RECLAMATION

Managing Water in the West

Environmental Assessment Davis & Weber Counties Canal Company Water Conservation Project

PRO-EA-15-004

Provo Area Office
Provo, Utah
Upper Colorado Region

U.S. Department of the Interior
Bureau of Reclamation
Provo Area Office
Provo, Utah

October 2015

Mission Statements

The mission of the Department of the Interior is to protect and manage the Nation's natural resources and cultural heritage; provide scientific and other information about those resources; and honor its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities.

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

Environmental Assessment
Davis & Weber Counties
Canal Company
Water Conservation Project

PRO-EA-15-004

Davis County and Weber County, Utah
Upper Colorado Region
Provo Area Office
Provo, Utah

prepared by *Beth Reinhart*
Provo Area Office

U.S. Department of the Interior
Bureau of Reclamation
Provo Area Office
Provo, Utah

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PRO-FONSI-15-004

U.S. Department of the Interior
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FINDING OF NO SIGNIFICANT IMPACT

Environmental Assessment Davis and Weber Counties Canal Company Water Conservation Project
Davis County and Weber County, Utah

Recommended by:

Beth Reinhart
Chief, Environmental Group

9/28/15
Date

Concur:

Mary Halverson
Acting Manager, Water and Environmental Resources Division

10/2/15
Date

Approved by:

Wayne G. Pullan
Area Manager, Provo Area Office

10/2/2015
Date

Introduction

In compliance with the National Environmental Policy Act of 1969, as amended (NEPA), the Bureau of Reclamation, Provo Area Office, Upper Colorado Region has conducted an Environmental Assessment (EA) for a proposed action to replace approximately 1,000 feet of open canal with 66-inch reinforced concrete pipe (RCP), install two 10kW hydropower turbines and 5 meters. Reclamation is the lead agency for the purposes of compliance with the NEPA for this proposed action. The cooperating agency for this NEPA analysis is the Davis and Weber Counties Canal Company.

The EA was prepared by Reclamation to address the above proposed action to replace a section of open canal with a buried RCP. The purpose of the Proposed Action is to eliminate seepage losses and to allow for a higher percentage of diverted water to reach points of use. This will allow for improved irrigation success on fields and pastures and increased growth of grass and crops.

Alternatives

The EA analyzed the No Action Alternative and the Proposed Action Alternative to replace 1,000 linear feet of open canal with RCP, install two 10kW hydropower turbines and 5 meters. The decision is to implement the proposed action alternative. Environmental commitments that are integral to the Proposed Action are as follows:

1. **Additional Analysis**. If the Proposed Action were to change significantly from what is described in this document, additional environmental analyses will be undertaken as necessary.

2. **Cultural Resources**. If any cultural materials are discovered during construction, work in the area shall halt immediately, the lead Federal agency must be contacted, and the materials evaluated by an archaeologist or historian meeting the Secretary of the Interior's Professional Qualification Standards (48 FR 22716, Sept. 1983).

3. **Construction Activities Confined to Surveyed Corridor**. All construction activities will be confined to areas previously surveyed for cultural and biological resources.

4. **Roads.** Existing roads will be used whenever possible for project activities. Access will also be required along the proposed pipeline route during construction.

Related NEPA Documents

There are no other Environmental Assessments or NEPA documents that are currently being prepared that are related to, but not part of the scope of this EA

Decision and Finding of No Significant Impact

Based upon a review of the EA and supporting documents, I have determined that implementing the proposal will not significantly affect the quality of the human environment, individually or cumulatively with other actions in the area. No environmental effects meet the definition of significance in context or intensity as defined at 40 CFR 1508.27. Therefore, an Environmental Impact Statement is not required for this proposed action. This finding is based on consideration of the context and intensity as summarized here from the EA.

Context
The affected localities are Davis County and Weber County, Utah, within the Upper Colorado Region.

Intensity
The following discussion is organized around the 10 significance criteria described in 40 CFR 1508.27. These criteria were incorporated into the resource analysis and issues considered in the EA.

1. **Impacts may be both beneficial and adverse**. The proposed action would impact resources as described in the EA. The following short-term effects of the proposed action are predicted, noise associated with the piping and enclosure of the canal and revegetation of the disturbed area. Long-term predicted effects are beneficial and include the conservation of 3,440 acre-feet of water annually.

None of the environmental effects discussed in detail in the EA are considered significant.

2. **The degree to which the selected alternative will affect public health or safety or a minority or low-income population.** The proposal will have no significant impacts on public health or safety. No minority or low income community would be disproportionately affected by the proposed action.

3. **Unique characteristics of the geographic area**. There are no park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas that would be affected by the proposal.

4. **The degree to which the effects on the quality of the human environment are likely to be highly controversial.** The effects of the proposed work on the quality of the human environment are not controversial.

5. **The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks**. There are no predicted effects on the human environment that are considered highly uncertain or that involve unique or unknown risks.

6. **The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.** This action would not establish a precedent for future actions with significant effects, because there

are no significant effects as a result to this action. The action does not represent a decision in principle about future consideration.

7. **Whether the action is related to other actions which are individually insignificant but cumulatively significant.** Documents above; however, significant cumulative effects are not predicted, as described in the EA.

8. **The degree to which the action may adversely affect sites, districts, buildings, structures, and objects listed in or eligible for listing in the National Register of Historic Places**. The State Historic Preservation Officer has concurred with a determination of an adverse effect to a historic property as a result of this proposal. The parties have agreed upon ways to accommodate historic preservation concerns as the undertaking proceeds through a signed memorandum of agreement.

9. **The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.** There are no endangered or threatened species or critical habitat affected by this action. Therefore, a no effect determination is made

10. **Whether the action threatens a violation of Federal, state, local, or tribal law, regulation or policy imposed for the protection of the environment**. The project does not violate any federal, state, local, or tribal law, regulation, or policy imposed for the protection of the environment. In addition, this project is consistent with applicable land management plans, policies, and programs.

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Chapter 1 Purpose and Need for the Proposed Action

1.1 Introduction

This Environmental Assessment (EA) has been prepared for the U.S. Bureau of Reclamation and the Davis and Weber Counties Canal Company (DWCCC), to assess the potential environmental impacts of the proposed improvements to the DWCCC's irrigation delivery system located in Davis and Weber Counties, Utah (Figure 1.1 Project Location Map). The Federal action evaluated in this EA is whether Reclamation should authorize the use of Federal funds to replace the existing open portions of the Davis and Weber Counties Canal (Canal).

This document has been prepared as required by the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ), and the U.S. Department of Interior's (Interior) NEPA implementing regulations. If potentially significant impacts to the environment are identified through the environmental evaluation, an Environmental Impact Statement (EIS) will be prepared. If no significant impacts are identified, a Finding of No Significant Impact (FONSI) will be issued by Reclamation.

1.2 Background

1.2.1 WaterSMART

As Interior's primary water management agency, Reclamation's mission is to manage, develop, and protect water, and water related resources, in an environmentally and economically sound manner. A key component of Reclamation's activities is to support water conservation and assist resource managers in making decisions regarding water use. Reclamation's WaterSMART Program administers grants, funds, scientific studies, and provides technical assistance to state and local entities to support conservation activities. Established in February 2010, by U.S. Secretary of the Interior Ken Salazar, the WaterSMART Program was developed to meet the goals outlined in the Omnibus Public Land Management Act of 2009. Subtitle F of the Act, also known as the SECURE Water Act, established that "adequate and safe supplies of water are fundamental to the health, economy and ecology of the United States" and authorizes Federal agencies to work with local entities to address issues that jeopardize the security and supply of water (Reclamation 2015).

1.2.2 The Davis and Weber Counties Canal Company

The DWCCC was established in 1884, to provide irrigation water for agricultural users in Davis and Weber Counties. Echo Reservoir and East Canyon Reservoir are integral parts of Reclamation's Weber Basin Project, and provide the primary storage for the DWCCC irrigation system. Water from both reservoirs is released into the Weber River and then diverted into the Canal. Water is eventually diverted into the Roy and Syracuse irrigation sub-basins. The Canal provides water to over 90 irrigation ditches and 4 secondary water reservoirs owned and operated by DWCCC.

