RECLAMATION

Managing Water in the West

Environmental Assessment

Cawelo Water District Calloway Canal Lining Project

EA-12-08-MP

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

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Mission Statements

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

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

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List of Acronyms and Abbreviations

APE	area of potential effect
CAA	Clean Air Act
CDFG	California Department of Fish and Game
CEQ	Council on Environmental Quality
CFR	Code of Federal regulations
CNDDB	California Natural Diversity Data Base
CWD	Cawelo Water District
Delta	Sacramento-San Joaquin River Delta
DOI	Department of the Interior
EA	Environmental Assessment
ITA	Indian Trust Assets
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
NKWSD	North Kern Water Storage District
PM_{10}	particulate matter less than 10 micrometers in diameter
$PM_{2.5}$	particulate matter less than 2.5 micrometers in diameter
Reclamation	U.S. Bureau of Reclamation
ROW	right-of-way
Service	U.S. Fish and Wildlife Service
SJVAB	San Joaquin Valley Air Board
SJVAPCD	San Joaquin Valley Air Pollution Control District
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SOIP	System Operations Improvement Project
SWP	State Water Project
TLHR	Tulare Lake Hydrologic Region
U.S.	United States
USGS	U. S. Geological Survey

Section 1 Introduction

1.1 Background

In conformance with the National Environmental Policy Act of 1969 (NEPA), as amended, the Bureau of Reclamation (Reclamation) has prepared this Environmental Assessment (EA) to evaluate and disclose any potential environmental impacts associated with implementation of the Cawelo Water District's (CWD) Calloway Canal Lining Project. Reclamation proposes to provide a Department of the Interior (DOI) CALFED Water Use Efficiency Grant to the CWD to support implementation of the Proposed Action.

The CALFED Bay-Delta Program is a 30-year Program (2000-2030) among 25 federal and state agencies with responsibility in the Sacramento-San Joaquin River Delta (Delta). The Program is based on four major resource management objectives that guide its actions to ensuring the Delta has a healthy ecosystem and a reliable water supply for Californians. Those objectives are levee system integrity, water quality, water supply reliability and ecosystem restoration. The Proposed Action would increase the CWD's water supply reliability and the quality of water within the project area.

The CWD was formed in 1965 as part of the State Water Project (SWP). The district is located in the Southern San Joaquin Valley, Kern County, California. Encompassing nearly 45,000 acres, the district lies between State Highway 99 on the west, State Highway 65 on the east, Oildale on the south and the community of McFarland on the north (Figure 1). About 34,000 of CWD's 45,000 acres are irrigated. The principle crops are grapes, citrus, deciduous fruits, and nuts. CWD provides raw water for direct irrigation or water spreading for groundwater recharge, with no water provided for municipal services.

Shortly after its creation, the CWD began cooperating with neighboring North Kern Water Storage District (NKWSD) in the use of conveyance facilities. NKWSD was formed in 1935 and is located north of the Kern River in the southern end of the San Joaquin Valley. The district is bordered by the City of Bakersfield on the south and the City of Delano on the north, and between Highway 99 on the east and the cities of Wasco and Shafter on the west.

In 2006, CWD and NKWSD formulated a plan to enhance the flexibility and efficiency of coordinated operations. The overall project, known as the Systems Operation Improvement Project (SOIP), consists of canal interties, pump stations, flow control structures, and canal lining. Pursuant to California Environmental Quality Act guidelines, NKWSD prepared and completed an Initial Study/Negative Declaration (IS/ND) for the SOIP, including plans to line the Calloway Canal. As part of the IS/ND, NKWSD prepared a *Biological Resource Assessment for North Kern Water District's System Upgrade Project* (Vanherweg 2006).

CWD, in partnership with NKWSD, applied for and was selected as a potential recipient of a CALFED Water Use Efficiency Grant to help fund lining their Calloway Canal as part of the SOIP. The Proposed Action would decrease seepage to a groundwater basin containing constituents of concern by lining a portion of the Calloway Canal (Cross Valley Canal Intertie to

the south and Coffee Road to the north (Figure 2)) with concrete. The Proposed Action would further the goals and objectives of the CALFED program as they apply to water supply reliability and water quality.

This EA describes the existing environmental resources in the Proposed Action area, evaluates the effects of the No Action and Proposed Action alternatives on the resources, and proposes measures to avoid, minimize, or mitigate any adverse effects. This EA was prepared in accordance with NEPA, Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations (CFR) 1500-1508), and DOI Regulations (43 CFR Part 46).

