

RECLAMATION

Managing Water in the West

Final Environmental Assessment

Ivanhoe Irrigation District Control System Project – 68 Main WaterSMART Water and Energy Efficiency Grant



**U.S. Department of the Interior
Bureau of Reclamation
Mid Pacific Regional Office
Sacramento, California**

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Mission Statements

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

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

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List of Acronyms and Abbreviations

AF	Acre-feet
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CFR	Code of Federal Regulations
CNDDDB	California Native Diversity Database
CO	Carbon Monoxide
CVP	Central Valley Project
District	Ivanhoe Irrigation District
DOI	Department of the Interior
EA	Environmental Assessment
EJ	Environmental Justice
EPA	Environmental Protection Agency
FE	Federally Endangered
FONSI	Finding of No Significant Impact
FP	State Fully Protected
FT	State Threatened
GHG	Greenhouse Gases
ITA	Indian Trust Assets
JB	Junction box
KDWCD	Kaweah Delta Water Conservation District
NAAQS	National Ambient Air Quality Standards
National Register	National Register of Historic Places
NEPA	National Environmental Policy Act

NHPA	National Historic Preservation Act
NO ₂	Nitrogen Dioxide
O ₃	Ozone
Pb	Lead
PM _{2.5}	Particulate matter less than 2.5 microns in diameter
PM ₁₀	Particulate matter between 2.5 and 10 microns in diameter
ppm	Parts per million
Reclamation	Bureau of Reclamation
SCADA	Supervisory control and data acquisition
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SO ₂	Sulfur Dioxide
SSC	State Species of Special Concern
ST	State Threatened
µg/m ³	Microgram per cubic meter
U.S.C.	U.S. Code
USFWS	U.S. Fish and Wildlife Service
WL	State Watch List
1B.1	Plants rare, threatened, or endangered in California and elsewhere, seriously threatened in California
1B.2	Plants rare, threatened, or endangered in California and elsewhere, moderately threatened in California

Section 1 Introduction

1.1 Background

The Bureau of Reclamation (Reclamation) proposes to provide WaterSMART Water and Energy Efficiency Grant funds to the Ivanhoe Irrigation District (District) for the implementation of the Control System Project – 68 Main. The District is located northeast of the City of Visalia in Tulare County. (Figure 1-1). Under the WaterSMART program, Reclamation provides cost-shared funding on a competitive basis for on-the-ground water conservation and energy efficiency projects. The WaterSMART grant program is under the authority of Section 9504(a) of the Secure Water Act, Subtitle F of Title IX of the Omnibus Public Land Management Act of 2009, P.L. 111-11 (42 USC 10364).

Reclamation would further the goals and objectives of the WaterSMART program as they apply to water management operations in the District by providing funding for the installation of supervisory control and data acquisition (SCADA) equipment, the construction of a new water control structure and above ground low-flow bypasses and the replacement of an intertie receiving structure (Proposed Action).

In accordance with the National Environmental Policy Act (NEPA), this Environmental Assessment (EA) discloses potential environmental impacts associated with the construction and operation of the Proposed Action.

1.2 Need for Proposal

Historically, water deliveries conveyed through the District's 68 Main Lateral have been accomplished through multiple, repetitive manual adjustments, while only being able to control accurately during elevated delivery conditions. The purpose of the Proposed Action is to increase the District's ability to accurately deliver the necessary amount of surface water during reduced flow conditions within the District. Due to operation constraints, the 68 Main Lateral loses an average of 413 acre-feet (AF) to direct recharge that could be marketed to District landowners to provide surface water deliveries and recharge through in-lieu operations. The Proposed Action would increase the District's water supply reliability which would result in better management of California's water resources. In addition, the Proposed Action would result in a decrease in the amount of groundwater currently extracted to meet the District's water supply needs.

