



Central Utah Water Conservancy District

355 WEST UNIVERSITY PARKWAY, OREM, UTAH 84058-7303
TELEPHONE (801) 226-7100, FAX (801) 226-7107
TOLL FREE 1-800-281-7103
WEBSITE www.cuwcd.com

OFFICERS
Michael H. Jensen, President
Randy Crozier, Vice President

Don A. Christiansen, General Manager
Secretary/Treasurer

Date: December 24, 2013
To: Interested Persons, Organizations, and Agencies
Subject: Comment period for the Draft Environmental Assessment for the Wasatch County Water Efficiency Project – Operation, Maintenance, and Replacement Project

The Central Utah Water Conservancy District (District), the United States Department of the Interior, Central Utah Project Completion Act Office (Interior), and the Utah Reclamation Mitigation and Conservation Commission (Mitigation Commission) as Joint Lead Agencies, have released the Draft Environmental Assessment (Draft EA) for the Wasatch County Water Efficiency Project (WCWEP) Operation, Maintenance, and Replacement Project for public and agency review and comments. The Joint Lead Agencies initiated the preparation of an Environmental Assessment to analyze the environmental impacts of the Proposed Action with a Notice of Intent published in the Federal Register on May 6, 2013. This Draft EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council of Environmental Quality regulations implementing NEPA (40 CFR 1500-1508) and the Interior regulations implementing NEPA (43 CFR 46).

The Proposed Action for WCWEP OM&R Project includes:

- Comprehensive stabilization of canal banks;
- Lining, enclosing, or piping the canals as necessary to maintain the safety, integrity, and efficiency of the canals;
- Improving maintenance access to the canals; and
- Updating pump stations and regulating ponds to accommodate the changing pattern of water demand.

The need for the Proposed Action is to address the operation, maintenance, and replacement needs of the water delivery system to maintain the integrity, safety, efficiency, and reliability of the WCWEP in order to continue to meet the WCWEP objectives. Residential and commercial development is increasing in the vicinity of the canals, increasing the hazard of damage to life and property in the event of an embankment failure creating a breach of a canal.

The purpose of the WCWEP OM&R Project includes:

- Maintain safety and system integrity to address risks associated with aging infrastructure, land use changes, and urbanization within the study area;
- Meet water delivery obligations of the WCWEP System

BOARD OF TRUSTEES

Gary J. Anderson
Randy A. Brailsford
Kirk L. Christensen

David R. Cox
Randy Crozier
Michael K. Davis

Tom Dolan
Claude R. Hicken
Jani Iwamoto

George R. Jackson
Dallin W. Jensen
Michael H. Jensen

Michael J. McKee
Rondal R. McKee
Kent R. Peatross

Stanley R. Smith
Gawain Snow
Mark Wilson

- Improve access to WCWEP facilities
- Adapt WCWEP facilities to meet future water system demands as water use changes

Enclosed is a CD containing a copy of the Draft EA. An electronic copy of the Draft EA may be viewed online at the project website - www.wcwepea.com. Hard copies are also available for review at the District Orem office - 355 West University Parkway, Orem; the District WCWEP office - 626 East 1200 South, Heber City; Interior office - 302 East 1860 South, Provo; or Mitigation Commission office - 230 South 500 East #230, Salt Lake City, Utah. Comments may be submitted by email to Sarah Johnson at sarah@cuwcd.com or directly mailed to Central Utah Water Conservancy District, c/o Sarah Johnson, 355 West University Parkway, Orem, Utah 84058. For an additional CD or hard copy of the Draft EA please call or email Sarah Johnson (801 226-7147). **Comments must be received by Friday, January 31, 2014.** Thank you for your interest in this project.

Sincerely,



Sarah Johnson
Environmental Programs Manager

enclosure: CD containing Draft EA

cc: Reed Murray, Interior
Mark Holden, Mitigation Commission

**Wasatch County Water Efficiency Project
Operation, Maintenance, and Replacement**

DRAFT ENVIRONMENTAL ASSESSMENT

Submitted by:

U.S. Department of the Interior, Central Utah Project Completion Act Office
Central Utah Water Conservancy District
Utah Reclamation Mitigation and Conservation Commission

December 2013



UTAH RECLAMATION
MITIGATION
AND CONSERVATION
COMMISSION



Joint Lead Agencies:

U.S. Department of the Interior, Central Utah Project Completion Act Office
Central Utah Water Conservancy District
Utah Reclamation Mitigation and Conservation Commission

Cooperating Agencies:

U.S. Bureau of Reclamation
Wasatch County
Heber City

Responsible Officials:

Reed Murray
U.S. Department of the Interior, CUPCA Office
302 East 1860 South
Provo, Utah 84606-7317

Sarah Johnson
Central Utah Water Conservancy District
355 W. University Parkway
Orem, Utah 84058-7303

Mark Holden
Utah Reclamation Mitigation and Conservation Commission
230 South 500 East, #230
Salt Lake City, Utah 84102

For information, Contact:

Sarah Johnson
Central Utah Water Conservancy District
355 West University Parkway
Orem, Utah 84058-7303
(801) 226-7147
Sarah@cuwcd.com



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CHAPTER ONE: PURPOSE AND NEED

1.1 INTRODUCTION

The Central Utah Water Conservancy District (CUWCD), the Utah Reclamation Mitigation and Conservation Commission, and the U.S. Department of the Interior, Central Utah Project Completion Act Office, as Joint Lead Agencies, have prepared this Environmental Assessment (EA) to analyze the environmental impacts of proposed Operation, Maintenance, and Replacement (OM&R) activities associated with the Wasatch County Water Efficiency Project (WCWEP) water delivery system (WCWEP system) in the Heber Valley, Wasatch County, Utah.

As stated in the WCWEP and Daniel Replacement Project (DRP) Environmental Impact Statement (EIS), the need for the WCWEP was to restore flows to the upper Strawberry River that were diverted by the Daniel Irrigation Company and to provide water and water conveyance facilities to the existing Daniel Irrigation Company water storage facilities. These needs were met by conserving water from the Central Utah Project agricultural supply for Wasatch County and providing it as replacement for water that had been diverted from the Strawberry River basin by the Daniel Irrigation Company. The purposes of WCWEP are:

- To improve efficiencies, conserve water, and improve water management in Heber Valley by constructing water management facilities;
- To supplement flows in some Heber Valley streams through conservation and efficiency measures to improve environmental and recreation resources;
- To protect the water rights of downstream users;
- To minimize costs of project features;
- To minimize adverse impacts on groundwater, wetlands, and other environmental resources; and
- To return the portion of the Strawberry River and its tributaries affected by the Daniel Irrigation Company diversion facilities to a naturally functioning state.

WCWEP was approved for construction in the 1997 Records of Decision for the WCWEP and DRP EIS. This current EA evaluates proposed OM&R activities associated with the WCWEP system. The EA tiers to the EIS, and any activities for the Proposed Action in this EA which were discussed in the WCWEP and DRP EIS will be summarized and incorporated by reference to the EIS. The WCWEP and DRP EIS is available at: <http://wcwepea.com>.

This EA evaluates the potential effects of the Proposed Action in order to determine whether it would cause significant impacts to the human environment as defined by the National Environmental Policy Act (NEPA) and the Council on Environmental Quality and Department of the Interior Regulations Implementing NEPA (40 CFR Parts 1500-1508 and 43 CFR Part 46, respectively). If the EA shows no significant impacts associated with implementation of the proposed project, then a Finding of No Significant Impact (FONSI) will be issued by the Joint Lead Agencies. During the EA process, if it is

What is the WCWEP Water Delivery System?

The WCWEP System, as defined for this document, consists of the Timpanogos, Wasatch, and Humbug Canals, pump stations, and regulating ponds.

The Humbug Canal is an extension of the Wasatch Canal; therefore, when this EA refers to the Wasatch Canal, it is referring to both the Wasatch Canal and the Humbug Canal.

determined that there may be significant impacts, preparation of an EIS would be necessary prior to Proposed Action implementation. The Joint Lead Agencies will use this EA to satisfy disclosure requirements and as a means for public participation as part of NEPA, Section 106 of the National Historic Preservation Act (NHPA), and Section 7 of the Endangered Species Act (ESA).

In consultation with the U.S. Fish and Wildlife Service (USFWS), this Draft EA will serve as the Biological Assessment which is needed to evaluate potential impacts to threatened, endangered, and candidate species that may be found within the study area.

1.1.1 Proposed Action

The proposed OM&R activities would include:

- Comprehensive stabilization of canal banks;
- Lining, enclosing, or piping the canals as necessary to maintain the safety, integrity, and efficiency of the canals;
- Improving maintenance access to the canals; and
- Updating pump stations and regulating ponds to accommodate the changing pattern of water demand.

1.1.2 Cooperating Agencies

In addition to the Joint Lead Agencies, the following agencies are participating in the preparation and review of this EA as formally designated Cooperating Agencies:

- Bureau of Reclamation
- Heber City Corporation
- Wasatch County

As defined by the CEO, a cooperating agency actively participates in the NEPA processes, provides information for preparing environmental analyses for which the cooperating agency has special expertise, and is part of the projects interdisciplinary team.

1.1.3 Study Area

The proposed improvements are located along and adjacent to the existing Timpanogos and Wasatch Canals and associated pump stations and regulating ponds in the Heber Valley, Wasatch County, Utah (see Figure 1-1 Study Area).

What is the National Environmental Policy Act (NEPA)?

NEPA applies to all projects which are authorized, funded, or carried out with the involvement of the federal government. It is designed to help officials make decisions that are based on a full understanding of the environmental consequences of a project and to take actions that protect, restore, and enhance the environment. NEPA provides a structured process for decision-makers to follow. The Council on Environmental Quality regulations [40 CFR 1500-1508] are the primary regulations implementing NEPA. Compliance with the provisions of NEPA is required for WCWEP OM&R activities because the WCWEP is a federal project.



Figure 1-1 Study Area

1.2 PROJECT BACKGROUND

1.2.1 History of the Wasatch, Humbug, and Timpanogog Canals

In the spring of 1859, settlers established the first farming communities in the Heber Valley. Early settlements were located near streams and other sources of water, but by the late 1800s, the water needs of the rapidly-increasing population in the valley had outgrown the existing water supply. The Wasatch and Timpanogog Canals were constructed to allow the distribution of water to the rapidly-increasing Heber Valley population, and to facilitate farming and crop production in agriculturally marginal areas.



Farming in Heber Valley

Wasatch and Humbug Canals

In 1869, the Wasatch County Canal Committee was formed to establish a canal to divert Provo River water and provide irrigation for nearby fields. The Wasatch Canal was completed in June 1877. In 1879, the Wasatch Canal Committee changed its name to the Wasatch Canal Company, and moved away from canal construction and focused on maintenance and refinement of the existing Wasatch Canal. Less than ten years later (in 1887) the Wasatch Canal Company, in partnership with the East Ditch Company, built an extension ditch (now known as the Humbug Canal).

Timpanogog Canal

The Timpanogog Irrigation Company was formed in the late 1890s with the intent to construct a high water canal. Water claimed for the Timpanogog Canal came mainly from high water seasons and the potential water that could be stored in man-made dams. The original canal was completed in 1912.

1.2.2 History of the WCWEP

Background

Since the late 1800s the Daniel Irrigation Company, a private irrigation company, diverted waters through a trans-basin tunnel from the upper reaches on the Strawberry River, a tributary of the Duchesne River, and delivered it into Daniels Creek for re-diversion and application for irrigation in the Heber Valley. This practice historically dewatered the upper Strawberry River and several of its tributaries.

Resource agencies, striving to develop a mitigation plan for the 10 tributary streams of the Duchesne River that were impacted by the construction and operation of the Strawberry Aqueduct and Collection System of the Central Utah Project, identified the elimination of the trans-basin diversion from the upper Strawberry River by the Daniel Irrigation Company as a high-priority action. This measure was called the Daniels-Strawberry Exchange, and was included as a component of the 1988 Aquatic Mitigation Plan and was formally adopted by the U.S. Bureau of Reclamation in 1988 and included as a component of the (draft) 1988 Definite Plan Report (DPR) for the Bonneville Unit, Central Utah Project. The Bureau of Reclamation's 1990 Final Supplement to the Final EIS, Diamond Fork System, committed to restore flows in the Upper Strawberry River.

In 1992, through the Central Utah Project Completion Act (CUPCA), Congress established the Mitigation Commission to coordinate implementation of fish, wildlife, and recreation mitigation and conservation programs for the Bonneville Unit, specifically the uncompleted measures identified in USBR's 1988 DPR (e.g., the elimination of the trans-basin diversion from the Upper Strawberry River by the Daniel Irrigation Company). In addition CUPCA authorized the study of WCWEP and water conservation measures to be implemented in Wasatch County. Through CUPCA, Congress specifically provided for the potential of integrating the water efficiency projects (also known as WCWEP) with the measures to provide a replacement water supply for the Daniel Irrigation Company, thus allowing the termination of the trans-basin diversion. The efforts to restore flows in the upper Strawberry River and to implement water conservation measures in Wasatch County complemented one another. Accordingly, it was decided to analyze the projects jointly, as the WCWEP and DRP. The WCWEP and DRP EIS was completed with the Records of Decision signed by Interior and the Mitigation Commission in March 1997.

WCWEP Objectives

After completion of the WCWEP and DRP EIS, CUWCD initiated the implementation process to meet the WCWEP objectives, including:

- **Restoring flows to the upper Strawberry River that were diverted by the Daniel Irrigation Company.** Flows were restored to the upper Strawberry River by eliminating the trans-basin diversion from the upper Strawberry River. To provide replacement water to the Daniel Irrigation Company, water was conserved from the Central Utah Project agricultural supply for Wasatch County. The conserved water came from water efficiency improvements associated with the WCWEP, including delivering pressurized water to irrigation company service areas through pipelines extending from the Timpanogos and Wasatch Canals and associated regulating ponds. The pressurized water facilitated the conversion from historic flood irrigation to more efficient sprinkler irrigation.

- **Conveying replacement water to Daniel Irrigation Company from the water conserved by the WCWEP.** Currently, the Timpanogos Canal is used to meet the commitment to deliver the conserved Central Utah Project agricultural supply water to the Daniel Irrigation Company water storage facilities. Thus, the number of water users and acreage served by the Timpanogos Canal is greater than before implementation of the DRP Diversion.
- **Supplementing the stream flow in five Heber Valley streams with conserved water to maintain riparian and fish habitat and groundwater levels.**
- **Providing the facilities necessary to pressurize water (pump stations, regulating ponds, and pipelines), making it possible for farmers to switch from flood to sprinkler irrigation.**

1.3 EXISTING WCWEP SYSTEM

The WCWEP water delivery system has been in operation since 2001, though final construction of the WCWEP facilities was not completed until 2012. During the first several years of operation of the WCWEP, it was realized that the combination of development of homes and associated features occurring near the Timpanogos and Wasatch Canals, and the presence of large trees and vegetation growing along the canals, were creating problems that could affect adjacent property owners and water delivery operations. The WCWEP and DRP EIS provided for clearing flow-restricting vegetation and debris inside the canals, reshaping the canals to reduce friction losses, and lining the inside of the canals on the downhill side in areas likely to experience embankment failure; however, controlling canal seepage in the canals was not included as a project purpose. In an effort to address the risk associated with the potential for embankment failures and canal breaches caused by the seepage problems, a seepage control program was implemented concurrent with the implementation of the WCWEP and DRP.

The seepage control program consisted of a long-term plan to annually reconstruct and line or pipe those sections of the Timpanogos and Wasatch Canals that were at risk of failing or had seepage that created risk of damage to adjacent properties. In the first 12 years of operation, during final construction of the WCWEP, 44% of the Timpanogos Canal and 25% of the Wasatch Canal were lined or piped. In addition to this reconstruction, several reaches of the canals were partially rehabilitated by removing trees and deep-rooted vegetation from the downhill canal banks. Embankments were also stabilized by contouring and adding material to restore freeboard and width to the banks in areas where erosion, roots, and rodent activity had weakened the canal structure and eminent failure, or an increased risk of failure, was observed.

Implementation of the seepage control program necessitated additional NEPA compliance for several canal maintenance issues requiring immediate response. Because there is an ongoing need to address seepage and stability issues of the Timpanogos and Wasatch Canals, along with the need to provide maintenance access to the canals and update the pump stations and regulating ponds, the Joint Lead Agencies have initiated this EA that focuses on activities to preserve the integrity of the canals and adapting the pump stations and regulating ponds to meet changing demands.

1.4 PURPOSE AND NEED

1.4.1 Need for Action

Residential and commercial development is increasing in the vicinity of the canals, increasing the hazard of damage to life and property in the event of an embankment failure creating a breach of a canal. Many reaches of the canals do not have adjacent access which impedes maintenance of the canals, including timely response to locations threatening imminent failure.