Figure 1 - Project Site Location

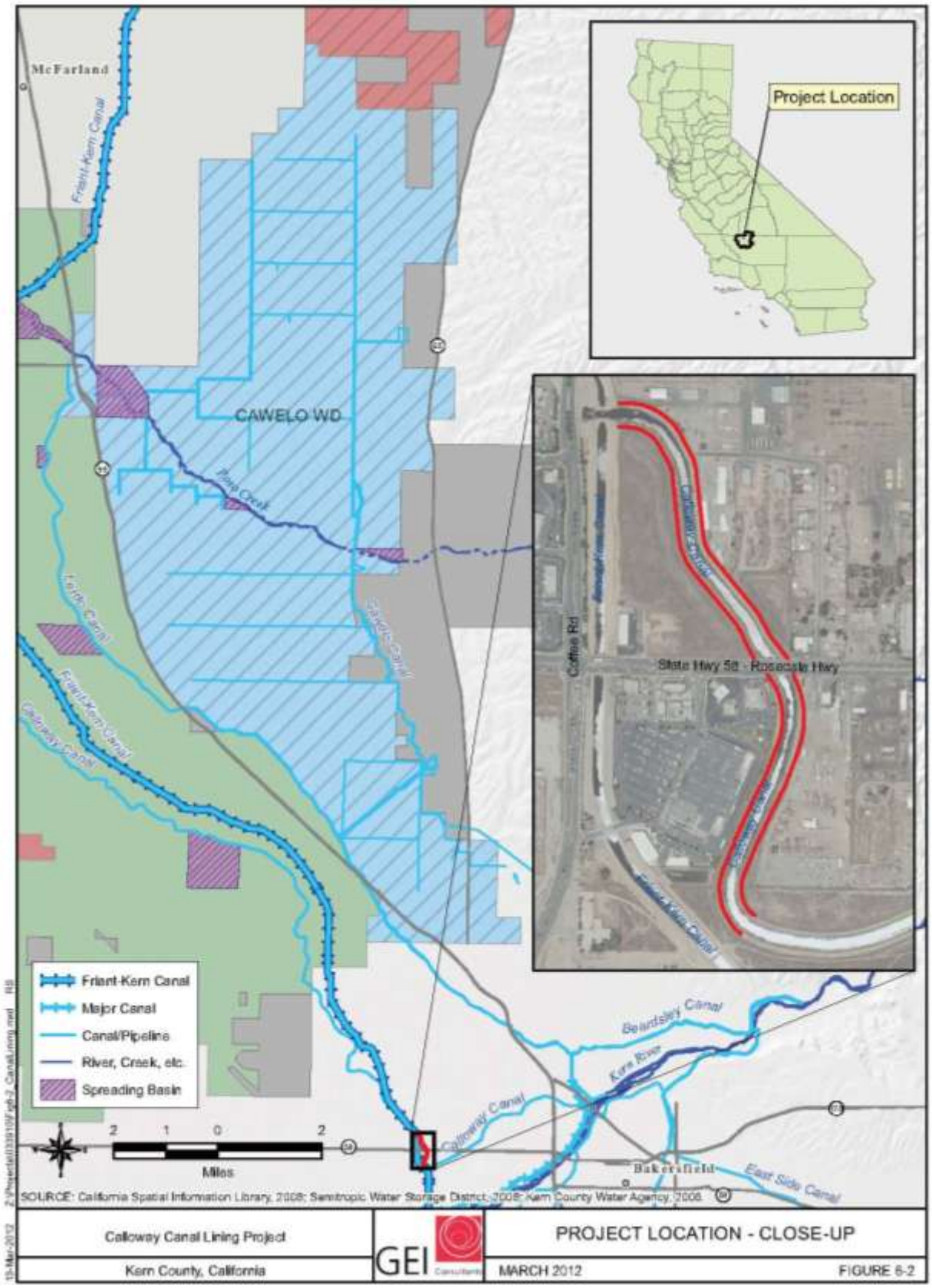
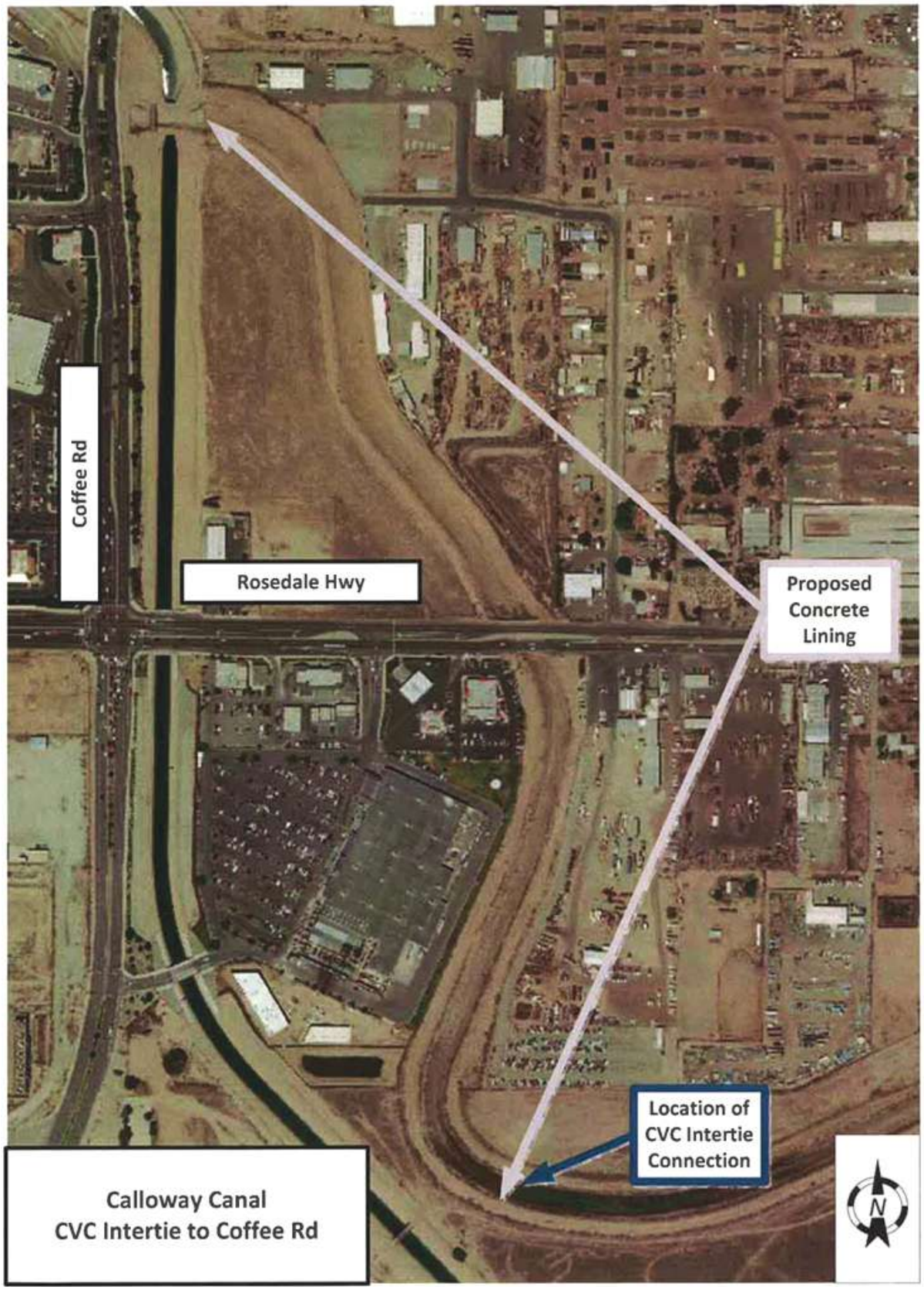