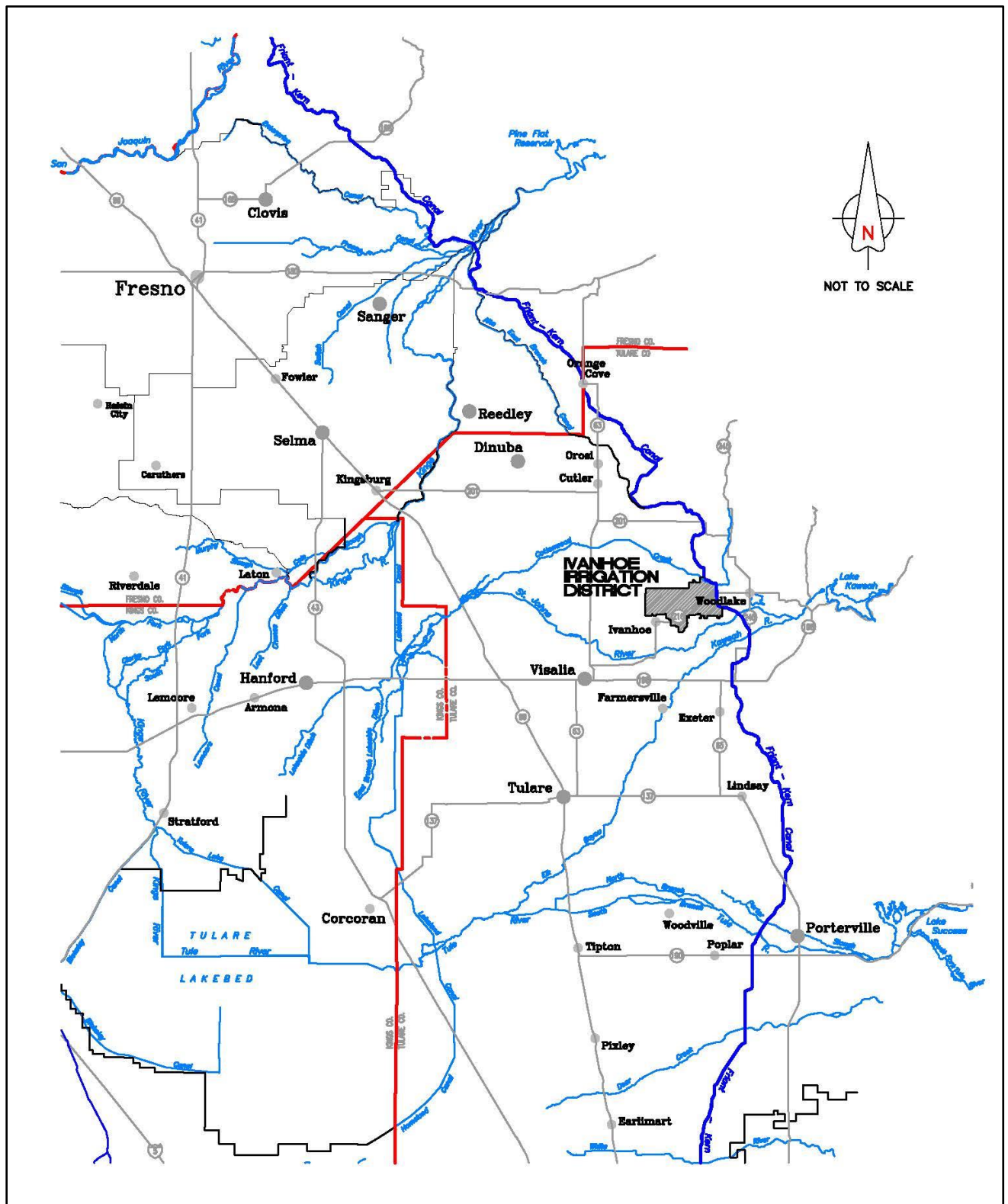


Figure 1-1. District Location Map

Section 2 Alternatives Including the Proposed Action

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

2.1 No Action Alternative

Without federal funding assistance, the project would, at a minimum, be delayed. It is the District's intent to eventually construct and operate the project; however, the timing would be speculative and it is possible that the project would never be built. Consequently, for the No Action Alternative, Reclamation would not award a grant to the District and they would continue to operate and maintain their internal distribution system under existing conditions.

2.2 Proposed Action

The Proposed Action would consist of Reclamation providing a grant for \$284,000 to support the acquisition and installation of SCADA equipment. SCADA is a system operating with coded signals over communication channels so as to provide control of remote equipment. The Proposed Action would modify the District's 68 Main by installing a flow control structure located approximately 200 feet downstream of the District's Friant-Kern Canal turnout, replacing the existing Wutchumna Ditch lateral intertie receiving structure and automating the 5 control in-line gate valves located at the Junction Boxes (JBs) on the 68 Main. (Figure 2-1). The improvements to the JBs include installation of low flow bypasses. Reclamation owns the 68 Main and therefore would also have to approve construction within Reclamation's right-of-way for alteration of Federal facilities.

2.2.1 Construction Elements

Site Preparation

Initial construction staking would be completed prior to construction activities to set temporary benchmarks in which to construct both the proposed control structure and the Wutchumna Ditch lateral intertie receiving structure and associated excavation of earthen material. The existing lands where earthen materials would be excavated are within the existing District right-of-way or within the easement obtained by the District in 2014. Clearing and grubbing would be necessary to remove no less than 9 existing orange trees and no more than 16 orange trees for the construction of the proposed control structure. All clearing and grubbing would be completed prior to March 1, unless a qualified biologist has surveyed vegetation for nesting birds and determined none to be present. Construction staging and material stockpiling would also occur on the lands and maintenance road adjacent to the Friant Kern Canal. All stockpiles of materials would be covered and stabilized during the wet season with erosion control fabric. Best management practices would be followed to the extent practical to prevent storm water run-off

from the construction site. Once ground disturbing activities are complete and the area returned to the final grade, the site would be seeded to control erosion.

Ground Disturbance

Approximately 570 cubic yards would be excavated over a footprint of 2,500 square feet for the construction of the new control structure (Figure 2-2). This excavation would have a depth of approximately 15 feet. The construction of the Wutchumna Ditch lateral intertie receiving structure would require approximately 90 cubic yards to be excavated over a footprint of 252 square feet. This excavation would have a depth of approximately 10 feet. All ground disturbances would be confined to the right-of-way of the 68 Main Lateral and the obtained easement. It is anticipated that 1 excavator would be used to do the bulk of the earthwork excavation and placement of earthen material. Additional equipment used would consist of a water truck for dust control and 1 loader and several dump trucks to move any unused material.

SCADA Installation

The installation of the SCADA equipment would include sensors, data controllers, antennas for radio transmission and solar power panels. This equipment would be housed adjacent to the existing JB's and proposed control structure to control the movement of control gates and valves. The SCADA system would also include installation of an interface with the office base station and programming of the system. These activities would occur within existing buildings and would not include any ground disturbance.

New Control Structure

A new control structure would be installed downstream of the 68 Main turnout from Reclamation's Friant-Kern Canal (Figure 2-2). Construction of the control structure would involve excavating approximately 570 cubic yards of earthen material for the installation of an underground reinforced concrete structure, which would house three (3) control gates/valves and a few feet of 12-inch to 36-inch conveyance piping. As mentioned above, SCADA equipment would also be installed at the proposed control structure. Upon completion of the proposed structure, the excavated area, less the area for the new structure would be backfilled and returned to its original form. Any additional earthen material would be hauled to the District's yard for future use. All construction activities would be confined to the right-of-way of the 68 Main Lateral or within the easement obtained by the District. Vehicle access would be within the District's right-of-way and the right-of-way of Reclamation along the access road to the District's Friant-Kern Canal turnout and would not require any road improvements.

Wutchumna Ditch Lateral Intertie Receiving Structure Replacement

The existing Wutchumna Ditch lateral intertie receiving structure would be removed and the construction of the new intertie structure would be installed at the same location, which is located along Avenue 344 at the Road 190 alignment. Construction of the intertie receiving structure would involve excavating approximately 90 cubic yards of earthen material for the installation of an underground reinforced concrete structure. Upon completion of the proposed structure, the excavated area, less the area for the new structure would be backfilled and returned to its original form. Any additional earthen material would be hauled to the District's yard for future use. The existing structure would be dismantled and hauled to either the District's yard or a neighboring District for use as rip-rap. All construction activities would be confined to the right-of-way of the 68 Main Lateral. Vehicle access would be within the District's right-of-way;

however, traffic control along Avenue 344 might be required to ensure that the site is safe for both the construction crew and persons traveling along Avenue 344.

Junction Box Bypasses

An above-ground bypass would be installed at each of the existing 5 Junction Boxes located along the 68 Main Lateral. Construction of the bypasses would involve the installation of a 4-inch concrete pad, a few feet of 12-inch conveyance piping and 1 control valve. As mentioned above, SCADA equipment would also be installed at each of the 5 Junction Boxes, which would include the installation of above-ground conduit mounted to the existing structure and construction of a lockable, weatherproof electrical house. The Construction at each Junction Box site would require connection to the existing power supply and would not require the installation of new power poles. All construction activities would be confined to the right-of-way of the 68 Main Lateral. Vehicle access would be within the District's right-of-way and would not require any road improvements.

Construction is anticipated from November 2015 through February 2016, following the completion of the water irrigation season. If the irrigation season is cut short due to drought conditions, then construction could potentially occur from October, 2015 through January, 2016.

