RECLAMATION
Managing Water in the West

Environmental Assessment 16-20-MP

Molasses Ditch Lining Project
Central California Irrigation District

Bureau of Reclamation
WaterSMART Water Use Efficiency Grant No. R15AS00002
Mid-Pacific Region, Sacramento, California

U.S. Department of the Interior
Bureau of Reclamation

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Mission Statements

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

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

List of Acronyms and Abbreviations

af	acre feet
afy	acre-feet per year
APE	Area of potential effects
CAA	Federal Clean Air Act
CCAA	California Clean Air Act
CCID	Central California Irrigation District
CFR	Code of Federal Regulations
cfs	cubic feet per second
CO	Carbon monoxide
EA	Environmental Assessment
EPA	Environmental Protection Agency
ESA	Endangered Species Act
Exchange Contractors	San Joaquin River Exchange Contractors Water Authority
ITA	Indian Trust Assets
MBTA	Migratory Bird Treaty Act
NAAQS	National Ambient Air Quality Standards
NHPA	National Historic Preservation Act
NO_2	Nitrogen dioxide
NO_x	Nitrous oxides
PM_{10}	Particulate matter between 2.5 and 10 microns in diameter
$PM_{2.5}$	Particulate matter less than 2.5 microns in diameter
Project	Molasses Ditch Lining Project
Reclamation	Bureau of Reclamation
Service	U.S. Fish and Wildlife Service
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SJVAPCD	San Joaquin Valley Air Pollution Control District
VOC	volatile organic compounds

Section 1 Introduction

This Environmental Assessment (EA) has been prepared by the Bureau of Reclamation (Reclamation) to examine the potential direct, indirect, and cumulative impacts to the affected environment associated with providing federal grant funding to Central California Irrigation District (CCID) for the Molasses Ditch Lining Project (Proposed Action). The Project is located approximately 14 miles east of the City of Los Banos, within CCID's service area boundary in Merced County, California (Figure 1).

1.1 Need for the Proposal

The DOI WaterSMART Initiative was established in 2010 to provide funding for projects that improve the conservation and sustainability of water supplies in the face of burgeoning demands. As the SMART acronym suggests ("Sustain and Manage America's Resources for Tomorrow"), the DOI WaterSMART Strategic Implementation Plan states that "Collaborative partnerships that go beyond political and institutional jurisdictions must be developed to ensure that the Nation's limited water resources are used efficiently, sufficient amounts are retained to protect and restore the environment, and supplies are managed to reliably meet new demands (DOI 2011)." WaterSMART Grants are designed to coordinate conservation efforts between Reclamation and other Federal, state, tribal, and non-government agencies.

The purpose of providing grant funding for the Proposed Action is for Reclamation to further the goals and objectives of the WaterSMART Initiative as they apply to water supply reliability through management operations within the CCID. Reclamation intends to do so by providing grant funding for the implementation of the Proposed Action.

CCID needs to reduce seepage losses and improve its water management capabilities in order to make the conversion to high efficiency irrigation systems more feasible for the District's growers. The major crops consist of cotton, alfalfa, tomatoes, wheat, barley, and other field crops. The existing Molasses Ditch is unlined, overrun with vegetation, and oversized – factors that combine to degrade the efficiency of the system and waste water. The channel measures, on average, 15 feet wide (from bank to bank), ranging from 12 to 20 feet. Its depth reaches 5 feet but is shallower (<4 feet) in some sections. The ditch's banks rise about 1 foot above the surrounding surface. Dense vegetation covers the western flank of Reach A, and the ditch prism is mostly overgrown with weeds in this section. Overgrowth is much less pronounced in and around Reaches B and C.

The Molasses Ditch system was constructed in the early 1900's as an unlined irrigation ditch, and remains substantially unchanged since that time. The ditch varies in depth and width, but is generally larger than necessary due to historic

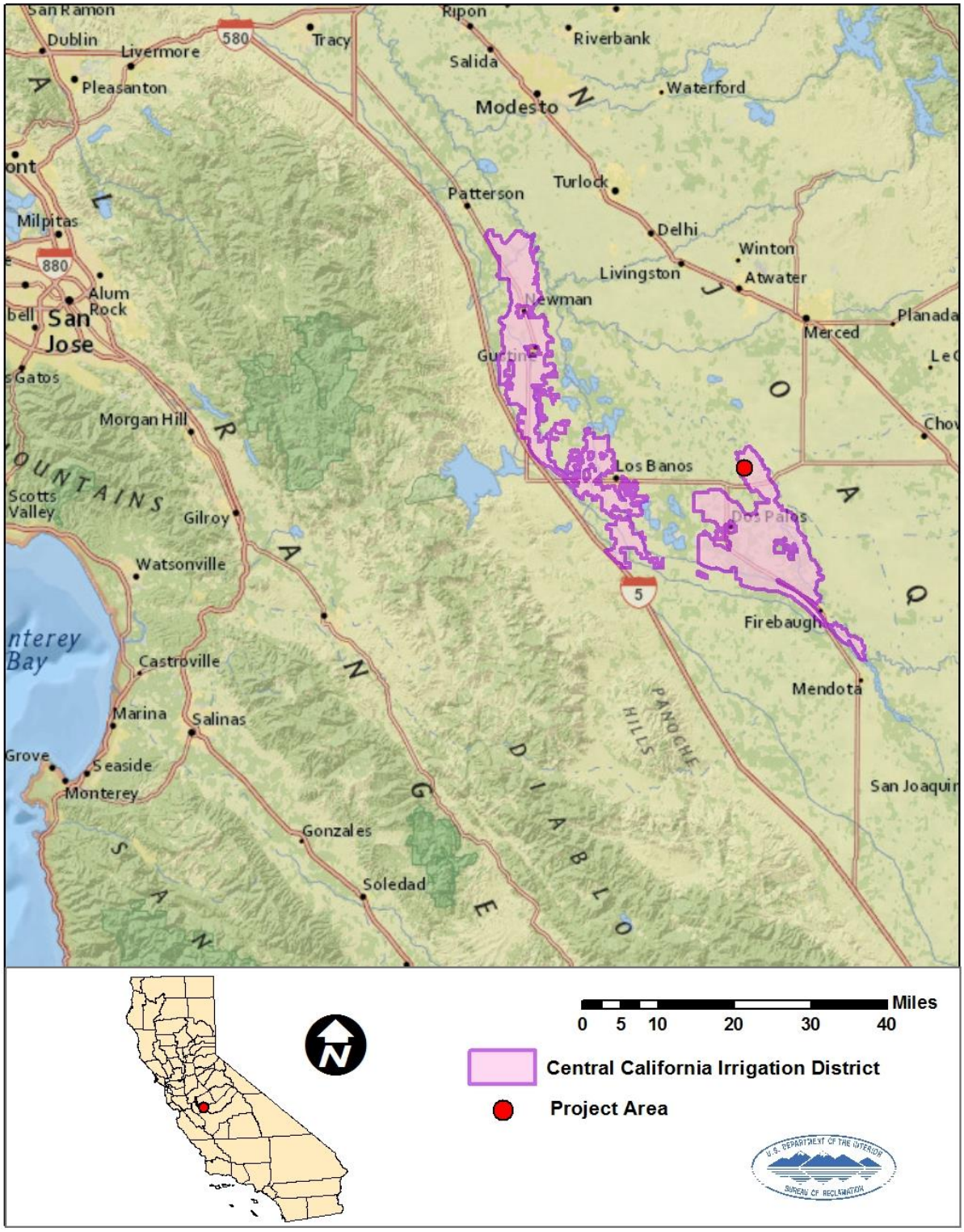


Figure 1. Molasses Ditch Lining Project, Central California Irrigation District, Merced County, California.

cleaning efforts which have over-excavated accumulated silt. The system serves approximately 570 acres. Due to its unlined condition, aquatic growth presents a management problem and decreases the hydraulic efficiency of water conveyance and irrigation dependent on it. Some of the key deficiencies of the system include:

- Abundant bank vegetation which hampers maintenance, chokes irrigation deliveries, and contributes floating detritus that would plug high-efficiency filters.
- An oversized cross-section which is hydraulically inefficient and requires significant water volume to fill at initial system charge-up.
- Improperly located and undersized culverts which create unusable dead storage.
- Absence of a water level control structure to maintain canal water surface elevations for deliveries.
- Earthen bank and bottom which allows for aquatic growth and seepage losses.