This Proposed Action is needed to address the operation, maintenance, and replacement needs of the water delivery system to maintain the integrity, safety, efficiency, and reliability of the WCWEP in order to continue to meet the WCWEP objectives.

1.4.2 Project Purposes

The purposes of the Proposed Action are to:

- Maintain safety and system integrity to address risks associated with aging infrastructure, land use changes, and urbanization within the study area
- Meet water delivery obligations of the WCWEP System
- Improve access to WCWEP facilities
- Adapt WCWEP facilities to meet future water system demands as water use changes

Address Risks and Maintain Safety and System Integrity

Generally, the highest risks of canal failures are in areas where the canals are in an embanked section, rather than a banked section. Canal embankments are raised banks that are built to hold back water, while a canal bank is the slope of the land adjoining the canal, where the canal is in a depressed condition (see Figure 1-2).

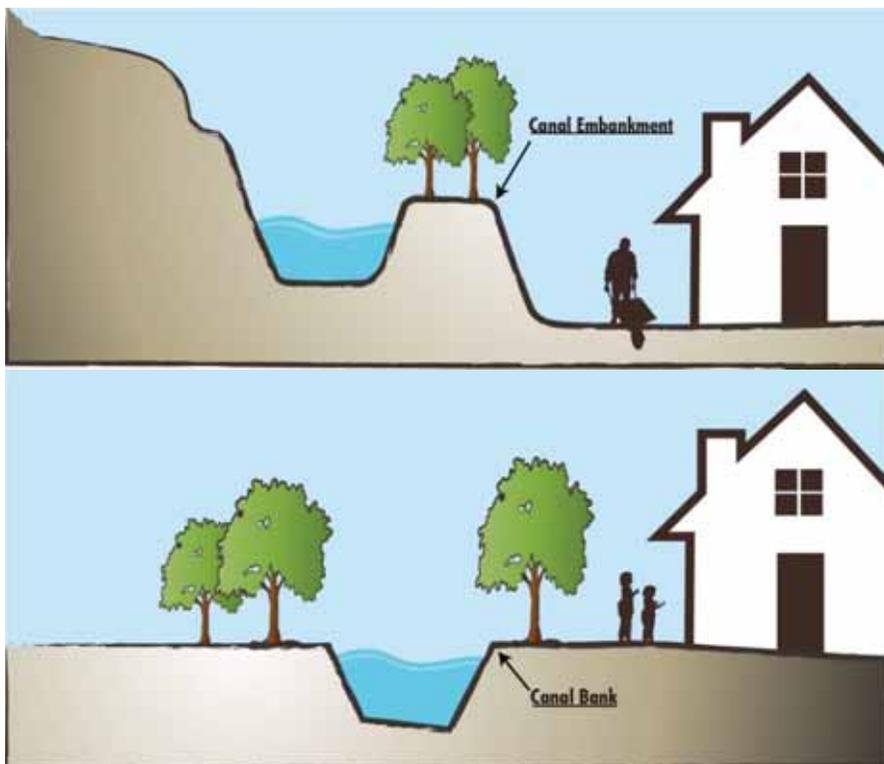


Figure 1-2 Canal Embankment vs. Canal Bank

The Wasatch and Timpanogos Canals were constructed using the silt, sand, and gravel soils, and larger rock fragments, native to the area. The stability of canals constructed using these materials depend on both the construction quality and the maintenance of the canal embankments. Maintaining the integrity of the canal embankments not only keeps water flowing to water users via the canals, it is critical in preventing canal breaches. A canal breach can be a threat to life and property, and the development that has occurred and is currently occurring in some areas below the Timpanogos and Wasatch Canals substantially increases that risk. The recent canal breaches in other Utah communities, including Murray and Logan, have reinforced the importance of comprehensive maintenance and replacement activities for WCWEP facilities.



*Canal Breach in Murray, UT
(Image courtesy of KSL news)*

A 2011 report on flooding by the Utah Department of Public Safety states: "In recent years Utah has seen a new kind of flood risk emerge that includes canal failures and flooding and debris flows related to watersheds damaged by wildfire. This type of flooding is distinctly different from the floods normally dealt with. Utah's farm lands are now being used for residential development. This development, occurring in a patch work fashion, is leaving irrigation canals in place to transport water to undeveloped farms. This is placing residential development near and often below irrigation canals that are not engineered and lack consistence maintenance. Irrigation canals have a history of breaching, yet development pressure has put homes at the base of many of these canals." The Proposed Action includes activities to prevent canal breaches described in this report.

In the recent past, there have been three major canal breaches in Utah:

- Weber-Davis Canal, Riverdale, July 11, 1999: A portion of the Weber-Davis Canal gave way and flooded 75 homes in the Pinebrook subdivision in Riverdale. In addition to the damage to residences, approximately 1,000 agricultural users with some 30,000 acres of farmland were negatively impacted by the canal breach.
- Logan & Northern Canal, Logan, July 11, 2009: A landslide along a hillside in Logan caused the complete failure and breach of the Logan & Northern Canal. Three people were killed by the landslide and canal failure, and water delivery to approximately 7,000 acres of farmland was disrupted.
- North Jordan Canal, Murray, April 26, 2013: A breach of the North Jordan Canal sent water through the Murray Bluffs subdivision in Murray, causing extensive damage to at least eight homes. The canal served many agricultural, commercial, and industrial customers in Salt Lake County.

Heber Valley residents depend on the water delivered through the WCWEP system. Close to 90% of the irrigation and secondary water supply to the east side of the Heber Valley comes from the WCWEP canal system. Canal failures are not only a threat to life and property; they interrupt water delivery to water users.

Regular inspections of the Wasatch and Timpanogos Canals are conducted to identify problems and take preventive action to avoid canal failures. However, even with this ongoing and continual monitoring of the canals, the Timpanogos and Wasatch Canals have experienced failures which have resulted in damage to property. Deteriorated canal segments currently pose the risk of catastrophic canal breaches that would impact existing homes and commercial properties below the Wasatch and Timpanogos Canals. In July 2013, normal canal inspections identified unstable embankments resulting from a combination of narrow canal embankments, tree roots in the canal embankment, seepage and rodent burrows, and extensive repairs were required to prevent a canal failure of the Wasatch Canal between approximately Coyote Lane and Valley Drive.

Risks to the WCWEP system include aging infrastructure and land use changes, particularly urbanization.

Aging Infrastructure

The Timpanogos and Wasatch Canals were constructed in the late 1800s, and are thus in excess of 100 years old. The cumulative impact of natural earth movements over time (erosion, heaving, expansion, rock slides), combined with the intrusion of tree roots and rodent burrows, have compromised the conditions of the canals, especially in embanked sections. As with all facilities of this age, on-going maintenance and replacement activities are critical to keep the aging WCWEP system operating in a safe manner. Common causes for canal failure associated with aging infrastructure and limited maintenance include erosion, deep-rooted vegetation, and rodent damage.

- **Erosion** – Erosion can weaken canal banks and embankments and cause cracking, sinkholes, and settlement
- **Deep-rooted Vegetation** – Growth of trees and other deep-rooted vegetation adjacent to canals causes the following problems which can lead to a canal failure:
 - Difficulty in conducting proper surveillance and inspection of the canals for seepage, cracking, sinkholes, the presence of rodent activity and their associated burrows, and other signs of distress.
 - Trees may not allow adequate access along the embankment for normal and emergency operation and maintenance activities.
 - Root growth can open the compacted soil in the embankments providing a shortened path for water to seep through the embankment, possibly leading to a breach of the embankment.
 - Toppled trees and their root systems, or even their decayed roots can cause holes in the canal banks.
 - Tree roots encourage animal/rodent activity by providing a food source and habitat. Rodent burrows create holes within canal embankments and increase seepage which can lead to a canal breach.
 - Vegetation can limit the flow-carrying capabilities of the canals.



Erosion/Rock Slides



Deep-Rooted Vegetation

- **Rodent Damage** – Rodent burrows create holes within canal banks and increase seepage. Burrows can be from both inside the canal (such as from muskrats) and outside the canal (such as from groundhogs). When burrows extend through the embankment, water can break through the burrow creating a breach of the canal (see Figure 1-3).



Rodent Burrow

Rodent burrows are a constant concern because they can be a cause of canal embankment failure. They weaken the embankment by serving as pathways for seepage which, if left unchecked, can provide a channel for complete embankment failure and a breach of the canal. This poses a threat to life and property below the canal, and also disrupts the delivery of water to downstream water users. (For example, rodent damage caused a breach of the Truckee Canal in Fernley, Nevada in January 2008, damaging almost 600 homes and disrupting water delivery for several months.)

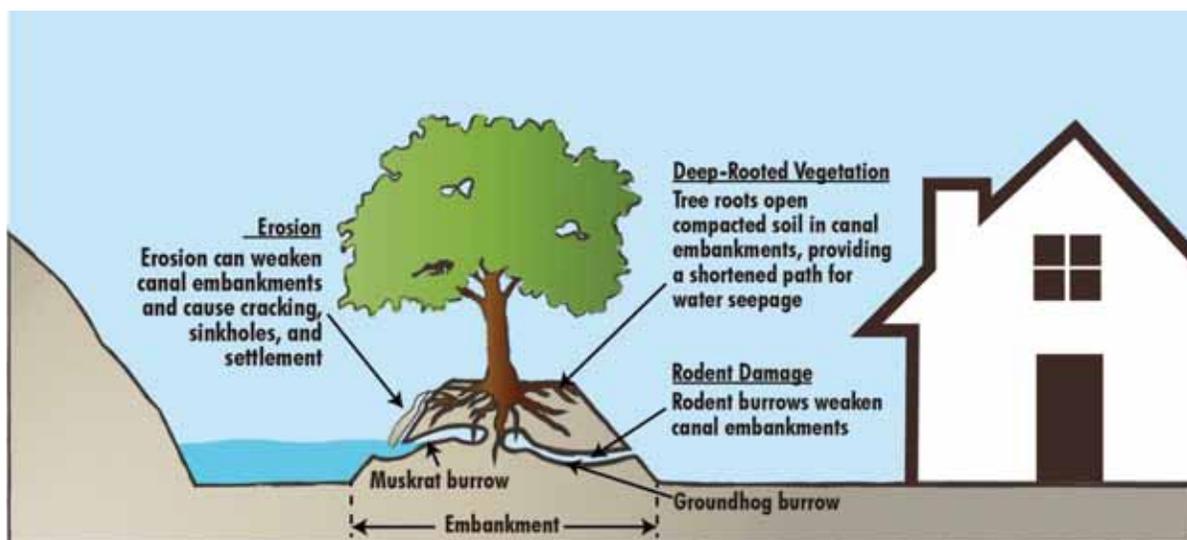


Figure 1-3 Common Causes for Canal Failure

Rehabilitating and maintaining sections of the canal system that are at high risk of failure by clearing vegetation, bank stabilization, lining, or piping the canals is critical in continuing to meet the WCWEP objectives and the Heber Valley water needs.

Land Use Changes and Urbanization

There is a greater risk to life and property if a canal failure occurs above residential and commercial development, as opposed to if a canal failure occurs above undeveloped areas. In recent years, the Heber Valley has seen substantial growth in population and development. Land that was previously used for agricultural purposes has been converted to residential and commercial development (see Figure 1-4).

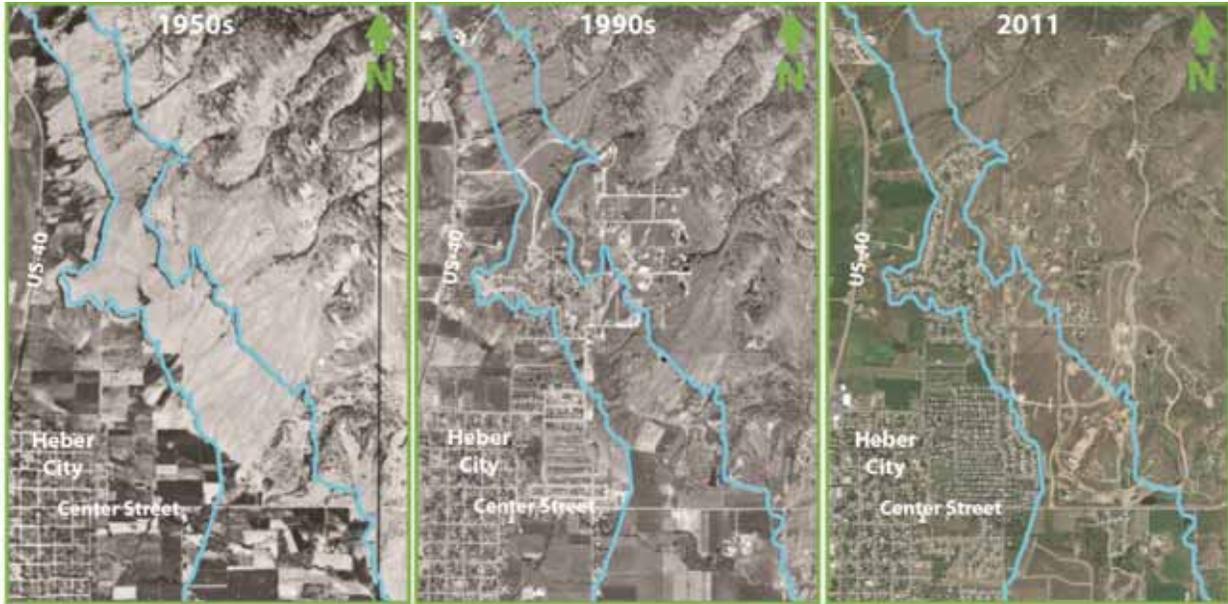


Figure 1-4 Development near the Canal System

In the areas adjacent to the Timpanogos and Wasatch Canals, land is currently undergoing and will continue to undergo change from agricultural and low density residential to higher density residential and commercial in accordance with the development and zoning plans of the local agencies. For example, on the south end of the Timpanogos Canal zoning and land use maps show a change from residential agricultural zoning to medium to low density residential. On the Wasatch Canal, just north of Heber City the zoning and land use maps show a change from residential agricultural to planned community (see Figure 1-5 on next page).

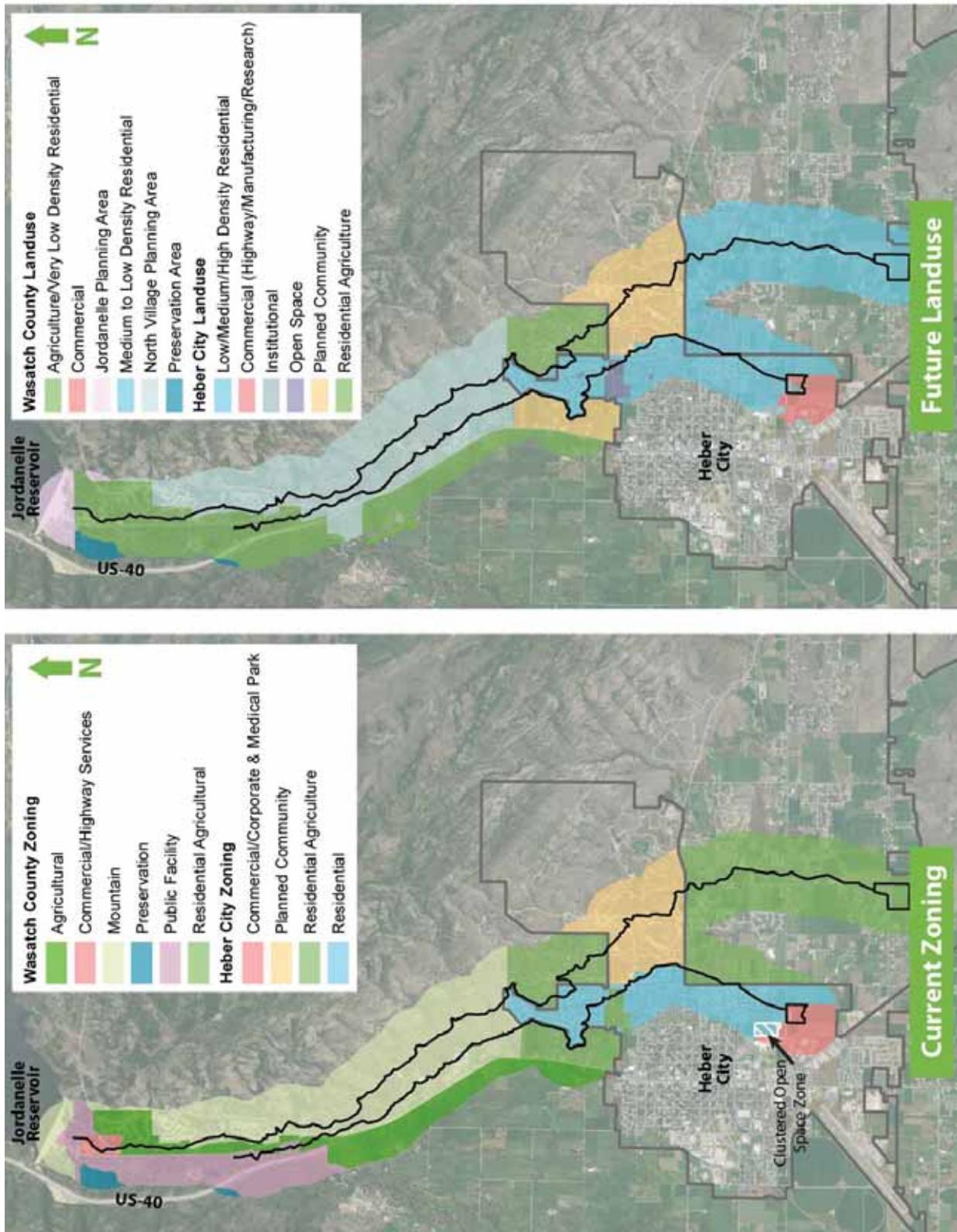


Figure 1-5 Wasatch County and Heber City Zoning and Land Use

An embankment or dam that contains water relies on the mass or weight of the embankment to contain the water and to prevent seepage which can cause a failure of the dam or embankment. Homes and businesses have developed in close proximity to the canal systems, occasionally cutting into the downhill toe of canal embankments. Any reduction in the thickness of the embankment, such as for building construction, landscaping, or for other purposes, increases the potential of a canal breach. The close proximity of homes and businesses to the canals increases concern for safety and potential for property damage should a canal failure occur.