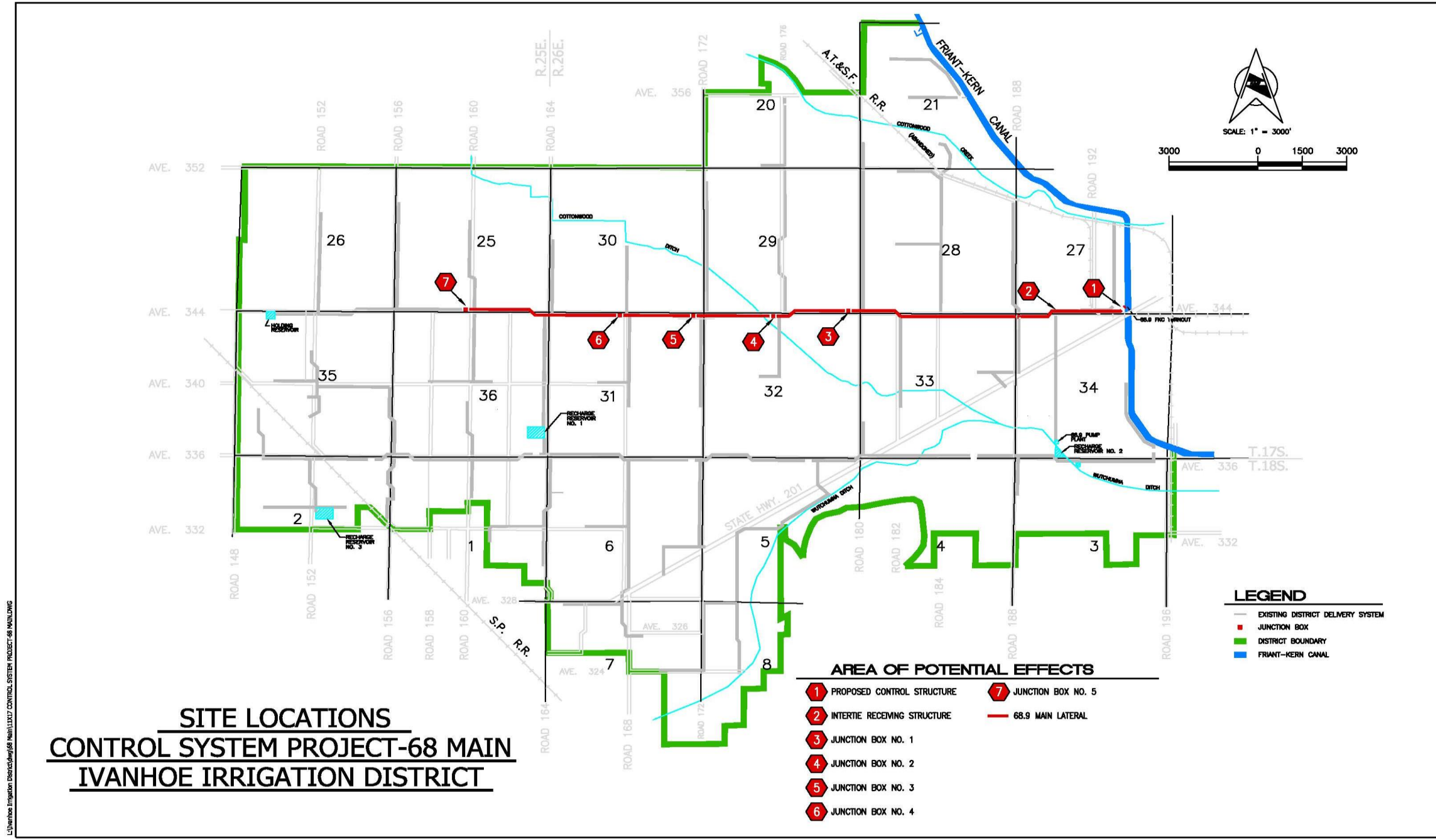
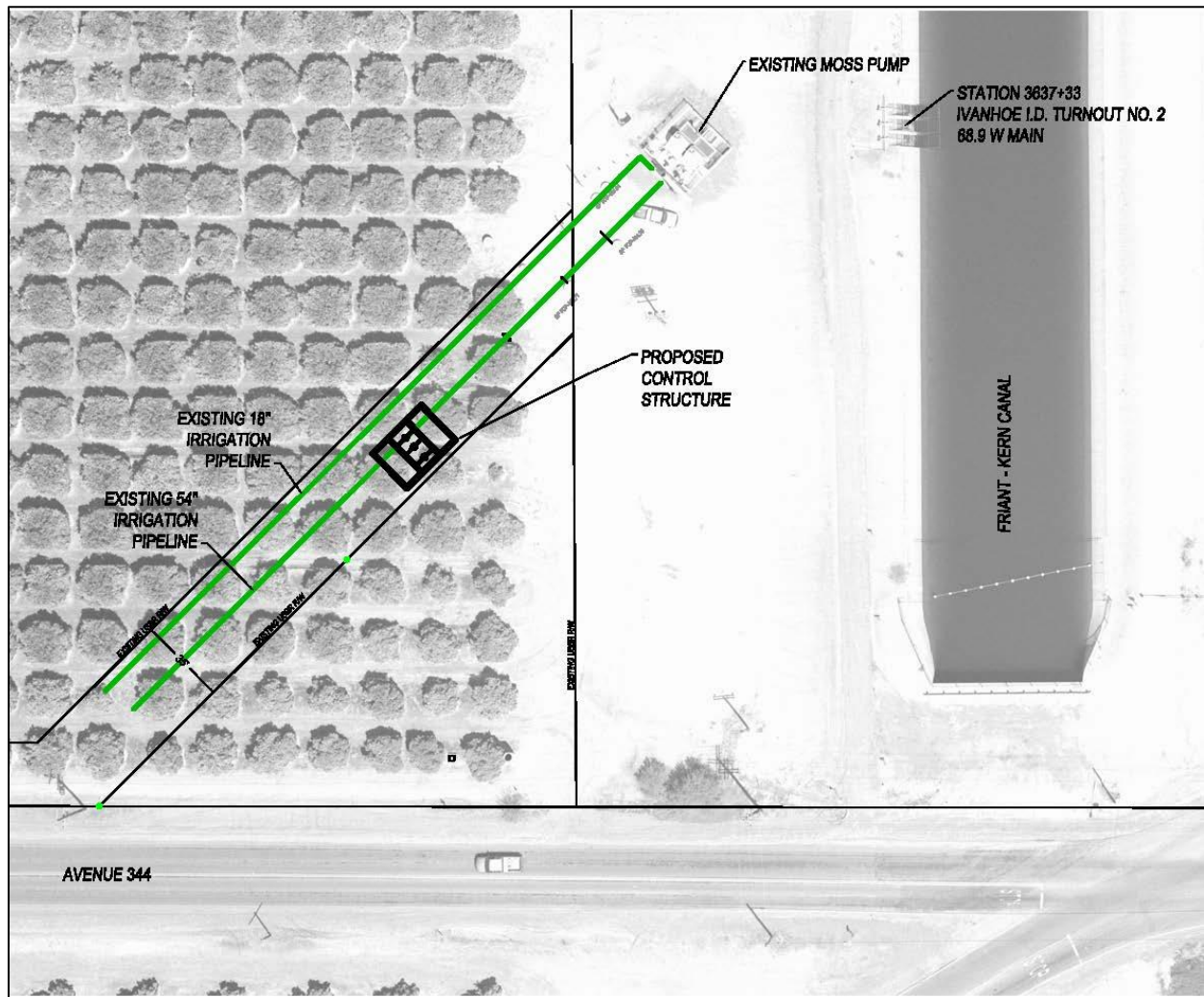