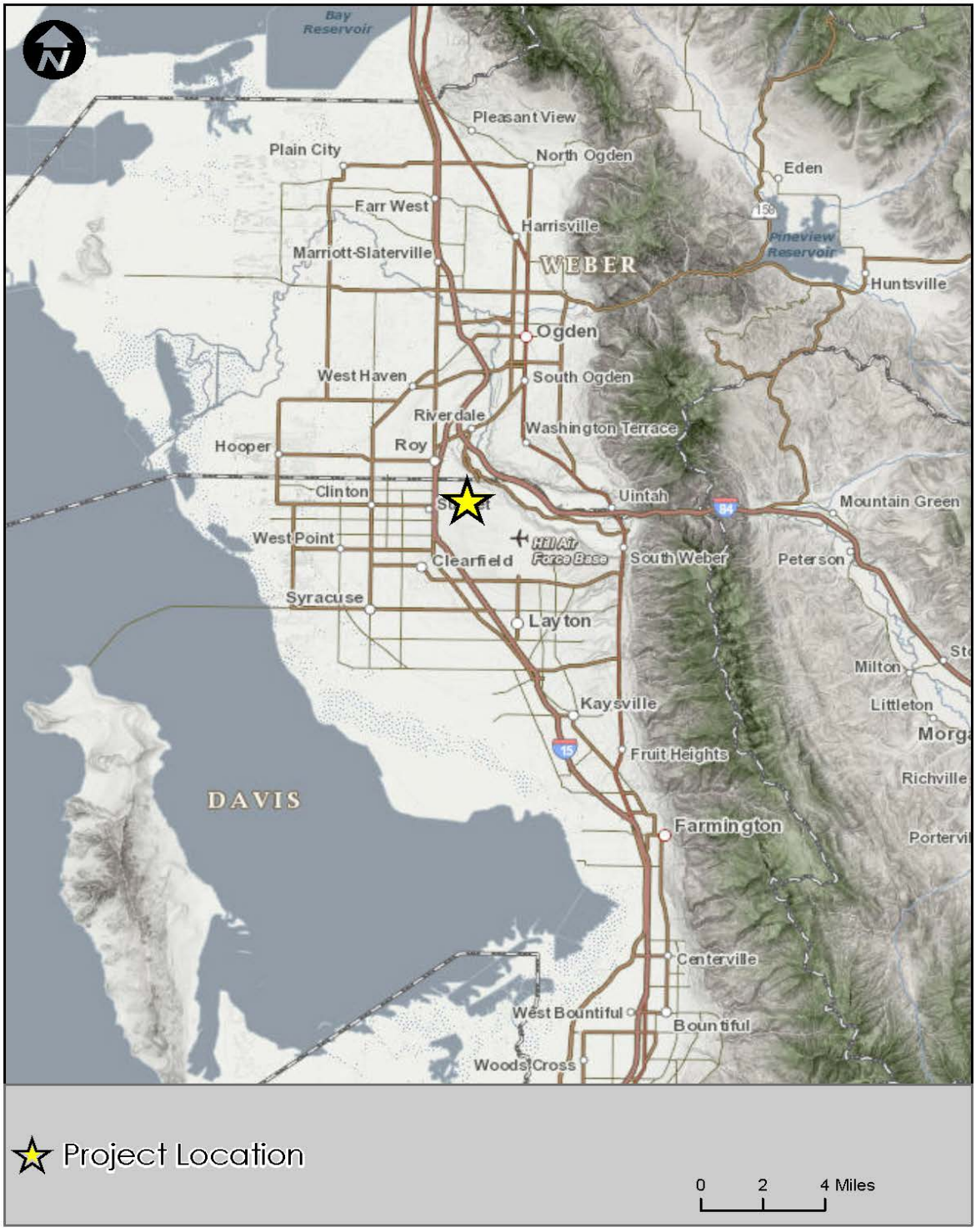

Figure 1.1
Project Vicinity Map

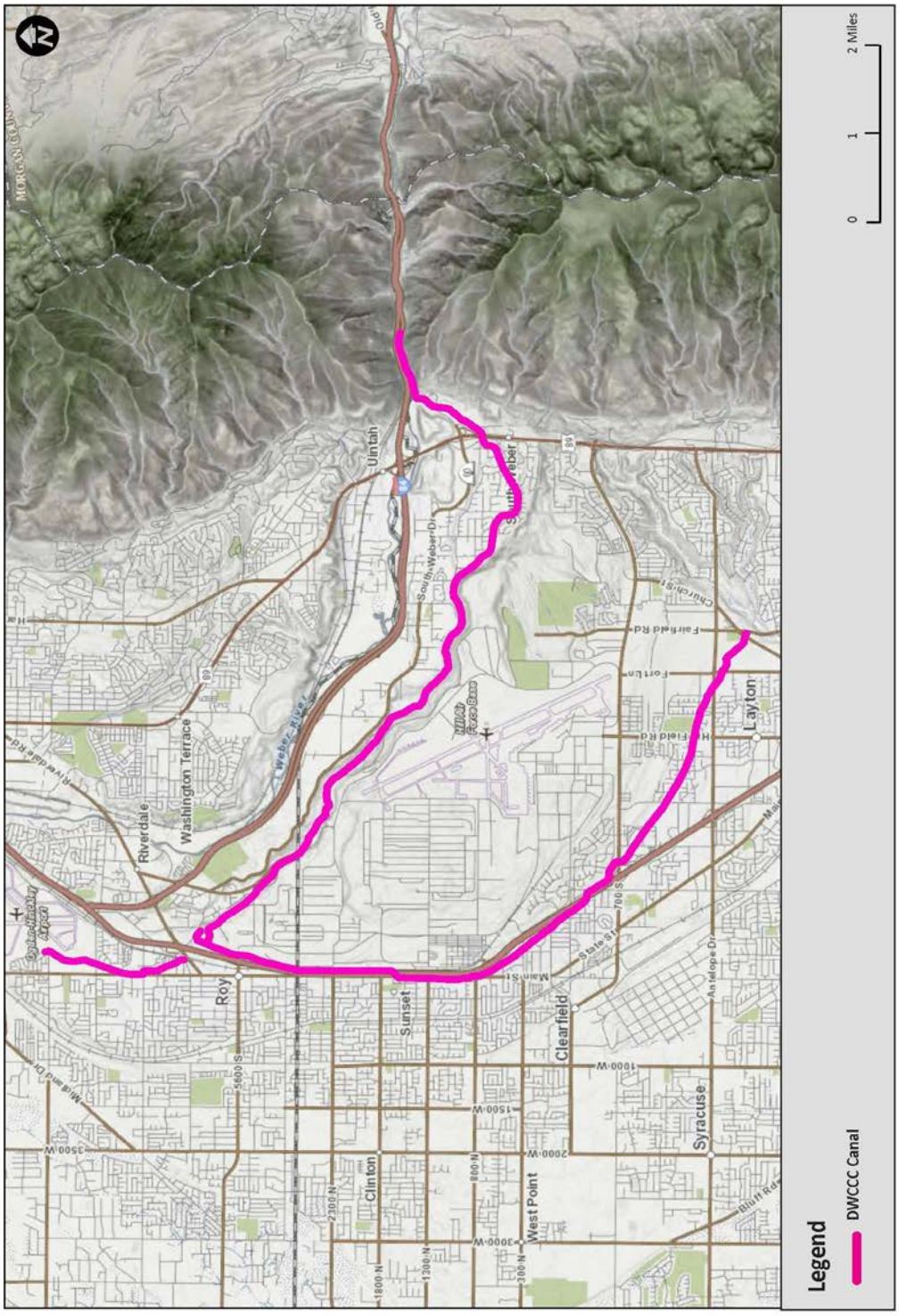

Figure 1.2
Project Location Map

The DWCCC serves over 41,000 acres of irrigated land. The Canal is approximately 17.2 miles long, running from the diversion on the Weber River in Weber Canyon to its terminus at an impoundment reservoir in Layton. DWCCC's service area has experienced large-scale residential growth in the past ten years, increasing the water requirements for secondary and municipal use.

1.3 Purpose and Need for the Proposed Action

The Federal action evaluated in this EA, is whether or not Federal funds should be used to implement the proposed project improvements for the Canal. The Proposed Action would replace 9.2 miles of open portions of the Canal with a pipeline, increase the efficiency of the DWCCC delivery system, provide new meters, and place small hydropower generators in the Canal. The need for the Proposed Action, consistent with Reclamation's WaterSMART Program, is to improve the efficiency of the existing system and reduce the amount of water lost to seepage, evapotranspiration, and operational water losses. The Proposed Action would also reduce routine maintenance costs.

1.4 Decisions to be Made

If the Proposed Action is selected, Reclamation would authorize the use of Federal funds to pipe the Canal and associated improvements, to increase the efficiency of the DWCCC irrigation system.

1.5 Permits and Authorizations

If the Proposed Action is approved the following permits would be required prior to project implementation:

- Utah Pollution Discharge Elimination Permit (UPDES) – This permit would be issued to the Contractor by the Utah Division of Water Quality and would comply with Section 402 of the Clean Water Act for actions disturbing more than one acre of ground.
- Construction Permit – A construction permit would be obtained from Davis County for excavation activities.