Figure 2 - Project Action Area



1.2 Need for the Proposal

The purpose of the Proposed Action is to decrease the current water losses through seepage in the CWD's Calloway Canal between the Cross Valley Intertie and Coffee Road. The implementation of the Proposed Action would increase operational efficiency in the CWD and decrease recharge to the underlying groundwater basin that contains constituents of concern. .

Based on the City of Bakersfield daily readings, CWD estimates Calloway Canal's historical surface water supply losses would be reduced on the order of 8 acre-feet per day over the 9 month period of expected use, which represents about 2,190 acre-feet per year. The water conserved would either be delivered directly to growers for crop irrigation or to existing direct spreading facilities for groundwater recharge in an area that does not contain constituents of concern.

This EA will analyze the affected environment of the Proposed Action and the No Action Alternatives in order to determine the potential and cumulative impacts to the following:

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

1.3 Resources Not Analyzed in Detail

Effects on several environmental resources were examined and found to be minor. Because of this, the following resources were eliminated from further discussion from this EA: Aesthetic Resources; Fisheries; Geology, Soils, Seismicity, and Minerals; Hazards and Hazardous Materials; Land Use; Noise; Socioeconomics, Population and Housing; Recreation; Transportation and Circulation; and Utilities, Public Services, and Service Systems.

1.3.1 Indian Trust Assets

ITAs are legal interests in assets that are held in trust by the United States (U.S.) for federally recognized Indian tribes or individuals. There are no Indian reservations, rancherias or allotments in the project area. The nearest ITA is a Public Domain Allotment approximately 38 miles east of the project location. The Proposed Action does not have a potential to affect ITAs.

1.3.2 Indian Sacred Sites

There are no identified Indian Sacred Sites within the action area of the proposed project and therefore this project would not inhibit use or access to any Indian Sacred Sites.

1.3.3 Environmental Justice

No significant changes in agricultural communities or practices would result from the Proposed Action, other than potential changes to individual irrigation systems. These changes are not likely to affect agricultural employment, which employs a higher proportion of low-income and minority workers than are employed in the general workforce. Accordingly, the Proposed Action would not have any significant or disproportionately negative impact on low-income or minority individuals within the project area.

Section 2 Alternatives Including Proposed Action

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 that would result from implementation of the Proposed Action.

2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not award a CALFED Water Use Efficiency Grant to CWD that would partially fund the lining of a portion of the Calloway Canal. The unlined canal would continue to lose water to seepage, resulting in water supply inefficiencies and continued contributions to a groundwater basin containing constituents of concern. Conditions would remain the same as existing.

2.2 Proposed Action Alternative

Under the Proposed Action Alternative, Reclamation would award CWD with a CALFED Water Use Efficiency Grant to assist in funding the lining of the Calloway Canal between the Cross Valley Canal Intertie and Coffee Road. The portion of the canal to be modified under the Proposed Action does not contain any structures. Dewatering of the canal would not be necessary due to construction occurring when the canal is dry. All associated construction activities would occur on existing facilities which are surrounded by lands that are fully developed urban areas.