Figure 2-1. Site Location Map

Figure 2-2
Proposed Control Structure



Section 3 Affected Environment & Environmental Consequences

This section identifies the potentially affected environmental resources and the environmental consequences that could result from the No Action Alternative and Proposed Action.

3.1 Resources Not Analyzed in Detail

Department of the Interior Regulations, Executive Orders, and Reclamation guidelines require a discussion of the following items when preparing environmental documentation:

3.1.1 Indian Sacred Sites

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

3.1.2 Indian Trust Assets

Indian Trust Assets (ITAs) are legal interests in assets that are held in trust by the United States government for federally recognized Indian tribes or individual Indians. There are no Indian reservations, Rancherias or allotments in the Proposed Action area. The Proposed Action does not have a potential to affect ITAs. The nearest ITA is located 50 miles north in Fresno County.

3.1.3 Environmental Justice

Executive Order 12898, "Federal Actions to Address Environmental Justice (EJ) in Minority Populations and Low-Income Populations" requires federal agencies, to the greatest extent practicable, and as permitted by law, to achieve EJ by identifying and addressing disproportionately high and adverse human health and environmental effects, including interrelated social and economic effects, of their programs, policies and activities on minority populations and low-income populations. The Proposed Action would support delivery of agricultural water. While low income and minority populations are commonly found working in agricultural settings, the Proposed Action would not affect any population, nor disproportionately affect the health or environment of minority or low-income populations.

3.2 Air Quality

Section 176 (c) of the Clean Air Act (CAA) (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 (SIP) required under Section 110 (a) of the CAA (42 U.S.C. 7401 (a)) before the action is otherwise approved. In this context, conformity means that such federal actions must be consistent with a SIP's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards (NAAQS) and achieving expeditious attainment of those standards. Each federal agency must determine that any action that is proposed by the agency and that is subject to the regulations implementing the conformity requirements would, in fact conform to the applicable SIP before the action is taken.

On November 30, 1993, the U.S. Environmental Protection Agency (EPA) promulgated final general conformity regulations at 40 CFR 93 Subpart B for all Federal activities except those covered under transportation conformity. The general conformity regulations apply to a proposed Federal action in a non-attainment or maintenance area if the total direct and indirect emissions of the relevant criteria pollutant(s) and precursor pollutant(s) caused by the Proposed Action equal or exceed certain threshold amounts, thus requiring the Federal agency to make a determination of general conformity.

3.2.1 Affected Environment

The Proposed Action lies within the San Joaquin Valley Air Basin (SJVAB), which is managed by the San Joaquin Valley Air Pollution Control District (SJVAPCD). NAAQS and California Ambient Air Quality Standards (CAAQS) have been established for the following criteria pollutants: carbon monoxide (CO), ozone (O₃), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), particulate matter (PM₁₀ and PM_{2.5}) and lead (Pb). The CAAQS also set standards for sulfates, hydrogen sulfide and visibility.

Areas are classified under the Federal Clean Air Act as either "attainment" or "non-attainment" areas for each criteria pollutant based on whether or not the NAAQS have been achieved. Attainment relative to the State standards is determined by the California Air Resources Board (CARB). The SJVAB is designated as a State and Federal non-attainment area for O₃ and PM_{2.5} and a State and Federal attainment area for CO, SO₂, NO₂, and Pb. The Basin is in Federal attainment, but State non-attainment for PM₁₀. (SJVAPCD, 2011).

The CalEEMod Version 2013.2.2, was used to estimate construction emissions for the Proposed Action. The modeling results are provided in Appendix A.

3.2.2 Environmental Consequences

3.2.2.1 No Action Alternative

Under the No Action Alternative, there are no effects on air quality since conditions and trends would remain the same as existing conditions.

3.2.2.2 Proposed Action

The Proposed Action would not conflict with or obstruct the implementation of the air quality management plan of the SJVAB. Post-construction operations would not contribute to criteria pollutant emissions; however, emissions would be associated with construction. Post operation would not generate additional traffic trips. Standards set by the SJVAPCD, CARB, and Federal

agencies relating to the Proposed Action would be required and incorporated at applicable design and approval stages.

Table 3-1. Summarized Estimated Proposed Action Emissions

Pollutant	Thresholds for Federal Conformity Determinations	Local Significance Thresholds	Construction (Total Tons)
ROG	10	10	0.1225
NO _x	10	10	0.8398
PM ₁₀	100	15	0.0611
PM _{2.5}	100	15	0.0547

As indicated in Table 3-1 above, the Proposed Action has been estimated to emit less than the *de minimis* threshold for NO_x and ROG and PM_{2.5}. In addition, PM₁₀ emissions from the Proposed Action have been estimated to be well below the SJVAPCD threshold of 15 tons/year since the Proposed Action is proposed to be constructed in 6 months. Therefore, the Proposed Action would not impact air quality.

3.3 Surface Water and Groundwater Resources

3.3.1 Affected Environment

The District receives its water supply through 3 different sources: The District's Central Valley Project (CVP) – Friant Division contract, pre-1914 Kaweah River Rights through the Wutchumna Water Company, and through a portion of the Kaweah Delta Water Conservation District's (KDWCD) Longs Canal Company water. The District's CVP contract is for 7,700 AF of Class 1 and 7,900 AF of Class 2 water supply, although a portion of that contract supply was exchanged to KDWCD through a partial assignment of 1,200 AF of Class 1 and 7,400 AF of Class 2 to acquire the pre-mentioned portion of the KDWCD Longs Canal Company water and to secure 2,500 AF of storage behind Terminus Dam.