Compliance with the following laws and Executive Orders (EO) are also required prior to and during project implementation:

1.5.1 Natural Resource Protection Laws

- Endangered Species Act (ESA) of 1973 as amended (16 U.S.C 1531-1544, 87 Stat. 884)
- Clean Water Act (CWA) of 1972 as amended (33 U.S.C. 1251 et seq.)
- Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-712)

- Bald and Golden Eagle Protection Act (BGEPA) of 1940 (16 U.S.C. 668-668c)
- Comprehensive Environmental Response Compensation and Liability Act (CERCLA) of 1980 (42 U.S.C. 9601 et seq.)
- Superfund Amendments and Reauthorization Act (SARA) of 1986 (6 U.S.C. Public Law 107-296)
- Resource Conservation and Recovery Act (RCRA) of 1976 (42 U.S.C. 9601)

1.5.2 Cultural Resource Laws

- National Historic Preservation Act (NHPA) of 1966 (16 U.S.C. 470 et seq.)
- Archaeological Resources Protection Act (ARPA) of 1979 (16 U.S.C. 470aa-470mm et seq.)
- Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 (25 U.S.C. 3001 et seq.)
- Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines (48 FR 44716)
- American Indian Religious Freedom Act (AIRF) of 1978 (42 U.S.C. Public Law 95-341)

1.5.3 Paleontological Resource Laws

- Paleontological Resources Preservation Act (PRPA) of 2009 [Section 6301-6312 of the Omnibus Land Management Act of 2009 (Public Law 111-11 123 Stat. 991-1456)]

1.6 Relationships to Other Projects

In 2010, Reclamation completed an EA and issued a FONSI for the use of Federal funds to pipe portions of the Canal and to replace the Canal headworks in the Weber River, the forebay channel, and associated gates. The proposed action evaluated in this EA addresses the areas of the Canal which were not improved by the 2010 project.

Chapter 2 Alternatives

2.1 Introduction

The Proposed Action analyzed in this EA, is Reclamation's authorization of the use of Federal funds for the enhancement deemed most suitable for the proposed improvements under present conditions. This EA will be used to determine the potential effects on the human and natural environment, and will serve to guide Reclamation's decisions, along with other pertinent information, about whether or not to implement the Proposed Action. The Proposed Action is analyzed in comparison to a No Action Alternative in order to determine potential effects.

If Reclamation decides to implement the Proposed Action, DWCCC would be authorized to proceed with the piping of the Canal, including water conveyance system improvements associated with the pressurization and metering of the DWCCC irrigation system. If authorized to proceed, DWCCC would construct, operate, and maintain the new pipeline in place of the existing open Canal. The new water conveyance system, existing easements and newly acquired easements, would be owned and operated by DWCCC.

2.2 No Action Alternative

Reclamation would not authorize the use of Federal funds for piping the Canal under the No Action Alternative. The existing open segments of the Canal would continue to deliver water with no improvements for replacing the deteriorating lined segments of the Canal, or for reducing the amount of water that is lost to seepage. Approximately 3,440 acre-feet (AF) of water would continue to be lost annually due to seepage along the unpiped portions of the Canal. The failing concrete liner would continue to deteriorate eroding the fine soils in the area. It is likely that this erosion will cause a future Canal breach.

2.3 Proposed Action

Under the Proposed Action, Reclamation would replace approximately 1,000 feet of the unlined open Canal, with a 66-inch reinforced concrete pipe (RCP), and would pipe 3,430 feet of the deteriorating concrete lined open Canal with two 72-inch RCP. The project would include the installation of meters at five turnouts along the Canal. This project would also place two 10kW hydropower generation turbines in the Canal near the headworks. The placement of the hydropower turbines in the Canal would not result any new land disturbance, would be entirely

contained within the existing Canal, and would be located in an area that was previously evaluated in the 2010 EA prepared by Reclamation.

DWCCC intends to pursue additional funding from Reclamation to pipe the remaining segments of the Canal, those areas that are outside of the areas that were funded under the 2014 WaterSMART program. Therefore, this EA also evaluates impacts along a 9.2-mile corridor of the Canal (covering both those segments that are currently funded and those areas for which DWCCC intends to pursue future funding). The project area evaluated in this EA begins near the Davis-Weber County line and extends along the Canal corridor to the end of the Canal at an impoundment structure located in Layton (Figure 2.1 Proposed Action).

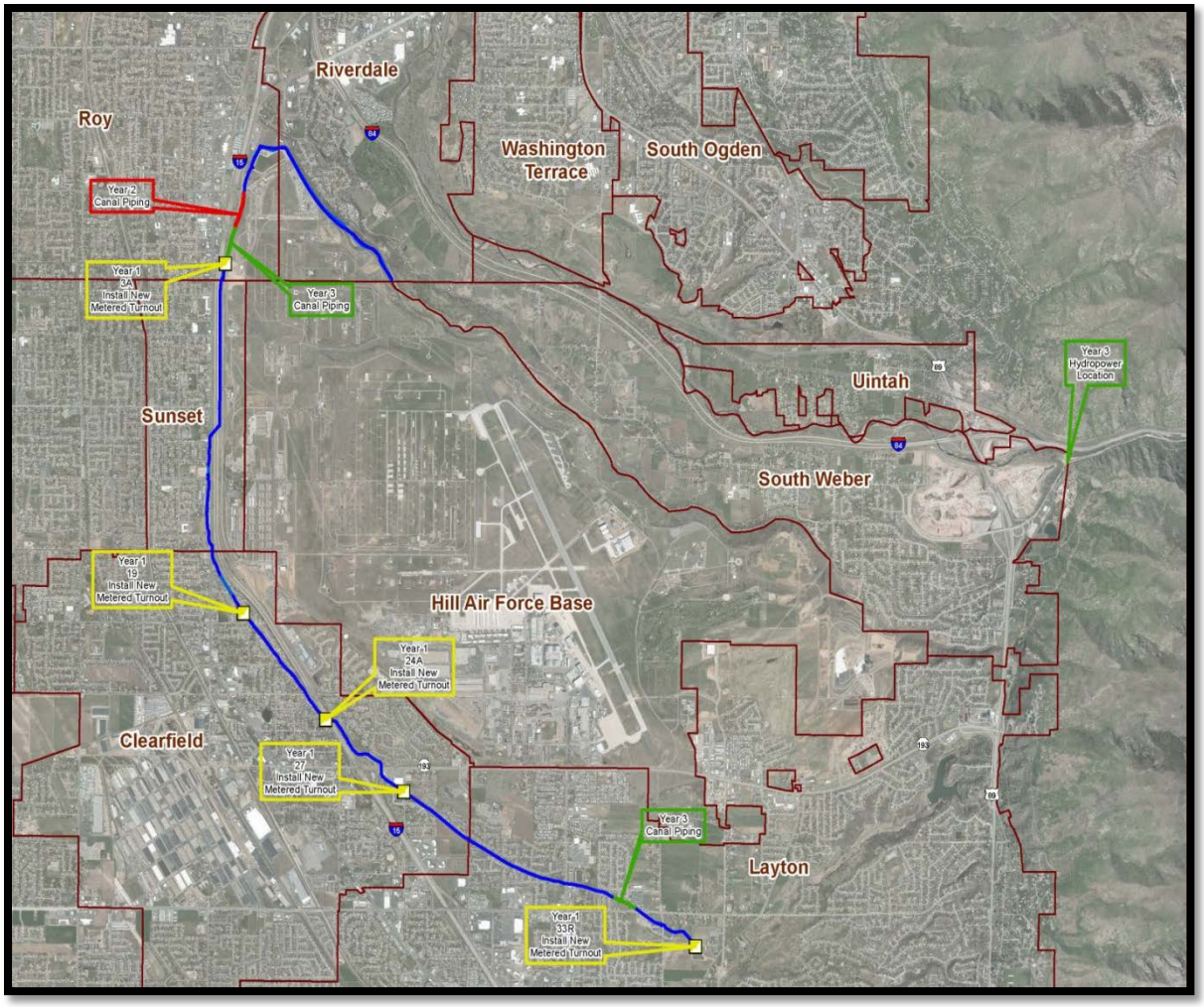

Figure 2.1
Proposed Action

2.3.1 Easements

No permanent easements, right-of-way acquisition, or temporary construction easements would be required for the implementation of the Proposed Action. All project improvements and associated construction activities would take place along land owned, or held in perpetual easement for the operation and maintenance of the Canal.

2.3.2 Canal Excavation

Piping the existing lined and unlined portions of the Canal would not require excavation outside of the existing Canal alignment. All excavated material would be stockpiled onsite and would be used for backfill over the new pipeline. A maintenance access road that currently exists adjacent to the Canal would be used for construction access to minimize disturbance to the surrounding area.

2.3.3 Crossings

No new roadway crossings or drains would be required under the Proposed Action. Existing roadway crossings would be left in place or improved with a new structure in the same location.

2.3.4 Transportation Requirements

An access road exists along the Canal alignment and would be used for ongoing operation and maintenance. Existing local, county, and state transportation routes would be utilized for the hauling of construction equipment and material. No traffic rerouting, disruptions to traffic in the area, or construction of additional access roads would be required.

2.3.5 Standard Operating Procedures

Standard operating procedures (SOPs) would be followed during construction, operation, and maintenance of the Proposed Action. The SOPs and features of the Proposed Action have been formulated to avoid or minimize adverse impacts on resources in the area. A preconstruction meeting with the contractor, and DWCCC's representative, would be held prior to commencing construction on the project to review and assess SOPs, environmental commitments, and other proscribed measures. Weekly project team meetings would be held during construction to assess the progress of the work.

2.3.6 Socioeconomics

Davis County's population was 306,479 in 2010 (Wikipedia, 2015), which increased 28.2 percent from 2000. Hill Air Force Base is the area's largest employer, followed by the Davis School District, Lagoon Amusement Park, and Lifetime Products.