Population and employment is expected to continue to grow as shown in Table 1-2 and Figure 1-6. The Governor’s Office of Planning and Budget forecasts that by 2040, Wasatch County will have 59,159 residents, and Heber City will have 22,683 residents. Wasatch County employment is projected to grow from 10,958 jobs in 2010 to 25,536 jobs in 2040. As population and employment increases, urbanization is anticipated to increase as well.

Table 1-1 Population and Employment Growth Projections

Area	1990 Census	2000 Census	2010 Census	2020	2030	2040	% Growth (1990 to 2040)
Population							
Wasatch County	10,089	15,215	23,530	32,741	44,549	59,159	486%
Heber City	4,782	7,291	11,362	15,387	19,243	22,683	374%
Total Employment							
Wasatch County	4,255	7,669	10,958	15,271	20,073	25,536	500%

Source: U.S. Census Bureau and Governor’s Office of Planning and Budget, 2012 Baseline Projections

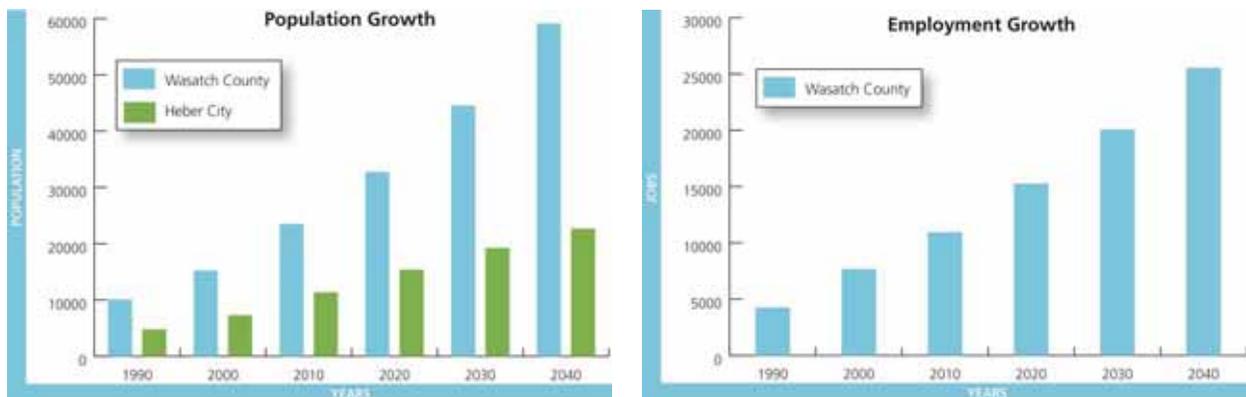


Figure 1-6 Population and Employment Growth

Meet Water Delivery Obligations of the WCWEP System

Prior to the WCWEP, water was delivered by way of open ditches and flooded across fields to meet crops needs. According to the WCWEP and DRP EIS, this method of irrigation, known as flood irrigation, was difficult to control, had poor coverage, was less than 40% efficient, and required 5 to 7 acre-feet of water to be applied per acre to meet crop needs.

The WCWEP provided for the facilities necessary to pressurize water, making it possible for farmers to switch from flood to sprinkler irrigation. The sprinkler method of irrigation is easier to control, has better coverage, provides for higher crop yields, is more than 65% efficient, and requires approximately 3 acre-feet of water to be applied per acre to meet crop needs.

The conversion of flood irrigation to sprinkler irrigation conserves water by reducing the average annual water usage. The conserved water is stored in Jordanelle Reservoir and is later released to: provide replacement water to the Daniel Irrigation Company; supplement flows in local streams, including the Provo River; meet downstream water rights; and enhance groundwater, wetlands, and other environmental resources.

Delivery of water to the end users, both the Daniels Irrigation Company and those traditionally served by the Timpanogos and Wasatch Canals, is an essential part of the WCWEP objectives. The proposed OM&R activities would maintain the canals to prevent canal breaches or other water delivery disruptions so the WCWEP objectives can be met.

Improve Access

Appropriate access to the WCWEP system is crucial for OM&R activities. Currently, 31% of the Timpanogos and Wasatch Canal systems have uphill access, while 74% of the canal systems have downhill access (see Figure 1-7 Canal Access Map on following page).

Access to the WCWEP canals allows for: canal repair; removal of debris blocks; silt and sediment removal; noxious weed control; and proper inspection of the canals for seepage, cracking, sinkholes, and other signs of distress.



Over 300-ft of air hose and a hammer drill were required to remove this obstruction because there was no access to the canal.

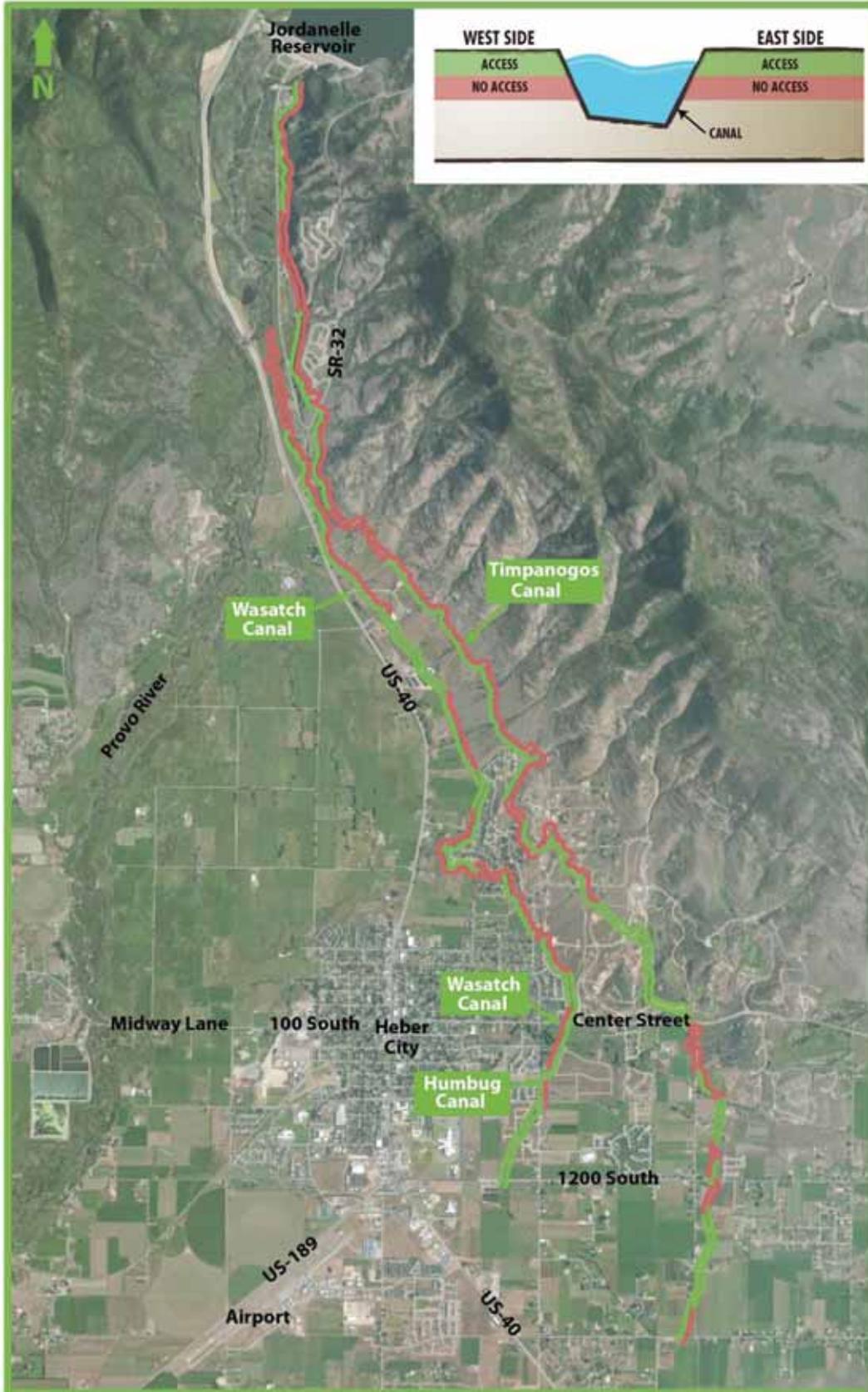


Figure 1-7 Canal Access Map

Adapt to Meet Future Water System Demands

The conversion from agricultural land uses to residential/commercial land uses (as seen in Figures 1-4 and 1-5 above) has changed, and will continue to change, the pattern of water use in the Heber Valley. The WCWEP system was developed almost exclusively for farm applications (originally 97% of the irrigation water was used for farms, while only 3% was used for residential and commercial development). Currently, 70% of the WCWEP irrigation water is used for farms, and 30% is used for residential and commercial development (see Figure 1-8). Water users are increasingly using water from the WCWEP system for landscaping purposes rather than commercial agricultural purposes.

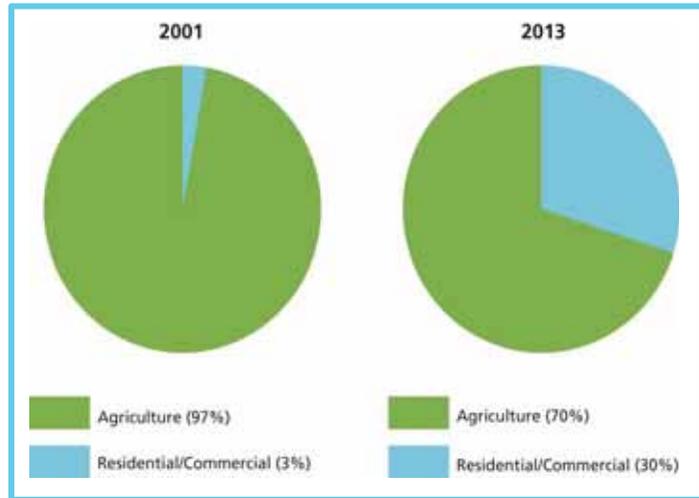


Figure 1-8 Water Usage of the WCWEP System

Most residential and commercial developments use approximately 85% of the water at night, with the remaining 15% used during the day. Conversely, irrigation water is delivered continuously to farmers. This change in water use patterns creates a peaking pattern on the system (see Figure 1-9). With a greater demand on water at peak times, there is a need to provide facilities, such as larger regulating ponds, to more efficiently regulate the water supply.



Figure 1-9 Water Demand on the WCWEP System

1.5 STATUTES, REGULATIONS, OR OTHER RELATED DOCUMENTS

WCWEP OM&R activities will comply with all federal, state, and local regulations, including those relating to water rights, construction, zoning, and irrigation activities.

1.5.1 Related Environmental Documents

The Proposed Action has taken into consideration related environmental documents, including:

- WCWEP and DRP EIS
- Provo River Restoration Project EIS
- WCWEP Recycled Water Project EA
- Block Notice 1A: Heber Sub-Area Agricultural Water to M&I Water Conversion EA

CHAPTER TWO: ALTERNATIVES

2.1 INTRODUCTION

This chapter discusses the No-action Alternative, the Proposed Action Alternative, and other Alternatives considered.

2.2 NO-ACTION ALTERNATIVE

The No-action Alternative would consist of the general operation of the existing Wasatch County Water Efficiency Project (WCWEP) delivery system under current practices and limitations. It would allow for operation and maintenance from within and along some reaches of the existing canals, through existing easements, and would maintain the associated facilities as they are today. No additional lining, piping, or access improvements to the canals would be performed.

2.2.1 Purpose and Need Compliance

The No-action Alternative does not meet the purpose and need of the project because it would:

- Not allow for activities which would decrease the potential of canal embankment failures. Embankment failure could result in damage to life and property in adjacent developments.
- Not improve access to the canals, therefore limiting the ability to quickly make repairs.
- Not provide for activities which would allow WCWEP to meet contractual water delivery obligations. The canals would need to be shut down due to failure or imminent failure to conduct repairs or to make inspections when problems are observed.
 - When the canals are closed, water is not delivered to the irrigation companies, including the replacement water to the Daniels Irrigation Company. This can result in an adverse effect on the economy, including agricultural production, when water does not reach the end users.
 - Closing the Wasatch Canal to provide the water to meet minimum flows to the five Heber Valley Streams as provided in the WCWEP and Daniel Replacement Project (DRP) Environmental Impact Statement (EIS) would affect the riparian habitat along these streams and the wildlife dependent on this habitat.
- Not allow for compliance with state law. According to the Utah Code Annotated (UCA) Section 73-1-8, it states that "the owner of any ditch, canal, flume or other watercourse shall maintain it to prevent waste of water or damage to the property of others." Additionally, 2010 House Bill 60 addresses safety management plans for water conveyance facilities. If a water conveyance facility has a potential risk location (failure could cause loss of human life or extensive economic loss), then the facility owner or operator must adopt a safety management plan.

The No-action Alternative fails to meet the purpose and need; however, it will be studied in detail in accordance with CEQ Guidelines.

2.3 PROPOSED ACTION ALTERNATIVE

The Proposed Action Alternative would include:

- Comprehensive stabilization of canal banks;
- Lining, enclosing, or piping the canals as necessary to maintain the safety, integrity, and efficiency of the canals;
- Improving maintenance access to the canals; and
- Updating pump stations and regulating ponds to accommodate the changing pattern of water demand.

2.3.1 Canal Bank Stabilization



Bank Stabilization

The Proposed Action includes rehabilitation work and maintaining the canals in their proper working condition for safety and structural integrity. As provided for in the WCWEP and DRP EIS, the inside walls and bottom of the canals would be cleared of flow-restricting vegetation and debris and reshaped to reduce flow friction losses. Eroded or narrow banks would be widened and strengthened. Deep-rooted vegetation having root systems within 25-feet of the canals would be removed. Canal bank stabilization activities would be conducted from the banks of the canal and would occur as needed, as part of routine maintenance.

2.3.2 Lining, Enclosing, or Piping the Canals

The Proposed Action includes a phased process of lining or piping the canals as necessary to maintain the safety, integrity, and efficiency of the distribution system. Canal lining would consist of lining the existing canals with reinforced concrete, or other suitable materials, and possibly enclosing the canal by placing a cap over the top. Capped reaches of the canal would be covered with material appropriate for the conditions in the area. Piping would include installation of pipe; screening at the pipe inlet would be used to prevent debris, people, and animals from entering the pipe. Piped reaches of the canals would be covered to an appropriate depth and revegetated.



Canal Lining

A process will be used to determine when lining or piping a reach of canal is necessary. This process includes evaluations by engineers and the owners/operators of the canal for unsafe conditions, such as unstable embankments, erosion, tree roots in the canal embankment, seepage and rodent damage. Canals would be piped or lined, as necessary, based on the following conditions:

- An evaluation by engineers and the owners/operators of the canals determines that improvements are necessary to maintain the structural and operational integrity of the canals or to protect life and property.
- Development occurs immediately adjacent to or below the canals that creates an increased risk of impacts to homes and businesses if a canal failure occurred.