Combined, these features fail to provide the dependable service necessary to encourage growers to convert from current surface irrigation methods to high efficiency systems (e.g., buried drip), as well as contributes to seepage losses. Seepage losses from the system are estimated at 476 acre feet per year. The goal of the Proposed Action is to address major deficiencies in three reaches of Molasses Ditch to provide a new facility with the capacity, control and reliability necessary to eliminate seepage and encourage growers to install high-efficiency irrigation systems. The Project extends north along Reach A from the ditch's head gate on the Santa Rita Canal for 0.8 mile to the Reach B and C Diversion Structure; it follows Reaches B and C to their intersections with Hutchins Road (Figure 2). As a gravity flow canal, water descends along the natural gradient at an average of about 2 feet per mile—from 110 feet above mean sea level at the head to 105 feet above mean sea level at the terminus of Reach C.

1.2 Resources Analyzed in Detail

A range of potential impacts may occur as a result of Reclamation providing funding to CCID to implement the Molasses Ditch Lining Project. This EA will analyze the affected environment of the Proposed Action and No Action Alternative in order to determine the potential impacts and cumulative effects to the following environmental resources:

- Water Resources
- Air Quality
- Biological Resources
- Cultural Resources

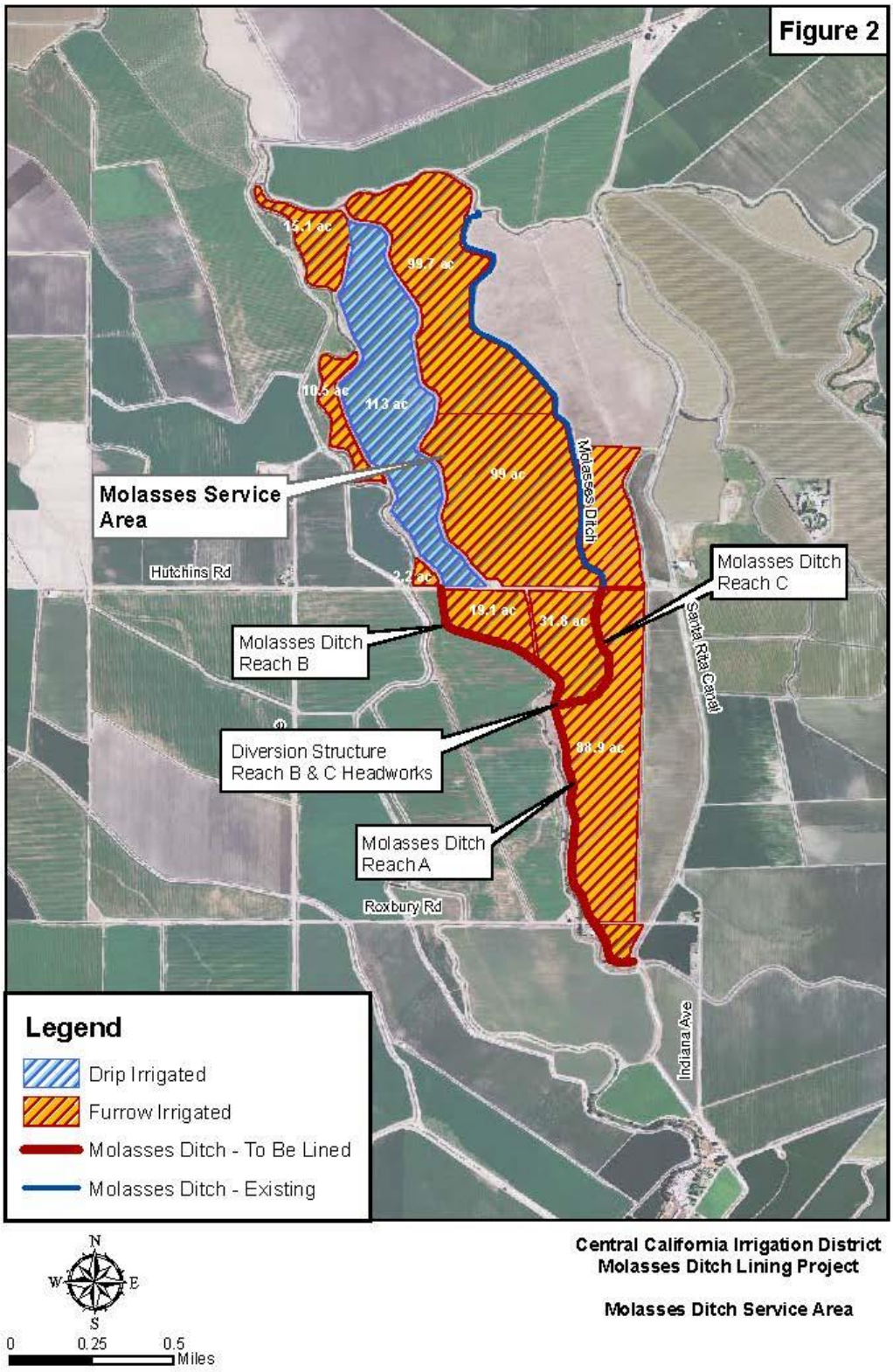


Figure 2. The proposed Molasses Ditch Lining Project action area, containing Reaches A, B, and C.

Impacts to the following resources were considered and found to be minor or absent. Brief explanations for their elimination from further consideration are provided below:

- Indian Sacred Sites: The Proposed Action is not on federal lands, and will not affect or prohibit access to and ceremonial use of Indian sacred sites.

- Indian Trust Assets (ITA): The Proposed Action does not have the potential to affect ITA (see Appendix A).

- Environmental Justice: These changes are not likely to have effects to any individuals or populations within the action area. Accordingly, the Proposed Action would not have disproportionately negative impacts on low-income or minority populations within the Project area.

Section 2 Proposed Action and Alternatives

2.1 No Action Alternative

The No Action Alternative would consist of Reclamation not providing grant funding to facilitate water conservation measures at CCID. Without grant funding from Reclamation, CCID would not line reaches of Molasses Ditch and would not improve the water conveyance efficiency to the local customers. Under the No Action Alternative current deficiencies in Molasses Ditch would continue to allow inefficient water distribution. Molasses Ditch would continue to be hampered by bank vegetation and silt, banks and culverts would continue to have hydraulic inefficiencies, water control structures would be lacking, and unnecessary seepage from the ditch would continue. Furthermore, local growers would have no incentive to improve the efficiency of their irrigation practices.

2.2 Proposed Action

Reclamation proposes to award a Department of the Interior WaterSMART Water and Energy Efficiency Grant to the CCID to partially fund the Project. For the Project CCID proposes to make water conveyance improvements to a two-mile segment of the Molasses Ditch. The Molasses Ditch is approximately 3 miles long with a capacity of 25 cfs and serves growers by delivering an average of 3,200 acre-feet of irrigation water per year. The ditch is currently unlined, overrun with vegetation, and oversized—factors that combine to degrade the efficiency of the system, resulting in waste of irrigation water. CCID proposes to clean out the existing canal, replace culverts and headworks, and rebuild the earthen ditch to a properly sized facility with a concrete lining to eliminate seepage losses. CCID expects the new facility will improve water delivery timing

and overall system reliability, which will help encourage growers to convert to high efficiency irrigation systems.

