RECLAMATION
Managing Water in the West

Environmental Assessment

Weyand Canal Automation Project

Solano Irrigation District
Grant #R18AP00132

U.S. Department of the Interior
Bureau of Reclamation

October 2018

Mission Statements

The mission of the Department of the Interior is to protect and manage the Nation's natural resources and cultural heritage; provide scientific and other information about those resources; and honor 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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Section 1 Purpose and Need for the Proposed Action

1.1 Introduction

This Environmental Assessment (EA) examines the potential direct, indirect, and cumulative impacts to the affected environment associated with the Weyand Canal Automation Project (Project). The Bureau of Reclamation (Reclamation), in cooperation with the Solano Irrigation District (District), proposes to demolish and reconstruct four existing reinforced concrete check structures for the removal of the existing weir boards and the installation of automated Rubicon FlumeGates as part of the Weyand Canal Automation Project, located in an unincorporated area of Solano County, California (Figure 1. Project Vicinity, Figure 2. Project Location, and Figure 3. Project Features). In addition, the District will modify 10 turnout and lateral structures, one spill structure, and integrate two pumped services. All Project-related activities will occur within the District's right-of-way (ROW) when the canal is dewatered.

1.2 Purpose and Need for the Proposed Action

The purpose of the Project is to install automated control structures to more efficiently distribute irrigation water to adjacent agricultural lands. The proposed Action will complete the modernization of a 1950's vintage conveyance system into an efficient conveyance system equipped with industry-leading technology. The proposed Action will allow the District to better manage the approximate 31,000 acre-feet typically diverted into the Weyand Canal distribution system each water season. Incorporating automation of the Weyand Canal is anticipated to decrease the system's average annual operational spill volume of 960 acre-feet of agricultural water to a spill volume of less than 10 acre-feet.

Figure 1. Project Vicinity

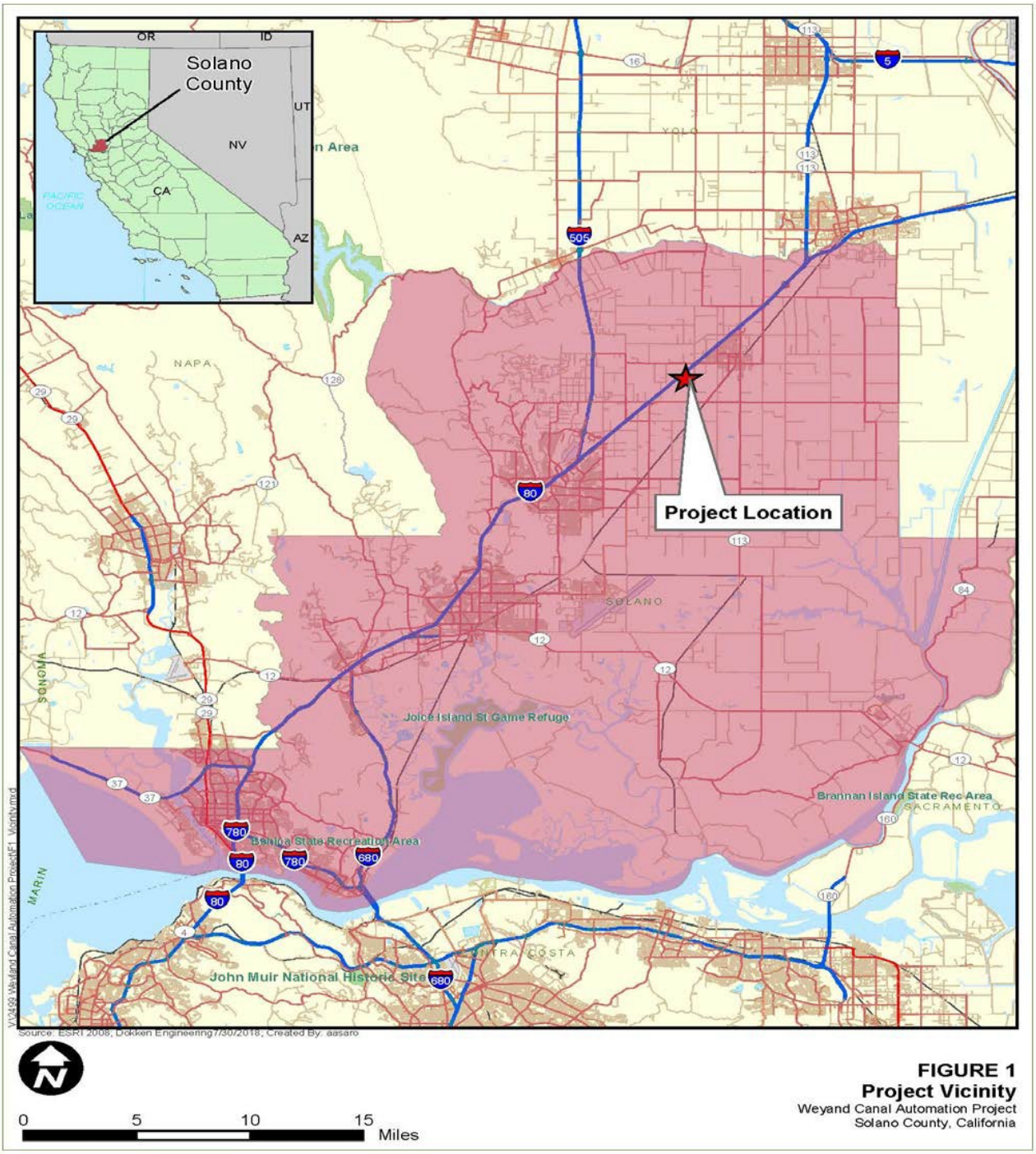
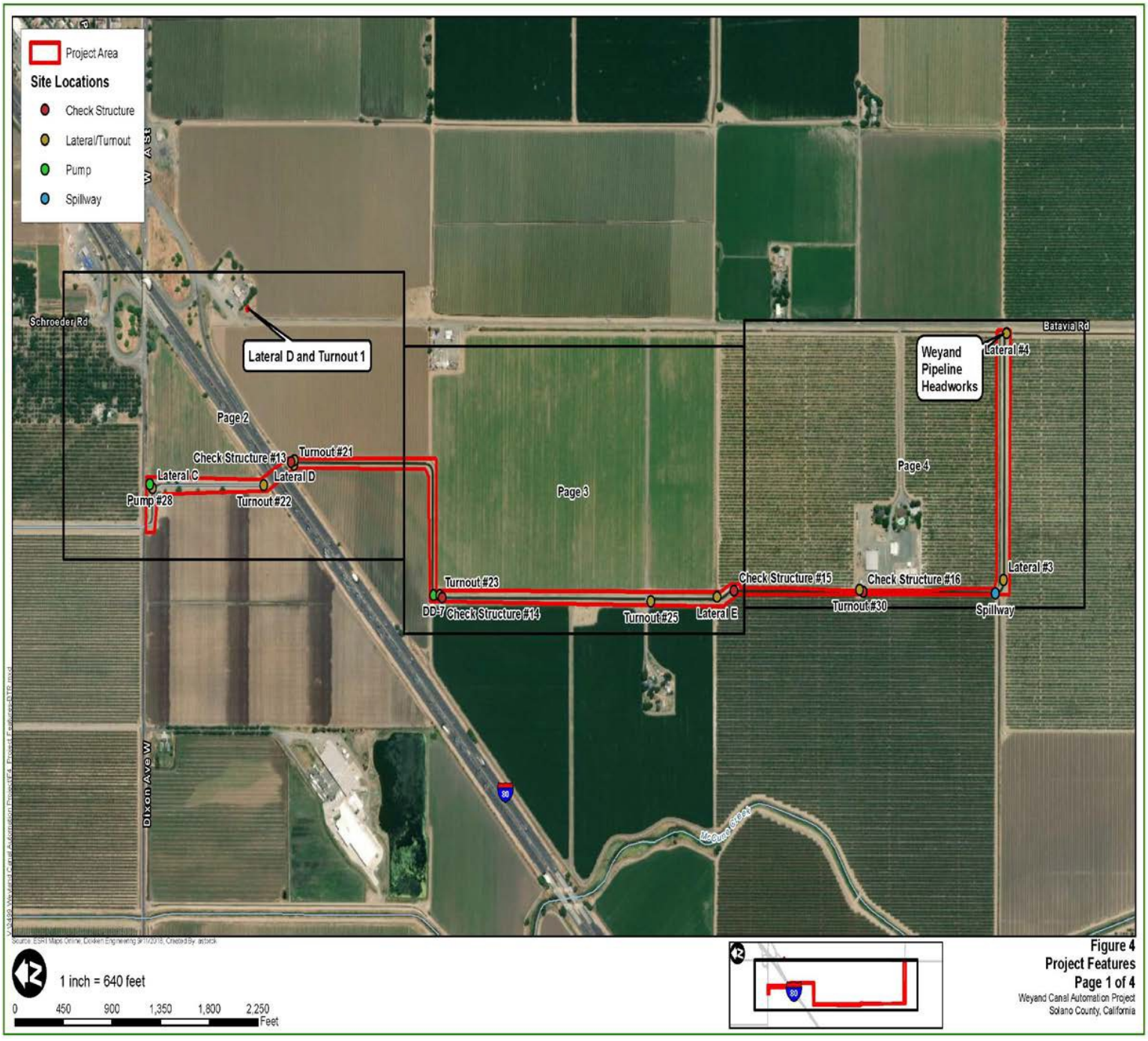