Weber County's population was 231,236 in 2010 (Wikipedia, 2015), which increased 17.7 percent from 2000. Leading area employers include Hill Air Force Base, Weber State University, Weber School District, and the Internal Revenue Service. The Project construction costs under the Action Alternative have been estimated at $3,050,240, to be spent over 3 years. Though it is

currently unknown whether a local contractor would be used or where the materials would be sourced, there would undoubtedly be some minor economic benefits to the area for fuel, retail, food, and other services. However, these benefits would not be significant due to the size and economic diversity of the area.

Chapter 3 Affected Environment and Environmental Consequences

3.1 Introduction

The existing conditions of the project area and the potential impacts from the No Action Alternative and the Proposed Action are analyzed in this chapter. The Affected Environment section details the present conditions and characteristics of each resource. The Environmental Consequences section presents an analysis of the potential impacts under the No Action Alternative and the Proposed Action.

3.2 Project Area

The project area includes a 9.2-mile stretch of the existing Canal, located in the cities of Riverdale, Roy, Sunset, Clearfield and Layton. The project area is contained within sec. 6, 7, 8, 9 and 16, T. 4 N., R. 1 W.; sec. 1, T. 4 N., R. 2 W.; sec. 13, 24, 25, 26, 35 and 36, T. 5 N., R. 2 W.; and sec 19, T. 5 N., R. 1 W.; of the Salt Lake Base and Meridian, Davis and Weber Counties, Utah. The elevation in the project area ranges from approximately 4,500 to 4,700 feet above sea level. Land use in the area includes residential, agricultural, and commercial uses.

3.3 Resource Eliminated from Analysis

Resources that do exist within the project area or those that would not be impacted by the Proposed Action were not carried forward for additional analysis. The resources that were eliminated from further analysis are described in Table 3.1.

Table 3.1
Resources Eliminated from Further Analysis

Resource	Rationale for Elimination from Further Analysis
Environmental Justice	There would be no impact to populations or persons meeting the definition of environmental justice. Furthermore, the Proposed Action would not involve relocations, health hazards, hazardous waste, property takings, or economic impacts.
Noise	There would be no long-term increases to the ambient noise levels from the implementation of the Proposed Action. Noise from construction activities is likely to temporarily increase noise levels in the project area. Noise impacts would be implemented with the use of Best Management Practices (BMPs).
Recreation Resources	There are no designated recreation resources in the project area and there would be no direct effects on recreation from the Proposed Action.
Urban Quality and Design of the Built Environment	The project area is located entirely within the existing Canal easement that extends along agricultural and residential areas. There are no urban resources that would be impacted by the Proposed Action.
Visual Resources	There would be no impact on visual resources within the project area from the Proposed Action.
Wilderness and Wild and Scenic Rivers	There are no wilderness areas, Wild and Scenic Rivers or Study Rivers within or adjacent to the project area (NPS 2015 and BLM 2013).

3.4 Affected Environment

3.4.1 Air Quality

The Environmental Protection Agency (EPA) and the Utah Division of Air Quality (UDAQ), regulate air quality standards in the State of Utah. The National Ambient Air Quality Standards (NAAQS) established by the EPA under the Clean Air Act (CAA), specify levels of seven criteria air pollutants: carbon monoxide, particulate matter (PM 10 and PM 2.5), ozone, sulfur dioxide, lead, and nitrogen.

The project is located in an area of nonattainment for PM 2.5 (UDAQ 2015) and a maintenance area for ozone. A PM 2.5 State Implementation Plan (SIP) for the Salt Lake City, Utah Nonattainment Area (which includes the Davis County airshed), was approved in December 2014.

3.4.2 Water Resources

Water diverted through the DWCCC irrigation system includes: the Weber River, Echo Reservoir, Rockport Reservoir, Lost Canyon Reservoir, and East Canyon Reservoir. The Weber River is approximately 125 miles long and runs through Summit, Morgan, Weber, and Davis Counties. The Weber River provides a supplemental water supply for approximately 109,000 acres of agricultural land in Weber and Davis Counties. Water is released from Echo, Rockport, Lost Creek, and East Canyon Reservoirs into the Weber River. The DWCCC stores a combined 57,553 AF of water in East Canyon and Echo Reservoirs. DWCCC is the largest subscriber to the irrigation water drawn from the Weber River. Approximately 21,000 AF of water from the Weber River Project is delivered through the Canal to five other large subscribers in the area, the Hooper Irrigation Company, the Wilson Irrigation Company, Plain City Irrigation Company, Weber Basin Water Conservancy District, and Warren Irrigation Company.

3.4.3 Water Quality

Section 303(d) of the CWA, requires each state to identify those water bodies that are not supporting their beneficial uses. The Utah Division of Water Quality (UDWQ) does not require monitoring within irrigation canals, so the water quality data analyzed in this EA relates to the Weber River. The water quality standards for the Weber River are based on a Class 3A stream and a 4-day average for aquatic wildlife. The Weber River upstream of the project area is classified as fully supporting its beneficial use (UDWQ, 2009). Water quality data for the downstream portion of the River was collected at Station 492100, located near the mouth of the Weber Canyon. The State of Utah water quality standards for pollutants of concern for the Weber River are shown in Table 3.2.

Table 3.2
State Standards and Background Concentration Levels for the Weber River

Pollutant	State Standard (mg/L)	Weber River Background Concentrations (mg/L)
Total Copper	0.0090	Non-Detect
Total Lead	0.0025	Non-Detect
Total Zinc	0.12	Non-Detect
Total Suspended Solids	25	21
Total Dissolved Solids (0.0090 Non-Detect)	1,200	291

Source: Utah Division of Water Quality

3.4.4 Upland Vegetation Resources

The project area is located within the Intermountain Semi-desert and Desert Province of the western United States (Bailey 1995). The land surrounding the project area is almost exclusively previously disturbed. Land cover throughout the project area is dominated by residential developments, agricultural fields, and commercial uses. Vegetation within the project footprint includes various bunch grasses, ornamental trees/shrubs, and noxious/non-native species.

3.4.5 Wetlands and Riparian Resources

The majority of the hydrology within the project area is derived from irrigation waters that are drawn from the Weber River. The Canal is a man-made feature that does not contain any wetland areas within the existing Canal prism. The existing habitat within the Canal is highly disturbed with minimal amounts of native vegetation. The Canal is dry outside of the irrigation season (i.e. May-October).

3.4.6 Fish and Wildlife Resources

Habitat in the project action area can be characterized as disturbed, since most of the project area does not contain natural, undisturbed unaltered habitat. The entire length of the new piping would be placed within the existing, pre-developed, disturbed Canal alignment. The project area contains limited habitat within the human-altered and agricultural environments. Species that may use the project area include those most acclimated to urban life: striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), California quail (*Callipepla californica*), raptors such the American kestrel (*Falco sparverius*), and small rodents including northern pocket gopher (*Thomomys talpoides*), and deer mouse (*Peromyscus maniculatus*). Fish bearing habitat is not present along the Canal. There are no fish present in the Canal alignment.

3.4.7 Special Status Species

The ESA of 1973 (16 U.S.C. 1531-1543), protects federally listed endangered, threatened, proposed, and candidate plant and animal species and their critical habitats. Candidate species are those for which the U.S. Fish and Wildlife Service (USFWS), has sufficient data to list as threatened or endangered, but for which proposed rules have not yet been issued. Threatened species are those that are likely to become endangered in the foreseeable future throughout all or a significant portion of their range. Endangered species are those for which USFWS have identified as facing a serious risk of extinction.

3.4.7.1 Federally Listed Species

In order to identify species of concern associated with the proposed project actions, a species list was obtained from the USFWS Information, Planning, and Conservation (IPaC) System. According to a report generated by the IPaC System (dated December July 16, 2015), two ESA listed species have potential to exist within the project action area. Consultation with the Utah Division of Wildlife Resources (UDWR), was performed to obtain additional information on

ESA species and species of special concern in the vicinity of the proposed project area. A site visit was completed and a biological assessment was performed, written by qualified biologist, in October 2014 (Appendix A, Biological Resources).

Threatened Species

Canada Lynx

The Canada lynx is normally found in dense forested areas with an abundance of windfalls, swamps, and brushy thickets (Maas 1997). Lynx require heavy cover for concealment when stalking prey. Lynx depend on snowshoe hares for their prey base and are most likely to persist in areas that receive deep snow (Maas 1997). In the western U.S., lynx occurrences generally are found above 4,000 feet in elevation (McKelvey et al. 2000).

Based on information obtained from the UDWR, there are no recent documented occurrences of the Canada lynx near the defined project area. The highly disturbed residential environment and relatively small amount of vegetation surrounding the defined project action area is unsuitable habitat for this species.