Construction activities would include the following:

- The existing canal would be trimmed to provide a prism at a nominal depth of 8.5 feet with a 50 foot wide bottom and approximately 29' sides at a slope of 3:1.
- Lining would cover approximately 3,523 feet with 4-inch think unreinforced concrete.
- Canal lining would involve approximately 14,092 cubic yards of material.
- Trimming foundation work and the placement of backfill would likely include the use of an excavator, loader, and compaction equipment.
- Access would be through the existing Rosedale Highway access ramps. If necessary, additional access would be through Charity Avenue and property currently being utilized for the Cross Valley-Calloway Canal Intertie.
- Work would be completed within the maintained canal right-of-way (ROW).
- Staging would occur within the existing ROW or property currently being utilized for the Cross Valley-Calloway Canal Intertie.
- Excess material would be placed within the existing canal ROW.

Access and staging may occur outside of the canal ROW. If additional access and staging areas are necessary, adjacent land on the south side of the canal would be used. The property is

disturbed land currently being utilized for staging of fill materials for the Cross Valley-Calloway Canal Intertie Project. The Cross Valley-Calloway Canal Intertie Project is being completed as part of the SOIP, and was included in the 2006 IS/ND completed by NKWSD. The land was cleared and grubbed before utilized.

The construction timeline would be dependent on hydrology, when the canal is dry and unused. If 2013 is a dry year, construction would occur any time after April; if it is a wet year, construction would occur between August and September. The post-project seepage losses would be expected to be near zero but nominal losses would still occur through the concrete joints. The actual canal loss seepage reductions would be verified by continued daily measurements taken by the City of Bakersfield at two weirs to determine the difference in flow.

2.2.1 Environmental Protection Measures

CWD would implement the following environmental protection measures to reduce potential environmental consequences associated with the Proposed Action (Table 1). Environmental consequences for resource areas assume the measures specified would be fully implemented.

Table 1. Environmental Protection Measures

Resource	Measure
Biological Resources	U.S. Fish and Wildlife Service (Service) approved pre-construction protocol level surveys for San Joaquin kit fox shall be conducted no fewer than 14 days and no more than 30 days prior to the onset of any ground-disturbing activity (Service 2011). CWD would follow Standardized Recommendations for Protection of the San Joaquin kit fox prior to and during ground disturbance (Service 2011).
Biological Resources	A protocol level pre-construction burrowing owl survey shall be conducted within 250 ft of areas subject to disturbance no fewer than 14 days and no more than 30 days prior to start of construction according to established guidelines (CDFG 2012). Appropriate avoidance, minimization, or protection measures shall be determined in consultation with the California Department of Fish and Game in the event an active burrow or nest is located in an area subject to disturbance, or within the typical setback.
Air Quality	Implement control measures for construction emissions of particulate matter less than 10 microns in diameter (PM_{10}) according to the San Joaquin Valley Air Pollution Control District's (SJVAPCD) Regulation VIII (SJVAPCD 2012b). One measure includes the use of water with all "land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities" for fugitive dust suppression.

Section 3 Affected Environment & Environmental Consequences

This section identifies the potentially affected environment and the environmental consequences involved with the Proposed Action and the No Action Alternative.

3.1 Water Resources

3.1.1 Affected Environment

Surface Water Resources
A large portion of CWD's surface water supplies is SWP water, through a contract with Kern County Water Agency, with supplementary supplies from Kern River, Poso Creek and recycled water. In order to meet CWD's average requirements of around 100,000 acre-feet, amounts in excess of available surface water supplies are met through groundwater sources. The Calloway Canals nominal design is 1,000 cubic feet per second and typically holds water nine months of the year.

Groundwater Resources
The underlying groundwater is part of the southern San Joaquin Valley groundwater basin, located within the Tulare Lake Hydrologic Region (TLHR). The region is essentially a closed basin, with principal drainages from the Kings, Kaweah, Tule, and Kern Rivers. These streams are the principal source of natural recharge to the underlying groundwater basin with applied irrigation also being a large contributor. The primary constituents of concern within the TLHR are high total dissolved solids, nitrates, arsenic, and organic compounds (DWR 2009). CWD is located within the Kern County subbasin of the TLHR, one of seven subbasins designated by the California Department of Water Resources (DWR 2006).

The Calloway Canal traverses through an industrial area that includes oil refineries and an urbanized area northwest of Bakersfield, en route to the agricultural lands to which the water is delivered.

3.1.2 Environmental Consequences

No Action Alternative
Under the No Action Alternative, the existing operations would be utilized under their current conditions and seepage into the groundwater basin containing constituents of concern would continue.

Proposed Action
The Proposed Action would result in the concrete lining of a portion of the Calloway Canal, reducing water lost to seepage by approximately 2,190 acre-feet per year, based on historical losses calculated in the grant proposal from daily readings from the annual Kern River Report by the City of Bakersfield. The Proposed Action would not generate a new supply of water; rather, it would decrease water lost to seepage in a portion of the Calloway Canal.

Implementation of the Proposed Action would reduce groundwater recharge to an industrial area where recovery of the groundwater would be problematic due to constituents of concern. The conserved water would be used for irrigation or be spread using existing facilities to increase groundwater recharge in areas that do not contain constituents of concern.

Therefore, the Proposed Action would not adversely affect water resources.