Figure 2. Project Location

Figure 3. Project Features



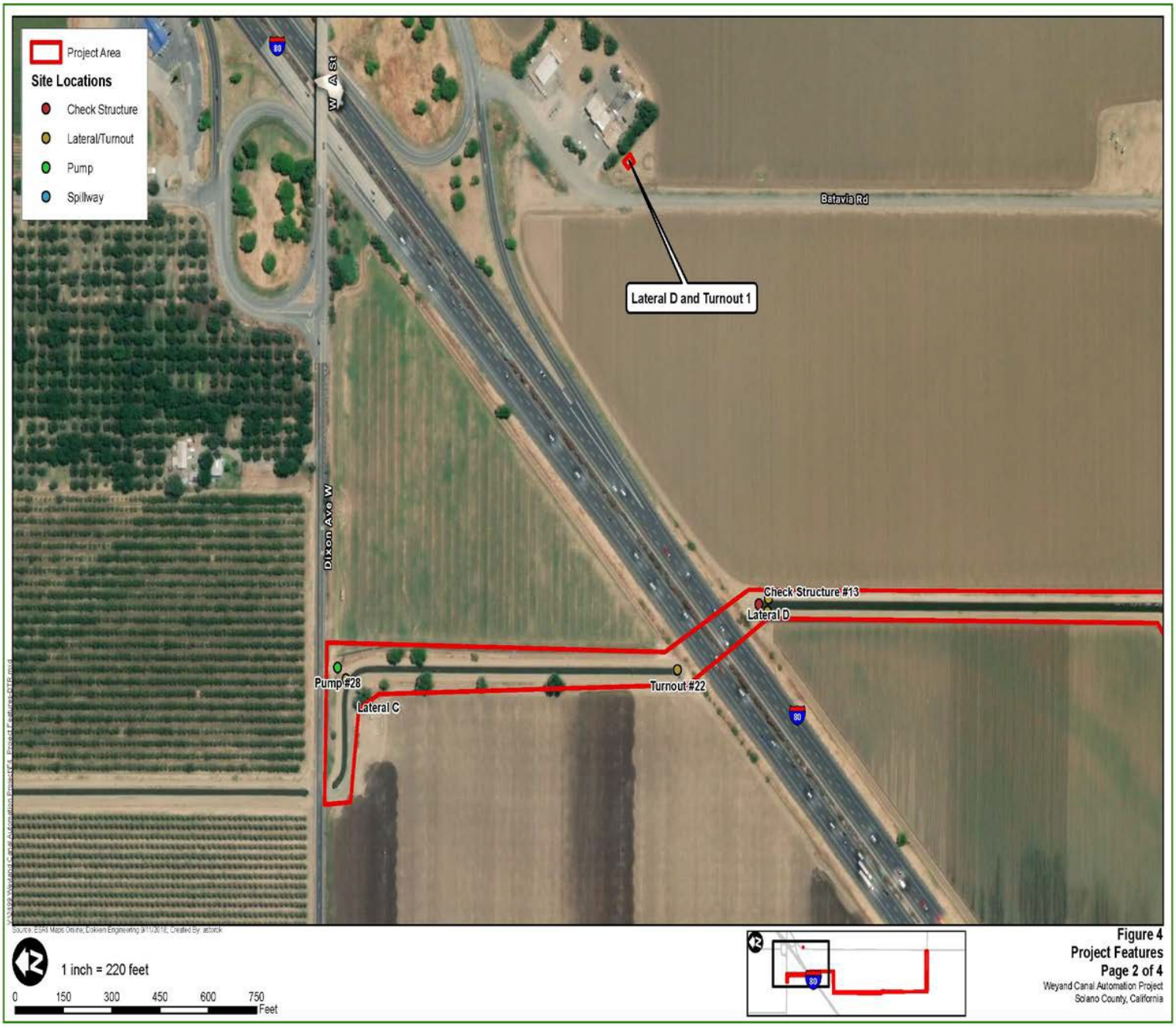


Figure 4
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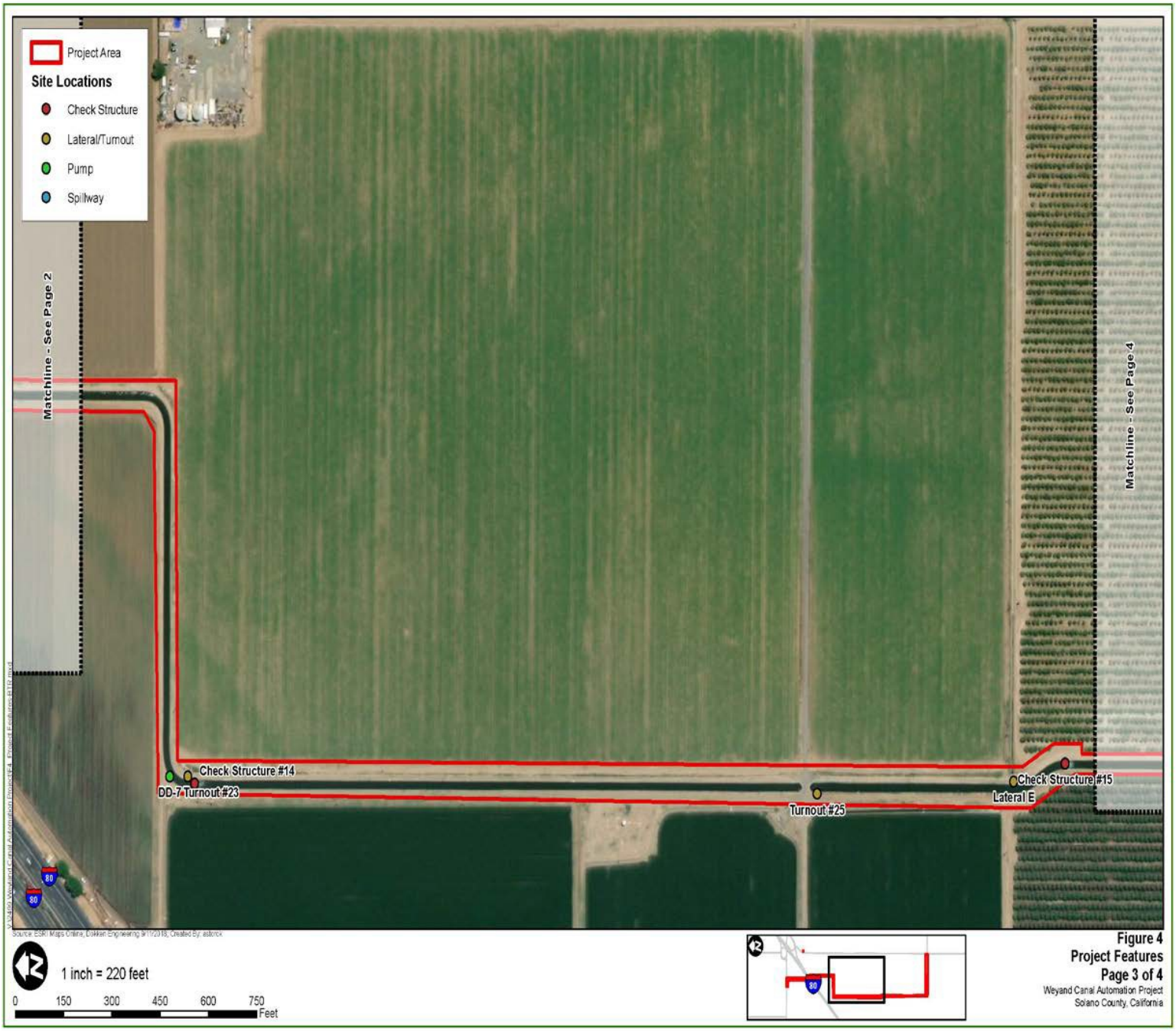

Figure 4
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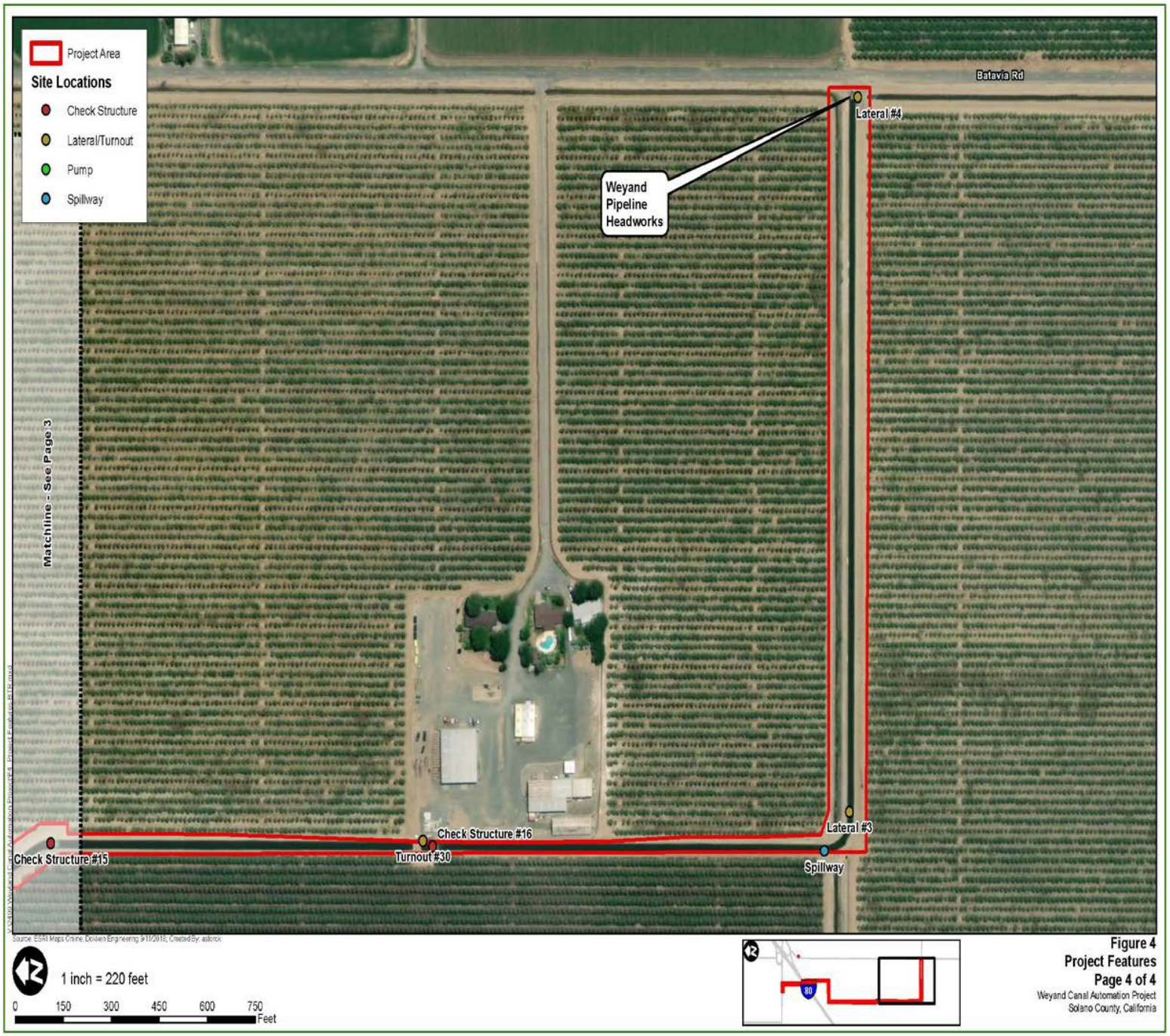

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Section 2 Alternatives

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

2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not provide the necessary grant funding, and the District would need to secure an alternative funding mechanism or forego the Project.