The District's primary distribution system consists of 48 miles of reinforced concrete pipe, which includes 2 main laterals and 31 sub laterals. The majority (10,336) of the 10,880 irrigable acres in the District is irrigated through micro irrigation methods.

The District lies within the Kaweah River Basin and is a participating member of the KDWCD Groundwater Management Plan (Plan). The goal of the Plan is to offer efficient and effective

groundwater management in an effort to provide a sustainable, high quality supply of groundwater for agricultural, environmental, and urban use for the future. (KDWCD 2012)

3.3.2 Environmental Consequences

3.3.2.1 No Action Alternative

Under the No Action Alternative, there would be no impacts associated with water resources, since existing conditions would remain the same. Under the No Action Alternative, use of groundwater resources within the District would continue under current conditions.

3.3.2.2 Proposed Action

Under the Proposed Action, the District's 68 Main Lateral would be upgraded in order to more efficiently monitor and control the District's water resources. Construction activities would occur entirely out of water channels, thus no channel alterations or similar water quality impacts would be associated with the Proposed Action's construction efforts. Drainage patterns in the area would not change as a result of the Proposed Action, and no water courses would be altered. The Proposed Action would not result in an increase of the rate of surface runoff because it would not significantly increase impermeable ground area. In addition, the Proposed Action would result in upgrades to existing structures and does not propose to construct any structure that would obstruct flood flows.

The Proposed Action would increase the availability of surface water delivery by 413 AF, which is currently lost to direct recharge as a result of improperly managed surface water deliveries. The increase in surface water delivery would result in a net reduction of groundwater reliance as a source of supply for District landowners, while continuing to be a source of groundwater recharge supply through in-lieu recharge efforts.

3.4 Biological Resources

3.4.1 Affected Environment

The affected environment includes farmland edges, a small residential area, ditch bank, three recharge basins and rural roadside habitats. The affected environment includes portions of the District's 68 Main Lateral, which is located alongside Avenue 344 in Tulare County. The Proposed Action area is annually excavated, graded, and sprayed for maintenance purposes resulting in the absence of natural habitat. (See Appendix B photos).

To assist in the determination of the environmental impacts of the Proposed Action, a reconnaissance-level biological survey was conducted on July 28, 2014 by a qualified biologist. The observed plant and wildlife species are listed in Tables 3-2 and 3-3 below.

Table 3-2. Plant Species Observed in the Proposed Action Area

Plant Species	Introduced Species
Prickly Lettuce (<i>Lactuca seriola</i>)	✓
Fleabane (<i>Conyza sp.</i>)	✓
Mexican Sprangletop (<i>Leptocloa unervia</i>)	✓
Sow Thistle (<i>Sonshus sp.</i>)	✓
Nutsedge (<i>Cyperis sp.</i>)	✓
Asparagus Fern (<i>Asparagus sp.</i>)	✓

Table 3-3. Animal Species Observed in the Proposed Action Area

Wildlife Species
House Sparrow (<i>Passer domesticus</i>)
Black Phoebe (<i>Sayornis nigricans</i>)
American Crow (<i>Corvus brachyrhynchos</i>)
Desert Cottontail (<i>Silvilagus audubonii</i>)

The California Natural Diversity Database (CNDDDB) and the U.S. Fish and Wildlife Service (USFWS) Species List (Document No. 140725041932) were queried for the Proposed Action on July 25, 2014. The combined queries identified seven (7) special status Plant Species, 21 special status animals and one critical habitat. The results are listed in Table 3-4 below.

Table 3-4. CNDDDB and USFWS Search Results

Common Name	Latin Name	Federal Listing Status	Habitat and Occurrence Notes
PLANTS			
Earlimart orache	<i>Atriplex cordulata</i> var. <i>erecticaulis</i>	1B.2	No suitable habitat exists in the Proposed Action area.
Atriplex minuscule	<i>Atriplex minuscule</i>	1B.1	No suitable habitat exists in the Proposed Action area.
Atriplex persistens	<i>Atriplex persistens</i>	1B.2	No suitable habitat exists in the Proposed Action area.
Hoover's spurge	<i>Chamaesyce hooveri</i>	FT	No suitable habitat exists in the Proposed Action area.
Recurved larkspur	<i>Delphinium recurvatum</i>	1B.2	No suitable habitat exists in the Proposed Action area.
Spiny-sealed button-celery	<i>Eryngium spinosepalum</i>	1B.2	No suitable habitat exists in the Proposed Action area.
San Joaquin Valley Orcutt grass	<i>Orcuttia inaequalis</i>	FT, SE, 1B.1	No suitable habitat exists in the Proposed Action area.
ANIMALS			
California tiger salamander	<i>Ambystoma californense</i>	FT, ST, SSC	No suitable habitat exists in the Proposed Action area; no aquatic habitat is in the vicinity.
Pallid bat	<i>Antrozous pallidus</i>	SSC	No suitable habitat exists in the Proposed Action area.
Golden eagle	<i>Aquila chrysaetos</i>	FP, WL	No suitable habitat exists in the Proposed Action area.

Burrowing owl	<i>Athene cunicularia</i>	SSC	No suitable habitat exists in the Proposed Action area.
Conservancy fairy shrimp	<i>Branchinecta conservatio</i>	FE	No suitable habitat exists in the Proposed Action area; no aquatic habitat is in the vicinity.
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	FT	No suitable habitat exists in the Proposed Action area; no aquatic habitat is in the vicinity.
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	FT	No suitable habitat exists in the Proposed Action area; no shrubs were observed during the site visit.
Tipton kangaroo rat	<i>Dipodomys nitratoideus nitratoideus</i>	FE	No suitable habitat exists in the Proposed Action area.
Spotted bat	<i>Euderma maculatum</i>	SSC	No suitable habitat exists in the Proposed Action area.
Western mastiff bat	<i>Eumops perotis californicus</i>	SSC	No suitable habitat exists in the Proposed Action area.
Blunt-nosed leopard lizard	<i>Gambelia sila</i>	FE	No suitable habitat exists in the Proposed Action area.
California condor	<i>Gymnogyps californianus</i>	FE	No suitable habitat exists in the Proposed Action area.
Delta smelt	<i>Hypomesus transpacificus</i>	FT	No suitable habitat exists in the Proposed Action area; no aquatic habitat is in the vicinity.
Western red bat	<i>Lasiurus blossevillii</i>	SSC	No suitable habitat exists in the Proposed Action area.
Vernal pool tadpole shrimp	<i>Lepidurus packardii</i>	FE	No suitable habitat exists in the Proposed Action area; no aquatic habitat is in the vicinity.
California linderiella	<i>Linderiella occidentalis</i>		No suitable habitat exists in the Proposed Action area; no aquatic habitat is in the vicinity.
California red-legged frog	<i>Rana draytonii</i>	FT	No suitable habitat exists in the Proposed Action area; no aquatic habitat is in the vicinity.
Western spadefoot	<i>Spea hammondi</i>	SSC	No suitable habitat exists in the Proposed Action area; no aquatic habitat is in the vicinity.
Giant garter snake	<i>Thamnophis gigas</i>	FT	No suitable habitat exists in the Proposed Action area; no aquatic habitat is in the vicinity.
Moody's gnaphosid spider	<i>Talanites moodyae</i>		No suitable habitat exists in the Proposed Action area.
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>	FE,ST	No suitable habitat exists in the Proposed Action area.
HABITAT			
Northern Hardpan Vernal Pool		The Proposed Action area is highly disturbed with active agricultural practices; no suitable habitat exists in the Proposed Action area.	