Yellow-billed Cuckoo

As the name suggests, this avian species has a yellow lower mandible. It has rufous wings that contrast against the gray-brown wing coverts and upperparts. The underparts are white and they have large white spots on a long black undertail (Alsop 2001). It is a neotropical migrant, which winters in South America. Breeding often coincides with the appearance of massive numbers of cicadas, caterpillars, or other large insects (Ehrlich et al. 1992). Its incubation/nestling period is the shortest of any known bird, because it is one of the last neotropical migrants to arrive in North America, and chicks have very little rearing time before embarking on their transcontinental migration. Yellow-billed cuckoos arrive in Utah in late May or early June, and breed in late June through July. Cuckoos typically start their southerly migration by late August or early September.

Yellow-billed cuckoos are considered a riparian obligate and are usually found in large tracts of cottonwood/willow habitats with dense sub-canopies (below 33 feet). More specifically, the proposed rule for critical habitat in the Federal Register (Vol. 79 No. 158 Pp. 48548-48652), describes habitat and space needs for normal life history behavior (non-critical habitat). Therein (Pp. 48551), it describes that yellow-billed cuckoos require "large tracts of willow-cottonwood or mesquite (*Prosopis sp*.) forest or woodland for nesting season habitat. Western yellow-billed cuckoos rarely nest at sites less than 50 acres in size, and sites less than 37 acres are considered unsuitable habitat."

Based on information obtained from the UDWR, there are no recent documented occurrences of yellow-billed cuckoo near the defined project area. The project area habitat does not meet the requirements of suitable habitat as outlined in the Federal Register. Construction activities are planned to occur during a time

period when the yellow-billed cuckoo would not be expected to be present in Utah.

Candidate Species

Greater Sage-grouse

The greater sage-grouse is a federally listed candidate species. As the name implies, greater sage-grouse are found only in areas where sagebrush is abundant. The largest of all grouse, the greater sage-grouse is up to 30-inches long, 2 feet tall, and weighs from 2 to 7 pounds (USFWS 2014). The species diet consists of evergreen leaves, plain sagebrush shoots, blossoms, leaves, pods, buds, and insects (Alsop 2001). The greater sage-grouse is dependent on sagebrush for food and cover, and habitat consists of relatively open flats or rolling sagebrush hills at elevations ranging from 4,000 to 9,000 feet above sea level (USFWS 2014). Land clearing and overgrazing by livestock are documented threats to this species' habitat.

Based on information obtained from the UDWR, there are no recent documented occurrences of greater sage-grouse near the defined project area. Habitat requirements for the greater sage-grouse are not present within the project area.

3.4.7.2 Species of Concern

American White Pelican

American white pelicans are very large (54-70 inches), primarily white, with black wing tips and outer trailing wing edge, and have an oversized orange bill (Alsop 2001). The species habitat ranges from the Canadian prairies and northwest United States, to Nevada, Utah, Wyoming, North Dakota, and in marshes west of the Rocky Mountains. They winter along the Pacific Coast, from California to Mexico. Preferred nesting areas include islands associated with freshwater lakes. Foraging areas consist of shallow lakes, marshlands, and large rivers (UDWR 2014). The American white pelican feeds exclusively on fish. They work communally to catch fish by "herding" them into shallow waters. These large birds scoop prey up with pouches in their bill, which can hold up to 3 gallons of water (Alsop 2001).

This species is listed on the Utah Sensitive Species List. The only known breeding colonies are located in the northern portions of the state, primarily in the Utah Lake/Great Salt Lake ecological complex (UDWR 2014). During spring migration in early March, the breeding season and fall migration periods, they can be found at many reservoirs throughout Utah. Fall migration from Utah appears to be associated with the opening of waterfowl hunting season, availability of fisheries, and ice-up of large bodies of water (UDWR 2014).

There are recent documented occurrences of the American white pelican within a 2 mile radius of the project area. It is likely that these documentations were linked to nearby areas with sufficient fish habitat, such as the Weber River (located approximately 0.6 miles northeast of the project action area) or Kays Creek (located approximately 0.38 miles southeast of the project action area).

The Canal does not contain suitable fish habitat, which the American white pelican is reliant on for food. Furthermore, construction activities would occur mostly during times when the American white pelican would not be expected to be present in the area.

Bald Eagle

Bald eagles are a large dark raptorial bird with a white head and a white tail when mature. They eat mostly fish, but will eat some small mammals, such as rabbits (Stokes, 1996). The bald eagle constructs massive nests on cliff edges or in large trees. Eagles congregate in feeding areas in late winter and early spring. Bald eagles generally select habitat located near water. Eagles select trees within that habitat for nesting and perching sites. The most important characteristic of the nesting tree is that it is the tallest in the forest stand. Selecting a tall tree ensures a structure that will adequately support a large nest, provide an open flight path to and from the nest, and have a panoramic view of the surrounding terrain (Stalmaster 1987). An eagle's nesting season is between the start of February, when they initiate construction of their nests, and mid-August when the young fledge the nest.

Based on information obtained from the UDWR, there are recent documented occurrences of the bald eagle within the vicinity of the defined project area. The Proposed Action does not impact any riparian areas along natural streams or lakes, or potential nesting or perching locations for the bald eagle. It is likely that the nearby documented occurrences were linked to either the Weber River or Kays Creek.

Bluehead Sucker

The bluehead sucker is native to parts of Utah, Idaho, Arizona, New Mexico, and Wyoming. The bluehead sucker is a native bottom feeding fish that scrapes algae from the surface of rocks. Fast flowing and steep gradient mountainous stream reaches are identified to be critical habitat for this species. Their population size has been in a decline due to habitat loss, flow alterations, and the introduction of nonnative species (UDWR 2014).

Based on information obtained from the UDWR, there are recent documented occurrences of the bluehead sucker within a 2 mile radius of the project area. It is likely that these occurrences were documented within the Weber River. The Canal does not contain suitable blue head sucker habitat.

Bonneville Cutthroat Trout

The Bonneville cutthroat trout is a subspecies of cutthroat trout native to the Bonneville Basin of Utah, Wyoming, Idaho, and Nevada. The Bonneville cutthroat trout habitat includes: mountain streams, mountain lakes, and grassland streams. Known populations of this species in Utah are found in Bear Lake and Strawberry Reservoir. Bonneville cutthroat trout are included on the Utah Sensitive Species List as a result of habitat loss, predation, and competition. The

species feeds primarily on insects. Spawning occurs in the spring over gravel substrate (UDWR 2014).

Based on information obtained from the UDWR, there are recent documented occurrences of the Bonneville cutthroat trout within a 2 mile radius of the project area. It is likely that the documented occurrences were in the Weber River. The Canal does not contain suitable Bonneville cutthroat trout habitat.

Short-eared Owl

The short-eared owl is a medium sized, mostly brown owl with a big head and a short neck (Alsop 2001). This nomadic owl prefers grasslands, marshes, and other open habitats to feed on rodents, small birds, and large insects. They often use fence posts as perches. Similar to the grasshopper sparrow, this owl constructs a nest in April, primarily on the ground in grasslands. In winter, some owls migrate south as far as Mexico, whereas others remain in the breeding grounds as a permanent year-round resident (UDWR 2014). According to the Utah USFWS Field Office, the recommended seasonal buffer for the short-eared owl is between March 1st and August 1st (USFWS 2002).

The project footprint does not contain suitable nesting areas for the short-eared owl. Construction activities are planned to be limited to times of the year between October and April, which is mostly outside of the USFWS recommended seasonal buffer for the short-eared owl.

3.4.7.3 Migratory Birds

The Migratory Bird Treaty Act of 1981 (MBTA), prohibits the take, capture, or killing of any migratory birds, and any parts, nests, or eggs of any such birds [16 U.S.C. 703 (a)]. Under the MBTA, Federal agencies are liable for both intentional and unintentional takes of migratory birds. Migratory birds known to frequent the general vicinity of the project area include: the yellow warbler (*Setophaga petechi*), lazulia bunting (*Passerina amoena*), white crowned sparrow (*Zonotrichia leucophrys*), American kestrel (*Falco sparverius*) and red-tailed hawk (*Buteo jamaicensis*). No migratory bird nests were observed in the proposed project area during the biological evaluation site visits in October 2014 and March 2015.

3.4.8 Cultural Resources

Section 106 of the NHPA of 1966, requires Reclamation to take into account the potential effects of the Proposed Action on historic properties. Historic properties are defined as any prehistoric or historic district, site, building, structure, or object included in or eligible for, inclusion in the National Register of Historic Places (NRHP).

The affected environment for cultural resources is identified as the APE, in compliance with the regulations in Section 106 of the NHPA (36 CFR 800.16). The APE is defined as the geographic area within which Federal actions may directly or indirectly cause alterations in the character or use of historic

properties. The APE for the proposed action consists of the existing Canal and access road. The 29 acre APE encompasses the area of potential ground disturbance associated with the proposed pipeline and pressurization improvements, including all staging areas.

Class I and Class III cultural resources inventories for the APE were conducted by Certus Environmental Solutions, LLC in November and December 2014. The Culture resource survey indicates that one historic property, the Canal (Site 42DV120/42WB487) is located within the APE. The Canal has been documented and recorded with the Utah Division of State History (UDSH).