2.2 Proposed Action

Under the Proposed Action, Reclamation would provide grant funding for the District to demolish and reconstruct four existing reinforced concrete check structures with modifications such that the new control structures can be mounted, saw-cut portions of existing concrete structure, the removal of the existing weir boards and the installation of automated Rubicon Flume Gates. In addition, the District will modify 10 turnout and lateral structures, one spill structure, and integrate two pumped services. All Project-related activities will occur within the District's ROW when the canal is dewatered during the non-irrigation season. The purpose of the Project is to install automated control structures to more efficiently distribute irrigation water to adjacent agricultural lands.

The District's proposed Action will complete the modernization of a 1950's vintage conveyance system into an efficient conveyance system equipped with industry-leading technology. The proposed Action will allow the District to better manage the approximate 31,000 acre-feet typically diverted into the Weyand Canal distribution system each water season. Incorporating automation of the Weyand Canal is anticipated to decrease the system's average annual operational spill volume of 960 acre-feet of agricultural water to a spill volume of less than 10 acre-feet.

The proposed Action will also allow growers to take water for farm-unique durations and, in turn, help facilitate on-farm efficiency improvements. The District estimates the automation of the Weyand Canal will allow the growers to make on-farm improvements, saving an additional 150 acre-feet of water per year. The Supervisory Control and Data Acquisition (SCADA) equipment being used to automate the Weyand Canal will improve the existing water measurement accuracy rating and would allow the District to better manage the water diverted into the Weyand Canal, thereby improving the overall system efficiency.

Construction of the proposed Action is anticipated to start as soon as October of 2018 and will last approximately 5 months. No utility relocations or land acquisitions are anticipated to be required by the proposed Action; however, temporary construction easements (TCEs) may be required for construction equipment staging and access to the Project site. Equipment access to the Project site is proposed on existing farm roads located throughout the Project area and on

either side (east and west) of the Weyand Canal. Northern access will occur through Dixon Avenue West where it intersects with Weyand Canal and the middle-southern/southern portion of the Project site can be accessed via Batavia Road and other unnamed farm roads crossing east-west through Weyand Canal.
Under the No Action Alternative, modernization and automation of the Weyand Canal would not occur and irrigation water would not be efficiently distributed to adjacent farmlands.

The District is the lead agency under the California Environmental Quality Act (CEQA) and Reclamation is the lead agency under the National Environmental Policy Act (NEPA).

Section 3 Affected Environment and Environmental Consequences

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

3.1 Project Setting

The Project is located within unincorporated Solano County, California in the Sacramento Valley, approximately 26 miles west of Sacramento. According to the 2008 Solano County General Plan Land Use Element, the Project is located within an area designated as agricultural land and zoned as Agricultural 40-acre (AG-40). All of the lands adjacent to proposed Action area are agricultural lands and includes two rural-residential properties.

3.2 Resources Eliminated from Further Analysis

Reclamation analyzed the affected environment and determined that the Proposed Action would have the potential to cause direct, indirect, or cumulative adverse effects to the resources listed below and therefore will be discussed within Section 3.3.

- Air Quality
- Water Resources
- Water Quality
- Biological Resources
- Cultural Resources
- Cumulative Effects

Reclamation analyzed the affected environment and determined that the Proposed Action did not have the potential to cause direct, indirect, or cumulative adverse effects to the resources listed in Table 1.

Table 1. Resources Eliminated from Further Analysis

Resource	Reason Eliminated
Climate Change	The Proposed Action would not cause significant amounts of greenhouse gas emissions, nor would the Proposed Action create new sources of greenhouse gas emissions. There would be no impact to climate change as a result of the Proposed Action.
Environmental Justice	The Proposed Action would not cause dislocation, changes in employment, or increase flood, drought, or disease nor would it disproportionately impact economically disadvantaged or minority populations. There would be no impact to environmental justice considerations as a result of the Proposed Action.
Indian Sacred Sites	The Proposed Action is not located on Federal lands and would not limit access to ceremonial use of Indian Sacred Sites on Federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites. Therefore, there would be no impacts to Indian Sacred Sites as a result of the Proposed Action.
Indian Trust Assets	The Proposed Action would not impact Indian Trust Assets (ITA) as there are none in the Proposed Action area. The nearest ITA is the Cache Creek Casino Resort located approximately 26 miles northwest of the Project location.
Land Use	The Proposed Action would not change the area's land use designation, as the footprint for new infrastructure and facilities is sited within an area previously disturbed and used for the same use. There would be no impact to land use as a result of the Proposed Action.
Noise	The Proposed Action would not cause substantial noise impacts in the project vicinity, and no new sources of noise would be constructed by the Proposed Action. Construction activities would be temporary and would follow the Solano County Noise Ordinance. No impacts related to noise would occur as a result of the Proposed Action.
Public Health, Safety, Access and Transportation	The Proposed Action would not cause changes to public health, safety, access or transportation. There would be no impact to public health, safety, access or transportation as a result of the Proposed Action.
Recreation	The Proposed Action would not change impact or change recreation uses or types in the area. There would be no impact to recreation as a result of the Proposed Action.

3.3 Affected Environment

3.3.1 Air Quality

Affected Environment

The U.S. Environmental Protection Agency (EPA) sets acceptable levels for seven air pollutants, and then determines – with the help of states and local air districts – where those standards are met and not met. The Proposed Action is located in the Yolo-Solano Air Quality Management District (YSAQMD). The YSAQMD currently meet the EPA's health standards for five of the seven air pollutants. The YSAQMD is in non-attainment for Ozone and fine particulate matter (PM-10) and is considered to be part of a regional non-attainment area. Figure 4 displays the YSAQMD ambient air quality standards.

Figure 4. Yolo-Solano Ambient Air Quality Standards

Ambient Air Quality Standards						
	Federal				California	
	Primary Standards		Secondary Standards			
Pollutant	**Level**	**Averaging Time**	**Level**	**Averaging Time**		
Carbon Monoxide	9 ppm (10 mg/m^3)	8-hour	None		9 ppm	
	35 ppm (40 mg/m^3)	1-hour			20 ppm	
Lead	1.5 µg/m^3	Quarterly Average	Same as Primary		1.5 µg/m^3	
Nitrogen Dioxide	0.053 ppm (100 µg/m^3)	Annual (Arithmetic Mean)	Same as Primary		0.030 ppm	(annual)
					0.18 ppm	(24 hr)
Particulate Matter (PM10)	150 µg/m^3	24-hour	Same as Primary		50 µg/m^3	(annual)
					20 µg/m^3	(24 hr)
Particulate Matter (PM2.5)	12.0 µg/m^3 (2012 standard)	Annual (Arithmetic Mean)	Same as Primary		12 µg/m^3	
	35 µg/m^3 (2006 standard)	24-hour	Same as Primary			
Ozone	0.075 ppm (2008 standard)	8-hour	Same as Primary		0.070 ppm	
	0.08 ppm (1997 standard)	8-hour	Same as Primary			
	0.12 ppm (1979 standard)	1-hour (Applies only in limited areas)	Same as Primary		0.09 ppm	
Sulfur Dioxide	0.03 ppm	Annual (Arithmetic Mean)	0.5 ppm (1300 µg/m^3)	3-hour		
	0.14 ppm	24-hour			0.04 ppm	(24 hr)
					0.25 ppm	(1 hour)

= attainment
= non-attainment

Environmental Consequences

No Action

Under the No Action Alternative there would be no adverse effects on air quality.

Proposed Action

Under the Proposed Action Alternative, there would be no long-term impacts to local air quality since no new, permanent sources of air pollution would be created. There is a potential for direct, short-term fugitive dust generation from construction activities which could have a temporary adverse effect on the air quality in the Project Area. The fugitive dust would be generated by excavation activities and the movement of construction equipment on unpaved roads. Best Management Practices (BMPs), described in detail in Section 4, to minimize fugitive dust would be implemented (i.e. watering for dust control). Impacts due to construction activities would be temporary and would cease once the project was completed.

3.3.2 Water Resources

Regulatory Background

Clean Water Act

The Clean Water Act (CWA) was enacted as an amendment to the Federal Water Pollutant Control Act of 1972, which outlined the basic structure for regulating discharges of pollutants to waters of the U.S. CWA serves as the primary Federal law protecting the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. CWA empowers the U.S. Environmental Protection Agency (EPA) to set national water quality standards and effluent limitations, and includes programs addressing both point-source and non-point-source pollution. Point-source pollution originates or enters surface waters at a single, discrete location, such as an outfall structure or an excavation or construction site. Non-point-source pollution originates over a broader area and includes urban contaminants in storm water runoff and sediment loading from upstream areas. CWA operates on the principle that all discharges into the Nation's waters are unlawful unless they are specifically authorized by a permit; permit review is CWA's primary regulatory tool.

The U.S. Army Corps of Engineers (USACE) regulates discharges of dredged or fill materialinto waters of the U. S. These waters include wetlands and non-wetland bodies of water that meet specific criteria, including a direct or indirect connection to interstate commerce. The USACE regulatory jurisdiction pursuant to Section 404 of the CWA is founded on a connection, or nexus, between the water body in question and interstate commerce. This connection may be direct (through a tributary system linking a stream channel with traditional navigable waters used in interstate or foreign commerce) or may be indirect (through a nexus identified in the USACE regulations).