The proposed project will replace approximately 9,400 linear feet of existing dirt ditch with a concrete lined canal, replace 3 road crossings with new pipes and install new turnouts. Construction elements are described below:

Mobilization: Equipment will be brought in by low-boy trailers and staged along the canal alignment. There is sufficient space along the canal right-of-way (about 30-feet on both sides) for staging and additional staging will not be required. This work is expected to take 1 day.

Cleanout and Site Preparation: The proposed project will be cleared of all vegetation and silt. The top 6 to 12 inches of material along the sides and bottom will be scarified to remove organic material. This work will make use of 1 to 2 excavators to remove weeds and dig out wet silt and place it on the adjacent bank to dry. A grader will be used to turn the excavated silt. This work is expected to take 8 work days.

Earthwork: The existing channel will be backfilled and compacted to the final design grade. Backfill will be placed in lifts by 1 to 2 excavators and compacted by a sheep's foot roller. A water truck will be used to ensure proper moisture content. An estimated 9,800 cubic yards of fill material will be required to complete this work. This work is expected to take 7 work days.

Prism Excavation and Placement of Lining: The channel prism will be excavated to the appropriate lines and grade by 1 to 2 excavators and a specially designed dozer. Concrete lining will be placed using a sled drawn by the dozer. This work is expected to take 20 work days.

New Structures: This work will replace 3 road crossings with new pipe (PVC or reinforced concrete), install a new, precast concrete diversion structure at the headworks of Reaches B and C, and install approximately 6 new turnouts (precast boxes with canal gates). This work will require an excavator to dig out the locations, place the pipe or structure, and backfill around the new facility. This work is expected to take 15 work days.

Final Cleanup and Grading: This work will remove all construction debris and grade the canal road banks to final grade and slope. This work will involve a grader and 2 pickups and is expected to take 3 work days.

All of the work involved with the Project would be performed in previously disturbed contexts, regularly-maintained canal infrastructure, or concrete structures. In total, construction activities would take approximately 54 days, starting December 2016.

Section 3 Affected Environment and Environmental Consequences

3.1 No Action Alternative

The No Action Alternative would consist of Reclamation not providing grant funding to facilitate water conservation measures at CCID. The irrigation system currently in place would continue to operate. CCID would continue to provide irrigation service to users via the unlined Molasses Ditch.

3.2 Proposed Action

3.2.1 Water Resources

CCID receives its water supply through the Central Valley Project (CVP) via the Delta-Mendota Canal by way of an exchange contract. The average annual water supply to CCID is 532,000 af in a non-critical water year and 424,000 acre feet in a critical water year. Groundwater and recycled drain water also supplement the District's surface supplies (approximately 65,000 afy total). The water use within the District boundaries is entirely for agricultural irrigation on 145,000 acres devoted to irrigated crop land within CCID for approximately 600 water users. The District typically delivers 100% of its allocation plus groundwater and recovered drain water, and does not anticipate a significant change in demand in the future.

The existing Molasses Ditch delivers about 3,200 afy of water to approximately 570 acres, and a conservation savings of about 476 afy from Project implementation is expected. With the more efficient delivery system in place along Molasses Ditch, CCID anticipates local growers will switch to high-efficiency drip irrigation systems from the conventional irrigation methods currently used.

The Project action area is located in the Salt Slough subwatershed, which is a tributary to the San Joaquin River. Both Salt Slough and the San Joaquin River are listed as "Impaired Waterbodies" (303d list) by the Central Valley Regional Water Quality Control Board for a variety of agricultural constituents including pesticides. The primary mechanism for contamination is through tailwater discharges, generated by conventional furrow irrigation methods. The conversion to high-efficiency systems caused by the proposed Project would practically eliminate tailwater from the Molasses Ditch service area, which would help improve water quality in the Salt Slough subwatershed.

3.2.2 Air Quality

Section 176(c) of the Clean Air Act (42 U.S.C. 7506(c)) requires that any entity of the federal government that engages in, supports, or in any way provided financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable State Implementation Plan (SIP) required under Section 110(a) of the Clean Air Act (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) for criteria air pollutants 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 will, in fact, conform to the applicable SIP before the action is taken.

The Proposed Action lies within the San Joaquin Valley Air Pollution Control District (SJVAPCD), which oversees air quality in the San Joaquin Valley air basin over eight counties of California. Included in the San Joaquin Valley air basin are Merced and Stanislaus Counties. The counties share a common "air shed", the boundaries of which are defined by surrounding topography. Although mixing between adjacent air basins inevitably occurs, air quality conditions are relatively uniform within a given air basin. The San Joaquin Valley air basin experiences episodes of atmospheric mixing caused by inversion layers formed when temperature increases with elevation above ground, or when a mass of warm, dry air settles over a mass of cooler air near the ground.

Air quality management responsibilities exist at Federal, State, and local levels of government. The primary statutes that establish ambient air quality standards and the regulatory authorities necessary to enforce the regulations designed to attain those standards are the Federal Clean Air Act (CAA) and the California Clean Air Act (CCAA). The enforcement of Federal and State air statutes and regulations is complex and the various agencies have different, but interrelated responsibilities.

The Federal CAA and the CCAA require that the California Air Resources Board, based on air quality monitoring data, designate portions of the state where Federal or State ambient air quality standards are not met as "nonattainment areas". Because of the differences between the Federal and State standards, the designation of "nonattainment area" is different under the Federal and State legislation. Stanislaus County is in attainment for all State ambient air quality standards except for ozone, inhalable particulate matter (PM_{10}, and $PM_{2.5}$ - particulates 10 microns or less in diameter and 2.5 microns or less in diameter, respectively). However, under the State ambient air quality standards the county is designated as severe nonattainment for1 hour ozone and nonattainment for 8 hour ozone, PM_{10}, and $PM_{2.5.}$ Under the Federal ambient air quality standards, Merced County is classified as extreme nonattainment area for ozone and

nonattainment for $PM_{2.5}$. The U.S. EPA grades the region as in attainment or unclassified for all other air pollutants, including PM_{10}. Table 1 presents the emissions thresholds covering the Project location's overlying air basin.

The SJVAPCD has local jurisdiction over the project area. SJVAPCD is responsible for bringing and/or maintaining air quality within Federal and State air quality standards. Specifically, SJVAPCD has the responsibility to monitor ambient air pollutant levels and to develop and implement strategies to attain the applicable Federal and State standards.

Table 1. San Joaquin Valley Air Basin Attainment Status and Emissions Thresholds for Conformity Determinations.

Pollutant	**Federal Attainment Status[a]**	**Federal Standard (tons/year)[b]**	**San Joaquin Valley Attainment Status[a]**	**SJV Standard (tons/year) [a]**
Volatile organic compounds (VOC) (as an ozone precursor)	Nonattainment/ Extreme (8 hour ozone)	50	Nonattainment/Severe (1-hour) Nonattainment (8 hour)	10
Nitrogen oxides (NO_x) (as an ozone precursor)	Attainment/ Unclassified	100	Attainment	10
Inhalable particulate matter (PM_{10})	Attainment	100	Nonattainment	15
Inhalable particulate matter ($PM_{2.5}$)	Nonattainment	100	Nonattainment	15
Carbon monoxide (CO)	Attainment/Unclassified	100	Attainment/Unclassified	100

[a] San Joaquin Valley Air Resources Control Board.
[b] 40 CFR 93.153

Environmental Consequences

Short-term air quality impacts would be associated with construction, and would generally arise from dust generation (fugitive dust) and operation of construction equipment. Fugitive dust results from land clearing, grading, excavation, concrete work, and vehicle traffic on paved and unpaved roads. Fugitive dust is a source of airborne particulates, including PM10 and PM2.5. Large earth-moving equipment, trucks, and other mobile sources powered by diesel or gasoline are also sources of combustion emissions, including nitrogen dioxide (NO2), CO, VOC, sulfur dioxide, and small amounts of air toxics. Table 2 provides the duration of construction equipment operation used to estimate the air quality impacts caused by the project construction. Comparison of the estimated

Proposed Action emissions (Table 3) with the thresholds for Federal conformity determinations (Table 1) indicates that Project emissions are estimated to be below these thresholds and a conformity determination is not required.