In accordance with 36 CFR 800.4, the site was evaluated for significance in terms of NRHP eligibility. The significance criteria applied to evaluate cultural resources are defined in 36 CFR 60.4, as the quality of significance in American history, architecture, archaeology, engineering, and cultural is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

A. that are associated with events that have made a significant contribution to the broad patterns of our history; or

B. that are associated with the lives of persons significant in our past; or

C. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. that have yielded, or may be likely to yield, information important in prehistory or history.

The cultural resource survey indicates that Site 42DV120/42WB487, was determined eligible for the NRHP under Criterion A, as a result of prior documentation efforts and Section 106 consultations. The Utah State Historic Preservation Office (SHPO) in coordination with Reclamation determined that the Canal constitutes a significant historic resource and that the proposed piping of the canal would have an adverse effect on those characteristics which make the Canal eligible for inclusion on the NRHP.

3.4.9 Paleontological Resources

A Utah Geological Survey (UGS) file search, indicates that there are no paleontological localities in the project area (Appendix B, Cultural and Paleontological Resources). Quaternary alluvial deposits that are exposed in the project area have a low potential for yielding significant fossil localities.

3.4.10 Soil Sedimentation and Erosion

Soil information obtained from the Natural Resources Conservation Service (NRCS), indicates that the soil in the project area is comprised of mix of soils including loamy fine sand, sandy loam and gravelly sandy loam (Appendix C, Soil Survey). Water seeping along the open portions of the Canal has led to substantial erosion of the fine soils in the area.

3.4.11 Indian Trust Assets

Indian Trust Assets (ITAs) are legal interests in property held in trust by the United States for federally recognized Indian tribes or individual tribal members. ITAs may include lands, minerals, hunting and fishing rights, traditional gathering grounds, and water rights. The United States, including all bureaus and agencies, has a fiduciary responsibility to protect and maintain rights reserved by or granted to Indian tribes or individual tribal members by treaties, statutes, and executive orders, which are sometimes further interpreted through court decisions and regulations. The trust responsibility requires that all Federal agencies take all actions necessary, within reason, to protect ITAs. Reclamation carries out its activities in a manner which protects these assets and avoids adverse impacts when possible.

There are no known ITAs in the project area.

3.4.12 Public Safety, Access, and Transportation

Transportation resources in the vicinity of the project area include U.S. Highways 84 (I-84) and 15 (I-15), State Highway 89 (SR-89), numerous county and local roads. Public safety facilities in the area include the Sunset Fire Department, located at 85 West 1800 North (located 0.20 miles from the project area), and the Layton Fire Station 52, located at 2701 North Church Street (approximately 1.25 miles from the project area). The Roy City Police Department and the Clearfield City Policy Department are also both located in the general vicinity of the project area (both are approximately 0.60 miles from the project area). Hill Air Force Base (HAFB) is located directly to the east of the project area.

3.4.13 Prime, Unique, and Statewide Important Farmlands

No Action Alternative

The continued loss of water along the Canal under the No Action Alternative, has the potential to adversely impact agricultural lands in the project area by making it difficult to meet water demand. The No Action Alternative may result in a negative long-term impact to farmland in the project area.

Proposed Action

The construction of the Proposed Action would have no long-term negative impact on the farmland within the project area. The limits of disturbance would be along the existing Canal alignment and would not convert existing farmland to non-agricultural use. Furthermore, implementation of the Proposed Action is anticipated to increase the efficiency of the existing DWCCC irrigation system to agricultural users in the area. By decreasing water losses along the Canal, the

Proposed Action would make it easier to meet the user demands along the system. Therefore, the Proposed Action is likely to have a beneficial impact to farmland in the project area.

3.4.14 Energy Requirements and Conservation Potential

Irrigation water is currently delivered along the Canal through an open channel in the project area. Approximately 2,680 AF of water is lost each year to seepage and administrative losses.

3.5 Environmental Consequences

The following section discusses the potential impacts to the existing condition of resources from both the No Action Alternative and the Proposed Action.

3.5.1 Air Quality

No Action Alternative

There would be no adverse effects to air quality from the No Action Alternative.

Proposed Action

There would be no long-term impact on air quality from the Proposed Action. Construction of the Proposed Action may have short-term temporary impacts on air quality. Best Management Practices would be implemented to reduce fugitive dust generation from construction activities. Air quality impacts would cease once construction activities are completed. Construction activities would follow guidelines outlined in the PM10 State Implementation Plan.

3.5.2 Water Resources

No Action Alternative

There would be a long-term negative effect to water resources from the No Action Alternative. Water loss would continue along the Canal. Currently, 3,440 AF of water is lost annually due to seepage and evapotranspiration along the Canal. The amount is expected to increase under the No Action Alternative as the condition of the existing Canal would continue to deteriorate causing greater water loss. The losses would require a larger allocation of water to meet the needs of users along DWCCC irrigation system.

Proposed Action

The Proposed Action would place 4,430 feet of pipe in the existing open channel that delivers DWCCC irrigation water. This action is anticipated to increase the efficiency of the existing water delivery system and prevent the loss of water along the Canal. The Proposed Action would prevent the loss of 2,680 AF of DWCCC irrigation water that is lost annually to seepage, evapotranspiration, and operative inefficiencies. The proposed improvements would sure up the water required to meet existing water user allocations. The Proposed Action is likely to have a long-term beneficial effect on water resources in the area.

3.5.3 Water Quality

No Action Alternative

Continued operation and maintenance of the Canal would have no impact on the existing water quality conditions, and therefore there are no anticipated impacts on water quality for the No Action Alternative.

Proposed Action

Under the Proposed Action, the DWCCC irrigation water would be delivered through a pipe placed in the existing open portions of the Canal. There would be no long term negative impacts on water quality from the Action Alternative. Enclosing 4,430 feet of the Canal will prevent sediment and nutrient runoff into the existing open section of the Canal. Therefore, the Proposed Action may result in a long-term beneficial impact on water quality.

3.5.4 Upland Vegetation Resources

No Action Alternative

The vegetative communities in the project area would remain in its current condition under the No Action Alternative. Routine Canal maintenance would continue to disturb vegetation in the area. As this disturbance continues the area may see an increase in the composition and infestation of noxious and nonnative plant species.

Proposed Action

The existing vegetation within the project area is highly disturbed from irrigation, agricultural, and residential activities. Much of the vegetation in the project area is composed of noxious and nonnative species. All disturbed areas would be contoured and seeded with appropriate native species to minimize noxious and nonnative species. No long-term negative effects would occur on upland vegetation resources from the Proposed Action.

3.5.5 Wetlands and Riparian Resources

No Action Alternative

There would be no impact on wetlands or riparian resources from the No Action Alternative.

Proposed Action

There are no wetlands or riparian resources within the disturbance area for the Proposed Action. The land along the Canal is highly disturbed with limited amounts of native vegetation. The Proposed Action would therefore, not impact wetlands or riparian resources.

3.5.6 Fish and Wildlife Resources

No Action Alternative

Under the No Action Alternative, the limited habitat in the project area and the wildlife species that may be present, would remain in their current condition, experiencing no predictable gains or losses based on the continued operation and maintenance of the Canal.

Proposed Action
Construction would be contained within the existing Canal prism. Impacts to small mammals, especially burrowing animals, could include direct mortality and displacement during construction activities. Most small mammal species would likely experience reduced populations in direct proportion to the amount of disturbed habitat. These species and habitats are relatively common throughout the area, so the loss would be minor. Impacts to raptors and other avian species may include minor short-term disturbance and displacement during construction, with no long-term impacts after construction.

Areas disturbed by construction would be contoured, replanted, and reseeded, which would assist in the reestablishment of the minimal habitat impacted during construction. Measures would be taken to prevent the infestation of invasive species and to reestablish existing habitat.

3.5.7 Special Status Species

3.5.7.1 Federally Listed Species

No Action Alternative
The No Action Alternative would not impact any federally listed species.

Proposed Action
Canada Lynx
Based on information obtained from the UDWR, there are no recent documented occurrences of the Canada lynx near the defined project impact area. The highly disturbed urban/residential environment and relatively small amount of heavy cover surrounding the defined project action area is unsuitable habitat for this species.

The Proposed Action would therefore have no effect on the Canada lynx.

Yellow-billed Cuckoo
The project action area generally lacks dense sub-canopies of cottonwoods and willows, which would be considered suitable habitat. Construction activities are planned to occur during a time period when the yellow-billed cuckoo would not likely to be present in Utah. Due to the schedule of construction activities, lack of suitable habitat, and lack of known occurrences the Proposed Action would have no effect on the yellow-billed cuckoo.

Greater Sage-grouse
Based on information obtained from the UDWR, there are no recent documented occurrences of greater sage-grouse near the defined project action area (see attached UDWR letter). Habitat requirements for the greater sage-grouse are not present within the project action area. The project action area does not contain abundant sagebrush in which this species is dependent on for food and cover. Therefore, the Proposed Action would have no effect on the greater sage-grouse or its habitat.

3.5.7.2 Species of Concern

No Action Alternative

The No Action Alternative would not impact any State Sensitive Species.