The Regional Water Quality Control Board (RWQCB) has jurisdiction under Section 401 of the CWA and regulates any activity which may result in a discharge to surface waters. Typically, the areas subject to jurisdiction of the RWQCB coincide with those of the USACE (i.e., waters of the United States [U.S.] including any wetlands). The RWQCB also asserts authority over "Waters of the State" under waste discharge requirements pursuant to the Porter-Cologne Water Quality Control Act.

Section 404: Permit for Fill Placement in Waters and Wetlands

CWA Section 404 regulates the discharge of dredged and fill materials into waters of the U.S. Waters of the U.S. refers to oceans, bays, rivers, streams, lakes, ponds, and wetlands, including any or all of the following: areas within ordinary high water mark of a stream, including non-perennial streams with a defined bed and bank and any stream channel that conveys natural runoff, even if it has been realigned; and seasonal and perennial wetlands, including coastal wetlands.
Compliance with CWA Section 404 requires compliance with several other environmental laws and regulations. USACE cannot issue an individual permit or verify the use of a general permit until the requirements of the FESA and the National Historic Preservation Act have been met. In

addition, USACE cannot issue or verify any permit until a water quality certification has been issued pursuant to CWA Section 401.

Section 401: Water Quality Certification

Under CWA Section 401, applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the U.S. must obtain certification from the State in which the discharge would originate or, if appropriate, from the interstate water pollution control agency with jurisdiction over affected waters at the point where the discharge would originate. Therefore, all Projects that have a federal component and may affect State water quality (including Projects that require federal agency approval, such as issuance of a Section 404 permit) must also comply with CWA Section 401.

Section 402: Permit for Stormwater Discharge

CWA Section 402 regulates construction-related stormwater discharges to surface waters through the National Pollutant Discharge Elimination System program, administered by EPA. In California, the State Water Resources Control Board is authorized by EPA to oversee the National Pollutant Discharge Elimination System program through RWQCBs. The Project corridor and vicinity are under the jurisdiction of the Central Valley RWQCB. Stormwater Pollution Prevention Plan (SWPPP) descripts proposed construction activities and describes the BMPs that will be implemented to prevent soil erosion and discharge of other construction-related pollutants (e.g., petroleum products, solvents, paints, cement) that could contaminate nearby water resources.

Affected Environment

The Proposed Action is located in the Cache Slough Watershed which is approximately 53,000-acre complex located in the northwest corner of the Sacramento-San Joaquin River Delta in Solano and Yolo counties. The Cache Slough Watershed links to the Sacramento River via Miner and Streamboat Sloughs, while low-lying grasslands and seasonal wetland/vernal pool complexes separate it from the northeast corner of the Suisun Marsh (CDFW 2017). Annual precipitation is approximately 18.5 inches at a surface elevation of approximately 65 to 75 feet above mean sea level (AMSL).

Based on field survey results, the USGS quadrangle topographic maps, and the USFWS National Wetland Inventory; the only water feature located within the BSA is the Weyand Canal. Weyand Canal was constructed in 1959 and is a concrete lined artificial irrigation canal. The Weyand Canal originates from the Putah South Canal and flows in an easterly direction and eventually discharges into the McCune Channel. McCune Channel originates in the English Hills, and naturally flows southeast until it becomes channelized and joins the Sweeney Channel. McCune Channel is located approximately 0.03 mile to the west of the BSA. McCune Creek was artificially straightened with its natural course slightly altered in the 1960s, presumably for irrigation purposes. Sweeney and McCune Creek eventual join Ulatis Creek through the Cache Slough to final deposit into the Sacramento Deep Water Shipping Channel.

According to the California Department of Transportation (Caltrans) Water Quality Planning Tool the Weyand Canal is not a 303(d)-listed water; therefore, it is not considered an impaired water.

Jurisdictional Waters

The Weyand Canal is the only water resource within the BSA. Currently, Weyand canal is a regulated irrigation channel that provides approximately 31,000 acre-feet of water per year to adjacent farmlands for agricultural purposes. During the irrigation season, tail-water runoff from farm fields and operational spills enter the canals. Much of the drainage water that is not recovered within the canals travels eastward and eventually discharges into Sweeney Creek, a Jurisdictional Water of the State. The survey conducted by Dokken Engineering biologist on August 14, 2018 identified approximately 4.21 acre (approximately 10,000 linear feet) of Weyand Canal within the designated Project Area. The canal ranges from 17 - 35 feet wide and varies in depth depending on irrigation demands. During the time of the survey, depth of the canal ranged from 3 to 5 feet. In-channel emergent vegetation was also observed in various segments of the canal; however, no wetlands were observed.

Environmental Consequences

No Action

Under the No Action Alternative, the Weyand Canal would continue to exist in its current condition and no impacts to water quality or loss of water resources would continue.

Proposed Action

Under the Proposed Action Alternative, the incorporation of automation control systems, and modification of 10 turnout and lateral structures would conserve approximately 12,360 acre-feet of water per year and improve annual operational spill volume from 960 acre-feet to less than 10 acre-feet. The Proposed Action Alternative would allow local agricultural growers to use water for farm-unique durations and in-turn help farm efficiency and improvements. Weyand Canal is not a jurisdictional water and no other jurisdictional waters were identified within the Project Area. Additionally, all proposed work within Weyand Canal will occur when water to the canal has been diverted and the canal is dry; therefore, no impacts to waters are anticipated. Measures WQ-1 and WQ-2 as described in Section 4 will be incorporated into Project design and Project management to minimize impacts on the environment including reduction of sedimentation and release of pollutants (e.g., oils, fuel, etc.) Additionally, avoidance and minimization measures BIO-1 through BIO-3 as discussed in Section 4 would be implemented to further avoid causing unnecessary impacts to waters.

3.3.3 Biological Resources

Regulatory Background

Executive Order 13112: Prevention and Control of Invasive Species

Executive Order (EO) 13112 (signed February 3, 1999) directs all Federal agencies to prevent and control introductions of invasive species in a cost-effective and environmentally sound manner. The EO requires consideration of invasive species in NEPA analyses, including their identification and distribution, their potential impacts, and measures to prevent or eradicate them.

Affected Environment

The project is located in an unincorporated area of Solano County, within the Great Valley floristic region and ecological Sacramento Valley subsection (Cal-IPC 2018). Average summer highs reach approximately 90 degrees Fahrenheit and winter lows reach approximately 50 degrees Fahrenheit, with up to 18.51 inches of precipitation annually (US Climate Data 2018). A biological study area (BSA) was established for the Proposed Action Area and includes all impact areas as well as a 100-foot buffer, where feasible (Figure 5). The BSA is approximately 71.83 acres and occurs at an elevation range of 65 to 75 feet AMSL. The dominate soil types in the Project Area are well drained, Yolo silty clay loam (94.7% of Project Area) and poorly drained, Sycamore silty clay loam (5.3% of Project Area) soils (NRCS 2018). Vegetation communities within the BSA consists of barren (22.66 acres), urban (0.54 acres), agricultural lands (42.92 acres), interstate/paved (1.5 acres), and waters (4.21 acres). Wildlife present within the BSA is limited to wildlife species typically found in the temperate climate of the California Central Valley. The habitat within and adjacent habitat is described as highly disturbed and fragmentated by adjacent agriculture fields, urban development and cleared lots. A complete list of wildlife species observed, or identified within the BSA during the biological surveys and habitat assessment is discussed within the Biological Resources Technical Report in Appendix B.

Environmental Consequences

No Action

Under the No Action Alternative, the Weyand Canal would continue to exist in its current condition and no impacts to biological resources would occur.

Proposed Action

Under the Proposed Action Alternative, the incorporation of automation control systems, and modification of 10 turnout and lateral structures would conserve approximately 12,360 acre-feet of water per year and improve annual operational spill volume from 960 acre-feet to less than 10 acre-feet. The Proposed Action Alternative would allow local agricultural growers to use water for farm-unique durations and in-turn help farm efficiency and improvements. The Proposed Action would not result in the removal of natural communities within or adjacent to the BSA or result in the introduction of invasive species; therefore, no mitigation is required.

3.3.4 Special Status Species

Regulatory Background

Federal Endangered Species Act
The Federal Endangered Species Act (FESA) of 1973 (16 U.S.C. section 1531 et seq.) provides for the conservation of endangered and threatened species listed pursuant to Section 4 of the Act (16 U.S.C. section 1533) and the ecosystems upon which they depend. These species and resources have been identified by the United States Fish and Wildlife Service (USFWS).

Executive Order 13186: Migratory Bird Treaty Act
EO 13186 (signed January 10, 2001) directs each Federal agency taking actions that could adversely affect migratory bird populations to work with USFWS to develop a Memorandum of Understanding that will promote the conservation of migratory bird populations. Protocols developed under the Memorandum of Understanding will include the following agency responsibilities:

- Avoid and minimize, to the maximum extent practicable, adverse impacts on migratory bird resources when conducting agency actions;
- Restore and enhance habitat of migratory birds, as practicable; and
- Prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

The EO is designed to assist Federal agencies in their efforts to comply with the Migratory Bird Treaty Act (MBTA) (50 Code of Federal Regulations [CFR] 10 and 21) and does not constitute any legal authorization to take migratory birds. Take is defined under the MBTA as "the action of or attempt to pursue, hunt, shoot, capture, collect, or kill" (50 CFR 10.12) and includes intentional take (i.e., take that is the purpose of the activity in question) and unintentional take (i.e., take that results from, but is not the purpose of, the activity in question).

Bald Eagle and Golden Eagle Protection Act
The Bald Eagle was de-listed by the Fish and Wildlife Service in 2007. The Bald and Golden Eagle Protection Act of 1940 prohibits unregulated "takes" of both species. Bald eagles generally nest near coastlines, rivers, large lakes, or streams that support an adequate food supply.

Federally Listed Species

Affected Environment

Dokken Engineering obtained an official list of species protected under the Federal Endangered Species Act (ESA) Section 7 for the Proposed Action area from the US Fish and Wildlife Service's (Service 2017) Information for Planning and Consultation (IPaC) website on July 27, 2018. Additional information on the listed species' habitat and range was obtained elsewhere on the

Service's Environmental Conservation Online System (ECOS) website and in the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB 2018). Dokken Engineering biologists researched the CNDDB and used the Biographic Information and Observation System (BIOS) mapping complement, for recorded sightings of Federally-listed species in the vicinity of the Project. The information obtained from the Service and CDFW websites was used to complete Table 2 below.