Table 2. Construction duration and equipment.

Phase	Construction Element	Operating Equipment	Number of Equipment	Duration (Days)	Work
1	Site Preparation	Excavator	2	8	Clean out silt and weeds
		Grader	1		Clear/grade road
2	Recompact Subgrade	Excavator	2	10	Place/compact backfill
		Roller	1		
		Water Truck	1		Maintain moisture
3	Excavate Cross Section	Excavator	2	17	Cut & trim prism
		Dozer	1		
4	Place Lining	Cement truck	1	8	Provide concrete
		Dozer			Pull lining sled
5	Install Diversion Structure	Excavator	2	11	Place structure/pipes
	Install Crossing Checks	Plate compactor	2		
	Install Turnouts	Backhoe	2		
6	Final Cleanup/Grading	Grader	1	4	Restoration

Table 3. Estimated Maximum Project Emissions During Construction

Pollutant	Estimated Project Emissions[a] (tons)	Below Federal Threshold	Below SJV Threshold
VOC	0.13	Yes	Yes
NO_x	1.42	Yes	Yes
PM_{10}	0.18	Yes	Yes
$PM_{2.5}$	0.11	Yes	Yes
CO	1.02	Yes	Yes

[a] CalEEMod Version 2013.2.2.

Although the estimated project emissions are below the federal and San Joaquin Valley air basin thresholds for pollutant standards, conservation measures will be implemented where practical and relevant to minimize project emissions. These may include:

- Individual truck idling in excess of five consecutive minutes will be prohibited, unless allowed under Title 13 of the California Code of Regulations §2485 (CARB's Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling).
- The Contractor will encourage worker carpooling.
- Backfill material will be stabilized prior to and during handling as well as at completion of activity.
- Suspend the use of all construction equipment during first-stage smog alerts.
- Electricity or alternative fuels for on-site mobile equipment will be used instead of diesel equipment to the extent feasible.
- Diesel-power construction equipment shall use low-sulfur diesel fuel, as defined in Rule 431.2.
- Suspend any excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 miles per hour.
- Minimize disturbed areas during construction.
- Ensure that all construction equipment is properly tuned and maintained prior to and for the duration of construction.
- Provide adequate ingress and egress to minimize vehicle idling and traffic congestion.
- To reduce the potential for significant hazardous air emissions the following project controls are included:

    - Maintain slow speeds with all vehicles;
    - During dumping, minimize soil drop height into transportation trucks or stockpiles;
    - During transport, cover or enclose trucks transporting soils;
    - Increase freeboard requirements, and repair trucks exhibiting spillage due to leaks.

Excavation areas will be controlled with physical barriers (e.g., perimeter fencing with tarps), and soil wetting to avoid or control dust generation. Water will be used periodically to control any fugitive dust from blowing onto other properties. In times of high wind conditions (e.g., wind speed in excess of 25 miles per hour), all excavation areas will be securely covered to prevent excessive amounts of dust. The areas that require excavation and earth-moving operation will be minimized to prevent excessive amounts of dust.

Operation of the Proposed Action involves using electrically-driven pumps and motors; accordingly, there would not be any direct emissions from this equipment.

3.2.3 Biological Resources

The action area is the footprint of the installation and modification activities for the canal and a 200-foot buffer around those activities in which noise and dust

may occur from construction activities. The present land use around the action area consists of agricultural fields, farm roads and shoulders, and existing ditches and canal infrastructure. The majority of the crops grown within the CCID service area consist of cotton, alfalfa, tomatoes, wheat, barley, melons, pomegranates, pistachios, asparagus and onions. Currently the Molasses Ditch is subject to periodic excavation, dredging, grading, and spraying for maintenance. In addition, irrigation, maintenance and harvesting occur throughout the surrounding area on an annual basis.

On August 22, 2016, an official list of species protected by the Endangered Species Act of 1973 (as amended), was generated from the U.S. Fish & Wildlife Service's (Service) Information for Planning and Consultation (IPaC) website (Appendix B). Table 4 presents the listed species reported by the Service.

No vernal pools or elderberry shrubs occur within the action area. Habitat components within the action area may be suitable as a movement corridor by both the giant garter snake (snake) and the San Joaquin kit fox (fox). However, no occurrences of either species have been observed within the action area.

Table 4: Federally Listed Species Identified as Potentially Occurring in the Molasses Ditch Lining Project action area.

Scientific Name	Common Name	Federal Status	Effects	Potential habitat utilized by species in Proposed Action Area
INVERTEBRATES				
Branchinecta lynchi	Vernal pool fairy shrimp	T, X	NE	**Absent**. No vernal pool habitat in the Project area. No vernal pool habitat would be disturbed. Vernal pool fairy shrimp would not be affected. Critical habitat would not be affected but the Project.
Lepidurus packardi	Vernal pool tadpole shrimp	E, X	NE	**Absent**. No vernal pool habitat in the Project area. No vernal pool habitat would be disturbed. Vernal pool tadpole shrimp would not be affected. Critical habitat would not be affected but the Project.
Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	T, X	NE	**Absent**. No suitable habitat in the Proposed Action area. No elderberry shrubs would be disturbed. Critical habitat would not be affected but the Project.
AMPHIBIANS				
Ambystoma californiense	California tiger salamander, central population	T, X	NE	**Absent.** No suitable wetland habitat in the Project area. Project will not affect suitable California tiger salamander habitat. Critical habitat would not be affected but the Project.

Scientific Name	Common Name	Federal Status	Effects	Potential habitat utilized by species in Proposed Action Area
Rana draytonii	California red-legged frog	T, X	NE	**Absent.** Species absent from San Joaquin Valley floor and from vicinity of the Project area. Project will not affect suitable red-legged frog habitat. Critical habitat would not be affected but the Project.
REPTILES				
Gambelia sila	Blunt-nosed leopard lizard	E	NE	**Absent**. No suitable habitat in the Proposed Action area. No suitable habitat would be disturbed.
Thamnophis gigas	Giant garter snake	T	NE	**Absent**. There are nine records of giant garter snake within 10 miles of the Project, with the closest occurrence 3.3 miles southwest. However, the Project action area does not contain suitable habitat for a permanent population. There also is no connectivity between the Proposed Action Area and suitable habitat.
MAMMALS				
Dipodomys nitratoides exillis	Fresno kangaroo rat	E, X	NE	**Absent**. No known occurrences within roughly 25 miles. No suitable habitat in the Proposed Action area. No disturbance of suitable or critical habitat.
Vulpes macrotis mutica	San Joaquin kit fox	E	NE	**Absent.** Three records within 10 miles of the Project footprint. The closest record is 4.99 miles away. No dens are located in the Project Action area.
FISHES				
Hypomesus transpacificus	Delta smelt	T, X	NE	**Absent.** There is no suitable habitat in the Project action area. No suitable habitat would be disturbed or would be affected. Delta smelt and critical habitat would not be affected by the Project.
Oncorhynchus mykiss	California Central Valley Steelhead	T, X	NE	**Absent.** There is no suitable habitat in the Project action area. No suitable habitat would be disturbed. Steelhead would not be affected by the Project.