Proposed Action

American White Pelican

The Canal does not contain suitable fish habitat, which the American white pelican is reliant on for its food base. Furthermore, the scheduled construction period would occur mostly during times when the American white pelican would not be expected to be present in the area. Based on the lack of food base and the anticipated timing of the construction activities, the Proposed Action would have no effect on the American white pelican.

Bald Eagle

Based on information obtained from the UDWR, there are recent documented occurrences of the bald eagle near the defined project area. However, the Proposed Action would not impact any riparian areas along natural streams or lakes, including potential nesting or perching locations for the bald eagle. However, in the event that a bald eagle is found at a winter roost site or a nest is found during construction, the appropriate buffer and/or Limited Operating Period (LOP) would be put in place as described by Romin and Muck (2002). Constructing this project would not change the abundance or diversity of the prey base for bald eagles. Therefore, the Proposed Action would have no effect on bald eagles.

Bluehead Sucker

The Canal does not contain suitable bluehead sucker habitat and does not change the amount of water diverted from the Weber River, therefore, the Proposed Action would have no effect on the bluehead sucker.

Bonneville Cutthroat Trout

The Canal does not contain suitable Bonneville cutthroat trout habitat and does not change the amount of water diverted from the Weber River, therefore, the Proposed Action would have no effect on Bonneville cutthroat trout or its habitat.

Short-eared Owl

The project footprint does not contain suitable nesting areas for the short-eared owl. Construction activities are planned between October 15 and April 15, 2015, which is mostly outside of the USFWS recommended seasonal buffer for the short-eared owl. Based on the lack of suitable habitat in the project footprint, coupled with the anticipated construction timing, the Proposed Action would have no effect on the short-eared owl (see Environmental Commitment No. 10).

3.5.7.3 Migratory Birds

No Action Alternative

The No Action Alternative would have no impact on migratory birds in the area.

Proposed Action
Under the Proposed Action there would be no permanent long-term effects on migratory birds. Construction of the Proposed Action would take place outside of the irrigation season commencing in the fall of each year with continuous construction taking place until early spring. Construction would not commence during the nesting season and all vegetative clearing would take place in the fall when migratory birds are not likely to be in the project area. Migratory birds may experience minor short-term disturbance and displacement during construction, if present. The area surrounding the proposed project area contains open water habitat including the Weber River and several nearby reservoirs, ponds, and wetlands that birds could move to if temporarily displaced prior to the nesting season. Impacts to migratory birds and their habitat would be minimal.

3.5.8 Cultural Resources

No Action Alternative
There would be no foreseeable impacts to cultural resources from the No Action Alternative.

Proposed Action
Implementation of the Proposed Action would result in an adverse effect to the Canal (Site 42DV120/42WB487). The open portions of the Canal would be replaced with a pipeline and buried within the existing Canal alignment. Measures to mitigate for the adverse effect to the historic site are outlined in a Memorandum of Agreement (MOA) that would be executed in accordance with 36 CFR 800.6(c). Reclamation will oversee and enforce the MOA.

3.5.9 Paleontological Resources

No Action Alternative
There are no foreseeable impacts to paleontological resources from the No Action Alternative.

Proposed Action
There are no known paleontological localities within the project area. Therefore, the Proposed Action is not anticipated to have an impact on paleontological resources.

3.5.10 Soil Sedimentation and Erosion

No Action Alternative
Under the Action Alternative, erosion would continue along the unpiped portions of the Canal. Water would continue to seep from the Canal, eroding away the fine soils that are present in the project area. This erosion has the potential to create a breech in the Canal. Therefore, the No Action Alternative may have a long-term negative impact by continuing erosion in the project area due to seepage along the Canal.

Proposed Action
The Proposed Action is anticipated to reduce soil erosion in the project area by preventing seepage of water from the Canal. During construction of the Proposed Action, soil would be excavated, compacted, and graded. The BMPs would be employed to minimize the potential short-term impacts of erosion and sedimentation from construction activities. Land disturbed during the construction of the Proposed Action would be contoured and reseeded. Therefore, the Proposed Action is anticipated to have beneficial impact by reducing erosion along the Canal alignment.

3.5.11 Indian Trust Assets

No Action Alternative
The No Action Alternative would have no impact on ITAs.

Proposed Action
There are no known ITAs in the project area and implementation of the Proposed Action would have no foreseeable impact on ITAs.

3.5.12 Public Safety, Access, and Transportation

No Action Alternative
The No Action Alternative would have no impact on public safety, access or transportation resources.

Proposed Action
The Proposed Action may cause limited delays along roadways adjacent to the project area due to construction vehicles entering and exiting the roadways. Service from the fire stations, police departments, and HAFB would not be impacted by construction activities. The Proposed Action would have no long term impact on public safety, access, and transportation resources. Therefore, the Proposed Action is likely to have a beneficial impact to farmland in the project area.

3.5.13 Energy Requirements and Conservation Potential

No Action Alternative
The No Action Alternative would have no effect on energy requirements in the project area.

Proposed Action
The Proposed Action would not require any additional energy resources. The project is estimated to generate approximately 86,400 kWh of renewable energy through the placement of the two hydropower generation turbines near the canal's headwork structure. Therefore, the Proposed Action would have a beneficial effect on energy requirements and conservation potential within the project area.

3.6 Summary of Environmental Consequences

Table 3.3 provides a summary of environmental consequence for the resources evaluated in this EA. Resource impacts are outlined for both the No Action and the Proposed Action. Mitigation, if required, is also described.

Table 3.3
Summary of Environmental Consequences

Resource	No Action Alternative	Proposed Action
Air Quality	No Effect	Minor short-term impacts due to fugitive dust and equipment exhaust from construction activities. Mitigate with BMPS including a fugitive dust mitigation plan.
Water Resources	Long-term negative impact from the loss of water through the DWCCC Canal.	Likely beneficial impact to water resources from the increased efficiency of the water delivery system.
Water Quality	No Effect	Likely beneficial impact to water quality from the piping of the water delivery system.
Upland Vegetation Resources	No Effect	Temporary impacts from construction activities. Mitigate with BMPS including contouring and reseeding disturbed areas.
Wetland and Riparian Resources	No Effect	No Effect
Fish and Wildlife Resources	No Effect	No Effect
Federally Listed Species	No Effect	No Effect
Species of Special Concern	No Effect	No Effect

Resource	No Action Alternative	Proposed Action
Migratory Birds	No Effect	Minor short-term disturbance and displacement during construction if present early in the spring.
Cultural Resources	No Effect	Adverse Effect to Site 42DV120/42WB487. An MOA outlining mitigation measures for the adverse effect was signed and will be implemented prior to the commencement of construction activities.
Paleontological Resources	No Effect	No Effect
Soil Sedimentation and Erosion	Long-term negative impact from the continued seepage of water from the DWCCC Canal.	Beneficial impact by reducing erosion from seepage along the Canal.
Indian Trust Assets	No Effect	No Effect
Public Safety, Access, and Transportation	No Effect	No Effect
Prime, Unique and Statewide Important Farmland	Potential long-term negative impact to farmland from continued water loss along the open canal.	Likely beneficial impact from the increase in the efficiency of the water delivery system.
Energy Requirements and Conservation Potential	No Effect	Beneficial impact from the generation of renewable energy.
Cumulative Effects	No Effect	Cumulative impacts from the Proposed Action and related actions were assessed during the resource evaluation. This analysis determined that there would be no adverse cumulative impacts.

Chapter 4 Environmental Commitments

The following environmental commitments would be implemented as an integral part of the Proposed Action:

1. **Reclamation Standard Operating Procedures –** Reclamation SOPs, as outlined in Reclamation's Facilities Instructions, Standards and Techniques Volume 1-2 (November 2000) and Reclamations' Manual – Directive and Standards, would be applied during construction activities to minimize environmental impacts and would be implemented by construction personnel and included in contract specifications.

2. **Additional Analysis –** If the Proposed Action were to change significantly from the alternative described in this EA, additional environmental analyses would be undertaken as necessary.

3. **Construction Activities Confined to the Surveyed Corridor –** All construction activities would be confined to the width of the canal corridor that has been surveyed for cultural, paleontological, and biological resources.

4. **Cultural Resources –** If cultural resources are encountered during construction, all construction in the area of the discovery would cease until Reclamation's Provo Area Office archaeologist is notified and an assessment of the resource and recommendations for further work can be made.

   Any person who inadvertently discovers possible human remains, must immediately provide notification of the discovery to Reclamation's Provo Area Office archaeologist. Work would stop until the proper authorities are able to assess the situation onsite. This action would promptly be followed by written confirmation to the responsible Federal agency. The SHPO and interested Native American tribal representatives would be promptly notified. Consultation would begin immediately. This requirement is prescribed under the NAGPRA and the ARPA of 1979.

   An MOA will be executed to mitigate for the adverse effect to Site 42DV120/42WB487. Mitigation for the adverse effect to the site, set forth in the stipulations of the MOA, must be implemented before completion of the Proposed Action.

5. **Paleontological Resources –** Should vertebrate fossils be encountered during ground disturbing activities, construction must be suspended until a permitted paleontologist can be contacted to assess the find.