The transition between lined/piped canal and unlined/piped canal requires special treatment in order to prevent erosion and failure of the canal; therefore, when the evaluation process indicates the need for lining/piping, the entire reach of the canal would be addressed to minimize the number of transitions. Each reach of a canal will be funded on a case-by-case basis and will likely be financed through partnerships between developers, landowners, and water users.



Improving Access

2.3.3 Improving Access

The Proposed Action includes the construction of Operation, Maintenance, and Replacement (OM&R) access along both sides of the canals (where practicable) and access to associated facility features. Generally, this would be done within the existing easements by leveling the canal banks, clearing debris and vegetation, and adding additional stabilizing material as necessary.

2.3.4 Updating Pump Stations and Regulating Ponds



Regulating Pond

The Proposed Action includes improved screening and filtering of secondary irrigation water intakes, pump station upgrades and modifications, and the enlargement of regulating ponds to accommodate the changing patterns of water demand. As described in Chapter 1, the conversion of land from agricultural land uses to residential/commercial land uses has changed, and will continue to change, the pattern of water use in the Heber Valley. Generally, residential and commercial developments water their landscaping early in the morning or in the evening, while farmers irrigate on a more continuous basis. This change in water use patterns creates a peaking pattern on the system,

with a greater demand for water at peak times. The expansion of regulating ponds would allow for the more efficient regulation of the water supply.

The Proposed Action would allow for the expansion of the existing Humbug and Timpanogos Regulating Ponds (see Figure 2-1).



Figure 2-1 Regulating Ponds

2.3.5 Purpose and Need Compliance

The Proposed Action Alternative would meet the purpose and need for the project because it would:

- Enable the canals to deliver water as provided in the WCWEP and DRP EIS by allowing for the appropriate level of operation, maintenance, and replacement of the system features including stabilizing the canal embankments, and lining and/or piping as necessary
- Reduce the potential for damage to life and property in adjacent developments
- Provide for timely repairs to problem areas because of improved access to the canals
- Meet future water system demands by updating the pump stations and regulating ponds

The Proposed Action Alternative meets the purpose and need for the project and will be studied in detail.

2.4 OTHER ALTERNATIVES

Based upon the agency and public scoping process, receipt of stakeholder comments, and the interpretation and evaluation of the resource specialists, no other options or alternatives were identified.

2.5 COMPARATIVE ANALYSIS OF IMPACTS OF THE PROPOSED ACTION AND NO-ACTION ALTERNATIVES

Table 2-1 summarizes the effects of the Proposed Action Alternative in comparison to the effects of the No-action Alternatives. See Chapter 3, Affected Environment and Environmental Consequences for a complete analysis of affected resources.

Table 2-1 Comparative Analysis of Impacts of the Proposed Action and No-action Alternatives

Subject	Proposed Action Alternative	No-action Alternative
Air Quality	<ul style="list-style-type: none"> • Temporary and localized impacts to air quality during construction that would be minimized through implementation of Best Management Practices (BMPs). • No long-term effects. 	<ul style="list-style-type: none"> • No effect.
Environmental Justice	<ul style="list-style-type: none"> • No disproportionately high and adverse effects on minority or low-income populations. 	<ul style="list-style-type: none"> • No disproportionately high and adverse effects on minority or low-income populations.
Socioeconomics	<ul style="list-style-type: none"> • Would not generate changes in growth and development. • Very minimal impact to tourism industry on the Wasatch Canal between the Provo River diversion and the Rock Ditch diversion as a result of lining, piping, or enclosing. 	<ul style="list-style-type: none"> • No effect.
Health and Safety	<ul style="list-style-type: none"> • Canal bank stabilization activities would reduce the hazard of a canal breach. • Lining, Enclosing, or Piping the canals would essentially eliminate the hazard of a canal breach. • Capping or piping the canals would reduce concerns for the safety of children and wildlife. • Construction of maintenance access would facilitate inspections and making repairs. 	<ul style="list-style-type: none"> • The hazard of a canal breach by undetected unstable canal banks, seepage through the soil, rodent burrows, and deep-rooted vegetation would continue to exist.

Subject	Proposed Action Alternative	No-action Alternative
Recreation	<ul style="list-style-type: none"> Although the canals are not intended to be fisheries and are subject to being shutoff periodically for operation and maintenance activities, incidental fishing occurs in this area. Fishing, hiking, and wildlife viewing opportunities would still be available, but the nature of the experience would be more limited due to changes in wildlife habitat. 	<ul style="list-style-type: none"> No effect.
Prime, Unique, and Statewide Important Farmland	<ul style="list-style-type: none"> No effect. 	<ul style="list-style-type: none"> No effect.
Floodplains	<ul style="list-style-type: none"> No adverse impacts to floodplains. May require new construction or alteration of existing structures within the Federal Emergency Management Act (FEMA) 100-year floodplain for North Lake Creek, South Lake Creek, and Center Creek. Design of new facilities would maintain canal capacity and would not result in a rise of the 100 year flood surface elevations at cross-drainage locations. 	<ul style="list-style-type: none"> No impacts to 100-year floodplains would occur; however, the canals would continue to experience the threat of breach as a result of flooding into the canals.
Cultural Resources	<ul style="list-style-type: none"> Adverse Effect on the Timpanogos, Wasatch, and Humbug Canals. No known impacts on Native American religious sites, ceremonies, and ceremonial sites, burial grounds, or other sacred lands. 	<ul style="list-style-type: none"> Would not directly impact cultural resources; however, with the increased risk of canal breaches under the No-action Alternative, impacts to cultural resources may occur as repairs are conducted.
Water Resources (Water Quality)	<ul style="list-style-type: none"> Slight improvement to water quality in canals as a result of: less herbicide applications, less exposure to sediment from bank erosion; and less exposure to agricultural and urban runoff. No effect to groundwater quality. 	<ul style="list-style-type: none"> Herbicides, nutrients, and sediments would continue to remain in the water in the same ratios as current conditions.
Water Resources (Groundwater)	<ul style="list-style-type: none"> Could have a very minimal impact to groundwater recharge (less than a hundredth of a percent of the Heber Valley groundwater basin). 	<ul style="list-style-type: none"> No effect.
Water Resources (Waters of the U.S. and Wetlands)	<ul style="list-style-type: none"> No Clean Water Act (CWA) permit required. No effect to wetlands. 	<ul style="list-style-type: none"> No effect.
Aquatic Resources	<ul style="list-style-type: none"> Negligible impacts to aquatic resources within the canal. 	<ul style="list-style-type: none"> No effect.

Subject	Proposed Action Alternative	No-action Alternative
Wildlife	<ul style="list-style-type: none"> • Would not impact state sensitive species or primary habitat, but could impact other wildlife species including, deer and elk. Some concerns include potential elimination of water sources and the creation of wildlife barriers. Adverse effects could be minimized through the use of wildlife crossing bridges and wildlife escape ramps. • May affect migratory bird species that use vegetation proposed to be removed for nesting, feeding, roosting, and hiding. These effects would be minimized by conducting vegetation removal outside the nesting season. 	<ul style="list-style-type: none"> • Wildlife entrapment would continue to occur at the same rate in the existing lined sections of the canals.
Threatened and Endangered Species	<ul style="list-style-type: none"> • No Effect on Yellow-Billed Cuckoo, Greater sage-grouse, Humpback chub, Colorado pikeminnow, Bonytail chub, Razorback sucker, and Canada Lynx. • May Affect, but not likely to Adversely Affect Ute ladies'-tresses. 	<ul style="list-style-type: none"> • No effect.
Visual Resources	<ul style="list-style-type: none"> • Minimal impact to overall visual character. • Visual impacts as a result of concrete lining and vegetation removal would remain localized for only those few viewers adjacent to the canals (these changes would be consistent with the trend to man-made features associated with adjacent development). • Mid-range to long-range viewers would not notice changes to canals because generally the canals blend in with the natural ground and are not visible. 	<ul style="list-style-type: none"> • No effect.
Vegetation and Invasive Species	<ul style="list-style-type: none"> • Could potentially impact approximately 6-acres of vegetated areas. • Would include construction activities that would disturb the ground surface and allow for the establishment or spread of invasive species and noxious weeds. Impact would be minimized through implementation of BMPs. • Would make implementing the Central Utah Water Conservancy District's (CUWCD) Integrated Pest Management (IPM) more effective by providing OM&R access. 	<ul style="list-style-type: none"> • No effect.



CHAPTER THREE: AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 INTRODUCTION

The purpose of this chapter is to describe the existing conditions of the human and natural environment within the study area and evaluate the potential beneficial or adverse consequences of implementing the Proposed Action and the No-Action Alternative. This section presents the basis for the comparative analysis of the alternatives described in Chapter 2, an analysis of the potential direct and indirect impacts that each alternative would have on the affected environment, and details measures to avoid, minimize, or mitigate potential impacts.

3.1.1 Affected Environment

Existing conditions were identified based on field investigations, coordination with federal, state, and local agencies, and literature and data file searches.

3.1.2 Environmental Consequences

The National Environmental Policy Act (NEPA) of 1969 requires consideration of direct, indirect, and cumulative impacts, plus identification of measures to mitigate these impacts. Impacts are described and generally illustrated as follows:

- **Direct impacts** are those caused by the action and occur at the same time and place (40 CFR §1508.8). These are discussed in each resource area subsection.
- **Indirect impacts** are those caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable (40 CFR §1508.8). Indirect effects are generally less quantifiable but can be reasonably predicted to occur. The Proposed Action is not anticipated to have significant indirect impacts.
- **Cumulative impacts** are those impacts to the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions (40 CFR §1508.7).

The scoping process identified the following resource topics of concern:

- Safety
- Land Use Planning
- Cultural Resources
- Threatened and Endangered Species
- Wildlife
- Water Resources, including wetlands
- Aquatic Resources
- Visual Resources
- Vegetation and Invasive Species
- Recreation
- Noise
- Air Quality
- Climate Change

3.1.3 Resources not Addressed in this EA

Resources not addressed in this Environmental Assessment (EA) include resources that are not present in the study area and/or would not be impacted by the Proposed Action. The resources considered for inclusion but eliminated from further analysis based on a no impact determination include:

- **Land Use Plans and Policies**

The Heber Valley, including the area adjacent to the Timpanogos and Wasatch Canals, continues to undergo change from agricultural or undeveloped use to residential and commercial use in accordance with the development and zoning plans of the local agencies (see Chapter 1, Section 1.4.2 Project Purposes). The Proposed Action does not provide for any new facilities that would extend the availability of water to areas within Wasatch County or Heber City and would not generate any changes in land use. The Proposed Action would not lead to conflicts with known or proposed plans or policies of Federal, state, or local agencies. However, the risk associated with a canal breach is much greater with development adjacent to and below the canals and the increased development is a major need for the Proposed Action (see Chapter 1 Purpose and Need).

During the scoping process, several commenters expressed concerns with the ongoing and future development that is occurring in the Heber Valley. Zoning and land use changes are addressed in a different and separate public process carried out by Wasatch County and Heber City. The direction of development decisions cannot be reasonably predicted in this EA. Because a local government could elect to deny or approve any development changes, regardless of the outcome of this process, this concern is eliminated from detailed analysis in this EA.

- **Hazardous Waste**

The Proposed Action would not introduce or disturb any known hazardous waste sites within the study area.

- **Wilderness**

The Proposed Action would not disturb lands that are protected now or proposed for protection under the Wilderness Act of 1964, nor would the project introduce any additional lands for consideration as wilderness.

- **Wild and Scenic Rivers**

The Provo River, within the study area, is not protected under the Wild and Scenic Rivers Act of 1968, as amended, and there is no known proposal to protect this portion of the Provo River under the act.

- **Soil Resources**

The Proposed Action would have a minimal impact to soil. Construction would be within the canal easements, and there would be minimal impact to farmland soils as a result of enlarging the Timpanogos and Humbug regulating ponds (see Section 3.7). Continued implementation of Best Management Practices (BMPs) during and after construction would result in the restoration of canal soils to baseline conditions, and the Proposed Action Alternative would help stabilize existing soil masses (embankments) by essentially eliminating seepage from the canals.

- **Noise**

The scoping process identified noise as a topic of concern. A few individuals indicated that the large trees and vegetation adjacent to the canals act as a sound barrier from US-40 traffic noise. The commenters felt that the removal of mature vegetation adjacent to the canals that would occur under the Proposed Action Alternative would increase noise levels at residences. According to the *Highway Traffic Noise Analysis and Abatement Policy and Guidance* report produced by the Federal Highway Administration (FHWA), vegetation must be extremely dense and several feet thick in order to achieve noticeable noise reduction. The Proposed Action would remove vegetation adjacent to the canals; however, the vegetation is not dense or thick enough to provide noticeable noise reduction. Therefore, the Proposed Action would not have an impact to noise levels.

- **Transportation**

Construction traffic related to the Proposed Action would be dispersed throughout the study area. The amount of construction traffic related to canal lining and piping would be small and would not cause delays on the roads serving areas in the vicinity of the canals except for short periods when pipeline construction proceeded under roadways. Concrete and gravel materials would likely come from local sources and transportation of these materials would not cause delays on the local roads. Pipe materials would be delivered using US-189 or US-40 and these highways can absorb this amount of traffic without causing delays.

- **Agricultural Resources**

The intent of the Proposed Action is to maintain irrigation water flow to water users to irrigate agricultural lands. There would be no change in the delivery of water to these users and no effect to agricultural resources except for a minimal impact to farmland soils as a result of enlarging the Timpanogos and Humbug regulating ponds (see Section 3.7).

- **Mineral and Energy Resources**

There would be no change in the energy used to deliver water to the water users, or in the energy required to provide irrigation. The amount of energy and mineral resources for the implementation of the Proposed Action is minimal compared to other construction activities in Heber Valley and would not have a measurable impact.

- **Climate Change**

Executive Order 13514 Federal Leadership in Environmental, Energy, and Economic Performance established an integrated strategy towards sustainability in the Federal Government and made the reduction of greenhouse gas emissions a priority for Federal agencies.

The Proposed Action will perpetuate delivery of the existing volume of water by the Timpanogos and Wasatch Canals to agricultural, residential, and commercial water users in the Heber Valley. The work along the canals to stabilize the banks, line, enclose, or pipe the canals as necessary, and provide maintenance access would not change the function or operation of the canals. Upgrading the pump stations and regulating ponds to accommodate the water demand pattern likewise would not change the function of the system.

The canals are not now, nor would be through implementation of the Proposed Action, vulnerable to changes in temperature or precipitation patterns, and the Proposed Action does not negatively impact or increase the vulnerability of other systems, sectors, or social groups. Construction of the Proposed Action would take place on existing canals and therefore does not create new effects to the diversity of habitat, communities or species or effects to the linkages among habitat areas. Wildlife movement patterns have been considered (see Section 3.12 Wildlife). Measures would be incorporated to prevent the spread of invasive species during construction activities.

The Proposed Action would not contribute to climate change, nor would it create vulnerability to climate impacts. Implementation of the Proposed Action will be consistent with Executive Order 13514 Federal Leadership in Environmental, Energy, and Economic Performance.

3.1.4 Impacts to Environmental Resources on the Wasatch Canal between the Provo River Diversion and the Rock Ditch Diversion

During the public scoping process, several commenters expressed concerns about environmental impacts as a result of lining, enclosing, or piping the Wasatch Canal on lands owned and managed by the Utah Reclamation Mitigation and Conservation Commission for the Provo River Restoration Project (PRRP). This area includes a section of the Wasatch Canal from its Provo River diversion to the Rock Ditch diversion. As stated in Chapter 2, lining, enclosing, or piping the Wasatch Canal between the Provo River diversion and the Rock Ditch diversion would likely only occur under the following conditions:

- An evaluation by engineers and the owners/operators of the canals determines that improvements are necessary to maintain the structural and operational integrity of the canals or to protect life and property.
- Development occurs immediately adjacent to or below the canals that creates an increased risk of impacts to homes and businesses if a canal failure occurred.

What is the Provo River Restoration Project (PRRP)?

The Utah Reclamation Mitigation and Conservation Commission, a federal agency, is responsible for implementing the Provo River Restoration Project (PRRP) along the middle Provo River, from Jordanelle Dam to Deer Creek Reservoir, in Wasatch County, Utah. The project goal is to realign the river to a more natural pattern, regain vegetative and wildlife resources once supported by the river, and provide a protected 800 to 2,200-foot-wide public corridor along the restored river. The project's purpose is to advance the sequence of natural succession, providing additional habitat diversity instream and in the surrounding forest in order to make up for fish, wildlife and related recreational losses caused by federal water reclamation projects in Utah, particularly the Central Utah Project (CUP).