Table 2. Threatened/Endangered Species Potentially Occurring within the Project Area

Common Name	Scientific Name	Potential	Status	Determination
California red-legged frog	*Rana draytonii*	Presumed Absent	Threatened	N/A - No Effect
California Tiger Salamander	*Ambystoma californiese*	Presumed Absent	Threatened	N/A - No Effect
Central Valley steelhead	*Oncorhynchus mykiss irideus pop. 11*	Presumed Absent	Threatened	N/A - No Effect
Conservancy fairy shrimp	*Branchinects conservation*	Presumed Absent	Endangered	N/A - No Effect
Crampton's tuctoria grass	*Tuctoria mucronata*	Presumed Absent	Endangered	N/A - No Effect
Delta smelt	*Hypomesus transpacificus*	Presumed Absent	Threatened	N/A - No Effect
Giant garter snake	*Thamnophis gigas*	Presumed Absent	Threatened	N/A - No Effect
Valley Elderberry Longhorn Beetle	*Desmocerus californicus dimorphus*	Presumed Absent	Threatened	N/A - No Effect
Vernal pool fairy shrimp	*Brachinecta lynchi*	Presumed Absent	Threatened	N/A - No Effect
Vernal pool tadpole shrimp	*Lepidurus packardi*	Presumed Absent	Endangered	N/A - No Effect
Western snowy plover	*Charadrius alexandrines nivosus*	Presumed Absent	Threatened	N/A - No Effect
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	Presumed Absent	Threatened	N/A - No Effect

According to the data obtained from USFWS and through the CDFW CNDDB on July 27, 2018 and as determined by biological surveys within the Project Area, no federally listed threatened, endangered, or candidate species were determined to have the potential to occur within the Proposed Action area.

Additionally, no federally listed special-status plant species were detected during the August 14, 2018 biological surveys and habitat assessment. It has been determined that no special-status plant species have the potential of occurring within the BSA.

Environmental Consequences

No Action

Under the No Action Alternative, the Weyand Canal would continue to exist in its current condition and no impacts to federally listed species would occur.

Proposed Action

According to the data obtained from USFWS and through the CDFW CNDDB on July 27, 2018 and as determined by biological surveys within the Project Area, no federally listed threatened, endangered, or candidate wildlife or plant species were determined to have the potential to occur within the Proposed Action area. Habitat types within the Project area would not support any federally-listed species and subsequently all species, as listed in Table 2 above, are presumed absent from the Proposed Action area; however, two species of special concern have a moderate potential to occur within the project area. Measures BIO-4 through BIO-10 will be implemented to further minimize potential impacts to federally listed plant species and species of special concern and is discussed in Section 4.

Migratory Bird Treaty Act

Affected Environment

According to data obtained from CDFW CNDDB on July 27, 2018, and as determined by biological surveys, migratory bird species including Swainson's hawk and White-tailed kite have the potential to occur within the Proposed Action area.

Swainson's Hawk

The Swainson's hawk is a California State-listed threatened species. Swainson's hawk migrates annually from wintering areas in South America to breeding locations in northwestern Canada, the western United States, and Mexico. In California, Swainson's hawks nest throughout the Central Valley in large trees near riparian habitats, and in isolated trees in or adjacent to agricultural fields. The breeding season extends from late March through late August, with peak activity from late May through July (England *et al.* 1997). In the Central Valley, Swainson's hawks forage in large, open agricultural habitats, including alfalfa and hay fields (CDFG 1994). The breeding population in California has declined by an estimated 91% since 1900; this decline is attributed to the loss of riparian nesting habitats and the conversion of native grassland and woodland habitats to agriculture and urban development (CDFG 1994).

Numerous Swainson's hawk nesting records and occurrences have been documented within a 10-mile radius of the BSA (CNDDB 2018). To date, no recorded nest sites have occurred in the Project Area (CNDDB 2018). Irrigated agriculture fields provide suitable foraging habitat for the species throughout the BSA. During the August 14, 2018 survey, a pair of Swainson's hawks were observed flying and foraging over the BSA.

White-tailed Kite

White-tailed kite is a fully protected species under CFGC Section 3511. The species has a restricted distribution in the United States, occurring only in California, western Oregon and along the coast of Texas (American Ornithologists' Union 1983). White-tailed kites nest in riparian and oak woodlands, and forage in nearby grasslands, pastures, agricultural fields, and wetlands. The species utilizes nearby treetops for perching and nesting sites. Voles and mice are common prey

species. The species is relatively common in California's Central Valley margins in habitats containing scattered oaks and river bottomlands but populations have declined by 36% between 1970 and 2014. In the early 1900s, white-tailed kite populations dropped significantly. The decline in populations has been attributed to habitat loss, shooting, and egg collection. Since then, populations have rebounded somewhat, although long-term trends suggest continued declines (IUCN 2018). A bird breeding survey in California conducted between 1980 and 2006 noted populations of white-tailed kites in California may be declining due to urban and commercial development, with the most significant decline occurring in Southern California grasslands from 1982 to 1991 (CDFW 2018).

Several white-tailed kite nesting sites and occurrences have been documented within a 10-mile radius of the BSA (CNDDB 2018). To date, no nesting sites have occurred within the Project Area (CNDDB 2018). Irrigated agriculture fields provide suitable foraging habitat for the species throughout the BSA. The BSA has potentially suitable foraging for white-tailed kite; however, the species was not observed during biological survey on August 14, 2018.

Environmental Consequences

No Action
Under the No Action Alternative, the Weyand Canal would continue to exist in its current condition and no impacts to migratory birds would occur.

Proposed Action
According to data obtained from CDFW CNDDB on July 27, 2018, and as determined by biological surveys, migratory bird species have the potential to occur within the Proposed Action area; however, the Proposed Action would not be reducing foraging habitat or removing any potential nesting trees within the BSA. Measures BIO-4 through BIO-9 will be implemented to further protect migratory birds and can be found in Section 4.

Bald and Golden Eagle Protection Act

Environmental Consequences

No Action
Under the No Action Alternative, the Weyand Canal would continue to exist in its current condition and no impacts to bald or golden eagles would occur.

Proposed Action
There are no perennial water sources within the Project Area to support an adequate food supply in the Proposed Action area. The closest presumed extant occurrence of bald eagle and golden eagle is approximately 20 miles northwest of the Proposed Action area, located at Lake Berryessa. Both Species are presumed absent from the Proposed Action area, and no impacts to either species are anticipated.

3.3.5 Cultural Resources

Regulatory Background

National Historic Preservation Act Section 106
Section 106 of the National Historic Preservation Act (NHPA) of 1966 requires Federal agencies to take into account the effects of their undertakings on historic properties and to provide the Advisory Council on Historic Preservation (ACHP) with a reasonable opportunity to comment. In addition, Federal agencies are required to consult on the Section 106 process with State Historic Preservation Offices (SHPO), Tribal Historic Preservation Offices (THPO), Indian Tribes (to include Alaska Natives) [Tribes], and Native Hawaiian Organizations (NHO).

Affected Environment

In order to determine the necessary level of historic property identification efforts for the proposed undertaking and to better understand the types of cultural resources likely to be encountered, the Area of Potential Effect (APE) was developed with a subsequent survey and a variety of resources were consulted (Figure 5). Sources included a records search at the Northwest Information Center (NWIC), literature, aerial imagery, and historical map review, and consultation with the Native American Heritage Commission (NAHC).

A records search (File No. 118-0207) of the APE and a 1-mile study area buffer was requested from the NWIC on July 30, 2018. The search examined the National Register of Historic Places (National Register), the California Register of Historical Resources (California Register), the Directory of Properties in the Historic Property Data File, the *California Historic Landmarks* (1996), the *California Inventory of Historic Resources* (1976), and the *California Points of Historical Interest* listing (May 1992 and updates). Additional research efforts conducted outside the NWIC included a review of historic USGS topographic maps, and other pertinent historic data specific to Solano County. While the APE was later revised after the records search results were provided by the NWIC, the boundaries of the revised APE remained within the 1-mile studyarea.

No previously recorded cultural resources have been identified within the APE. Five previously recorded cultural resources have been reported to the NWIC within 1 mile of the APE.

Cultural resource staff conducted an internal search of reports, archaeological records, and historic aerial imagery and maps on file at the Mid-Pacific Regional Office (MPRO). No information specific to the APE or project vicinity was available.

On August 14, 2018, Dokken Engineering archaeologist Althea Asaro conducted a ground surface inventory of the APE. Five-meter wide pedestrian transects were used, where appropriate, to inspect the ground surface. All cut banks, burrow holes, and other exposed sub-surface areas were visually inspected for the presence of archaeological resources, soil color change, and/or staining that could indicate past human activity or buried deposits.

The pedestrian ground surface inventory survey did not identify any archaeological sites, features, or artifacts. during the August 14, 2018 surface inventory. The historic-era Weyand Canal was identified in the APE, and one historic-era structure (an agricultural building) was identified adjacent to (approximately 5 feet) the east side of the southern portion of the APE. This structure dates to at least 1952 and is located on a property with seven other potentially historic-era structures (adjacent to, but not within the APE) noted on historic USGS topographic maps (two structures present on the 1908 *Vacaville, California* and six indicated by the 1952, the *Dixon, California*) at the southern road running east-west. These structures were observed adjacent to the APE and are likely those historic-era buildings depicted on the USGS maps. None of these structures, however, will be impacted by the proposed Action.

Weyand Canal Segment

GPA Consulting architectural historian Christine Cruiess conducted a cultural resources inventory of the proposed Action area on August 28, 2018. One built-environment cultural resource was identified in the proposed Action APE: the Weyand Canal. Ms. Cruiess documented the Weyand Canal in the proposed Action APE and took representative digital photos (Photos 1 through 11).

The Weyand Canal is 7.8 miles long and was constructed between 1959 and 1960 by the District. The canal generally flows from the north to the south. The Weyand Canal branches east from the Putah South Canal (at Allendale Road) in Vacaville. The segment of the canal investigated here is approximately 2 miles long. Throughout the segment, the visible portion of the Weyand Canal system is primarily a concrete-lined trapezoidal canal (Figures 2 through 12). The concrete-lined canal has a rough finish and is approximately 24 to 26 feet wide at the top of the concrete lining, approximately 8 feet wide at the toe of the canal, and approximately 5 to 6 feet deep.