3.2 Biological Resources

3.2.1 Affected Environment

The Proposed Action involves construction within a footprint located exclusively within maintained canal ROW and surrounded entirely by lands that have been fully developed urban areas since the CWD was formed in 1965. The crops in CWD are mainly grapes, citrus, deciduous fruits, and nuts. There is no natural habitat remaining on the canal ROW or the immediately adjoining areas due to operation and maintenance activities occurring throughout the year and therefore, suitable habitat for special-status species is absent or uncommon in the Proposed Action. There is no critical habitat in the affected area.

On July 30, 2012, a species list of federally listed, proposed and candidate species potentially occurring in Kern County and the Oildale 7 ½ minute U.S. Geological Survey (USGS) Quadrangle was obtained from the U.S. Fish and Wildlife's (Service) website. The following Table 2 includes those federally listed species with recorded occurrences within the Oildale and immediately surrounding USGS 7.5-minute Quadrangles based on the California Natural Diversity Database (CNDDB). The table also includes the species' status, determination of effects from the Proposed Action, and a summary of the rationale supporting the determination.

Table 2. Special Status Species in Surrounding USGS 7.5-minute Quadrangles				
Common Name	***Scientific Name***	***Status[1]***	***Effect[2]***	***Summary of Effects Determination[3]***
Birds				
Swainson's hawk	*Buteo swansoni*	MBTA	NE	CNDDB[4] records indicate this species occurs within a 10-mile radius of the Proposed Action area. No suitable habitat present.
Western burrowing owl	*Athene cunicularia*	MBTA	NLAA	CNDDB[4] records indicate this species occurs within a 1-mile radius of the Proposed Action area. Environmental Protection Measures would be implemented to avoid potential effects.
Invertebrates				
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	T	NE	No suitable habitat in the Proposed Action area. No elderberry shrubs would be disturbed.
Mammals				
Buena Vista Lake shrew	*Sorex ornatus relictus*	E, X	NE	The draining or drying of wetlands has left little suitable habitat. Canals do not provide suitable habitat as they are generally steep-sided and free of vegetation. No suitable habitat in the Proposed Action area.
San Joaquin kit fox	*Vulpes macrotis mutica*	E	NLAA	CNDDB[4] occurrences within a 1-mile radius of the Proposed Action area. Environmental Protection Measures would be implemented to avoid potential effects.
Tipton kangaroo rat	*Dipodomys nitratoides nitratoides*	E	NE	Previously recorded CNDDB[4] sites within a 5-mile radius of the Proposed Action area have been developed for housing. No suitable habitat in project area.
Plants				
Bakersfield cactus	*Opuntia treleasei*	E	NE	CNDDB[4] records indicate isolated clumps in Kern County, northeast of project area. Believed to be extirpated from Bakersfield due to development. No suitable habitat in project area.

California jewelflower	*Caulanthus californicus*	E	NE	Isolated populations may still occur west of Bakersfield in Kern County. Previously recorded CNDDB[4] sites have been cultivated and developed. Believed to be extirpated from Bakersfield.
Kern mallow	*Eremalche kernensis*	E	NE	CNDDB[4] records indicate this species occurs within a 10-mile radius of the project area. Occurrences located to the west of Bakersfield in alkaline desert habitat. No suitable habitat in project area.
San Joaquin woolly-threads	*Monolopia congdonii*	E	NE	Native vegetation and habitat has been eliminated at previously recorded CNDDB[4] sites. Believed to be extirpated from Bakersfield due to development. No suitable habitat in project area.
Reptiles				
Blunt-nosed leopard lizard	*Gambelia sila*	E	NE	CNDDB[4] records indicate this species occurs within the Oildale Quad and a 10-mile radius of the project area. No suitable habitat present.

1 Status= Listing of Federally special status species, unless otherwise indicated
E: Listed as Endangered
MBTA: Birds protected by the Migratory Bird Treaty Act
T: Listed as Threatened
X: Critical Habitat designated for this species
2 Effects = Effect determination
NE: No Effect to federally listed species anticipated from the Proposed Action.
NLAA: Not Likely to Adversely Affect with Environmental Protection Measures
3 Summary of rationale supporting determination
4 CNDDB = California Natural Diversity Database 2012

Based on the habitat requirements of the listed species that could potentially occur within the Proposed Action area, suitable habitat is absent for the Swainson's hawk, Valley elderberry longhorn beetle, Buena Vista lake shrew, Tipton kangaroo rat, Bakersfield cactus, California jewelflower, Kern mallow, San Joaquin woolly-threads, Blunt-nosed leopard lizard. Therefore, these species are not discussed in this section.

As part of the IS/ND, NKWSD prepared a *Biological Resource Assessment for North Kern Water District's System Upgrade Project* (Vanherweg 2006). Daytime ground surveys for San Joaquin kit fox were completed along the Calloway Canal ROW with a 200 foot buffer area.

Surveys found no sign of recent kit fox use of the project site, however, two potential kit fox dens were found along the Calloway Canal ROW, one of which was located within the Proposed Action area (Vanherweg 2006). Potential dens were defined as "any natural den or burrow within the species' range that has entrances of appropriate dimensions (4 to 12 inches in diameter) to accommodate San Joaquin kit foxes for which, however, there is little to no

evidence of kit fox use" (Vanherweg 2006). Burrowing owl sign and potential burrows were also found along the canal ROW, outside of the Proposed Action area.