Because this reach of the canal is in a low-lying area, the risk of a canal breach is low, and needed improvements to prevent failure would be unlikely. Improvements to the canal in this area would most likely be driven by adjacent development. Currently, the PRRP land is protected from future development. Development along the Wasatch Canal between the Provo River diversion and the Rock Ditch diversion would likely only occur if management status of the land currently under the PRRP were to change, a change in zoning were to occur, and it was determined to develop the land. Under these conditions, impacts to environmental resources adjacent to the Wasatch Canal between the Provo River diversion and the Rock Ditch diversion may occur as part of other actions (development, building construction, etc.) and not as part of the Proposed Action.

3.2 AIR QUALITY

The Clean Air Act Amendments (CAAA) of 1990 established the National Ambient Air Quality Standards (NAAQS) for airborne pollutants. The six criteria pollutants addressed in the NAAQS are carbon monoxide (CO), particulate matter, ozone (O₃), nitrogen dioxide (NO_x), lead (Pb), and sulfur dioxide (SO₂). Particulate matter is broken into two categories: particulate matter with a diameter of 10 micrometers or less (PM₁₀) and particulate matter with a diameter of 2.5 micrometers or less (PM_{2.5}). The CAAA requires that air quality conditions within all areas of a state be designated with respect to the NAAQS as attainment, maintenance, nonattainment, or unclassifiable. Areas that do not exceed the NAAQS are designated as attainment, while areas that exceed the standards are designated as nonattainment. A maintenance area is an area that was previously designated as a nonattainment area that a state or local government has developed a plan to reduce the criteria pollutant in violation to obtain attainment status.

3.2.1 Affected Environment

The study area is in an attainment area for all criteria pollutants.

3.2.2 Environmental Consequences

Proposed Action Alternative

Temporary and localized impacts to air quality could occur during construction of the Proposed Action. Some dust would be released and become airborne during the construction of the Proposed Action; implementation of BMPs, including periodic watering of borrow and spoil material, and access roads, would prevent large amounts of dust from being emitted (see Section 3.16 Construction Impacts).

No-Action Alternative

The No-action Alternative would have no impact on the existing air quality conditions in the study area.

3.3 ENVIRONMENTAL JUSTICE

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, signed by the President on February 11, 1994, directs federal agencies to take appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent possible and permitted by law. Fundamental Environmental Justice principles include:

- To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations
- To ensure the full and fair participation by all potentially affected communities in the decision-making process

3.3.1 Affected Environment

Selected social and demographic characteristics of the population living in Wasatch County are summarized in Table 3-1. Wasatch County exhibits limited overall racial diversity, with 90.4% of residents classified as white in 2010. Hispanic or Latino persons represent the largest ethnic/racial minority group in the community, comprising 13.5% of the county's population in 2010. Seven-percent of Wasatch County residents fell below the official poverty level.

Table 3-1 Selected Population Characteristics Relating to Environmental Justice

Wasatch County, Utah	
Total Population	23,530
Median Household Income*	\$64,651
Percent of People below Poverty Level*	7.0%
White	21,275 (90.4%)
Black or African American	79 (0.3%)
American Indian or Alaskan Native	127 (0.5%)
Asian	181 (0.8%)
Native Hawaiian or Other Pacific Islander	29 (0.1%)
Some Other Race	1,513 (6.4%)
Two or More Races	326 (1.4%)

*2007-2011 American Community Survey 5-Year Estimates
<http://factfinder2.census.gov>

3.3.2 Environmental Consequences

Proposed Action

Impacts and benefits from the Proposed Action (such as a decrease in the risk of canal breach) would be comparable for all residents in the study area. No Environmental Justice population has been identified that would disproportionately bear impacts of the Proposed Action. The Proposed Action would not result in the denial of, reduction in, or substantial delay in the receipt of the benefits of any federal programs, policies, or activities to Environmental Justice populations. Based on the above considerations, the Proposed Action would not have disproportionately high and adverse effects on minority or low-income populations.

No-action Alternative

The No-action Alternative would not have disproportionately high and adverse effects on minority or low-income populations.

3.4 SOCIOECONOMICS

3.4.1 Affected Environment

In the areas adjacent to the Timpanogos and Wasatch Canals, land is currently undergoing and will continue to undergo change from agricultural and low density residential to higher density residential and commercial in accordance with the development and zoning plans of the local agencies. For example, on the south end of the Timpanogos Canal zoning and land use maps show a change from residential agricultural zoning to medium to low density residential. On the Wasatch Canal, just north of

Heber City the zoning and land use maps show a change from residential agricultural to planned community (see Figure 1-5 in Chapter 1).

3.4.2 Environmental Consequences

Proposed Action

Growth and Development

The Proposed Action would protect current delivery obligations and would not make any changes to the availability and distribution of water in the Heber Valley (except in the updating of the pump stations and regulating ponds to accommodate the changing pattern of water demand). The Proposed Action would not generate any changes in growth and development.

The area adjacent to the Timpanogos and Wasatch Canals continues to undergo change from agricultural or undeveloped use to residential and commercial use in accordance with the development and zoning plans of the local agencies; however, the Proposed Action would not cause any growth-inducing impacts. The risk associated with a canal breach is much greater with development adjacent to the canal; therefore, the Proposed Action would be implemented in *response to* growth and development in the Heber Valley.

Tourism

During the public scoping process, some commenters expressed concerns about impacts to the tourism industry as a result of lining, enclosing, or piping the Wasatch Canal from the Provo River diversion to the Rock Ditch diversion. Proposed Action activities could impact tourism (fishing, hiking, wildlife viewing, etc.) in this area; however, this length of canal (approximately 2,800 linear feet) is only a very small portion of the available recreational opportunities in the Heber Valley. Therefore impacts to the overall tourism industry in the Heber Valley would be minimal.

As noted in Section 3.1.4, the Wasatch Canal between the Provo River diversion and the Rock Ditch diversion is in a low lying area with very low risk of canal failure. Given these conditions, impacts to this reach of the canal would likely only occur as part of other actions (development, building construction, etc.).

Property Values

Other individuals who commented during the scoping process were concerned that property values would decrease if the canals were piped or lined. Lining or piping the canals could have either a positive or negative effect on property values, depending on the parties involved. Some potential buyers may feel that lining or piping the canal would be a positive since there would not be as many easement restrictions, weeds would decrease, seepage would decrease, and land is potentially more developable. Other buyers may feel that lining or piping the canal would be a negative because a water feature with associated vegetation would be changed. Although lining or piping the canal may have an impact on property values (both positive and negative), this is both highly subjective and very local in nature.

No-action Alternative

There would be no changes to the socioeconomics in the Heber Valley over what is described in the Affected Environment.

3.5 HEALTH AND SAFETY

3.5.1 Affected Environment

The health and safety conditions in the Heber Valley are basically as described in the Affected Environment section of the WCWEP and DPR EIS. The already completed bank stabilization, canal reshaping, and increased freeboard has reduced the potential of a canal breach in these areas, which would result in allowing canal water to flow through neighborhoods and agricultural fields. However, much of the canal system still has potential problems with erosion, seepage, rodent burrows, and deep-rooted vegetation that can also contribute to canal failure.

The area adjacent to the Timpanogos and Wasatch Canals continues to undergo change from agricultural or undeveloped use to residential and commercial use in accordance with the development and zoning plans of the local agencies. This development downslope from the canals substantially exacerbates the potential damage that would occur with a canal failure.

The sections of canal that have been lined or piped are much less likely to have safety problems.

3.5.2 Environmental Consequences

Proposed Action

The Proposed Action Alternative could consist of canal bank stabilization; lining, enclosing, or piping the canals where necessary to maintain the safety, integrity, and efficiency of the canals; improving maintenance access; and enlarging regulating ponds.

Canal Bank Stabilization

Canal bank stabilization would consist of clearing flow-restricting vegetation and debris from the inside walls and bottom of the canals, reshaping the canals to reduce flow friction losses, widening and strengthening eroded and narrow banks, and removing deep-rooted vegetation having root systems within 25-ft of the canals. These activities would reduce the hazard of a canal breach.

Lining Canal

Canal lining would consist of lining the existing canals with reinforced concrete or other suitable materials. Lining the canals basically eliminates the hazard of a canal breach by stabilizing the canal banks, eliminating seepage through the soil, rodent burrows, and deep rooted vegetation.

Capping or Piping Canal

Canal capping would include enclosing previously concrete lined canals by placing a concrete cap over the top. Canal piping would include the installation of pipe. Piped reaches of the canals would be covered to an appropriate depth and revegetated. Piping the canals basically eliminates the hazard of a canal breach by stabilizing the canal banks, eliminating seepage through the soil, rodent burrows, and deep rooted vegetation. Piping or capping the canals also reduces concerns for the safety of children and wildlife.

Maintenance Access

The Proposed Action includes the construction of OM&R access along both sides of the Timpanogos and Wasatch Canals (where practicable). Providing access along the canals would facilitate inspection and maintenance, as necessary.

Regulating Pond Expansion

The Proposed Action includes enlarging the Timpanogos and Humbug regulating ponds. There would be no impact to health and safety as a result of enlarging the regulating ponds.

Safety of Open Canals

During the public scoping process, some commenters expressed concerns about the safety of the existing open canals and indicated that they would like to have the canals fenced. The Proposed Action does not include fencing; however, adjacent property owners are permitted to install fencing along the easement line.

No-action Alternative

Health and safety risks would remain the same as currently exists. The hazard of a canal breach by undetected unstable canal banks, seepage through the soil, rodent burrows, and deep rooted vegetation would continue to exist. With continued residential development below the canals, there would be an associated increase in the risk associated with canal failure.

3.6 RECREATION

3.6.1 Analysis Areas

For purposes of the recreation resource analysis, the study area will be divided into the following three analysis areas:

- Wasatch Canal – Wasatch Canal Diversion from the Provo River to Rock Ditch Diversion
- Timpanogos Canal – Jordanelle Reservoir to Timpanogos Pond and Wasatch Canal – Rock Ditch Diversion to Humbug Pond
- Regulating Ponds Expansion Area

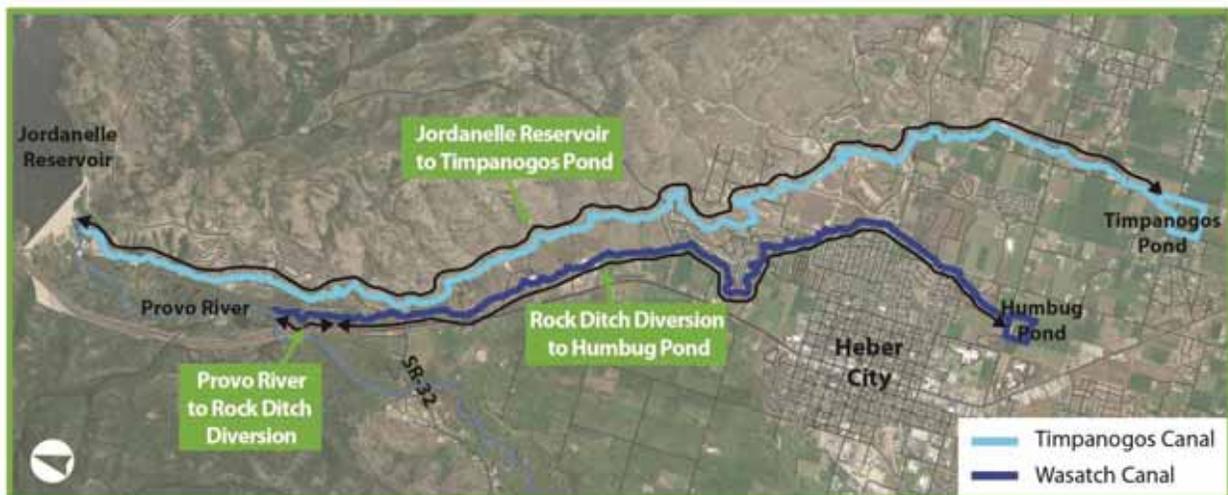


Figure 3-1 Analysis Segments (Recreation)

3.6.2 Affected Environment

Wasatch Canal – Wasatch Canal Diversion from the Provo River to Rock Ditch Diversion

Comments received during public scoping indicate that members of the public believe that the Wasatch Canal, between the Provo River diversion and the Rock Ditch diversion, provides recreational opportunities in the form of fishing, hiking, and wildlife viewing.

Timpanogos Canal – Jordanelle Reservoir to Timpanogos Pond and Wasatch Canal – Rock Ditch Diversion to Humbug Pond

The Timpanogos Canal and the Wasatch Canal between the Rock Ditch Diversion and Humbug Pond are not currently recreational features, with the exception of an existing recreational trail on the Wasatch Canal between approximately Center Street and 1200 South.

Regulating Ponds Expansion Area

The regulating ponds expansion area does not provide for recreational opportunities.

3.6.3 Environmental Consequences

Proposed Action Alternative

Wasatch Canal – Wasatch Canal Diversion from the Provo River to Rock Ditch Diversion

The Proposed Action Alternative in this area could consist of canal bank stabilization; lining, enclosing, or piping the canal; or improving maintenance access.

Canal Bank Stabilization

Canal bank stabilization, in this analysis area, would consist of clearing flow-restricting vegetation and debris from the inside walls and bottom of the canals and reshaping the canal to reduce flow friction losses. Although the canals are not intended to be fisheries and are subject to being shutoff periodically for operation and maintenance activities, incidental fishing occurs in this area. Fishing, hiking, and wildlife viewing opportunities would still be available, but the nature of the experience would be more limited due to changes in wildlife habitat.

Lining, Enclosing, or Piping the Canal

As described above, the canals are not intended to be fisheries and are subject to being shutoff periodically for operation and maintenance activities; however, incidental fishing does occur in this area. Lining, enclosing, or piping the Wasatch Canal between the Wasatch Canal diversion from the Provo River and the Rock Ditch Diversion would impact fishing opportunities in this analysis area. Fishing would still be possible in approximately 13 miles of the Provo River through the Heber Valley, and in other streams in the area, but not in the Wasatch Canal.

As noted in Section 3.1.4, the Wasatch Canal between the Provo River diversion and the Rock Ditch diversion is in a low lying area with very low risk of canal failure. Given these conditions, impacts to this reach of the canal would likely only occur as part of other actions (development, building construction, etc.).

Hiking and wildlife viewing opportunities would still be available, but the nature of the experience would be more limited due to changes in wildlife habitat.

Timpanogos Canal (Jordanelle Reservoir to Timpanogos Pond) and Wasatch Canal (Rock Ditch Diversion to Humbug Pond)

The Proposed Action Alternative in these areas could consist of canal bank stabilization; lining, enclosing, or piping the canal; or improving maintenance access and would have no effect on recreational opportunities.

During the public scoping process, some commenters expressed a desire for the Joint Lead Agencies to provide recreational trails either adjacent to, or on top of enclosed or piped canals, while others expressed concern about additional trails across their property. The construction of recreational trails is not included as part of the Proposed Action Alternative, but the Proposed Action would not preclude the

implementation of recreational trails by others. However, construction of trails along the canals would require federal permits and private property owner permission, and may require additional National Environmental Policy Act (NEPA) documentation. The rights of private property owners will be recognized.

Regulating Ponds Expansion Area

The Proposed Action, which includes expanding the Humbug and Timpanogos Regulating Ponds, would have no impact to recreational resources in this analysis area.

No-action Alternative

The No-action Alternative would not impact recreational resources.

3.7 PRIME, UNIQUE, AND STATEWIDE IMPORTANT FARMLAND

The Farmland Protection and Policy Act (FPPA) defines prime farmland as farmland that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for other uses. A unique farmland is land other than prime farmland that is used for production of specific high-value food and fiber crops; it has the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high quality or high yields of specific crops. Farmland does not include land already in or committed to urban development. Farmland *already in* urban development includes lands identified as “urbanized area” on the Census Bureau Map. Farmland committed to urban development or water storage includes all such land that receives a combined score of 160 points or less from the Natural Resources Conservation Service’s (NRCS) Farmland Conversion Impact Rating (form AD-1006). A portion of this form is completed by the Federal agency involved in the potential farmland conversion, and the remainder is completed by the NRCS. The form considers information such as the average farm size in the area, major crops, the amount of farmland to be converted, and the distance to urban areas.

The State of Utah allows for the formation of Agricultural Protection Areas (APAs). Areas designated as such are protected for the production of commercial crops, livestock, and livestock products. APAs can be established in unincorporated parts of a county or within a city or town limit.

3.7.1 Affected Environment

A review of the NRCS web soil survey revealed the presence of soils indicative of prime farmland and farmland of statewide importance near the study area (see Figure 3-2).