3.4.2 Environmental Consequences

3.4.2.1 No Action Alternative

Under the No Action Alternative, biological resource conditions within the Proposed Action area would remain unchanged.

3.4.2.2 Proposed Action

The Proposed Action would remove up to sixteen orange trees for the construction of the proposed control structure. All clearing and grubbing would be completed prior to March 1, unless a qualified biologist has surveyed vegetation for nesting birds and found them to be absent.

The results of the reconnaissance-level biological survey confirmed that habitat for special-status species does not exist in the project area.

During pre-construction meetings with the contractor, a qualified biologist would present documents regarding kit fox biology and how to identify a kit fox if present during construction; however, it is unlikely that kit fox are present within the Proposed Action area.

Based on the lack of potentially suitable habitat for kit fox and the fact that construction would occur during daylight hours only, Reclamation has determined that the Proposed Action would have no effect to San Joaquin kit fox.

3.5 Cultural Resources

“Cultural Resources” is a broad term that applies to prehistoric, historic, and architectural resources, as well as to traditional cultural properties. Cultural resources can include both archaeological sites, which contain evidence of past human use, and the built environment, which consists of structures such as buildings, roadways, dams, and canals. The National Historic Preservation Act (NHPA) of 1966, as amended, is the primary Federal legislation that outlines the Federal government’s responsibilities related to cultural resources. Section 106 of the NHPA requires the Federal government to take into consideration the effects of its undertakings on historic properties. Historic properties are, by definition, cultural resources that are included in, or eligible for inclusion in, the National Register of Historic Places (National Register). The evaluation criteria for National Register eligibility are outlined at 36 CFR Part 60.4.

Compliance with Section 106 of the NHPA follows a process outlined at 36 CFR Part 800. This process includes determining the area of potential effects (APE) for an undertaking, consulting with Indian tribes and other interested parties, identifying if historic properties are present within the APE, assessing the effects the undertaking would have on historic properties, and resolving any adverse effects to historic properties before an undertaking is implemented. The Section 106 process also requires consultation with the State Historic Preservation Officer (SHPO), or Tribal Historic Preservation Officer (THPO) where applicable, to seek concurrence with the finding of effect for the undertaking.

3.5.1 Affected Environment

The proposed project is located within the District's right-of-way, in areas previously disturbed by the construction of the 68 Main Lateral and its appurtenant facilities. Reclamation contacted the Tachi Yokut Tribe and Tule River Indian Tribe, inviting their participation in the Section 106 process and seeking their assistance in identifying any resources of religious or cultural significance that might be affected by Reclamation's undertaking. Section 106 historic properties identification efforts were conducted by RSO Consulting on behalf of the District. These efforts included a records search at the Southern San Joaquin Valley Information Center and a pedestrian survey of the APE. No previously recorded prehistoric or historic-era cultural resources were identified through these efforts. The underground 68 Main Lateral and its various above ground components were the only cultural resources identified in the APE.

Reclamation evaluated the 68 Main Lateral and its appurtenant features for National Register eligibility and determined that they are not eligible for National Register inclusion.

3.5.2 Environmental Consequences

3.5.2.1 No Action Alternative

Under the No Action Alternative there would be no undertaking and no potential to affect cultural resources.

3.5.2.2 Proposed Action

Under the Proposed Action Alternative, improvements to the 68 Main distribution system would take place beginning in 2015. As with the No Action Alternative, since there are no historic properties in the APE, the Proposed Action would result in no adverse impacts to cultural resources.

3.6 Cumulative Effects

There are no other known past, present, and reasonably foreseeable future actions that would cumulatively result in significant impacts to the human environment when taking into consideration the actions analyzed within this EA.

Section 4 Consultation and Coordination

4.1 Public Review Period

Reclamation made the draft EA available for a 14-day public review period from April 20, 2015 to May 4, 2015. No comments were received on the draft.

4.2 National Historic Preservation Act (16 U.S.C. § 470 et seq.)

The National Historic Preservation Act (NHPA) of 1966, as amended, is the primary legislation that outlines the Federal government's responsibilities related to cultural resources. Section 106 of the NHPA requires that Federal agencies take into consideration the effects of their undertakings on historic properties. Historic properties are defined as cultural resources that are included in, or eligible for inclusion in, the National Register. The process for implementing Section 106 of the NHPA is found at 36 CFR Part 800. The Section 106 process includes requirements to identify historic properties that could be affected by a proposed undertaking, to seek and gather information about significant cultural resources from Indian tribes and other interested parties, and to consult with the SHPO on a finding of effect for an undertaking.

Pursuant to 36 CFR Part 800.4(d)(1), Reclamation initiated consultation with the California SHPO on a finding of no historic properties affected for this undertaking on February 23, 2015. SHPO responded on April 2, 2015 on the Proposed Action's lack of eligibility and on a finding of no historic properties affected pursuant to 36 CFR §800.4(d)(1). (Appendix C).

Section 5 References

Kaweah Delta Water Conservation District. 2012. Groundwater Management Plan – 2010 Annual Report. August 16, 2012.

United States Bureau of Reclamation. 2007. New Melones Resource Management Plan/Environmental Impact Statement Resource Inventory Report.