An analysis of potential impacts to both western burrowing owl and San Joaquin kit fox are discussed below due to CNDDB occurrences and potential dens and burrows located near the Proposed Action area.

Western Burrowing Owl
Although not a federally protected species, the burrowing owl is protected by the Migratory Bird Treaty Act (MBTA). This small ground-dwelling owl is a year-long resident that exhibits high site fidelity. They live in ground squirrel and other mammal burrows that it appropriates and enlarges for its own purposes (CDFG 2012). Burrowing owls are typically found in short-grass grasslands, open scrub habitats, and a variety of open, human-altered environments, such as the edges of canals or roadways, ditches, and drains along agricultural fields. These owls are active day and night and are opportunistic feeders. Their diet includes insects, amphibians, reptiles, small mammals, and grass material.

Burrowing owls have shown significant declines throughout California in recent years principally due to the conversion of grassland and pasturelands to agricultural and urban uses, and to poisoning programs to control California ground squirrels (*Spermophilus beecheyi*). Other hazards common to agricultural areas in the state that could impact burrowing owls include automobiles, barbed-wire fences, and electric fences (Gervais et al. 2008).

San Joaquin Kit Fox
The San Joaquin kit fox is federally listed as an endangered species. Their diet varies based on prey availability, and includes small to mid-sized mammals, ground-nesting birds, and insects. Kit foxes excavate their own dens, or may use other animals', and human-made structures (culverts, abandoned pipelines, and banks in sumps or roadbeds).

Kit foxes currently inhabit western and southern San Joaquin Valley in grassland and scrubland communities. Primary reasons for the species decline include loss and degradation of habitat (Service 1998), in addition to vehicular traffic.

3.2.2 Environmental Consequences

No Action Alternative
Under the No Action Alternative, Reclamation would not provide grant funds for the lining of the Calloway Canal and conditions would remain the same as described above. There would be no impacts to wildlife and special-status species as no new construction would occur and historical operation and maintenance practices would continue.

Proposed Action
Under the Proposed Action, the potential for impacts to wildlife and special-status species would be limited, since the project would be constructed within the existing, disturbed ROW for CWD. There is the possibility that Western burrowing owl and the San Joaquin kit fox could utilize the project area for burrowing or as a corridor. CNDDB records indicate owl burrows and kit fox occurrences within a 1-mile radius and den sites historically within a 3 mile radius of the project.

Western Burrowing Owl
The Proposed Action could adversely affect the owl's survivorship or disturb their foraging habitat if the owls are within or along the edge of the canal (Gervais et al. 2008). Owls could also become disturbed from factors such as noise and vibration due to heavy equipment which could cause the owls to flee and result in nest failure as well as vehicular strikes. During construction, there is the potential that if owls are present along or near the canal, they could become buried inside burrows.

Environmental Protection Measures
A survey for burrowing owls would be conducted by a qualified biologist within 250 ft of the project area no fewer than 14 days and no more than 30 days prior to construction activities (CDFG 2012). If the survey indicates the presence of burrowing owls, then the mitigation measures to minimize impacts to burrowing owls, their burrows and foraging habitat according to established guidelines would be followed. The California Department of Fish and Game (CDFG) would be consulted in the event occupied burrows or nests within 150 feet of an area subject to disturbance during the non-breeding season (September 1 through January 31), or within 250 ft of an area subject to disturbance during the breeding season (February 1 through August 31) are discovered within the Proposed Project area (CDFG 2012).

San Joaquin Kit Fox
The Proposed Action could cause negative impacts to prey abundance or reduce the number of den sites through habitat modification during construction (Service 1998). Also, kit foxes could potentially be harassed or become buried in their dens. Impacts to kit foxes may also result if an individual uses the canal as a migratory corridor during construction. A survey conducted in 2006, as part of the SOIP, found a potential kit fox den within the Proposed Action area (Vanherweg). The survey found no sign and no evidence of use at the potential dens. A potential den was determined in the survey to be any natural den or burrow between 4 to 12 inches in diameter. Kit fox den entrances are usually 8 to 10 inches in diameter, often with two or more entrances (Service 1998).

Environmental Protection Measures
A Service approved pre-construction protocol level survey would be conducted for kit fox no fewer than 14 days and no more than 30 days prior to initiation of any ground disturbance or construction activity (Service 2011). If the surveys find that no special-status species are present within the project area, Reclamation's determination would remain. If the surveys detect the presence of listed species, then the Proposed Action would halt while Reclamation coordinates with the Service and the appropriate corrective measures have been completed or it has been determined that the species will not be harmed.

To ensure that the construction areas remain unoccupied by kit fox prior to and during ground disturbance, CWD would implement the following avoidance measures for construction and operational requirements, as outlined in the Service's Standardized Recommendations for Protection of the San Joaquin kit fox (Service 2011):

All project-related vehicle traffic will be restricted to established roads, construction areas, and other designated areas. In order to reduce impacts by project-related vehicles, workers will observe the following:

- Maintain a daytime speed of 20-mph throughout the site.
- Minimize construction at night when kit foxes are most active (to the extent possible).