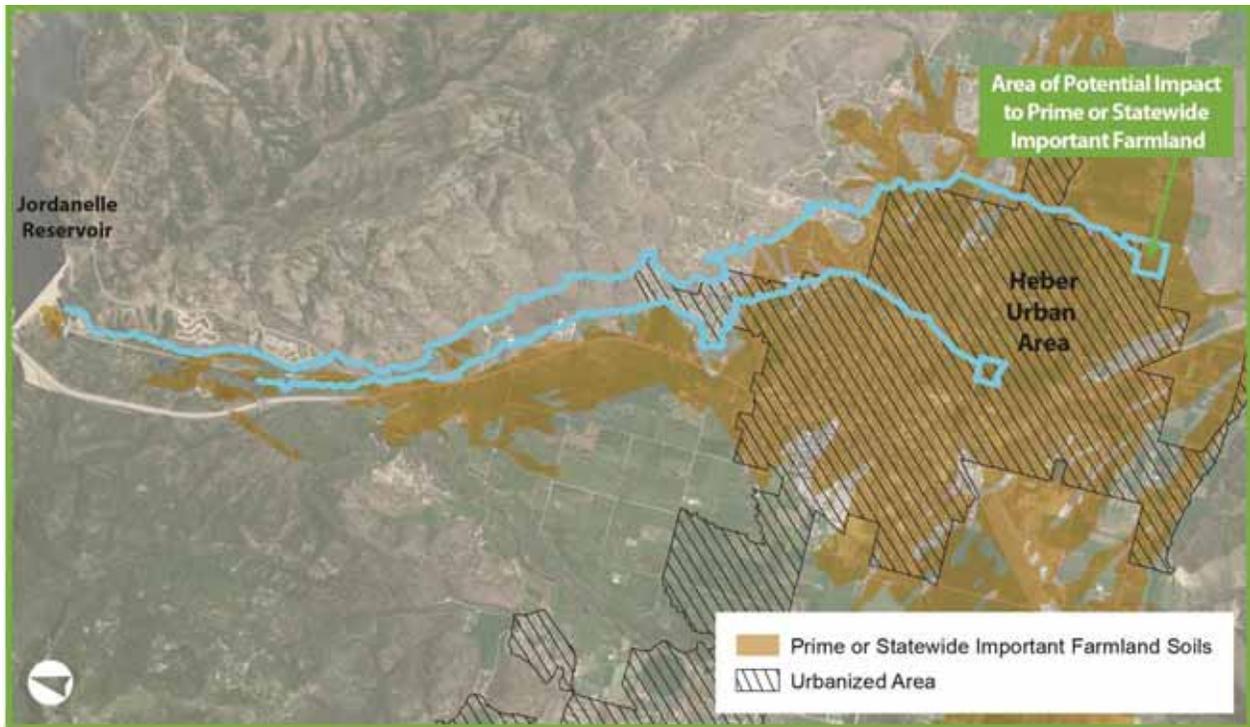


Figure 3-2 Prime or Statewide Important Farmland Soils near the Study Area

Portions of the study area are within the boundaries of the Heber urban area, as identified in the 2010 Census, but portions of the study area are outside of that defined urban area and need to be considered for prime, unique, or statewide important farmland (see Figure 3-2).

According to the Wasatch County planning department, there are no Agricultural Protection Areas (APAs) within the study area.

3.7.2 Environmental Consequences

Proposed Action Alternative

The Proposed Action Alternative could consist of canal bank stabilization; lining, enclosing, or piping the canal; improving maintenance access to both the Timpanogos and Wasatch Canals; or enlarging the Humbug and Timpanogos regulating ponds.

Proposed Action Activities for the Timpanogos and Wasatch Canals

Proposed Action activities that would occur along the Timpanogos and Wasatch Canals (canal bank stabilization; lining, enclosing, or piping; and improving maintenance access) would remain within the canal easements and would not require the use of any farmland. Therefore, Proposed Action activities that would occur along the canals would not have any impact to prime, unique, or statewide important farmland.

Regulating Ponds

The Proposed Action includes enlarging the Timpanogos and Humbug regulating ponds. The Humbug regulating pond is within the boundaries of the Heber urban area; therefore, enlarging the Humbug regulating pond would have no impact to prime, unique, or statewide important farmland as it would be classified as land already committed to urban development.

The Timpanogos regulating pond is outside of the Heber urban area. Enlarging the Timpanogos regulating pond could impact approximately 14-acres of soil that is indicative of prime or statewide important farmland; however, the Farmland Impact Conversion Rating resulted in a score of 142, which is less than 160 points (see attached Farmland Conversion Impact Rating Form and October 30, 2013 correspondence from the NRCS in Appendix A). Therefore, under the definition contained in the Farmland Protection Policy Act (7 CFR 658.2), this land would be classified as committed to urban development and there would be no impact to prime, unique, or statewide important farmland.

No-action Alternative

The No-action Alternative would not impact prime, unique, or statewide important farmland.

3.8 FLOODPLAINS

Floodplains are defined as normally dry areas that are occasionally inundated by high stream flows or high lake water. Development in floodplains can reduce their flood-carrying capacity and extend the flooding hazard beyond the developed area.

A stream has a *regulatory floodplain* if the floodplain is identified and mapped by the Federal Emergency Management Agency (FEMA). Floodplains mapped by FEMA are managed at the local level by communities to prevent flooding. The *base flood elevation* is the computed elevation to which floodwater is anticipated to rise during the *base flood*, which is the flood that has a 1-percent chance of being equaled or exceeded in any given year. This is also called the 100-year flood. The land area covered by the floodwaters of the base flood is the Special Flood Hazard Area (SFHA) on National Flood Insurance Program (NFIP) maps.

3.8.1 Affected Environment

Some of the streams that traverse the study area have FEMA-defined regulatory floodplains. These are shown on Flood Insurance Rate Maps (FIRM) produced by FEMA (www.msc.fema.gov).

Floodplain Zones in the Study Area

The following mapped FEMA Special Flood Hazard Areas are present in the study area. A Special Flood Hazard Area is the area that would be covered by floodwaters and where floodplain management must be enforced.

- **Zone A:** Areas that could be flooded by a 100-year flood, as generally determined using approximate methods. No base flood elevations are shown
- **Zone AE:** Areas subject to inundation by the 1-percent-annual-chance flood event determined by detailed methods. Base Flood Elevations are shown.

Within the study area, FEMA has mapped four flooding risk areas (see Table 3-2 and Figure 3-3).

Table 3-2 FEMA Mapped Flooding Risks

Figure Label	Description
1	Provo River – The floodplain along the Provo River is designated Zone A. This includes the area west of Old US-40 and north of where the Provo River passes under US-40, which is north of the Wasatch Canal diversion.
2	North Lake Creek (also known as Spring Ditch) – The floodplain along North Lake Creek is designated Zone AE. This floodplain crosses both the Timpanogos and Wasatch Canals.
3	South Lake Creek – The floodplain along South Lake Creek is designated Zone AE.
4	Center Creek – The floodplain along Center Creek is designated Zone AE.

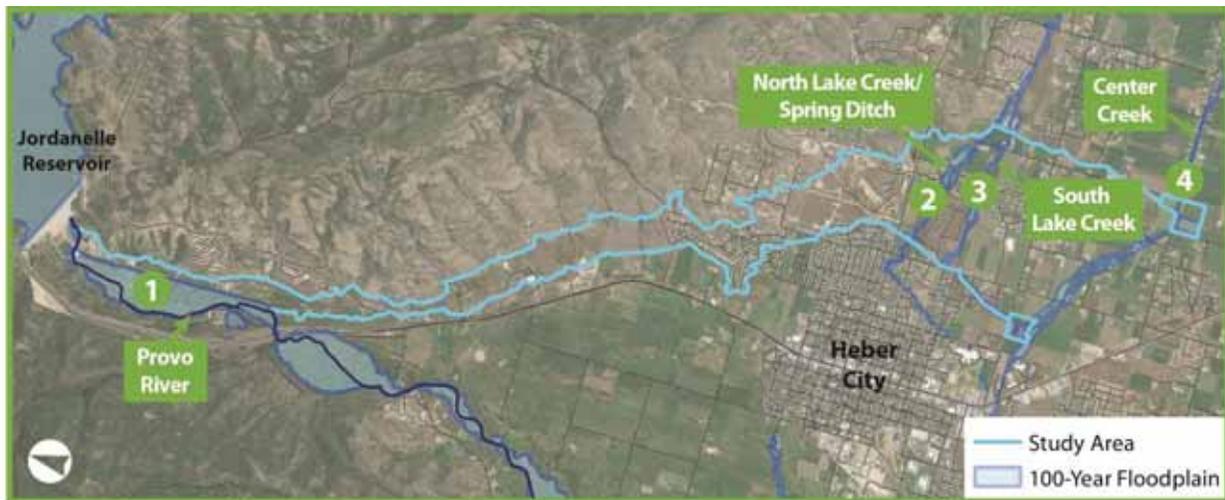


Figure 3-3 100-Year Floodplains

3.8.2 Environmental Consequences

The 100-year flood event is used to establish regulatory floodplains and is used as the basis of hydraulic design for structures in areas with regulatory floodplains. Although there is risk of flooding for infrastructure and development in other portions of the project area, the discussion of environmental consequences is limited to the Zone A and Zone AE (100-year) flood zones. This analysis will discuss impacts to each of the four floodplains described above.

Proposed Action Alternative

Provo River Floodplain

1 Proposed Action Alternative activities would occur outside the Provo River floodplain; therefore, the Proposed Action Alternative would not impact the floodplain at the Provo River.

North Lake Creek, South Lake Creek, and Center Creek Floodplains

2 3 4 The Proposed Action Alternative may require new construction or alteration of existing structures within the FEMA 100-year floodplain for North Lake Creek, South Lake Creek, and Center

Creek. Design of new facilities would maintain canal capacity and would not result in a rise of the 100 year flood surface elevations at cross-drainage locations.

The Proposed Action Alternative in these areas could consist of canal bank stabilization; lining, enclosing, or piping the canal; improving maintenance access to both the Timpanogos and Wasatch Canals; or enlarging the Humbug and Timpanogos regulating ponds.

Canal Bank Stabilization

Canal bank stabilization would consist of clearing flow-restricting vegetation and debris from the inside walls and bottom of the canals, reshaping the canals to reduce flow friction losses, widening and strengthening eroded and narrow banks, and removing deep-rooted vegetation having root systems within 25-ft of the canals. Canal bank stabilization activities for the Timpanogos and Wasatch Canals would likely not change the base flood elevation; therefore, canal bank stabilization activities would not adversely impact the floodplains at North Lake Creek, South Lake Creek, or Center Creek.

Canal Lining

Canal lining would consist of lining the existing canals with reinforced concrete or other suitable materials. Canal lining would be implemented in a manner that would not change the base flood elevation; therefore, there would be no adverse impact to the floodplains at North Lake Creek, South Lake Creek, or Center Creek.

Canal Capping or Piping

Canal capping would include enclosing previously concrete lined canals by placing a cap over the top. Canal piping would include the installation of pipe. Piped reaches of the canals would be covered to an appropriate depth and revegetated. Canal capping and piping would be implemented in a manner that would not change the base flood elevation; therefore, there would be no adverse impact to the floodplains at North Lake Creek, South Lake Creek, or Center Creek.

Maintenance Access

The Proposed Action includes the construction of OM&R access along both sides of the Timpanogos and Wasatch Canals (where practicable). Access would be implemented in a manner that would not change the base flood elevation; therefore, there would be no adverse impact to the floodplains at North Lake Creek, South Lake Creek, or Center Creek.

Regulating Ponds

The Proposed Action includes enlarging the Timpanogos and Humbug regulating ponds. Enlarging the ponds would be implemented in a manner that would not change the base flood elevation; therefore, there would be no adverse impact to the floodplains at North Lake Creek, South Lake Creek, or Center Creek.

Mitigation

Design of new facilities would maintain canal capacity and would not result in a rise of the 100 year flood surface elevations at cross-drainage locations. Also, the Central Utah Water Conservancy District (CUWCD) would coordinate with the local agencies responsible for flood control in areas where flood channels cross the canals.

No-action Alternative

Under the No-action Alternative no impacts to 100-year floodplains would occur; however, the canals would continue to experience the threat of breach as a result of flooding into the canals.

3.9 CULTURAL RESOURCES

Historic properties include archaeological resources (both prehistoric and historic), architectural resources (buildings and structures), and traditional cultural properties. The Advisory Council on Historic Preservation (ACHP) defines a historic property as “any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP (National Register of Historic Places).”

The National Historic Preservation Act (NHPA) of 1966, as amended, and its implementing regulations (36 CFR §800) establish the national policy and procedures regarding historic properties. Section 106 of the NHPA requires consideration of the effects of federal projects and policies on historic properties. Also, the Utah Historic Preservation Act (UCA §9-8-401 et seq.) was passed to provide protection of “all antiquities, historic and prehistoric ruins, and historic sites, buildings, and objects which, when neglected, desecrated, destroyed or diminished in aesthetic value, result in an irreplaceable loss to the people of this state.”

The Section 106 review process requires historic properties to be evaluated for eligibility and listing on the NRHP, based upon whether “the quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association,” and meet one or more of the criteria in Table 3-3.

Table 3-3 NRHP Criteria

NRHP Criteria	Characteristics
A	Associated with events that have made a significant contribution to the broad patterns of our history.
B	Associated with the lives of persons significant in our past.
C	Embody distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction.
D	Yielded, or may likely to yield, information important in prehistory or history.

Native American Religious Concerns

The United States has a trust responsibility to protect and maintain rights reserved by or granted to Indian tribes by treaty, statutes, and executive orders. This trust responsibility requires that the Department of the Interior take actions reasonably necessary to protect Indian Trust Assets. The Department of the Interior Secretarial Order Number 3215, dated April 28, 2000, further states:

The proper discharge of the Secretary's trust responsibility requires, without limitation, that the Trustee, with a high degree of care, skill, and loyalty: Protect and preserve Indian trust assets from loss, damage, unlawful alienation, waste, and depletion.

Further, the Department of the Interior’s Indian Trust Assets policy states that the Department will carry on its activities in a manner which protects Indian Trust Assets and avoids adverse impacts on Indian Trust Assets when possible. When the Department cannot avoid adverse impacts, it will provide appropriate mitigation or compensation.

3.9.1 Affected Environment

As part of the WCWEP and DRP EIS, *A Cultural Resources Survey of Portions of the Timpanogos, Humbug, and Wasatch Canals, Wasatch County, Utah* (August 1999) was prepared. The report determined that the Wasatch, Timpanogos, and Humbug canals were determined eligible to the NRHP under Criterion A and C.

For the WCWEP OM&R EA, a Class III Cultural Resources Survey was conducted in the regulating pond expansion areas. Additionally, the IMACS site forms were updated for the Wasatch, Timpanogos, and Humbug Canals. The Wasatch, Timpanogos, and Humbug Canals are eligible for inclusion on the NRHP (see Table 3-4).

Table 3-4 Cultural Resources within Study Area

Site Number	Site Name	NRHP Eligibility
42WA217	Wasatch Canal	Eligible, Criteria A and C
42WA218	Timpanogos Canal	Eligible, Criteria A and C
42WA219	Humbug Canal	Eligible, Criterion A

3.9.2 Environmental Consequences

Proposed Action Alternative

Effects are defined as “alteration[s] to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register” (36 CFR §800.16(i)). Impacts to historic properties are categorized as No Historic Properties Affected, No Adverse Effect, and Adverse Effect.

A finding of **No Historic Properties Affected** is made when “[e]ither there are no historic properties present or there are historic properties present but the undertaking will have no effect upon them as defined in §800.16(i)” (See 36 CFR §800.1(d)(1)). A finding of “no historic properties affected” is used in three instances: (1) No cultural resources are present in the Area of Potential Effect (APE), eligible or ineligible; (2) cultural resources are present in the APE, but no eligible properties are present; and (3) eligible properties are present in the APE, but the undertaking will have no effect on them.

A finding of **No Adverse Effect** is made “[w]hen the undertaking’s effects do not meet the criteria of [adverse effect] or the undertaking is modified or conditions are imposed... to ensure consistency with the Secretary’s standards for the treatment of historic properties (36 CFR §68) to avoid adverse effects” (See 36 CFR §800.5(b)). In other words, a finding of “no adverse effect” is used when an undertaking affects a property that is eligible for or listed on the National Register but does not impair the integrity of the property.

A finding of **Adverse Effect** is made “[w]hen an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property’s location, design, setting, materials,

workmanship, feeling, and association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative" (See 36 CFR §800.5(a)(1)).