U.S. Fish and Wildlife Service. 2012. Threatened and Endangered Species list for USGS 7.5-minute quadrangle Ivanhoe. Website accessed on November 5, 2012.
http://www.fws.gov/sacramento/es_species/Lists/es_species_lists-overview.htm

Appendix A

Air Emission Estimates

CalEEMod Version: CalEEMod.2013.2.2

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Date: 8/20/2014 1:06 PM

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.1225	0.8398	0.5143	7.1000e-004	2.9900e-003	0.0582	0.0611	9.7000e-004	0.0537	0.0547	0.0000	66.7385	66.7385	0.0185	0.0000	67.1262
Total	0.1225	0.8398	0.5143	7.1000e-004	2.9900e-003	0.0582	0.0611	9.7000e-004	0.0537	0.0547	0.0000	66.7385	66.7385	0.0185	0.0000	67.1262

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.1225	0.8398	0.5143	7.1000e-004	2.9900e-003	0.0582	0.0611	9.7000e-004	0.0537	0.0547	0.0000	66.7384	66.7384	0.0185	0.0000	67.1261
Total	0.1225	0.8398	0.5143	7.1000e-004	2.9900e-003	0.0582	0.0611	9.7000e-004	0.0537	0.0547	0.0000	66.7384	66.7384	0.0185	0.0000	67.1261

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Appendix B

Photographs



Photo 1: 68 Main Lateral downstream of the Friant-Kern Canal turnout where the new control structure would be installed.



Photo 2: 68 Main Lateral – Wutchumna Ditch Intertie Receiving Structure where the existing structure would be removed and a new structure would be installed.



Photo 3: 68 Main Lateral – Junction Box No. 3 where SCADA equipment and above ground low-flow bypasses would be installed. Note structure as described in report. All Junction Boxes are similar in structure.



Photo 4: Typical above ground bypass as installed in 2014 as part of the District's Control System Project – 69 Main.

Appendix C

Cultural Resources Compliance

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

MP-153 Tracking Number: 13-MPRO-194

Project Name: National Historic Preservation Act Compliance for Ivanhoe Irrigation District Control System Project: 68 Main Lateral Pipeline, Tulare County, California.

NEPA Document: EA

NEPA Contact: Doug Kleinsmith, Natural Resource Specialist

MP 153 Cultural Resources Reviewer: BranDee Bruce, Architectural Historian

Date: April 6, 2015

Reclamation proposes to provide funding through a WaterSMART Water Use Efficiency Grant to Ivanhoe Irrigation District to improve water efficiency on the 68 Main Lateral pipeline northeast of Visalia, California. The 68 Main Lateral pipeline was originally constructed and is currently owned by Reclamation. Ivanhoe Irrigation District operates and maintains the lateral. 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 Goodsell (2012), Bruce and Barnes (2015), and in-house background research, Reclamation consulted with, and received concurrence from the California State Historic Preservation Officer (SHPO) on the 68 Main Lateral's lack of eligibility and on a finding of no historic properties affected pursuant to 36 CFR §800.4(d)(1). Consultation correspondence between Reclamation and the SHPO has been provided with this cultural resources compliance document for inclusion in the administrative record for this action.

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

Attachments:

Letter: Reclamation to SHPO dated February 23, 2015

Letter: SHPO to Reclamation dated April 2, 2015



United States Department of the Interior

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

IN REPLY REFER TO:

MP-153
ENV-3.00

FEB 23 2015

CERTIFIED - RETURN RECEIPT REQUESTED

Dr. Carol Roland-Nawi
State Historic Preservation Officer
Office of Historic Preservation
1725 23rd Street, Suite 100
Sacramento, CA 95816

Subject: National Historic Preservation Act (NHPA) Section 106 Compliance for the Ivanhoe Irrigation District Control System Project: 68 Main Lateral Pipeline, Tulare County, California (Project #13-MPRO-194)

Dear Dr. Roland-Nawi:

The Bureau of Reclamation proposes to award a WaterSMART Water Use Efficiency Grant to the Ivanhoe Irrigation District (IID) for a project to improve efficiency of the 68 Main Lateral pipeline northeast of Visalia, California (Enclosure 1, Figure 1). The federally owned 68 Main Lateral, constructed by Reclamation, is operated and maintained by IID. Reclamation's actions to fund and permit the proposed activities constitute an undertaking as defined by Section 301(7) of the NHPA (16 USC 470), which requires compliance with Section 106 of the NHPA. We are consulting with you pursuant to the 36 CFR Part 800 regulations, which implement Section 106. Reclamation is notifying you of a finding of no historic properties affected for the undertaking, pursuant to 36 CFR § 800.4(d)(1).

IID proposes to install a flow-control structure located downstream of the Friant-Kern Canal (FKC) turnout for the 68 Main Lateral pipeline, replace the existing Wutchumna Ditch lateral intertie receiving structure, and improve five existing junction boxes on the 68 Main Lateral pipeline by installing a low flow bypass system with automated-control gate valves. The proposed new control structure will be installed within a 2,500-square-foot area to a depth of approximately 16 feet. Construction of the new control structure will require removing up to sixteen orange trees. The new Wutchumna Ditch lateral intertie receiving structure will be installed within an approximately 252-square-foot area to a depth of approximately 10 feet. An above-ground bypass, which includes a 4-inch-thick concrete pad and up to 10 feet of 12-inch pipe with a control valve, will be installed at each of the existing five junction boxes located along the 68 Main Lateral. SCADA equipment, including sensors, data controllers, antennas for radio transmission, and solar panels, will be installed adjacent to the existing junction boxes and

the new control and intertie structures to integrate these facilities into IID's remote operating system. All construction activities will be confined to the original footprint of pipeline construction. Access and staging will be limited to the existing 68 Main Lateral right-of-way, existing roads, and an 80-foot by 300-foot (0.55 acres) staging area adjacent to the FKC and existing IID turnout.

Reclamation determined that the area of potential effects (APE) for this undertaking includes seven individual locations all situated along Avenue 344 (Enclosure 1, Figure 2). Modifications to junction boxes 1 through 5 will occur within an approximately 20-foot by 45-foot area (each 0.02 acres, for a cumulative total of 0.1 acres). Modification to the Wutchumna Ditch lateral intertie receiving structure will be confined to an approximately 20-foot by 95-foot area (0.05 acres). Construction of the new control structure will occur in an approximately 0.8 acre area (which includes the 2,500-square-foot construction area and 0.55-acre staging area) for a cumulative project total APE of 0.95 acres. The vertical APE will be up to approximately 16 feet deep at the new control structure location and up to approximately 10 feet deep at the Wutchumna Ditch lateral intertie location, both of which are located in the original construction zone for the 68 Main Lateral. The project area is located in Section 25 in T. 17 S., R. 25 E. and Section 27, 29, 31, and 32 in T. 17 S., R. 26 E., Mount Diablo Meridian, as depicted on the Ivanhoe 7.5' U.S. Geological Survey topographic quadrangle map. Agricultural roads and adjacent orchards bracket the project area.