6. **Roads –** Existing roads would be used for project activities whenever possible. The contractor shall obtain all necessary permits through Davis and Weber Counties for work within and adjacent to all county roads.

7. **Air Quality –** The BMPs would be implemented to control fugitive dust during construction. The contractor would follow the EPA's recommended control methods for aggregate storage pile emissions to minimize fugitive dust generation, including periodic watering of equipment, staging areas, and dirt/gravel roads. Additionally, the contractor would comply with all State of Utah air quality regulations.

8. **Noise Impacts –** The BMPS would be implemented to control temporary noise impacts during construction. The contractor would follow all local noise ordinances.

9. **Migratory Bird Protection**

    a. Perform any ground-disturbing activities or vegetation treatments before migratory birds begin nesting or after all young have fledged.

    b. If activities must occur during the migratory bird breeding season, take appropriate steps to prevent migratory birds from establishing nests in the potential impact area by grubbing the area to mineral soil during the fall and winter to discourage nesting.

    c. Established nests with eggs or young cannot be moved, and the birds cannot be harassed (see b., above), until all young have fledged and are capable of leaving the nest site.

    d. If nesting birds are found during the survey or construction, appropriate spatial buffers should be established around nests. Vegetation treatments or ground-disturbing activities within the buffer areas should be postponed until the birds have left the nest. Confirmation that all young have fledged should be made by a qualified biologist.

10. **Raptor Protection**

    We will use the Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (Romin and Muck 2002), to ensure that the proposed project will avoid adverse impacts to raptors, including bald and golden eagles. Locations of existing raptor nests and eagle

roosting areas will be identified prior to the initiation of project activities. Appropriate spatial buffer zones of inactivity (as identified by Romin and Muck 2002) will be established during breeding, nesting, and roosting periods.

Chapter 5 Consultation and Coordination

5.1 Introduction

Reclamation's public involvement process presents the public with opportunities to obtain information about a given project and allows interested parties to participate in the project through written comments. The key objective is to create and maintain a well-informed, active public that assists decision makers throughout the process, culminating in the implementation of the Proposed Action. The Draft version of the EA was made available for public comment for a 15 day period. No comments were received.

5.2 Native American Tribes

Reclamation conducted Native American consultation. This consultation was conducted in compliance with 36 CFR 800.2(c)(2), on a government to government basis. Through this effort each tribe is given a reasonable opportunity to identify any concerns about historic properties; to advise on identification and evaluation of historic properties, including ITAs; to express their views on the effects of the proposed action on such properties; and to participate in the resolution of adverse effects. Consultation communications are included in the Appendix. No comments were received from Native American Tribes.

5.3 Utah Geological Survey

A paleontological file search was requested from the Utah Geological Survey UGS to determine the nature and extent of paleontological resources within the APE.

5.4 Utah State Historic Preservation Office

A copy of the Class III cultural resources inventory report and a determination of historic properties affected for the Proposed Action were submitted to the Utah SHPO. The Utah SHPO concurred with the adverse finding on the Canal. The Utah SHPO has entered into a MOA agreement with Reclamation to mitigate the adverse effect on the canal.

Chapter 6 Preparers

The following table provides a list of the agency representatives and consultants who participated in the preparation of this EA.

Table 6.1
List of Preparers

Name	Title/Position	Contributions
	Agency Representatives	
Beth Reinhart	Environmental Resources Chief, Reclamation, Provo Area Office	Project Manager
Peter Crookston	Biologist, Reclamation, Provo Area Office	Document Review
Jonathon Jones	Water & Environmental Resources Division Chief (Acting), Reclamation, Provo Area Office	Environmental Oversight
Shane Mower	Biologist, Reclamation, Provo Area Office	Biological Resources
Rick Baxter	Biologist, Reclamation, Provo Area Office	Biological Resources
Dr. Zachary Nelson	Archaeologist, Provo Area Office	Cultural Resources, Paleontological Resources, Indian Trust Assets
Bill Chada	Archaeologist, Upper Colorado Regional Office	Cultural Resources, Paleontological Resources, Indian Trust Assets
Jeffery Hearty	Economist, Reclamation, Provo Area Office	Socioeconomics

Name	Title/Position	Contributions
	Consultants	
Zan Murray	Project Engineer, J-U-B Engineers, Inc.	Project Manager
Marti Hoge	Senior Environmental Planner, J-U-B Engineers, Inc.	Environmental Project Manager
Vincent Barthels	Senior Biologist, J-U-B Engineers, Inc.	Biological and Wetland Resources
Roxann Hansen	Environmental Specialist, J-U-B Engineers, Inc.	Resource Evaluation
Paul Willardson	Design Engineer, J-U-B Engineers, Inc.	Alternative Analysis
Jordan Hansen	Designer, Gateway Mapping Inc.	GIS, Graphics
Sheri Murray Ellis	Owner/Principal Investigator, Certus Environmental Consultants	Cultural Resources

Chapter 7 References

Alsop, F. 2001. *Birds of North America (Western Region*). DK Publishing, Inc. New York, New York.

Bailey, R.G. 1995. Description of the ecoregions of the United States. 2nd ed. rev. and expanded (1st ed. 1980). Misc. Publ. No. 1391 (rev.), Washington, DC: USDA Forest Service.

Ehrlich, P.R., D.S. Dobkin, and D. Wheye. 1992. Birds in Jeopardy: the Imperiled and Extinct Birds of the United States and Canada, including Hawaii and Puerto Rico. Stanford University Press, Stanford, California. 259 pp.

Environmental Protection Agency (EPA). Status of SIP Requirements for Designated Areas, Utah Area by Pollutants. Updated on February 2, 1015. Accessed on February 17, 2015. http://www.epa.gov/airquality.

Maas, D. 1997. *North American Game Animals.* Cowles Creative Publishing, Minnetonka, Minnesota.

McKelvey, K.S., K.B. Aubry, and U.K. Ortega. 2000. History and Distribution of Lynx in the Contiguous United States. pp. 207-264. *In* Ruggiero, L.F., K.B. Aubry, S.W. Buskirk, G.M Koehler, C.J. Krebs, K.S. McKelvey, and J.R. Squires. (Tech. Eds.) Ecology and conservation of lynx in the United States. Univ. Press of Colorado. Boulder, CO. 480 pp.

National Park Service (NPS). National Wild and Scenic Rivers System. Accessed on February 17, 2015. http://www.rivers.gov.

NatureServe. 2014. NatureServe Explorer: An online encyclopedia of life. Version 7.1. NatureServe, Arlington, Virginia. Accessed December 14, 2014 at http://www.natureserve.org/explorer.

Romin, L. A., and J. A. Muck. 2002. Utah field office guidelines for raptor protection from human and land use disturbances. USFWS Field Office, Salt Lake City, UT.

Sigler, W. F., and J. W. Sigler. 1987. Fishes of the Great Basin: a Natural History. University of Nevada Press, Reno.

Stalmaster, M.V. 1987. *The Bald Eagle.* Universe Books, New York, New York.

Utah Division of Wildlife Resources (UDWR). *Utah Conservation Data Center*. Accessed December 1, 2014. http://dwrcdc.nr.utah.gov/ucdc/.

Stokes, D. and L. 1996. *Stokes Field Guide to Birds.* Little, Brown and Company, New York, New York.

U.S. Bureau of Reclamation (Reclamation) 2011. WaterSMART. Accessed February 2, 2015 http://www.usbr.gov/WaterSMART/water.html.

U.S. Fish and Wildlife Service (USFWS). 2002. *Utah field Office Guidelines for Raptor Protection From Human and Land Use Disturbances.*

U.S. Fish and Wildlife Service. 2014. *Greater Sage-Grouse. Species Profile.* Accessed 12/1/2014 at http://www.fws.gov/nevada/nv_species/sage_grouse.html.

Wikipedia. 2015. Accessed 7/15/2015 at https://en.wikipedia.org/wiki/Davis_County,_Utah

Wikipedia. 2015. Accessed 7/15/2015 at https://en.wikipedia.org/wiki/Weber_County,_Utah

Chapter 8 Acronyms and Abbreviations

Acronyms	Description
APE	Area of Potential Effect
BMPs	Best Management Practices
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CWA	Clean Water Act
DWCCC	Davis and Weber Counties Canal Company
EA	Environmental Assessment
E.O.	Executive Order
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
Interior	U.S. Department of the Interior
ITAs	Indian Trust Assets
MBTA	Migratory Bird Treaty Act
MOA	Memorandum of Agreement
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRCS	National Resources Conservation Service
NRHP	National Register of Historic Places
PM 2.5	Particulate Matter 2.5 Micrograms for Cubic Meter

Acronyms	Description
PM 10	Particulate Matter 10 Micrograms for Cubic Meter
RCP	Reinforced Concrete Pipe
Reclamation	U.S. Bureau of Reclamation
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SOP	Standard Operating Procedures
UDAQ	Utah Division of Air Quality
UDSH	Utah Division of State History
UDWQ	Utah Division of Water Quality
UDWR	Utah Division of Wildlife Resources
UGS	Utah Geological Survey
USFWS	U.S. Fish and Wildlife Service