In the WCWEP and DRP EIS, it was determined that there would be an Adverse Effect to the Timpanogos Wasatch, and Humbug Canals. As part of the mitigation for the Adverse Effects to the historic canals, a Programmatic Agreement between the United States Department of the Interior, CUWCD, the Utah Reclamation Mitigation and Conservation Commission, the United States Department of Agriculture Forest Service, the Utah State Historic Preservation Officer, and the Advisory Council on Historic Preservation was prepared and executed. Mitigation included the preparation of Intensive Level Surveys (ILSs) for the Timpanogos, Wasatch, and Humbug Canals.

State Historic Preservation Office Coordination

The project team met with the State Historic Preservation Office (SHPO) on June 25, 2013 to discuss potential impacts to cultural resources as a result of Proposed Action activities. The original WCWEP was previously determined to have an adverse effect on the canals. SHPO indicated that piping the Timpanogos, Wasatch, and Humbug Canals would have additional adverse effects and could remove them from eligibility to the NRHP. To account for these additional impacts, SHPO requested additional mitigation be provided (see below for discussion on mitigation measures outlined in the Memorandum of Agreement (MOA)).

The Joint Lead Agencies have determined that the Proposed Action would have an Adverse Effect on the historic canals. SHPO concurred with the Joint Lead Agencies on October 10, 2013 (see Appendix A).

Native American Religious Concerns

The Proposed Action would have no known impacts on Native American religious sites, ceremonies and ceremonial sites, burial grounds, or other sacred lands.

Copies of all correspondence with SHPO and the Section 106 consulting agencies are contained in Appendix A. No tribal representatives responded to the May 10, 2013 or May 13, 2013 invitations and associated follow-up calls.

Mitigation

A MOA has been prepared and agreed upon and executed by CUWCD, the United States Department of the Interior, the Utah Reclamation Mitigation and Conservation Commission, and the Utah State Historic Preservation Officer. Mitigation measures outlined in the MOA include (see Appendix A):

- Produce a brochure that summarizes the historic context of the Wasatch, Timpanogos, and Humbug canals. The brochure will include:
 - The development of irrigation and agriculture in Wasatch County and the importance of these events to local history; the various irrigation companies in Wasatch County; and the histories of the Wasatch, Timpanogos, and Humbug canals.
 - The brochure will be developed through already completed cultural resource reports prepared for WCWEP and will be supplemented with research at the Division of State History, Wasatch County, CUWCD, historic photograph archives, and other relevant archives or libraries.

- Produce a digital recording of oral history interviews with persons knowledgeable in the area's history and the development of irrigation in Wasatch County including:
 - Preparation of a DVD containing the oral history interviews.
 - A list of interviewees will be provided by the Heber City Certified Local Government (CLG).
- The brochure and the oral history interviews DVD will be disseminated by the Heber City CLG with the assistance of CUWCD and include:
 - Local school libraries, local newspapers, Heber City Chamber of Commerce, Wasatch County Chamber of Commerce, and other groups or agencies as determined by the Heber City CLG and CUWCD.
 - A digital copy of the brochure and the video of the oral history interview on CUWCD's webpage.

If any Native American artifacts are uncovered during ground disturbing activities, the appropriate contact procedures will be followed (see Section 3.16 Construction Impacts).

No-action Alternative

The No-action Alternative would not directly impact cultural resources; however, with the increased risk of canal breaches under the No-action Alternative, impacts to cultural resources (Timpanogos, Wasatch, and Humbug Canals) may occur as repairs are conducted.

3.10 WATER RESOURCES

3.10.1 Water Quality

The Federal Water Pollution Control Act (33 USC 1251-1376), as amended by the Clean Water Act (CWA) of 1977 and 1987, acts as the primary regulation for water quality.

Affected Environment

Each stream and reservoir in Utah is classified according to its beneficial uses. The classifications are used to determine the required standards for water quality parameters. According to the Standards of Quality for Waters of the State, Environmental Quality (R317-2), Utah Administrative Code (UAC), the Timpanogos and Wasatch Canals are classified as:

- **Class 2B** – Protected for infrequent primary contact recreation. Also protected for secondary contact recreation where there is low likelihood of ingestion of water or a low degree of bodily contact with the water.
- **Class 3E** – Severely habitat-limited waters. Narrative standards will be applied to protect these waters for aquatic wildlife.
- **Class 4** – Protected for agricultural uses including irrigation of crops and stock watering.

Herbicides

Herbicides are currently used when necessary to control aquatic weed growth in the Timpanogos and Wasatch Canals.

Nutrients and Sediment

In areas where the Timpanogos and Wasatch Canals are earthen, sediment from bank erosion enters the canals, and can decrease water quality. Additionally, the currently open canals may inadvertently intercept urban and agricultural runoff, which can contain fertilizers, pesticides, sediment, automobile

related pollutants (lead, copper, zinc, oil, grease, and rust) and de-icing chemicals (salt and salt solutions).

Groundwater

The groundwater aquifer in Wasatch County (Heber Valley and Round Valley Region) has been classified 1A, pristine, by the Utah Division of Water Quality by exhibiting Total Dissolved Solids (TDS) of less than 500 mg/L and no contaminant concentrations that exceed the ground water quality standard. The area around Midway is classified Class 2 ground water because TDS is greater than 500 mg/L but less than 3000 mg/L and may have contaminants that exceed the ground water quality standard.

Environmental Consequences

Proposed Action Alternative

The Proposed Action Alternative could consist of canal bank stabilization; lining, enclosing, or piping the canal; improving maintenance access; and enlarging regulating ponds.

Herbicides

- **Canal Bank Stabilization** – Canal bank stabilization activities (clearing flow-restricting vegetation and debris from inside walls, reshaping the canal, widening and strengthening banks, and removing deep-rooted vegetation) would not cause a change in the amount of herbicides used to control aquatic weed growth.
- **Lining, Enclosing, or Piping** – Lining, enclosing, or piping the canal would improve water quality in the Wasatch and Timpanogos Canals because herbicide application would be necessary on a less frequent basis.
- **Improving Maintenance Access** – Improving maintenance access would not cause a change in the amount of herbicides used to control aquatic weed growth.
- **Enlarging Regulating Ponds** – Enlarging regulating ponds would not cause a change in the amount of herbicides used to control aquatic weed growth.

Nutrients and Sediments

- **Canal Bank Stabilization** – Canal bank stabilization activities (clearing flow-restricting vegetation and debris from inside walls, reshaping the canal, widening and strengthening banks, and removing deep-rooted vegetation) would not cause a change in water quality.
- **Lining** – Lining the canals may cause a slight improvement to water quality because water would be conveyed in concrete lined channels and would not be exposed to sediment from bank erosion and would be less likely to intercept as much agricultural and urban runoff.
- **Enclosing or Piping** – Enclosing or piping the canals would improve water quality in the Timpanogos and Wasatch Canals because water would be conveyed in enclosed conduits and would not be exposed to sediment from bank erosion or agricultural and urban runoff.
- **Improving Maintenance Access** – Constructing maintenance access would not impact water quality in the canals.
- **Enlarging Regulating Ponds** – Enlarging regulating ponds would not impact water quality in the canals.

Groundwater

Because groundwater recharge from the Timpanogos and Wasatch Canals is minimal (as described in Section 3.10.2 Groundwater), there would be no impact to groundwater quality as a result of Proposed Action activities.

No-Action Alternative

Under the No-action Alternative, herbicides, nutrients, and sediments would continue to remain in the water in the same ratios as current conditions.

3.10.2 Groundwater

Affected Environment

The study area is within the Heber Valley groundwater basin, which extends from Jordanelle Reservoir in the north to Deer Creek Reservoir in the south. According to the WCWEP and DRP EIS, approximately 1.5 million acre-feet of water is stored in the Heber Valley groundwater basin. See Table 3-5 for annual discharge and recharge rates, as well as the sources of discharge and recharge.

Table 3-5 Heber Valley Groundwater Basin Recharge and Discharge

	Quantity	Sources
Annual Discharge	111,300 acre-feet	<ul style="list-style-type: none"> • Evapotranspiration • Leakage to Deer Creek Reservoir • Seepage to Provo River, springs, and seeps • Wells (accounts for only 7/10 of 1 percent of total discharge)
Annual Recharge	111,300 acre-feet	<ul style="list-style-type: none"> • Precipitation • Stream infiltration • Unconsumed irrigation water • Subsurface inflow from consolidated rocks

Utah Division of Water Resources, State Water Plan

Environmental Consequences

Proposed Action Alternative

The Proposed Action Alternative could consist of canal bank stabilization; lining, enclosing, or piping the canal; improving maintenance access; and enlarging regulating ponds.

Canal Bank Stabilization

Canal bank stabilization activities (clearing flow-restricting vegetation and debris from inside walls, reshaping the canal, widening and strengthening banks, and removing deep-rooted vegetation) would not impact groundwater recharge.

Lining, Enclosing, or Piping the Canals

If earthen sections of the canals are lined, enclosed, or piped, seepage losses along the canals are estimated to be less than a hundredth of a percent of the Heber Valley groundwater basin.

No-action Alternative

The No-action Alternative would not impact groundwater resources.

3.10.3 Waters of the U.S. and Wetlands

The Federal Water Pollution Control Act (33 USC §1251-1376), as amended by the Clean Water Act (CWA) of 1977 and 1987, acts as the primary regulation for water quality. It controls discharge of

dredged or fill material into "Waters of the United States" and requires states and Indian tribes to set specific water quality criteria and pollution control programs. The Environmental Protection Agency is charged with regulating its implementation and has delegated certain portions of its authority to the U.S. Army Corps of Engineers (USACE). Under the CWA, the USACE regulates placement of dredged or fill material impacting Waters of the United States, including jurisdictional wetlands. Waters of the U.S. have been defined for purposes of the CWA as:

- (a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;*
- (b) All interstate waters, including interstate "wetlands";*
- (c) All other waters such as interstate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
 - (1) Which are or could be used by interstate or foreign travelers for recreational or other purposes;*
 - (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or*
 - (3) Which are used or could be used for industrial purposes by industries in interstate commerce;**
- (d) All impoundments of waters otherwise defined as waters of the United States under this definition;*
- (e) Tributaries of waters identified in paragraphs (a) through (d) of this definition;*
- (f) The territorial sea; and*
- (g) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.*

USACE presently has jurisdiction over any waters that are adjacent to, bordering, or contiguous with navigable waterways. Under Section 404 of the Clean Water Act, no discharge of dredged or fill material is permitted in waters of the U.S. if there is a less environmentally damaging practicable alternative to that part of the activity that would result in a discharge of fill material to waters of the U.S. An alternative is practicable if it is available and capable of being implemented after taking into consideration cost, existing technology, and logistics in light of the overall project purposes.

Executive Order 11990 (May 24, 1977) requires federal agencies to not undertake or provide assistance to activities that impact wetlands. If a project does impact wetlands, it must be determined by the head of the agency (1) that there is no practicable alternative to such construction, and (2) that the Proposed Action includes all practicable measures to minimize harm to wetlands, which may result from such use. In making this finding, the head of the agency may take into account economic, environmental, and other pertinent factors.

When a project involves wetlands or "waters of the United States," a permit from the Army Corps of Engineers is required unless the project is exempt. Exemptions from the permit requirement can be pursuant to the nationwide or general permit scheme (NWP) or by qualifying for a specific, statutory or regulatory exemption. Statutory exemptions are set forth in 33 USC section 1344(f)(1). Specifically, section 1344(f)(1)(C) exempts construction or maintenance of irrigation ditches. That section exempts construction or maintenance of irrigation ditches unless the project (1) as its purpose, initiates a

"change of use," i.e. converts a wetland into a non-wetland, and (2) impairs flow or reduces the reach of U.S. waters.

Both the Timpanogos and Wasatch canals were built in the late 1800's in an effort to better distribute irrigation water to dry areas in the Heber Valley. These canals were originally owned and operated by canal companies that were formed by the very farmers and landowners in need of getting water to their land for crop and livestock production. In order to distribute water to the south end of the valley, generally the canals were built with a very shallow grade, closely mirroring the exiting topography, and dug primarily on hillsides, elevated well above the valley floor. The canals likely never went through or bisected any low valley areas where naturally occurring wetlands would most likely have been located. Since the time of construction, these canals have always served the need of delivering water to the end water users.

Prior to WCWEP, any tailwater from the canals may have eventually returned to the Provo River. However, since the conversion from flood irrigation to sprinkler practices (2001) and the creation of regulating ponds, excess water or waste irrigation water is conserved. Provo River water diverted into the Timpanogos and Wasatch canals is 100% allocated and put into irrigation pipes and distributed. Any non-delivered water is released to recharge basins where it percolates into the ground to meet project recharge commitments. If excess water reaches the regulating ponds, emergency spillways have been built to allow for a managed release. Water volumes must reach approximately 40 acre-feet for the Humbug regulating pond and 80 acre-feet for the Timpanogos regulating pond before water can go over the emergency spillways. Water spilled from the spillways could eventually return to the Provo River, but the frequency and duration of such flows are very limited.

The canals have not in the past and presently do not serve as tributaries to other lakes, rivers or streams. Based on the conditions described above, no CWA permit is necessary.

Affected Environment

Timpanogos Canal

The Timpanogos Canal terminates at the Timpanogos Regulating Pond; therefore, there is no surface connection to the Provo River or other waters of the U.S.

Wetlands

There are limited wetland areas in proximity to the Timpanogos Canal at various locations; however, these areas are generally supported by cross-drainages, seeps, and springs. The canal generally does support a narrow strip of riparian vegetation on the inside canal bank slopes and some nearby trees.

Wasatch Canal

The Wasatch Canal terminates at the Humbug Regulating Pond; therefore, there is no surface connection to the Provo River or other waters of the U.S.

Wetlands

Along the Wasatch Canal, between the Provo River and the Rock Ditch diversion, there are numerous wetland areas adjacent to and near the canal. This area of the Wasatch Canal is a gaining reach, with natural springs and wetlands occurring throughout the area (based on field observations and National Wetland Inventory (NWI) maps). Because this area of the canal is a gaining reach, there is no seepage from the Wasatch Canal to support the wetlands; wetlands are feeding water into the canal.

South of the Rock Ditch diversion, there are limited wetland areas in proximity to the Wasatch Canal at various locations; however, these areas are generally supported by cross-drainages, seeps, and springs. The canal generally does support a narrow strip of riparian vegetation on the inside canal bank slopes and some nearby trees.

Environmental Consequences

Proposed Action Alternative

Timpanogos Canal

The Proposed Action Alternative in this area could consist of canal bank stabilization; lining, enclosing, or piping the canal; or improving maintenance access.

Canal Bank Stabilization

Canal bank stabilization, in this analysis area, would consist of clearing flow-restricting vegetation and debris from the inside walls and bottom of the canals, reshaping the canal to reduce flow friction losses, and removing deep-rooted vegetation. These activities would not impact wetlands adjacent to the Timpanogos Canal.

Lining, Enclosing, or Piping the Canal and Constructing Maintenance Access

As discussed in the Affected Environment section, the wetland areas adjacent to the Timpanogos Canal are not supported solely by canal seepage. The Proposed Action Alternative, which could consist of lining, enclosing, or piping the canal; or improving maintenance access, would not impact wetlands because these activities would not impact the cross-drainages, seeps, and springs that currently support the wetlands that are adjacent to the Timpanogos Canal.

Wasatch Canal

The Proposed Action Alternative in this area could consist of canal bank stabilization; lining, enclosing, or piping the canal; or improving maintenance access.

Canal Bank Stabilization

Canal bank stabilization, in this analysis area, would consist of clearing flow-restricting vegetation and debris from the inside walls and bottom of the canals and reshaping the canal to reduce flow friction losses. These activities would not impact waters of the U.S. or wetlands on the Wasatch Canal.

Lining, Enclosing, or Piping the Canal and Constructing Maintenance Access

Because the Wasatch Canal, between the Provo River and the Rock Ditch Diversion, is a gaining reach, lining, enclosing, or piping the canal would not impact adjacent wetlands. These activities may increase wetland areas adjacent to the Wasatch Canal because the water currently feeding the Wasatch Canal from adjacent wetlands and natural springs would remain in the area, instead of entering the canal and moving out of the area.

As discussed in the Affected Environment section, the wetland areas adjacent to the Wasatch Canal, south of the Rock Ditch Diversion, are not generally supported by canal seepage. The Proposed Action Alternative, which could consist of lining, enclosing, or piping the canal; or improving maintenance access, would not impact wetlands because these activities would not impact the cross-drainages, seeps, and springs that currently support the wetlands that are adjacent to the Wasatch Canal.

Mitigation

During the final design process, all proposed areas to be disturbed, including staging areas, accesses, borrow and waste sites, would be inventoried for the presence of wetlands.

No-action Alternative

The No-action Alternative would not impact wetlands.