The Weyand Canal segment in the proposed Action APE has infrastructure to manage water flow and distribution and includes pipelines, drains, headworks, pipe headworks, drainage wells, inlets, check structures, and spillways. The canal is bordered with a gravel road for vehicular access.

Photo1: Project APE shown in red with photo locations for Photos 3 through 12. (Google Earth)

During fieldwork, 17 features were documented in the segment. An inlet was documented at Interstate 80 (Photo 2). Six headworks were documented, for Laterals C, D, E, 3, 4, and the Weyand Pipe (Photos 3, 7, and 9). There are four check structures (Photo 6 for a representative photo) and one spillway (Photo 7). The segment has four turnouts, one deep drainage well, and one spillway (Photo 7). The features of the canal segment operate as a system to divert water to agricultural lands to the east and west of the canal.

Photo 2. View of the Weyand Canal from Dixon Avenue, facing east.

Photo 3. View of the Lateral C headworks of the Weyand Canal from Dixon Avenue, facing northeast.

Photo 4. View of an inlet structure of the Weyand Canal at Interstate 80, facing south.

Photo 5. View of the Weyand Canal, facing north.

Photo 6. View of the Weyand Canal showing the Check 14 Structure and deep drainage well, facing north.

Photo 7. View of the Weyand Canal showing the Lateral 3 headworks and spillway, facing west.

Photo 8. View of the southern terminus of the Weyand Canal, facing east-northeast

Photo 9. View of the southern terminus of the Weyand Canal and the Pipe Headworks, facing west

Photo 10. View of the ditch that extends south from the southern terminus of the Weyand Canal, facing south-southwest.

Photo 11. View of the ditch that extends north from the southern terminus of the Weyand Canal, facing north.

National Register of Historic Places

National Park Service (NPS) regulations and guidance documents (including NRHP Bulletins) outline the process for evaluating sites for NRHP eligibility. According to NPS, the categories of sites that may be eligible for the NRHP are buildings, structures, sites, objects, or historic districts. Sites are evaluated for NRHP eligibility using the NRHP evaluation criteria, as listed in 36 CFR 60.4. To be listed in or eligible for listing in the NRHP, a property should be 50 years or older, possess historic significance based on its related historic context, and retain historic integrity in order to convey that significance. Additional information concerning the evaluation of sites can be found in the National Register Federal Program Regulations 36 CFR 60 and in National Register Bulletin 15, *How to Apply the National Register Criteria for Evaluation*. A cultural resource must meet at least one of the four following criteria:

- The resource is associated with events that have made a significant contribution to the broad pattern of history (Criterion A).
- The resource is associated with the lives of people significant in the past (Criterion B).
- The resource embodies the distinctive characteristics of a type, period, or method of construction; represents the work of a master; possesses high artistic value, orrepresents a significant and distinguishable entity whose components may lack individual distinction (Criterion C).
- The resource has yielded, or may be likely to yield, information important in prehistoryor history (Criterion D).

As defined by the NRHP, integrity is the ability of a property to convey its significance. To be eligible for the NRHP, properties must meet at least one of the NRHP significance criteria and have integrity. Historic period sites are typically found eligible for listing in the NRHP under criteria A, B, and C.

Under Criterion A, a property must be associated with a significant event in American history. The most relevant historic contexts for the Weyand Canal are agriculture and land use in Solano County, irrigation, and the Solano Project. In this case, the association with the Solano Project is the most applicable.

The Solano Project is one of the later Federal reclamation projects in the country. Most water facilities built by Reclamation took place between approximately 1930 and 1970, with the last major authorizations for construction projects occurring in the late 1960s. Although the Solano Project is associated with the continuing development of irrigated farming in the Sacramento Valley and Solano County, it does not appear to rise to the level of an important association. The Solano Project was undertaken much later than the other large-scale irrigation projects in the state and it was part of an ongoing solution to meet the irrigation needs of farmers in Solano County that began in the 1920s. The Solano Project represents the continuation of a trend, rather than a significant component of that trend. The Solano Project does not appear to be significant under Criterion A.

The Weyand Canal is a secondary canal within a larger water conveyance system and would not be a likely a contributing element to a potential Solano Project historic district, nor does it appear to be significant on an individual basis. The Weyand Canal does not appear to be significant under Criterion A.

Under Criterion B, a property must be associated with an individual important in local, state, or national history. The development of the Solano Project and the Weyand Canal was largely facilitated by groups of individuals, such as the Solano Board of Supervisors and the employees and directors at Reclamation. The project was collaborative bynature and not associated with any specific individual. The Solano Project and the Weyand Canal do not appear to be significant under Criterion B.

Under Criterion C, a property must embody the distinctive characteristics of a type, period, or method of construction such as an important water conveyance engineering design; or represent the work of a master; or possess high artistic values; or represent a significant anddistinguishable entity whose components may lack individual distinction.

Under Criterion C, in unusual cases, canals, laterals, and appurtenant features may have individual significance if they are rare surviving examples of a type of design or construction; of innovative engineering design that impacted subsequent designs; or were specifically designed to meet an unusual engineering challenge. The Weyand Canal and associated elements are secondary tier water conveyance structures within the Solano Project. The contextual history for the Solano Project does not indicate that any unusual engineering challenge arose with the construction of any portions of the project nor with the construction of the Weyand Canal. The design of the system and the canal appears to have been standard and straightforward. The Solano Project and the Weyand Canal do not appear to be significant under Criterion C.

The Solano Project and the Weyand Canal do not appear to be significant as a source, or likely source, of information in history or prehistory. The Solano Project and Weyand Canal do not appear to be significant under Criterion D.

In summary, the Weyand Canal does not appear to be significant under any NRHP Criteria. It is a typical water conveyance structure – it does not exhibit important engineering design, nor is the work of an important engineer. Both the Solano Project and the Weyand Canal do not appear to meet the requisite criteria (A through D) and are recommended not eligible for the NRHP. Because the Solano Project and Weyand Canal do not possess NRHP significance, the integrity was not analyzed, as integrity applies to significant properties.

Native American Consultation

Pursuant to Section 106, Native American consultation was initiated by Reclamation on September 10, 2018. The Yocha Dehe Wintun Nation (Yocha Dehe) requested to consult with Reclamation on the Proposed Action on October 15, 2018. A site visit with the Yocha Dehe was conducted on October 22, 2018. Representatives from the Yocha Dehe Wintun Nation (Yocha Dehe), Bureau of Reclamation (Reclamation), Solano Irrigation District (SID), and Dokken Engineering (Dokken) met at the Project area to discuss the Project features and anticipated ground disturbances associated with construction of the Project. SID relayed that existing laterals/turnouts and pumps within the Project area would be upgraded and the check stations within the Project area would be replaced with automated weir stations. Additionally, several sections of the canal access roads would be improved by laying down several inches of aggregate base atop geotextile fabric. SID also described how the turnouts/laterals and check/weir structures would be removed and replaced with upgraded equipment. Vertical ground disturbance would range from 2-4 feet and would include excavation for the concrete footing of solar paneled SCADA equipment and any all necessary pipe connections.

To provide a better understanding of the construction footprint needed to replace the existing canal features with updated equipment, the meeting participants visited a recently upgraded weir and lateral/turnout section. After seeing what the finished product consisted of, the meeting traveled to the proposed staging area and to one location where a weir and two laterals/turnouts will be replaced. Dokken confirmed that the entire Project area had been walked and visually inspected by an archaeologist.

No known sites were identified within the Project area by the Yocha Dehe; however, the Yocha Dehe expressed concern about the general sensitivity of the Project area as the canal and its existing features had originally been constructed in the 1950s, prior to existing environmental laws and protections. The Yocha Dehe would like to provide cultural awareness and sensitivity training to all crews which will be working on the project so that the crews know when they have encountered cultural resources and what the discovery protocol shall be. It was further requested that an archaeologist conduct spot checks of all excavated soil to see if any cultural resources are unearthed during construction.

The meeting concluded with the SID and Yocha Dehe arranging to coordinate on anticipated construction schedules and availability for cultural awareness and sensitivity training.

To be included upon completion of 106 outreach.

Environmental Consequences

No Action
Under the No Action Alternative, the Weyand Canal would continue to exist in its current condition and no impacts to cultural resources would occur.

Proposed Action
No previously recorded cultural resources have been identified within the APE. The Weyand Canal was evaluated as an individual resource and on a district basis (Solano Project), and recommended not eligible for inclusion in the National Register of Historic Places (NRHP). Based on the information discussed above, GPA recommends that there are no historic properties within the project APE and recommends that the project would not affect historic properties for the proposed undertaking, pursuant to 36 CFR § 800.4(d)(1). No further cultural resources work is recommended, and the Proposed Action should proceed as planned. Avoidance and Minimization Measures CR-1 through CR-2 will also be implemented to further protect cultural resources and can be found in Section 4.

3.3.6 Cumulative Effects

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

The Proposed Action would result in the modification, upgrade, and repair of existing facilities for irrigation water distribution purposes; therefore, the Proposed Action would not incrementally contribute to any cumulative effect on environmental resources.

Section 4 Environmental Commitments and Mitigation Measures

This Section discusses the environmental commitments and related mitigation that have been made by Reclamation during the development and analysis of the Proposed Action Alternative. The commitments, as described below would be implemented by the District as agreed in the cooperative agreement with Reclamation. The cooperative agreement includes the requirements that the District be responsible for "…implementing and/or complying with the environmental commitments contained in the NEPA/ESA compliance documents.

The Proposed Action Alternative would comply with all federal, state, and local laws, ordinances, regulations, and standards for construction and operations. The following environmental commitments would be implemented as an integral part of the Proposed Action Alternative for the Project.

Air Quality

AQ-1: Route and schedule construction traffic to avoid peak travel times as much as possible to reduce congestion and related air quality impacts caused by idling vehicles along local roads.

AQ-2: The following fugitive dust mitigation measures will be followed:

- Water all active construction areas to contain dust as necessary. Frequency of application should be based on the type of operation, soil and wind exposure;
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard; and
- Enclose, cover, or water three times daily exposed stockpiles, such as dirt, sand, etc.