Key:

(E) Endangered– Listed in the Federal Register as being in danger of extinction
(T) Threatened – Listed as likely to become endangered within the foreseeable future
(X) Critical Habitat – Critical Habitat has been designated for this species.
(NE) No Effect – Proposed Action will have no effect on the species

Giant Garter Snake

The snake inhabits agricultural wetlands and other waterways such as irrigation and drainage canals, sloughs, ponds, small lakes, low gradient streams, and adjacent uplands in the Central Valley (Service 1999a). Habitat requirements for

snakes consist of (1) adequate water during the snake's active season (early-spring through mid-fall) to provide food and cover; (2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat during the active season; (3) grassy banks and openings in waterside vegetation for basking; and (4) higher elevation uplands for cover and refuge from flood waters during the snake's dormant season in the winter (Service 2009).

In a letter from a Service-approved snake expert dated August 18, 2016 and included as Appendix C, Eric Hansen included his results from surveying the action area to determine if the area may be suitable habitat for the snakes.

Below is a list of factors along with the results of the survey leading to the determination that snakes are absent from the action area:

- The surrounding landscape of row crops and other land uses is incapable of supporting snakes;
- Sparse aquatic vegetation does exist in the waterway; however, it is not abundant enough for snakes to use for cover, and it is subject to periodic removal;
- While Molasses Ditch does possess water during portions of the snakes spring and summer active season (roughly April through September), the ditch does not possess the suite of characteristics generally associated with snake occupancy. The characteristics include, but are not limited to aquatic vertebrate prey, the emergent aquatic and terrestrial vegetation that snakes rely upon for cover, and the uplands that snakes rely upon for daily thermoregulation and winter brumation. Surrounding land uses around Molasses Ditch consist entirely of row crops devoid of wetlands, limiting the development of critical prey such as small fish and amphibians associated with wetlands;
- Frequent ground disturbance associated with the mechanical agricultural equipment in the area also reduces the availability of bankside burrows, holes and crevices that provide critical upland brumation sites;
- Molasses Ditch could be considered marginally suitable habitat for snakes. Marginally suitable habitat is characterized by any combination of the features needed to support transient snakes on a temporary basis, or to act as connective corridor between areas of more suitable habitat. Marginal habitats are incapable of supporting permanent populations of snakes and no permanent populations of snakes are known to occur within dispersal distance of Molasses Ditch;
- It is improbable that Molasses Ditch serves as a connective corridor for snakes due to the overall character of the potential *in situ* habitat, such as the incompatible land uses dominating the area, the lack of suitable habitat within 4 miles of the Project, and the distance of habitats with verified snake occurrences; and
- The nearest recent records include CNDDB numbers 143 and 161, which lie 3.3 and 4.7 miles from the project site, respectively. Although

> information associated with record number 161 is suppressed in the commercial version of the CNDDB, record number 143 was validated last during a 1976 study and snakes have not been observed there since. Based on extensive trapping conducted over the past 11 years (Hansen, unpublished data), indications are that despite the presence of marginally suitable aquatic features, giant garter snakes are likely extirpated throughout most of the Grasslands Ecological Area.

As a result, Reclamation determined that the Proposed Action will have no effect on snakes.

San Joaquin Kit Fox

Kit fox are an arid-land-adapted species and typically occur in desert-like habitats in North America. Such areas have been characterized by sparse or absent shrub cover, sparse ground cover, and short vegetative structure. Within this range, the kit fox has been associated with areas having open, level, sandy ground that is relatively stone-free to depths of about 3 to 4.5 feet. The kit fox utilizes subsurface dens, which may extend to six feet or more below ground surface, for shelter and for reproduction. Kit foxes are absent or scarce in areas where soils are shallow due to high water tables, impenetrable hardpans, or proximity to parent material, such as bedrock. Kit foxes also do not den in saturated soils or in areas subjected to periodic flooding.

Terrestrial habitat in the CCID is intensively managed for agriculture and the landscape is highly disturbed from land preparation, planting, irrigation and harvesting. Areas that are not cropped include the access roads and ditch prism, thus limiting areas for kit fox dens. These conditions also limit invertebrate prey, which are relatively scarce in crop fields. The Proposed Action area does not provide suitable habitat for potential prey (such as kangaroo rats) due to the high intensity agricultural practices within the CCID and surrounding lands. During a general biological survey that was performed on July 14, 2016, no individuals or appropriate burrows were observed at the Molasses Ditch Lining Project site. Reclamation has determined that the Proposed Action would have no effect on the kit fox.

Migratory Birds

The Migratory Bird Treaty Act (MBTA) protects 1,026 migratory bird species that breed in North America (78 CFR 65844). Under the MBTA, taking, killing or possessing migratory birds, bird parts, eggs, or active nests is unlawful.

Swainson's hawks (*Buteo swainsoni)* are known to nest within the vicinity of the action area, which also contains suitable foraging habitat. The California Natural Diversity Database contains four records of Swainson's hawk within six miles from the Project site, and there are some large trees within 200 yards of Molasses Ditch. However, the project construction timeframe is late September through

November 2016, which is outside the active nesting season (March 1 to September 15) for birds of the California Central Valley.

The Proposed Action would not result in a significant change in the surrounding environment and would not result in short-term or long-term changes to biological resources. However, by reducing the seepage contribution to the local perched water table, the Proposed Action would reduce the production of subsurface drain water which is currently discharged to the San Joaquin River and eventually to San Joaquin and Sacramento River Delta, thus providing possible habitat benefits to the immediate surrounding area.

3.2.4 Cultural Resources

With supporting documentation prepared by Applied Earthworks, Reclamation assumes, for the purposes of this undertaking only, that the Molasses Ditch contributes to the eligibility of the CCID conveyance system under National Register of Historic Places (National Register) Criterion A through its association with the development of agriculture in the local area (within CCID's distribution area). The proposed undertaking will not affect the characteristics that would make the Molasses Ditch eligible for listing in the National Register. Reclamation received concurrence from the State Historic Preservation Officer on a finding of no adverse effect to historic properties, pursuant to 36 CFR § 800.5(b). No further analysis is needed.
In the unlikely event that cultural resources or human remains are identified during the implementation of this project there may be additional considerations pursuant to Section 106 of the National Historic Preservation Act (NHPA). If inadvertent discoveries of cultural resources or human remains occur during project implementation, work shall temporarily stop and Reclamation cultural resources staff shall be contacted immediately.

3.2.5 Cumulative Impacts

According to the CEQ regulations for implementing the procedural provisions of NEPA, a cumulative impact is defined as *the impact on the environment which results from the incremental impact of the action when added to other past, present, and 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.

Air Quality
To conform with the purpose of the SIP, the Proposed Action must maintain emissions below the *de minimus* threshold for federal general conformity of the criteria pollutants that the SJVAB is not within attainment. Table 5 shows the

SJVAB attainment status and *de minimus* thresholds for federal conformity determinations. As indicated in Table 1, three criteria pollutants of nonattainment status for the Proposed Action are VOC, PM_{10}, and $PM_{2.5}$.

Table 5. SJVAB attainment status and *de minimus* (tons/year) thresholds for federal conformity determinations.

Pollutant	Attainment Status[a]	(tons/year)
VOC (as ozone precursor)	Nonattainment[d]	10[b]
NOx (as an ozone precursor)	Nonattainment[d]	10[b]
PM10	Nonattainment (CAAQS) Attainment (NAAQS)	15[c] 100
PM2.5	Nonattainment	15[c]

[a] Source: http://www.arb.ca.gov/desig/adm/adm.htm
[b] 40 CFR 93.153
[c] SJVAPCD Threshold
[d] The SJVAB is designated as Extreme for ozone NAAQS

Along with the Proposed Action, emissions from projects occurring concurrently throughout the SJVAB could lead to a cumulative impact that results in nonconformity. Known projects with the SJVAB that may be implemented simultaneously with the Proposed Action include similar WaterSMART grant projects occurring in the Cawelo Water District (CWD), Firebaugh Canal Water District (FCWD), and the North Kern Water Storage District (NKWSD). Table 6 shows the estimated cumulative impact on air quality of the Proposed Action in conjunction with the other known projects that may be occurring at the same time. The cumulative impacts to the SJVAB of all the known projects, including the Proposed Action, are below the *de minimus* thresholds for each criteria air pollutant, and therefore within conformity.