Inadvertent entrapment will be prevented via the following activities:

- Cover all excavated, steep-walled holes or trenches more than 2-feet deep with plywood or similar materials at the close of each working day.
- Construct one or more escape ramps of earthen-fill or wooden planks if the trenches cannot be closed.
- Thoroughly inspect all holes and trenches before they are filled.
- Thoroughly inspect all construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site overnight before the pipe is subsequently buried, capped or otherwise used in any way.
- All food-related trash items will be disposed of in securely closed containers and removed at least once a week from the project site.

An employee education program will be conducted by a qualified biologist consisting of a brief presentation in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and agency personnel involved in the project. The program will include a description of the San Joaquin kit fox and its habitat needs, an explanation of the status of the species and its protection under the Endangered Species Act, and a list of measures being implemented to avoid and minimize the chance of impacts to the species during project construction and implementation. A fact sheet conveying this information will be provided to project personnel. The Sacramento Fish and Wildlife Office and CDFG shall be notified in writing within three working days of any accidental death or injury to a kit fox during project related activities.

The Proposed Action area may be utilized by the Western burrowing owl and San Joaquin kit fox. With implementation of the previously described avoidance and minimization measures, Reclamation has determined that there would be no direct or indirect effects of the action on the species and there would be no interrelated or interdependent effects of other actions. The Proposed Action would not be beneficial, but would be insignificant and discountable and therefore may, but is not likely to adversely affect the Western burrowing owl and San Joaquin kit fox.

The Proposed Action would not result in a significant change in the surrounding environment and would not result in short-term or long-term adverse impacts to biological resources.

3.3 Air Quality

Section 176 (c) of the Clean Air Act (CAA) (42 USC 7506 (c)) requires that any entity of the Federal government that engages in, supports, or in any way provided financial support for,

licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable State Implementation Plan (SIP) required under Section 110 (a) of the CAA (42 USC 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 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.

3.3.1 Affected Environment

The Proposed Action lies within the San Joaquin Valley Air Basin (SJVAB), the second largest air basin in the State. Air basins share a common "air shed", the boundaries of which are defined by surrounding topography. Although mixing between adjacent air basins inevitably occurs, air quality conditions are relatively uniform within a given air basin. The San Joaquin Valley experiences episodes of poor 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.

Despite years of improvements, the SJVAB does not meet all State and Federal health-based air quality standards. To protect health, the SJVAPCD is required by Federal law to adopt stringent control measures to reduce emissions. On November 30, 1993, the Environmental Protection Agency promulgated final general conformity regulations at 40 CFR 93 Subpart B for all federal activities except those covered under transportation conformity. The general conformity regulations apply to a proposed Federal action in a non-attainment or maintenance area if the total of direct and indirect emissions of the relevant criteria pollutants and precursor pollutant caused by a proposed action equal or exceed certain emissions thresholds, thus requiring the Federal agency to make a conformity determination.

3.3.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative, there would be no impacts to air quality since no construction would take place.

Proposed Action

Construction emissions would vary from day to day and by activity, timing and intensity, and wind speed and direction. Generally, air quality impacts from the Proposed Action would be localized in nature.

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 PM_{10} and $PM_{2.5}$.

Large earth-moving equipment, trucks, and other mobile sources powered by diesel or gasoline are also sources of combustion emissions, including nitrogen dioxide, carbon monoxide, volatile organic compounds, sulfur dioxide, and small amounts of air toxics. Table 3 below provides a

summary of the estimated emissions during construction against federal and local emission thresholds in tons per year.

Table 3 - Estimated Project Emissions During Construction and Federal and Local Emissions Thresholds in tons per year				
Pollutant	Attainment Status[a]	Thresholds for Federal Conformity Determinations[b]	Local Significance Thresholds[b]	Estimated Project Emissions[c]
VOC[1] (as an ozone precursor)	Nonattainment/Extreme (8-hour ozone)	10	10	.12
NO_x[2] (as an ozone precursor)	Attainment	50	10	.89
PM_{10}[3]	Nonattainment	100	15	.52
$PM_{2.5}$[4]	Nonattainment	100	15	.14
CO[5]	Attainment/Unclassified	100	---	.46

1 = volatile organic compounds
2 = nitrogen oxides
3 = particulate matter less than 10 micrometers in diameter
4 = particulate matter less than 2.5 micrometers in diameter
5 = carbon monoxide
[a]SJVAPCD (2012a)
[b]40 CFR 93.153
[c]Construction emissions estimated with URBEMIS version 9.2.4 (2012)

Comparison of the estimated Proposed Action emissions (without mitigation) and the thresholds for Federal and local conformity determinations (Table 3) indicates that project emissions are estimated to be below these thresholds. Notwithstanding this observation, the Proposed Action would comply with the SJVAPCD's Regulation VIII (SJVAPCD 2012b) control measures for construction emissions of PM_{10}. One of these control measures includes the use of water with all "land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities" for fugitive dust suppression.