AQ-3: Basic Construction Emission Control Practices

The following practices describe exhaust emission control from diesel powered fleets working at a construction site. California regulations limit idling from both on-road and off-road diesel-powered equipment. The California Air Resources Board enforces the idling limitations:

- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [required by California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site. Although not required by local or state regulation, many construction companies have equipment inspection and maintenance programs to ensure work and fuel efficiencies.

- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated.

Water Quality

WQ-1: The following measures will be implemented to ensure best management practices:

- The area of construction and disturbance would be limited to as small an area as feasible to reduce erosion and sedimentation.
- Measures would be implemented during land-disturbing activities to reduce erosion and sedimentation. These measures may include mulches, soil binders and erosion control blankets, silt fencing, fiber rolls, temporary berms, sediment de-silting basins, sediment traps, and check dams.
- Existing vegetation would be protected where feasible to reduce erosion and sedimentation. Vegetation would be preserved by installing temporary fencing, or other protection devices, around areas to be protected.
- Exposed soils would be covered by loose bulk materials or other materials to reduce erosion and runoff during rainfall events.
- Exposed soils would be stabilized, through watering or other measures, to prevent the movement of dust at the Project site caused by wind and construction activities such as traffic and grading activities.
- All construction roadway areas would be properly protected to prevent excesserosion, sedimentation, and water pollution.
- All concrete curing activities would be conducted to minimize spray drift and prevent curing compounds from entering the waterway directly or indirectly.
- All construction materials, vehicles, stockpiles, and staging areas would be situated outside of the channel. All stockpiles would be covered, as feasible.
- All erosion control measures and storm water control measures would be properly maintained until the site has returned to a pre-construction state.
- All disturbed areas would be restored to pre-construction contours and revegetated, either through hydroseeding or other means, with native or approved non-invasive exotic species.
- All construction materials would be hauled off-site after completion of construction.

WQ-2: Prior to construction, the construction contractor shall prepare a Storm Water Management Plan (SWMP) for projects causing less than 1 acre of ground disturbance in compliance with the NPDES permitting program.

Biological Resources

BIO-1: Erosion Control Measures must be implemented during construction. To minimize the mobilization of sediment to adjacent water bodies, the following erosion-control and sediment-control measures will be included in the construction specifications:

- Soil exposure must be minimized through the use of temporary BMPs, groundcover, and stabilization measures;
- The contractor must conduct periodic maintenance of erosion- and sediment-control measures.

BIO-2: Vegetation clearing must only occur within the delineated Project boundaries. Vegetation should be removed in the late fall through winter months, to the greatest extent practicable.

BIO-3: Native fill will be utilized whenever possible.

BIO-4: Should a special-status plant species be observed within or immediately adjacent to the Project Area, ESA fencing (orange construction barrier fencing) will be installed around special-status plant populations.

BIO-5: Before any activities begin on the Project, the Project biologist will conduct environmental awareness training for all construction personnel. At a minimum, the training will include a description of sensitive species with potential to occur, including white tailed kite and Swainson's hawk, and the species' associated habitat. Project specific measures being implemented to conserve the species, and the boundaries within which the Project may be accomplished will also be included in the environmental awareness training.

BIO-6: If sensitive species are encountered during the course of construction, construction will temporarily stop within the area of discovery. The Project biologist will be contacted immediately for further guidance. Work will not resume in the area of discovery until the Project biologist has cleared the area or the animal has passively left the construction area unharmed.

BIO-7: All food-related trash must be disposed into closed containers and must be removed from the Project Area daily. Construction personnel must not feed or otherwise attract wildlife to the Project Area.

BIO-8: Vegetation removal, trimming, grading of vegetated areas, and construction activities associated with the Proposed Action should be conducted outside of the nesting season (between September 1 and February 28) to the maximum extent practicable. If this is not done, the following measures are required to avoid impacts to active nest sites protected by the Migratory Bird Treaty Act (MBTA):

- If vegetation removal, vegetation trimming, or construction activities are initiated during the nesting season (typically between March 1 to August 31) (Reclamation 2013), a pre-construction nesting survey shall be conducted by a qualified biologist1no more than five days prior to the scheduled activity.

- If no birds are observed nesting within 500 feet of project activities, the biologist would document the results of the pre-construction survey in a report and send it to the address below within 30 days following the survey. No further monitoring will be required Bureau of Reclamation Central California Area Office Attn: CC-400 7794 Folsom Dam Road Folsom, CA 95630-1799.
- If an active nest or breeding behavior (e.g., courtship, nest building, territorial defense, etc.) is detected during surveys, no project activities should be conducted until nestlings have fledged, the nest fails, or breeding behaviors are no longer observed. The biologist shall contact Reclamation by phone or email within one day following the survey. If the activity must occur, an appropriate buffer based on the needs of the species observed, the proposed activity, and habitat type shall be established around the nest (generally no less than a 50 foot buffer zone). The biologist would delineate the buffer zone with construction tape or pin flags to identify the buffer zone of the active nest. The biologist would submit a report documenting the pre-construction survey results, buffer determinations, and actions taken to the above address within 30 days following the survey.
- In the event that project activities cause a nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, the buffer zone will be increased such that activities are far enough from the nest to stop the agitated behavior. The buffer zone will remain in place until the chicks have fledged and left the area or as otherwise determined by a qualified biologist. The biologist would submit a report documenting the new buffer determination and actions taken to the above address within 30 days following the establishment of the new buffer.

- Guidance from the USFWS would be requested by CCAO for a reduced buffer zone if establishing a 50-foot buffer zone is impractical.
- If the project site is inactive at any time for more than 7 days or if a new breeding season has begun during construction inactivity, another nesting survey shall be conducted prior to re-initiation of work onsite. Exclusionary netting, or another type of exclusionary material, can be installed over standing equipment and materials to prevent nesting from being initiated during construction inactivity. The installation of exclusionary materials shall be monitored by a qualified biologist and inspected daily for the duration of the exclusion period to minimize potential harm or injury to birds.[2]
- Even though a pre-construction survey is not required outside of the nesting season (between September 1 and February 28), if an active nest is observed within the project site during that timeframe, no project activities should be conducted until nestlings have fledged, the nest fails, or breeding behaviors are no longer observed. The qualified biologist shall contact Reclamation by phone or email within one day following the nest observation. If the activity must occur, an appropriate buffer based on the needs of the species observed, the proposed activity, and habitat type shall be established around the nest (generally no less than a 50 foot buffer zone). The biologist would delineate the buffer zone with construction tape or pin flags to identify the buffer zone of the active nest. The biologist would submit a report documenting the nest location information and buffer determination to Reclamation's CCAO office within 30 days following the discovery of the nest.

BIO-9: In accordance with the Swainson's Hawk Technical Advisory Committee *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central* Valley (2000), protocol level surveys will be conducted during the appropriate survey periods immediately prior to construction to determine presence/absence of the species. If Swainson's hawk nests are discovered within ½ mile of the Project Area, appropriate protective measures will be developed in coordination with CDFW.

Cultural Resources

CR-1: If previously unidentified cultural materials are unearthed during construction, work shall be halted in that area until a qualified archaeologist can assess the significance of the find and develop a plan for documentation and removal of resources if necessary. Additional archaeological survey will be needed if project limits are extended beyond the present survey limits.

CR-2: Section 5097.94 of the Public Resources Code and Section 7050.5 of the California Health and Safety Code protect Native American burials, skeletal remains and grave goods, regardless of age and provide method and means for the appropriate handling of such remains. If human remains are encountered, work should halt in that vicinity and the county coroner should be notified immediately. At the same time, an archaeologist should be contacted to evaluate the situation. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within twenty-four hours of such identification. CEQA details steps to be taken if human burials are of Native American origin.

Section 5 Consultation and Coordination

5.1 Endangered Species Act (16 USC § 1531 et seq.)

Section 7 of the ESA 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.

Reclamation determined that there would be no effect to species Federally-listed as endangered or threatened from the Proposed Action; therefore, the USFWS was not consulted.

5.2 Section 106 (54 USC § 306108)

Section 106 of the National Historic Preservation Act (NHPA) of 1966 requires Federal agencies to take into account the effects of their undertakings on historic properties and to provide the Advisory Council on Historic Preservation (ACHP) with a reasonable opportunity to comment. In addition, Federal agencies are required to consult on the Section 106 process with State Historic Preservation Offices (SHPO), Tribal Historic Preservation Offices (THPO), Indian Tribes (to include Alaska Natives) [Tribes], and Native Hawaiian Organizations (NHO).

Reclamation determined that there are no historic properties within the project APE. The SHPO was consulted regarding the Proposed Action on October 23, 2018.

Section 6 Preparers and Reviewers

Prepared For:

Solano County Irrigation District
Justin Hopkins, Senior Civil Engineer

Prepared By:

Dokken Engineering
Andrew Dellas, Environmental Planner/Biologist
Amy Storck, Associate Environmental Planner

Reviewed By:

Bureau of Reclamation, Central California Area Office
Laurie Sharp, Repayment Specialist
Sarah Perrin, Natural Resource Specialist
Cynthia Meyer, Branch Chief of Environmental Compliance
Kevin Palmer, Architectural Historian

Section 7 References

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United States Geological Survey (USGS)
1869 *Dixon, California* 7.5-Mintue Quadrangle.
1916 *Dixon, California* 7.5-Mintue Quadrangle.
1952 *Dixon, California* 7.5-Mintue Quadrangle (Photo Revised 1968).
1968 *Dixon, California* 7.5-Mintue Quadrangle.
1908 *Vacaville, California* 7.5-Mintue Quadrangle.
1953 *Vacaville, California* 7.5-Mintue Quadrangle.

Appendix A: Representative Site Photographs

Representative Photograph 1. Lateral/Turnout #1 and Pump Station #1

Representative Photograph 2. Inlet Structure

Representative Photograph 3. Lateral/Turnout #2 and #3, and Check Structure #1

Representative Photograph 4. Lateral/Turnout #4, Check Structure #2, and Pump Station #2.

Representative Photograph 5. Lateral/Turnout #5

Representative Photograph 6. Lateral/Turnout #6, and Check Structure #4.