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.

Table 6. Cumulative impact to air quality of known projects occurring simultaneously to the Proposed Action.

Criteria Air Pollutant	Proposed Action tons/year[a]	Estimated total tons/year from CWD, FCWD, and NKWSD	Cumulative Impact to SJVAB
ROG/VOC	0.13	0.27	0.40
NO_x	1.42	2.70	4.12
PM_{10}	0.18	1.39	1.57
$PM_{2.5}$	0.11	0.33	0.44

Carbon dioxide equivalents	146.7 metric tons/year	207.49 metric tons/year	354.19 metric tons/year

[a] see Table 3
[b] see http://www.usbr.gov/mp/nepa/nepa_base.cfm?location=ro

Section 4 Consultation and Coordination

Reclamation has consulted with the following regarding the Proposed Action:

- Central California Irrigation District
- Summers Engineering
- Eric C. Hansen Consulting Biologist
- U.S. Fish and Wildlife Service
- California Office of Historic Preservation

4.1 Public Review Period

Reclamation intends to sign a Finding of No Significant Impact for this Project, and will make the EA available for a 15-day period beginning November 7, 2016. All comments will be addressed in the Finding of No Significant Impact. Additional analysis will be prepared if substantive comments identify impacts that were not previously analyzed or considered.

4.2 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.

On August 22, 2016, Reclamation received from the Service an official list of species that may be affected by the Proposed Action. Reclamation analyzed the project actions and the list of species that may be affected. Reclamation determined that the Proposed Action would not affect any listed species and thus would not require a section 7 consultation.

4.3 National Historic Preservation Act (16 USC § 470 et seq.)

The NHPA of 1966, as amended (16 USC 470 et seq.) is the primary Federal legislation that outlines the Federal Government's responsibility to cultural resources. Section 106 of the NHPA requires that cultural resources are

considered in the planning and implementation of projects undertaken by the Federal Government. Reclamation has taken into consideration the effects of the project on cultural resources listed on or eligible for inclusion in the National Register of Historic Places, and has provided the Advisory Council on Historic Preservation an opportunity to comment on the effects. A letter was received from the California Office of Historic Preservation on August 19, 2016, concurring with Reclamation's determination of eligibility and finding of historic properties affected and determination of eligibility for the Project (Appendix D).

Section 5 References

[DOI] United States Department of Interior. 2011. DOI WaterSMART Strategic Implementation Plan, August 22, 2016. Accessed February 25, 2016 at http://www.usbr.gov/watersmart/docs/FedRegister_WaterSMART_Implementation_plan_FINAL.PDF

[CCID] Central California Irrigation District. 2015. WaterSMART: Water and Energy efficiency grants for FY 2015, Molasses Ditch Lining Project. Proposal submitted to the U.S. Bureau of Reclamation, Sacramento, California, January 14, 2105.

[Exchange Contractors] San Joaquin River Exchange Contactors Water Authority. 2016. History, the San Joaquin River Exchange Contactors Water Authority, Los Banos, California. Accessed online September 20, 2016 at: http://sjrecwa.net/history.html

Service. 1999a. Draft Recovery Plan for the Giant Garter Snake (*Thamnophis gigas*). Portland, Oregon. Ix+ 192 pp.

Service. 2009. *Species Account. Giant Garter Snake*: U.S. Fish and Wildlife Service. May 13, 2009.

Appendix A – ITA Determination

08/22/2016

Indian Trust Assets
Request Form (MP Region)

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

Date:

Requested by (office/program)	Harry Kahler, MP-152
Fund	16XR0680A1
WBS	RY30180006CCICA0E
Fund Cost Center	RR2015200
Region # (if other than MP)	N/A
Project Name	Molasses Ditch Lining Project (Central California Irrigation District WaterSMART Grant Project)
CEC or EA Number	16-05-MP
Project Description (attach additional sheets if needed and include photos if appropriate)	The WaterSMART Water and Efficiency Grant from Reclamation would provide funding to the Central California Irrigation District for the Molasses Ditch Lining Project. WaterSMART Grant funding would allow about 2.0 miles of the existing Molasses Ditch in Merced County to be restructured and lined with concrete for more efficient water delivery and a reduction in seepage through the currently unlined ditch. New culverts, water level control structures, and headworks facilities between Molasses Ditch reaches would also help conserve water and encourage local growers to upgrade to high-efficiency irrigation systems.
***Project Location (Township, Range, Section, e.g., T12 R5E S10, or Lat/Long cords, DD-MM-SS or decimal degrees). Include map(s)**	37.074358 -120.605025 The above coordinates are a point near the center of the two-mile portion of Molasses Ditch that would be lined.

Signature | Harry Kahler (Printed name of preparer) | 8/22/2016 (Date)

08/22/2016

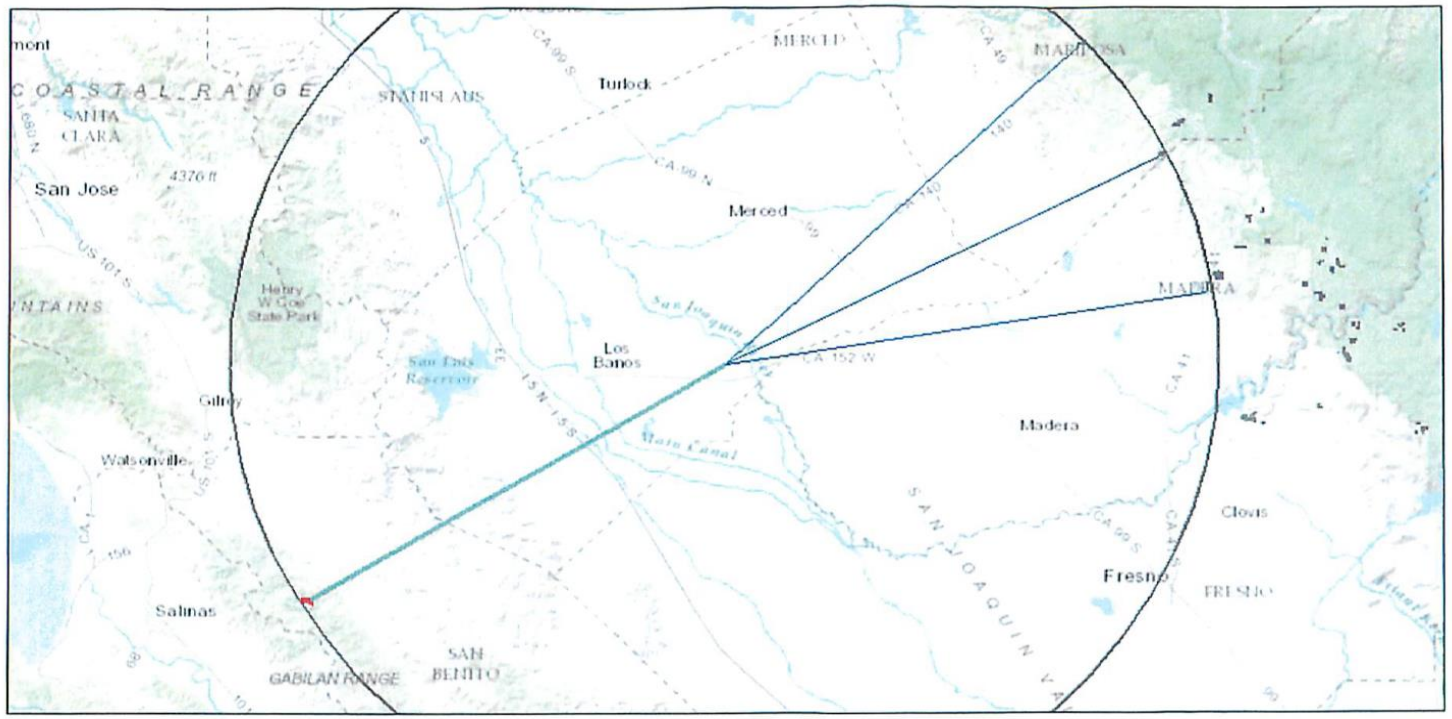
ITA Determination:

The closest ITA to the proposed **Molasses Ditch Lining Project** is the **50H CA12519** public domain allotment about **49.07 miles** to the southwest (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.