Identification efforts involved the review of previous cultural resources studies in the area and a pedestrian survey of the APE. In 2012, Reclamation consulted with your office on a separate WaterSMART grant for the 69 Main Lateral of the IID distribution system. At that time, two cultural resources reports were submitted with an evaluation of eligibility for inclusion in the National Register of Historic Places (National Register) for the 69 Main Lateral and the IID distribution system. On October 16, 2012, Reclamation submitted a determination of not eligible for both the 69 Main Lateral and the IID distribution system and a finding of no historic properties affected for the 2012 undertaking. Your office responded with comments and a statement of non-concurrence with Reclamation's eligibility and finding. On December 6, 2012, Reclamation responded with further justification for our original determination and finding. No response was received from your office and Reclamation moved forward with issuing the grant. (Reports and correspondence are provided in Enclosure 2).

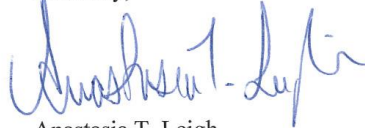
On January 30, 2015, Reclamation conducted a pedestrian survey of the current APE and recorded the segment of the 68 Main Lateral within the APE on a Department of Parks and Recreation 523 form (Enclosures 3 and 4). No other cultural resources were identified in the APE. Using the discussion from the previous 2012 consultation on the eligibility of the IID, Reclamation reaffirms its previous determination that the IID distribution system is not eligible for inclusion in the National Register (see Enclosure 2 for historic context and Enclosure 4 for evaluation). The 68 Main Lateral was found not eligible individually and not eligible as part of the IID distribution system since that system is not eligible.

Pursuant to 36 CFR § 800.3(f)(2), Reclamation identified the Santa Rosa Rancheria, Tejon Indian Tribe, and the Tule River Indian Tribe as those likely to have knowledge of historic properties or attach religious and cultural significance to historic properties within the APE.

Reclamation sent letters to the tribes requesting their participation in the Section 106 process and assistance in identifying sites of religious and cultural significance pursuant to 36 CFR § 800.4(a)(4) [Enclosure 5]. Reclamation also identified the Kern Valley Indian Council as an Indian tribe that may have knowledge or concerns regarding historic properties in the APE. Pursuant to 36 CFR § 800.4(a)(3), Reclamation sent a letter to this organization requesting their assistance in the identification of sites which may be eligible for listing on the National Register (Enclosure 5). To date, no responses have been received. Should any concerns subsequently arise, Reclamation will address them through consultation, as appropriate.

Based on the above discussion and the enclosed documentation, Reclamation finds no historic properties affected for this undertaking. We invite your comments on our delineation of the APE and our efforts to identify historic properties. We are also notifying you of our finding of no historic properties affected. Please contact Ms. Brandee Bruce, Architectural Historian, at 916-978-5039 or bbruce@usbr.gov, to request additional information on this project.

Sincerely,



Anastasia T. Leigh
Regional Environmental Officer

Enclosures - 5

**OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION**

1725 23rd Street, Suite 100
SACRAMENTO, CA 95816-7100
(916) 445-7000 Fax: (916) 445-7053
calshpo@parks.ca.gov
www.ohp.parks.ca.gov



April 2, 2015

Reply in Reference To: BUR_2015_0302_001

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

RE: Ivanhoe Irrigation District Control System Project: 68 Main Lateral Pipeline, Tulare County, California; (13-MPRO-194).

Dear Ms. Leigh:

Thank you for seeking my consultation regarding the above noted undertaking. Pursuant to 36 CFR Part 800 (as amended 8-05-04) regulations implementing Section 106 of the National Historic Preservation Act (NHPA), the Bureau of Reclamation (Reclamation) is seeking my comments regarding the effects that the above named project will have on historic properties.

The Bureau of Reclamation proposes to award a WaterSMART Water Use Efficiency Grant to the Ivanhoe Irrigation District for a project to improve efficiency of the 68 Main Lateral pipeline. This will involve installation of a flow-control structure downstream from the Friant-Kern Canal turnout for the 68 Main Lateral pipeline; replacement of the existing Wutchumna Ditch lateral intertie receiving structure; and improving five existing junction boxes on the 68 Main Lateral pipeline by installing a low flow bypass system and automated-control gate valves. Sixteen orange trees will need to be removed to construct the new control structure.

The Area of Potential Effects (APE) will be limited to the existing pipeline construction footprint and an 80 foot X 300 foot staging area adjacent to the Friant-Kern Canal and existing turnout. Access to the pipeline will be via existing roads. The vertical APE is approximately sixteen feet for the new control structure; ten feet for the lateral intertie; and twelve inches for concrete pads for the above ground bypasses installed at five junction box locations along the 68 Main Lateral.

In addition to your letter received March 2, 2015, you have submitted the *Supplemental Cultural Resources Report for the Ivanhoe Irrigation District 69 Main Control System Project, Tulare County, California (11-SCAO-169)* (Goodsell, October 2012) as evidence of your efforts to identify and evaluate historic properties in the project APE.

Archival research included a records search at the Southern San Joaquin Valley Information Center on August 23, 2011 as part of another WaterSMART Grant for the 69 Main Control System Project. No previously recorded cultural resources were noted in the Area of Potential Effects (APE) for the project. Reclamation identified the Santa Rosa Rancheria, Tejon Indian Tribe, the Tule River Indian Tribe and the Kern Valley Indian Council as Native American consulting parties

likely to have knowledge of sites of religious or cultural significance to them in the project area. Letters regarding the project were sent to these parties. No such properties were identified through consultation efforts. A pedestrian surface survey was conducted on January 30, 2015. A segment of the 68 Main Lateral was recorded; no other cultural resources were identified.

Reclamation has determined the segment of the 68 Main Lateral within the APE is not eligible to the National Register of Historic Places (NRHP) individually nor as part of the Ivanhoe Irrigation District distribution system. Pursuant to 36 CFR §800.4(d)(1) Reclamation has determined there will be *No Historic Properties Affected* by the proposed project.

Based on your identification efforts, I concur the segment of the 68 Main Lateral within the APE is not eligible to the NRHP; identification efforts are sufficient and I also have no objections to the delineation of the APE, as depicted in the supporting documentation. Therefore, I concur with Reclamation's *Finding of No Historic Properties Affected*.

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. Thank you for seeking my comments and considering historic properties as part of your project planning. If you have any questions or concerns regarding archaeological resources, please contact Associate State Archaeologist, Kim Tanksley at (916) 445-7035 or by email at kim.tanksley@parks.ca.gov. Any questions concerning the built environment should be directed to State Historian, Kathleen Forrest at (916)445-7022 or by email at kathleen.forest@parks.ca.gov.

Sincerely,



Carol Roland-Nawi, PhD
State Historic Preservation Officer