Representative Photograph 7. Lateral/Turnout #7, and Check Structure #3.

Representative Photograph 8. Lateral/Turnout #8, and Spillway #1.

Representative Photograph 9. Lateral/Turnout #9 and #10.

Representative Photograph 10. Staging Area.

Appendix B: CULTURAL RESOURCES COMPLIANCE

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

MP-153 Tracking Number: 18-CCAO-126.001

Project Name: Solano Irrigation District (SID) Weyand Canal Automation and Remote Control Project, Solano County California

NEPA Contact: Sarah Perrin, Natural Resource Specialist
EA Number:
MP 153 Cultural Resources Reviewer: Lex Palmer, Architectural Historian
Date: October 23, 2018

Reclamation is proposing to issue Natural Resources Conservation Service grant fund to the SID for their proposed Weyand Canal Automation Project. The award of Federal funding constitutes an undertaking as defined in 36 CFR § 800.16(y) and is a type of activity that has the potential to cause effects on historic properties under 36 CFR § 800.3(a), requiring compliance under Title 54 USC § 306108, commonly known as Section 106 of the National Historic Preservation Act (NHPA) as amended.

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

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

Attachments:

Letter: Reclamation to SHPO dated October 5, 2018
Letter: SHPO to Reclamation dated October 23, 2018

United States Department of the Interior

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

IN REPLY
REFER TO:
MP-153
2.1.1.04

OCT 0 3 2018

SPECIAL DELIVERY – HAND DELIVERED

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

Subject: National Historic Preservation Act (NHPA) Section 106 Consultation for the Natural Resources Conservation Service (NRCS) Grant for the Solano Irrigation District (SID) Weyand Canal Automation and Remote Control Project, Solano County, California (18-CCAO-126.001)

Dear Ms. Polanco:

The Bureau of Reclamation is initiating consultation under Title 54 U.S.C. § 306108, commonly known as Section 106 of the NHPA, and its implementing regulations found at 36 CFR Part 800, for the proposed issuance of NRCS Agricultural Water Conservation and Efficiency grant funds to the SID for their proposed Weyand Canal Automation Project (Enclosure 1: Appendix A, Figure A). The award of Federal funding constitutes an undertaking as defined in 36 CFR § 800.16(y) and is a type of activity that has the potential to cause effects on historic properties under 36 CFR § 800.3(a). We are entering into consultation with you on this undertaking and are notifying you of our finding of no historic properties affected, pursuant to 36 CFR § 800.4(d)(1).

The SID proposes to automate a 2.2-mile-long section of the lined and unlined Weyand Canal by installing Supervisory Control and Data Acquisition components on new gates to reduce spillage. New flume gates would replace weir boards on five check structures. New automated slip gates would replace eleven manually operated turnouts and five lateral headworks. Insertion Meters would be installed to monitor three existing deep wells. The project would include construction of an all-weather 1.75-mile access road along the canal prism. The proposed Weyand Canal automation is expected to decrease the system's annual spill volume of 1,480 acre-feet of agricultural water to less than 10 acre-feet.

Reclamation determined the area of potential effects (APE) includes all project-related activities as described above. The canal automation project system vertical APE would be variable with a 12-foot maximum depth, and the horizontal APE would be 8,200 linear feet and have a variable width with a maximum of 340 feet. Staging and material stockpiling would take place on existing canal roads and within the canal prism. The project is 20.51 acres in size (Enclosure 1:

Appendix A, Figures B and C). Lands surrounding the project area are characterized by rural open space and crop fields. The APE is located in Sections 16, 21, and 28 T. 7 N., R. 1 E., Mount Diablo Base and Meridian, as depicted on the Dixon, California, 7.5 minute U.S. Geological Survey topographic quadrangle map.

Efforts to identify historic properties in the APE were conducted by Dokken Engineering (Dokken) and GPA Consulting (GPA) on behalf of SID. The results of these efforts are documented in the enclosed cultural resources inventory report (Enclosure 1: Dokken and GPA, 2018). The consultants conducted background research, a record search at the Northwest Central Information Center at California State University, Sonoma, and a cultural resources inventory of the APE. No archaeological sites were located during the inventory. The Weyand Canal and its associated laterals were documented in the APE. Dokken and GPA recommended that the Weyand Canal and the associated laterals are ineligible for the National Register of Historic Places (National Register) as they do not meet the significance criteria under criteria A to C on an individual basis, nor as contributors to a potential Reclamation Solano Project historic district (refer to enclosure). Reclamation agrees with Dokken and GPA that neither the Weyand Canal nor its associated laterals are eligible for listing in the National Register.

Pursuant to the regulations at 36 CFR § 800.3(f)(2), Reclamation identified the Yocha Dehe Wintun Nation as an Indian tribe who might attach religious and cultural significance to historic properties within the APE. Reclamation contacted this tribe by letter dated September 10, 2018, inviting their participation in the Section 106 process and requesting their assistance in the identification of sites of religious and cultural significance or historic properties that may be affected by the proposed undertaking, pursuant to 36 CFR § 800.4(a)(4). We received no response to this letter. If any Native American concerns are raised, we will work to address them and notify your office, as appropriate.

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

Sincerely,

Anastasia T. Leigh
Regional Environmental Officer

Enclosure

State of California • Natural Resources Agency
Edmund G. Brown Jr., *Governor*
DEPARTMENT OF PARKS AND RECREATION
OFFICE OF HISTORIC PRESERVATION
Lisa Ann L. Mangat, *Director*
Julianne Polanco, State Historic Preservation Officer
1725 23rd Street, Suite 100, Sacramento, CA 95816-7100
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October 23, 2018

Reply in Reference To: BUR_2018_1005_002

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

RE: Solano Irrigation District (SID) Weyand Canal Automation and Remote Control Project, Solano County, California (18-CCAO-126.001)

Dear Ms. Leigh:

The California State Historic Preservation Officer (SHPO) received the Bureau of Reclamation's (Reclamation) letter on October 5, 2018, initiating consultation for the above-referenced project to comply with Section 106 of the National Historic Preservation Act of 1966 (54 U.S.C. § 300101), as amended, and its implementing regulation found at 36 CFR § 800. Reclamation is seeking the SHPO's comments regarding the effects the undertaking described below will have on historic properties. Included with the consultation letter was the *Cultural Resources Survey Report for the Weyand Canal Automation Project, Solano County, California* (report), prepared by GPA Consulting and Dokken Engineering in September 2018.

As described in the consultation package, the undertaking includes the automation of a 2.2-mile-long section of the Weyand Canal by installing Supervisory Control and Data Acquisition (SCADA) components on new gates to reduce spillage. New flume gates will replace weir boards on five check structures, and new automated slip gates would replace eleven manually operated turnouts and five lateral headworks. Additionally, insertion meters will be installed in three wells and a 1.75-mile access road will be constructed.

Reclamation has defined the Area of Potential Effect (APE) to include all project-related activities extending 8,200 linear feet and varying width with a maximum of 340 feet. The vertical APE is the maximum extent of ground disturbance, 12 feet. The undertaking is 20.51 acres in size.

Identification efforts included background research, a records search, pedestrian survey, and Native American consultation. No archaeological sites were identified. The Weyland Canal and its associated laterals were documented in the APE. Dokken and GPA recommended that the Weyland Canal and its laterals are not eligible for listing in the National Register of Historic Places (NRHP), either individually or as a district.

Reclamation has determined, based on the information in the report, that Weyland Canal and its laterals are not eligible for listing in the NRHP, and found that the undertaking will result in no historic properties affected. After reviewing the information submitted with your letter, the following comments are offered:

- I agree that the APE as represented in the attachments is appropriate, per 36 CFR § 800.4(a)(1).
- I agree that Reclamation's identification and evaluation efforts are sufficient for this undertaking, per 36 CFR § 800.4(b).
- I agree that Weyland Canal and its laterals are not eligible for listing in the NRHP, per 36 CFR § 800.4(c)(2).
- I agree with Reclamation's finding that pursuant to 36 CFR § 800.4(d), a Finding of No Historic Properties Affected is appropriate for the undertaking as described.

Please be advised that under certain circumstances, such as an unanticipated discovery or a change in project description, you may have future responsibilities for this undertaking under 36 CFR § 800. All unanticipated discoveries should follow the process at 36 CFR § 800.13(b). If you have any questions or concerns, please contact Kathleen Forrest, Historian, at (916) 445-7022 or Kathleen.Forrest@parks.ca.gov.

Sincerely,

Julianne Polanco
State Historic Preservation Officer

Appendix C:

Indian Trust Assets (ITA) Request Form
(Mid-Pacific [MP] Region)

Submit your request to your office's ITA designee Ms. Sarah Perrin at sperrin@usbr.gov.

Date: October 26, 2018

Requested by (office/program)	CC-414
Fund	18XR0680A1
WBS	RX035389433325400
Fund Cost Center	RR02430000
Region Number (if other than MP)	
Project Name	Weyand Canal Automation Project
Categorical Exclusion Checklist (CEC) or Environmental Assessment (EA) Number	CCAO-EA-18-05
Project Description: (Attach additional sheets if needed and include photos if appropriate.)	The Bureau of Reclamation (Reclamation), in cooperation with the Solano Irrigation District (District), proposes to demolish and reconstruct four existing reinforced concrete check structures for the removal of the existing weir boards and the installation of automated Rubicon FlumeGates as part of the Weyand Canal Automation Project, located in an unincorporated area of Solano County, California. In addition, the District will modify 10 turnout and lateral structures, one spill structure, and integrate two pumped services. All Project-related activities will occur within the District's right-of-way (ROW) when the canal is dewatered.

*Project Location (Township, Range, Section, e.g., T12 R5E S10, or Latitude/Longitude coordinates, DD-MM-SS or decimal degrees). Include map(s).	Approximate midpoint: Latitude: 38.44416667, Longitude: -121.86305556

ITA Determination: CCAO-EA-18-05

The closest ITA to the proposed **Weyand Canal Automation Project** activity is the **Rumsey, Yocha Dehe Wintun Nation** about 24.51 miles to the northwest of the Project Area (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.

Sarah Perrin	Sarah Perrin	26 Oct 2018
Signature	Printed Name of Approver	Date

ITA Request Document Map