Signature	Printed name of approver	Date
	Kevin Clancy	8-24-2016

Molasses Ditch Lining Project



Native American Lands FL
- PDA
- Rancheria

Native American Lands
- <all other values>
- Alaska Native Regional Corporation
- Alaska Native Village Statistical Area
- American Indian Reservation
- Colony
- Community
- Federally Recognized Tribal Entity
- Federally Recognized Tribal Entity (no land base)
- Not Provided
- Off-Reservation Trust Land
- Off-reservation Trust Land
- PDA
- Rancheria
- Reservation
- State Designated American Indian Statistical Area
- Tribal Designated Statistical Area
- Tribal Jurisdiction Statistical Area
- Village

RECLAMATION
Managing Water in the West

Appendix B – U.S. Fish and Wildlife Service Official Threatened and Endangered Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
FEDERAL BUILDING, 2800 COTTAGE WAY, ROOM W-2605
SACRAMENTO, CA 95825
PHONE: (916)414-6600 FAX: (916)414-6713

Consultation Code: 08ESMF00-2016-SLI-2068 August 22, 2016
Event Code: 08ESMF00-2016-E-04603
Project Name: CCID Molasses Ditch Lining Project

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2)

of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment

United States Department of Interior
Fish and Wildlife Service

Project name: CCID Molasses Ditch Lining Project

Official Species List

Provided by:

Sacramento Fish and Wildlife Office
FEDERAL BUILDING
2800 COTTAGE WAY, ROOM W-2605
SACRAMENTO, CA 95825
(916) 414-6600

Consultation Code: 08ESMF00-2016-SLI-2068
Event Code: 08ESMF00-2016-E-04603

Project Type: WATER SUPPLY / DELIVERY

Project Name: CCID Molasses Ditch Lining Project
Project Description: Central California Irrigation District proposes to line about 2 miles of Molasses Ditch to reduce seepage, and to upgrade associated water conveyance equipment to improve delivery efficiency.

Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.

United States Department of Interior
Fish and Wildlife Service

Project name: CCID Molasses Ditch Lining Project

Project Location Map:

Project Coordinates: The coordinates are too numerous to display here.

Project Counties: Merced, CA

United States Department of Interior
Fish and Wildlife Service

Project name: CCID Molasses Ditch Lining Project

Endangered Species Act Species List

There are a total of 11 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Amphibians	**Status**	**Has Critical Habitat**	**Condition(s)**
California red-legged frog *(Rana draytonii)* Population: Entire	Threatened	Final designated	
California tiger Salamander *(Ambystoma californiense)* Population: U.S.A. (Central CA DPS)	Threatened	Final designated	
Crustaceans			
Vernal Pool fairy shrimp *(Branchinecta lynchi)* Population: Entire	Threatened	Final designated	
Vernal Pool tadpole shrimp *(Lepidurus packardi)* Population: Entire	Endangered	Final designated	
Fishes			
Delta smelt *(Hypomesus transpacificus)* Population: Entire	Threatened	Final designated	
steelhead *(Oncorhynchus (=salmo)*	Threatened		

mykiss) Population: Northern California DPS			
Insects			
Valley Elderberry Longhorn beetle *(Desmocerus californicus dimorphus)* Population: Entire	Threatened	Final designated	
Mammals			
Fresno kangaroo rat *(Dipodomys nitratoides exilis)* Population: Entire	Endangered	Final designated	
San Joaquin Kit fox *(Vulpes macrotis mutica)* Population: wherever found	Endangered		
Reptiles			
Blunt-Nosed Leopard lizard *(Gambelia silus)* Population: Entire	Endangered		
Giant Garter snake *(Thamnophis gigas)* Population: Entire	Threatened		

United States Department of Interior
Fish and Wildlife Service

Project name: CCID Molasses Ditch Lining Project

Critical habitats that lie within your project area

There are no critical habitats within your project area.

Appendix C – Letter from Eric C. Hansen, Consulting Biologist

Eric C. Hansen
Consulting Environmental Biologist

4200 N. Freeway Blvd., Suite 4
Sacramento, CA
95834-1235

Phone 916-921-8281
Fax 916-921-8278
Mobile 916-214-7848

August 18, 2016

To: Chris Linneman
Summers Engineering

Cc: Central California Irrigation District (CCID)

Re: Molasses Ditch Lining Project – Summary of Giant Garter Snake (*Thamnophis gigas*) Habitat and Impact Potential

Dear Mr. Linneman:

This letter provides the results of the 10 June 2016 site evaluation along the main and east branches of the CCID Molasses Ditch in Merced County, California. This feature is located 1.3 miles south of Highway 152, approximately 10 miles east of the City of Los Banos and comprises roughly 1.7 miles of linear conveyance situated at the southwest corner of Hutchinson Road and Indiana Road. This visit was conducted to assess potential habitat for the giant garter snake (*Thamnophis gigas*) and was completed in reference to location data provided by Summers Engineering via electronic mail on 3 June 2016. Potential habitat was evaluated using a combination of ground-level surveys and National Agricultural Imagery Program (NAIP) aerial imagery to assess the overall suitability of the site based on the prevailing character of the landscape, and to examine the site's location in regard to historical and recent giant garter snake occurrence records drawn from the California Natural Diversity Database (CNDDB).

The results of this evaluation indicate that while the Molasses Ditch does possess water during portions of the giant garter snake spring and summer active season (roughly April through September), this feature does not possess the suite of characteristics generally associated with giant garter snake occupancy, These characteristics include, but are not limited to aquatic, vertebrate prey, the emergent aquatic and terrestrial vegetation that giant garter snakes rely upon for cover, and the uplands that giant garter snakes rely upon for daily thermoregulation and winter brumation. Surrounding land use ay Molases Ditch consists entirely of row crops devoid of wetlands (cotton, melons, and corn are the dominant crops), limiting the development of critical prey such as small fish and amphibians associated with wetlands. The frequent ground disturbance associated with this upland cropping regime also reduces the availability of bankside burrows,

holes and crevices that provide critical upland brumation sites. While emergent vegetation was observed during a return visit on 18 August 2016 (see attached photos), it was clear that the prey species and the upland habitat associated with giant garter snake occupancy remained largely absent.

As such, Molasses ditch could be considered marginally-suitable, at best. Marginal habitat is characterized by any combination of the features needed to support transient giant garter snakes on a temporary basis, or to act as connective corridors between areas of more stable, occupied habitat. Marginal habitat need only possess the water, vegetation, and refugia required to provide minimal coverage for dispersing snakes. On their own, marginal features are incapable of supporting permanent populations of giant garter snakes, and no permanent populations of giant garter snakes are known to occur near the Molasses Ditch.

Although Molasses ditch meets the structural criteria associated with marginal habitat, it is unlikely to serve as a connective corridor due to the overall character of the potential *in situ* habitat, the incompatible land uses dominating the area, the lack of suitable habitats nearby, the distance of the site from habitats where giant garter snake presence has been verified recently, and the likely extirpation of giant garter snakes at the two CNDDB sites most proximal to the project site.