The Proposed Action would involve short-term impacts consisting of emissions during construction, which have been estimated at about 108.16 tons of carbon dioxide; well below the Environmental Protection Agency thresholds (URBEMIS 2012). Accordingly, project construction and operations under the Proposed Action would result in *de minimis* impacts to global climate change. Project construction and operations under the Proposed Action would not result in adverse impacts to air quality beyond Federal thresholds.

3.4 Cultural Resources

In an effort to identify historic properties, Reclamation reviewed its archaeological site index and project data, and conducted a records search at the South San Joaquin Valley Information Center. Two previous cultural resources surveys have been conducted within the area of potential effect (APE). Only one cultural resource, the Calloway Canal (CA-KER-8810H), has been recorded within the APE. The Calloway Canal is a 30-mile long canal that is both lined and unlined. The first seven miles of canal were constructed between 1875 by O.P. Calloway and 1877 by the Kern County Land and Water Company, who subsequently expanded it to its current 30 mile length. Since that time, the canal prism, head gates, weirs, and appurtenant features have been repaired, replaced, and modified to maintain its functionality. The segment of the Calloway Canal in the APE is situated in a built environment characterized by commercial and road development. The site record for CA-KER-8810H that is on file at the South San Joaquin Valley Information Center includes California Office of Historic Preservation correspondence (dated November 10, 2008) concurring with a determination that the Calloway Canal is ineligible for listing on the National Register of Historic Places.

Reclamation consulted with the California State Historic Preservation Officer (SHPO) June 22, 2012 regarding a finding of no effects to historic properties pursuant to 36 CFR Part 800.4(d)(1). SHPO concurred with Reclamations' findings and determination on June 27, 2012.

As the Proposed Action will not affect historic properties, and SHPO has concurred, Reclamation has no further action under Section 106 of the National Historic Preservation Act.

3.5 Cumulative Effects

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.

There are no adverse impacts associated with implementing the Proposed Action, and therefore there are no cumulative effects to consider.

Section 4 Consultation & Coordination

Several Federal laws, permits, licenses and policy requirements have directed or guided the National Environmental Policy Act analysis and decision making process of this EA.

4.1 Public Review Period

Reclamation will make the EA available for a 30 day period. Additional analysis will be prepared if substantive comments identify impacts that were not previously analyzed or considered.

4.2 State Historic Preservation Officer

Reclamation consulted with SHPO June 22, 2012 regarding a finding of no effects to historic properties pursuant to 36 CFR Part 800.4(d)(1). SHPO concurred with Reclamations' findings and determination on June 27, 2012.

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

Section 7 of the Endangered Species Act requires Federal agencies to ensure that discretionary federal actions do not jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of the critical habitat of these species.

Reclamation sent a memo to the Service on November 26, 2012, requesting concurrence with a may affect, not likely to adversely affect determination for the San Joaquin Kit Fox based on implementation of the avoidance measures presented previously in Section 3.2.2.

Section 5 References

CDFG (California Department of Fish and Game). 2012. Staff Report on Burrowing Owl Mitigation. California Department of Fish and Game, Sacramento, CA.

CNDDB (California Natural Diversity Database). 2012. California Department of Fish and Game's Natural Diversity Database, RareFind Version 4. July 30, 2012.

DWR (California Department of Water Resources). 2009. California Water Plan Update 2009; Volume 3 – Regional Reports; Tulare Lake Hydrologic Region. California Department of Water Resources.

DWR (California Department of Water Resources). 2006. California Groundwater Bulletin 118 2003: http://www.water.ca.gov/groundwater/ Accessed: July 26, 2012.

U.S. Fish and Wildlife Service. 1998. Recovery Plan for the Upland Species of the San Joaquin Valley, California. Portland, OR.

U.S. Fish and Wildlife Service. 2011. Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance. Sacramento, CA.

U.S. Fish and Wildlife Service. 2012. Sacramento Fish and Wildlife Office. Endangered Species List. http://www.fws.gov/sacramento/. Accessed: July 23, 2012.

GEI (Geotechnical Engineers, Inc.). 2007. Poso Creek Integrated Regional Water Management Plan; GEI Consultants, Inc.; July 2007.

Gervais, J.A., D.K. Rosenberg, and L.A. Comrack. 2008. Burrowing Owl (*Athene cunicularia*). In: Shuford, W.D. and Gardali T., editors: California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, CA, and California Department of Fish and Game, Sacramento.

North Kern. 2006. Initial Study of the Environmental Aspects of the 2006 System Operations Improvement Project; North Kern Water Storage District, Kern County, CA; February 2006.

SJVAPCD (San Joaquin Valley Air Pollution Control District). 2012a. Air Quality Information. Resources. Ambient Air Quality Standards & Valley Attainment Status. Website: http://www.valleyair.org/index.htm . Accessed: September 5, 2012.

SJVAPCD (San Joaquin Valley Air Pollution Control District). 2012b. Rules and Regulations. Regulation VIII. Website: http://www.valleyair.org/index.htm. Accessed: September 5, 2012.

URBEMIS (The URBan EMISsions). 2012. Air Quality Analysis Urbemis 2007 Environmental Management Software. Windows Version 9.2.4. September 5, 2012.

Vanherweg, William J. 2006. Biological Resource Assessment for North Kern Water District's System Upgrade Project. Biological Consultant.