Molasses Ditch lies south and east of all verified sightings presented within the CNDDB (excluding CNDDB record number 144, which represents a specimen of unknown origin archived in 1906 and sited at the Merced County courthouse). The nearest recent records include CNDDB numbers 143 and 161, which lie 3.3 and 4.7 miles from the project site, respectively. Although information associated with record number 161 is suppressed in the commercial version of the CNDDB, record number 143 was validated last during a 1976 study and snakes have not been observed there since. Based on extensive trapping conducted over the past 11 years (Hansen, unpublished data), indications are that despite the presence of suitable aquatic features, giant garter snakes are likely extirpated throughout most of the Grasslands Ecological Area (including Mud Slough), which lies immediately west of Molasses ditch and supports the preponderance of all historic and contemporary giant garter snakes records in Merced County. Currently, only Pond 10 at Volta Wildlife Area is known to support an extant giant garter snake population. These snakes seem to be isolated, and do not appear to disperse to connected features elsewhere within the system[1] (Hansen, unpublished data). Volta Wildlife Area lies approximately 18 air miles west of Molasses Ditch and there is little or no functional connectivity between the two features.

In closing, although Molasses Ditch possesses the minimal characteristics associated with marginal giant garter snake habitat, it is unlikely to support the species due to its lack of emergent aquatic characteristics, the disturbed nature of the surrounding row crop uplands, its location relative to known historic occurrences, and the lack of

[1] This finding is supported by rigorous trapping, genetic analysis, and scent-dog surveys conducted as recently as summer of 2016.

connectivity to and distance from known, extant populations. Therefore, any work occurring within the Molasses Ditch is highly unlikely to result in adverse impacts to the species.

Please do not hesitate to contact me with any questions or concerns.

Sincerely,

Eric C. Hansen
Consulting Environmental Biologist

1. Photo Station 1: Main stem of Molasses Ditch facing south from Hutchins Road

2. Photo Station 2: East stem of Molasses Ditch facing south from Hutchins Road

3. Photo Station 3: Example of local conveyance (unknown ditch) at Roxbury Road

4. Photo Station 4: Example of prevailing upland row crops dominating the area.

Appendix D – NHPA Section 106 Concurrence

STATE OF CALIFORNIA – THE NATURAL RESOURCES AGENCY EDMUND G. BROWN, JR., Governor

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

August 19, 2016

In reply refer to: BUR_2016_0722_001

Anastasia T. Leigh, Regional Environmental Officer
United States Department of the Interior
Bureau of Reclamation
Mid-Pacific Regional Office
2800 Cottage Way
Sacramento, CA 95825-1898

Subject: National Historic Preservation Act (NHPA) Section 106 Consultation for Central California Irrigation District (CCID) Molasses Ditch Lining Project, Merced County, California (Project 15-SCAO-200)

Dear Ms. Leigh:

The Office of Historic Preservation (OHP) received your letter on July 22, 2016 initiating consultation for the above-referenced undertaking. The Bureau of Reclamation (Reclamation) is consulting pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations found at 36CFR Part 800 (as amended) and is seeking concurrence with its finding for this project. The following documentation was included in the submittal:

- *Cultural Resources Inventory and Evaluation for the Central California Irrigation District's Molasses Ditch Lining Project Merced County, California (15-SCAO-200) [for Central California Irrigation District, Los Banos, CA; by J. Lloyd, R. Baloian, & J. Tibbet-Applied Earthworks Inc. Fresno, CA, October 2015].*
- *Figure 1: Project Location Map; Figure 2: Area of Potential Effects*

The project by CCID proposes to improve system reliability and includes placing a concrete lining on the earthen Molasses Ditch, replacing existing culverts with new pipe crossings, constructing a new water level control structure and new headworks to eliminate seepage losses. The Molasses Ditch will be graded down 12 inches within the prism, a concrete lining will be installed, five metal culverts will be replaced with concrete pipes, and the Molasses Ditch headworks will be upgraded with modern utilitarian appurtenances.

The horizontal area of potential effects (APE) is the 3-mile-long Molasses Ditch, with a width of 75 feet wide (a 30 foot buffer to allow for construction-related activities and access on either side of the 15-foot-wide Molasses Ditch) for a total of approximately 16 acres. The vertical APE is a maximum of 12 inches depth for trenching within the existing Molasses Ditch prism. Equipment and materials will be used and stored within the existing Molasses Ditch footprint. No additional staging areas for equipment and materials are required for this project and the project area will be accessed using existing roads.

On behalf of CCID, Applied Earthworks, Inc. (AE) conducted a cultural resources inventory (Lloyd et. al. 2015). The only identified resource is the Molasses Ditch which was constructed between 1916 and 1946 and draws water from the San Joaquin River. By 1951, it had been consolidated into the CCID water delivery system which abandoned a section of the Molasses Ditch in 2013 due to poor design and lack of demand for local agricultural water delivery.

AE evaluated the Molasses Ditch on an individual property level as ineligible for the National Register of Historic Places (NRHP) due to a lack of association with patterns of history, individuals, type of construction and its small scale. Reclamation agrees with AE's recommendation that the Molasses Ditch is ineligible for listing in the National Register on an individual basis. However, Reclamation notes that AE's evaluation did not consider the Molasses Ditch on a district basis within the CCID system, which is a contributing part of the greater Central Valley Project (CVP). The Molasses Ditch is part of the CCID distribution system consisting of a broad network of conveyances that draw and distribute water from the San Joaquin River. Water from the San Joaquin River travels nearly 30 miles through multiple historically interconnected conveyance structures before arriving at the Molasses Ditch. Based on the information presented in AE's report, Reclamation will assume, for the purposes of this undertaking only, that the Molasses Ditch contributes to the eligibility of the CCID conveyance system under Criterion A through association with development of agriculture in the local area (within CCID's water conveyance distribution area derived from the CVP).

An analysis of buried site sensitivity indicates that, given the depositional characteristics of the landform and soils in the APE and with work scope being kept within the footprint of the Ditch, this setting has a low potential for the presence of intact subsurface archaeological sites.

Reclamation has identified and sent letters to Indian Tribes and Native American organizations in the area who might have special knowledge or concerns and requested their assistance in identifying sites of religious and cultural significance that may be located within or nearby the APE. To date, no responses have been received. Should any concerns be subsequently raised, Reclamation will work to address them and make notifications as required.

Reclamation applied the criteria of adverse effect [36 CFR § 800.5(a)] for the current undertaking on the Molasses Ditch which does not possess distinctive or unique design or exceptional construction methods. The ditch and its 15 recorded features are all of common design found along conveyances in the Central Valley. The ditch itself is earthen and its alignment has changed throughout its history. Reclamation finds that the proposal to fund concrete lining, replace metal culverts with concrete pipes, and upgrade the headworks will not affect characteristics that make the Molasses Ditch eligible for listing as contributing to the larger CCID system. The proposed actions will retain the ditch's association with its basic function of conveying water as part of the CCID.

OHP reviewed the documentation and Reclamation's requests and offers the following comments:

- Pursuant to 36 CFR 800.4(a)(1), there are no objections to the APE as defined and documented.

- Pursuant to 36 CFR 800.4(b), it is considered that Reclamation has made a reasonable and good faith effort to identify historic properties within the area of potential effects.

- Pursuant to 36 CFR 800.4(c)(2), **I do not object** that, for the purposes of this undertaking only, Reclamation will treat the Molasses Ditch as eligible for inclusion in the NRHP for being a contributing feature to the eligibility of the CCID conveyance system under Criterion A through association with development of agriculture in the local area via a system of historically interconnected canals and ditches (within CCID's water conveyance distribution area derived from the larger CVP).

- Reclamation has determined that the proposed undertaking will result in no adverse effect to historic properties. Pursuant to 36 CFR 800.5(b), **I concur**.

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

Respectfully,

Julianne Polanco
State Historic Preservation Officer