3.11 AQUATIC RESOURCES

3.11.1 Affected Environment

The canals are not intended to be fisheries and are shutoff annually during the non-irrigation season. They are also subject to being shutoff periodically for operation and maintenance activities. However, fish currently inhabit the Timpanogos and Wasatch Canals, including the lined and piped portions.

3.11.2 Environmental Consequences

Proposed Action Alternative

The Proposed Action Alternative could consist of canal bank stabilization; lining, enclosing, or piping the canals; improving maintenance access; and expanding regulating ponds.

Canal Bank Stabilization

Canal bank stabilization activities (clearing flow-restricting vegetation and debris from inside walls, reshaping the canal, widening and strengthening banks, and removing deep-rooted vegetation) would not impact aquatic resources in the Wasatch and Timpanogos Canals. Fish may continue to inhabit the canals.

Lining, Enclosing, or Piping the Canal

As discussed above, the canals are not intended to be fisheries; however, fish currently inhabit the Timpanogos and Wasatch Canals, including the lined and piped portions. Lining, enclosing, or piping the canals would change the nature of the canal, particularly on the Wasatch Canal between the Provo River and the Rock Ditch Diversion, but fish could still use the canal. Coordination with the Utah Division of Wildlife Resources (UDWR) has indicated that the Proposed Action impacts to aquatic resources within the canals would be negligible because of the abundance of fish habitat near the study area, including in the Provo River and other nearby streams and creeks.

As noted in Section 3.1.4, the Wasatch Canal between the Provo River diversion and the Rock Ditch diversion is in a low lying area with very low risk of canal failure. Given these conditions, impacts to this reach of the canal would likely only occur as part of other actions (development, building construction, etc.).

Improving Maintenance Access

Improving maintenance access to the canals would have no impact on aquatic resources.

Expanding Regulating Ponds

Expanding the Humbug and Timpanogos Regulating Ponds would have no impact to aquatic resources.

No-action Alternative

The No-action Alternative would not impact aquatic resources.

3.12 WILDLIFE

3.12.1 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) established protection for migratory birds and their parts (including eggs, nests, and feathers) from hunting, capture, or sale. Executive Order 13186, signed on January 10, 2001, directs federal agencies to take actions to further implement the MBTA. Specifically, the Order directs agencies, whose direct activities will likely result in the take of migratory birds, to develop and implement a Memorandum of Understanding (MOU) with USFWS that promote the conservation of bird populations.

3.12.2 Affected Environment

Very little wildlife habitat exists within the study area, but could include the narrow strips of riparian areas along the canals, cross drainages, associated vegetation, and any undisturbed land. Due to the study area's proximity to roadways, neighborhoods, and ongoing maintenance, much of the area is highly disturbed and could not be considered wildlife habitat. Limited areas may provide adequate foraging cover and breeding habitat for small mammals, songbirds, and amphibians. Parts of the study area are also frequented by mule deer and occasionally by elk and moose. The study area does not intersect big-game migration routes, but big-game habitat does surround the developed areas of the Heber Valley and borders the canals.

Several issues regarding wildlife were identified during scoping. The UDWR specifically commented on the lining of the canals and stated that it would result in negative impacts to a variety of wildlife species. Negative impacts identified include: riparian habitat loss, entrapment and drowning, travel barrier, and loss of a drinking source.

Public comments were also received with regards to wildlife concerns. Comments included:

- Mule deer and red tail fox habitat loss.
- Elimination of water source for wildlife. Deer and other wildlife could be forced to seek water sources across US-40 to the North Fields area.
- Wildlife getting trapped in concrete lined areas and drowning.
- The loss of bird habitat if large vegetation was removed.
- If lined, canals will become a travel barrier or obstruction to wildlife.
- Seek wildlife friendly solutions, such as providing watering areas, escape ramps and bridges.

Additional data were gathered through the Utah Data Conservation Center (UDCC) database and through an information request to the Utah Natural Heritage Program (UNHP) to identify any known documented occurrences of conservation agreement species and state sensitive species within the study area.

The Utah Sensitive Species List for Wasatch County identifies 19 conservation agreement or sensitive species in addition to federally listed threatened and endangered species. Of these 19 species, five have been documented to occur within a half-mile of the study area. These species are as follows:

Table 3-6 Wasatch County State Sensitive Species Occurring Within or Near the Study Area

Species	Status	Habitat and Occurrence in the Study Area
Black Swift (<i>Cypseloides niger</i>)	State Sensitive	No suitable habitat (coniferous forests with waterfalls). Observed in 1996 below Jordanelle Dam, but correct identification was not confirmed.
Bobolink (<i>Dolichonyx oryzivorus</i>)	State Sensitive	Suitable habitat consists of wet meadows and some irrigated pastures and hay fields. This habitat exists adjacent to the study area. Documented occurrences are located below Jordanelle Dam along the Provo River and crossing US-40, in the Northfields area, and near US-40 and 1200 North in Heber.
Columbia Spotted Frog (<i>Rana luteiventris</i>)	Conservation Agreement	Suitable habitat consists of perennial seeps, springs, and soughs with herbaceous wetland vegetation. This habitat exists adjacent to the study area along the Wasatch Canal north of the Rock Ditch diversion. Documented occurrences are numerous beginning below the Jordanelle Dam along the Provo River to SR-32.
Western Toad (<i>Bufo boreas</i>)	State Sensitive	Suitable habitat varies widely and includes slow moving streams, wet meadows, springs, ponds, lakes, and woodlands. Suitable habitat is present adjacent to the study area. A documented occurrence of this species near the study area was last recorded in 1976.
Southern Leatherside Chub (<i>Lepidomeda aliciae</i>)	Conservation Agreement	This species is native to streams and rivers in southern portions of the Bonneville Basin. It prefers slow water with deep pools. Surveys in 2005 documented the species in the Provo River below the Jordanelle Dam.

Source: Utah Data Conservation Center and UNHP Data

3.12.3 Environmental Consequences

Proposed Action Alternative

The Proposed Action Alternative could consist of canal bank stabilization; lining, enclosing, or piping the canal; improving maintenance access; and enlarging regulating ponds.

Multiple site visits to the study area were conducted to assess and inventory conditions associated with the Proposed Action, and to look for the presence/absence of state sensitive species. Also, a review of the UDCC database was conducted and a request was sent to the UNHP to identify any known documented occurrences of any state sensitive species in the study area.

The Proposed Action Alternative would not impact state sensitive species or primary habitat, but would potentially impact other wildlife species. For more information see Section 3.11 Aquatic Resources, Section 3.13 Threatened and Endangered Species, and Section 3.15 Vegetation and Invasive Species.

The site visits, the UDCC, and the UNHP data did not reveal any observations or evidence (scat, tracks, sightings) of the presence of any state sensitive species within or adjacent to the study area; however, during the site visits, observation or evidence of several other wildlife species were noted including: mule deer, songbirds, muskrats, fox, mice, raccoons, and other rodents.

In an effort to reduce negative impacts to wildlife species and to best address the UDWR and public scoping comments with regards to wildlife, the project team met with the UDWR at the WCWEP Office

in Heber, Utah on July 29, 2013 and August 22, 2013 including a site visit. The following items were discussed:

Wildlife Water Source

Deer and some elk do frequent the study area and use the canals as a drinking source. If the canals are lined, deer and elk (especially fawns and calves) likely struggle to access the water and then get out safely (safety of deer and elk is discussed under wildlife safety). If the canals are piped, the water source would be eliminated. Alternative methods for providing water, including wildlife drinkers, were discussed at the meeting; however, it was determined that numerous other water sources exist in the valley and that wildlife drinkers would likely pose a potential conflict with adjacent land uses.

Wildlife Safety - Barriers

As previously mentioned, deer and elk do frequent the study area and may cross the canals. Earthen canals typically do not pose challenges for big-game to cross; however, concrete lined sections can be a hazard and/or barrier for these animals, especially fawns and calves. When water is flowing in the lined portions of the canals, young animals may not attempt to cross. If they do attempt to cross, some are unable to stay on their feet (due to the swiftness of the water) or simply cannot get out. These animals may be able to escape if they can get to an earthen lined section of canal or they reach a maintenance ramp. However, drowning does occur and the animals are washed down the canals where maintenance crews remove and dispose of the carcasses. In winter months, an ice layer can build up on the floor of the lined portions of the canals. Trapped animals have to move up and down the canals to where an icy layer has not formed (beyond the concrete lined sections or to a maintenance ramp) in order to exit.

The project team and UDWR discussed the possibility of building and installing wildlife bridge crossings in strategic locations throughout the already lined sections of canal and to evaluate this option as other portions of the canals are considered for lining. The bridges would be removable in nature to allow for ongoing maintenance access, better placement, and removal if the need no longer exists. Wildlife bridges would consist of a platform approximately 6 to 10-feet wide and be covered with earthen materials. Wildlife bridges are not intended for ATV, motorcycle, or vehicle use. Safety precautions should be implemented to alert the public of this potential hazard. Any construction and placement of wildlife bridges would be in coordination with adjacent property owners and UDWR.

Some of the existing lined sections of canal have maintenance ramps. The project team and UDWR visited a few of the existing ramps and discussed the possibility of wildlife using them to access the water and to get out of the canal if they become trapped. UDWR thought that wildlife would take advantage of the ramps and recommended that maintenance ramps be included as part of any future project to line the canals.

Migratory Birds

Several migratory bird species could utilize the vegetation proposed to be removed for nesting, feeding, roosting, and as hiding cover.

Mitigation

To minimize potential impacts to wildlife species, consideration (in consultation with UDWR and property owners) will be given to determine what mitigation strategies will be implemented to reduce potential impacts to wildlife as projects are initiated along the canals. The strategies to be considered include both wildlife crossing bridges (as described above) at identifiable game trails and at other locations where frequent crossings may occur and wildlife escape ramps at locations where maintenance access may be required.

Due to the close proximity of suitable habitat for state sensitive species (specifically the Columbia spotted frog) adjacent to the Wasatch Canal north of the Rock Ditch Diversion, at least one survey must be completed prior to the commencement of any proposed construction project that would remove vegetation, line or pipe the canal in this area, as set forth in the *Protocol for Avoiding and Minimizing Impacts to the Columbia Spotted Frog During Construction* and the *Conservation Agreement and Strategy for Spotted Frog*. The survey should be conducted by a qualified biologist and be during the frog breeding season (typically late March to early May).

If spotted frogs are discovered adjacent to or within the construction zone, coordination with UDWR is required. Coordination with UDWR should address the need to capture and relocate the species and potential mitigation measures for direct or indirect effects.

To minimize any potential take of migratory birds, vegetation removal should only occur outside of the nesting season. Generally, migratory birds that could utilize these habitats would be done nesting by August and return to nest as early as April.

If it is necessary to remove vegetation during the nesting season (April 15 through July 31), nesting surveys would be conducted to verify that no migratory birds are nesting in the vegetation to be removed. These pre-construction nesting bird surveys would be conducted within the construction footprint and within a 100-foot buffer zone directly adjacent to the project boundary. The survey area for active bird nests would include areas where vegetation removal and disturbance is necessary. If an active nest of a protected species is located, a 100-foot buffer area would be designated until the nestlings have fledged.

No-action Alternative

Wildlife entrapment would continue to occur at the same rate as in the existing lined sections of the canals.

3.13 THREATENED AND ENDANGERED SPECIES

The Joint Lead Agencies have prepared this Draft EA to comply with the National Environmental Protection Act and to document anticipated environmental impacts associated with the WCWEP OM&R Proposed Action. In consultation with the U.S. Fish and Wildlife Service (USFWS), this Draft EA will serve as the Biological Assessment which is needed to evaluate potential impacts to threatened, endangered, and candidate species that may be found within the study area.

3.13.1 Endangered Species Act

Section 7 of the Endangered Species Act (ESA) of 1973 (7 USC §136, 16 USC §1531 et seq.), as amended, requires federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) if listed species or designated Critical Habitat may be affected by a Proposed Action. If adverse impacts would occur as a result of a Proposed Action, the ESA requires federal agencies to evaluate the likely effects of the Proposed Action, and ensure that it neither jeopardizes the continued existence of federally-listed ESA species, nor results in the destruction or adverse modification of designated Critical Habitat.

3.13.2 Affected Environment

Table 3-7 below lists the federally-listed ESA species that are known to occur in Wasatch County, Utah and are considered in this analysis. No critical habitat has been designated by USFWS for federally-listed ESA species within or near the study area.

Table 3-7 Wasatch County ESA Species List

Species	Status	Occurrence in the Study Area
Yellow-Billed Cuckoo (<i>Coccyzus americanus</i>)	Proposed Threatened	No suitable habitat and no documented occurrences within or near the study area have been recorded.
Greater sage-grouse (<i>Centrocercus urophasianus</i>)	Candidate	As per the Utah Conservation Data Center, suitable winter habitat encompasses both canals and adjacent lands from 500 North in Heber; north to Wanship, and from Kimball Junction to Woodland. No documented occurrences within or near the study area have been recorded (see discussion below).
Humpback chub (<i>Gila cypha</i>)	Endangered	No suitable habitat and no documented occurrences within or near the study area have been recorded. The humpback chub is not found in the Provo River basin.
Colorado pikeminnow (<i>Ptychocheilus lucius</i>)	Endangered	No suitable habitat and no documented occurrences within or near the study area have been recorded. The Colorado pikeminnow is not found in the Provo River basin.
Bonytail chub (<i>Gila elegans</i>)	Endangered	No suitable habitat and no documented occurrences within or near the study area have been recorded. The bonytail chub is not found in the Provo River basin.
Razorback sucker (<i>Xyrauchen texanus</i>)	Endangered	No suitable habitat and no documented occurrences within or near the study area have been recorded. The razorback sucker is not found in the Provo River basin.
Ute ladies'-tresses (<i>Spiranthes diluvialis</i>)	Threatened	Suitable habitat is in the vicinity of the Wasatch Canal in limited locations north of the Rock Ditch diversion. No documented occurrences have been recorded within the study area. The nearest documented occurrence is over 1,200-feet to the west of the Wasatch Canal on the other side of US-40 and is associated with a vernal oxbow of the Provo River channel. A single flowering individual was last observed in 2009 (see discussion below).
Canada Lynx (<i>Lynx canadensis</i>)	Threatened	No suitable habitat and no documented occurrences within or near the study area.

Source: USFWS (http://ecos.fws.gov/tess_public/countySearch!speciesByCountyReport.action?fips=49051)

Greater Sage-Grouse

The Greater sage-grouse is a candidate ESA species. They are found in sagebrush dominated habitats on plains, foothills, and mountain valleys. Where there is no sagebrush, there are no sage-grouse. A good understory of grasses and forbs, and associated wet meadow areas, are essential for optimum habitat. Male sage-grouse gather on traditional "strutting grounds" during March and April and put on a spectacular courtship performance - strutting with tails erect and spread, and air sacs inflated. Females visit the grounds during the first part of April. The principal winter food item is sagebrush leaves. During summer, the fruiting heads of sagebrush, leaves and flower heads of clovers, dandelions, grasses and other plants are taken. Insects are also taken during the summer. Sage-grouse range is declining in Utah in both quantity and quality. Populations have declined by 50% from historical times. Eradication of sagebrush, intensive use of lands by domestic livestock, cropland conversion, and over-grazing of mountain meadows are the causes for the decline (Utah Conservation Data Center).

Ute Ladies'-Tresses

The Ute ladies'-tresses (ULT) is a perennial, terrestrial orchid that is a threatened ESA species. Currently, populations can be found in relatively undisturbed riparian areas and wetland habitats in Colorado, Utah, Nevada, Idaho, Montana, Wyoming, Washington, and Nebraska. The ULT is found only in moist to very wet meadows near springs, lakes, relict meanders, and perennial streams. It occurs primarily in areas where the vegetation is relatively open and not overly dense, overgrown, or overgrazed. Several long-term threats may be responsible for the decline in the ULT. These include urban development; stream channelization and alteration, agricultural practices, and invasion by non-native plant species (Utah Conservation Data Center).

3.13.3 Environmental Consequences

Proposed Action Alternative

The Proposed Action Alternative could consist of canal bank stabilization; lining, enclosing, or piping the canal; improving maintenance access; and enlarging regulating ponds.

Threatened and Endangered Species

Multiple site visits to the study area were conducted to assess and inventory conditions associated with the proposed project, and to look for the presence/absence of threatened or endangered species. Also, a review of the Utah Data Conservation Center (UDCC) database was conducted and a request was sent to the Utah Natural Heritage Program (UNHP) to identify any known documented occurrences of any ESA species in the study area.

The site visits, the UDCC, and the UNHP data did not reveal any observations, evidence (scat, tracks, sightings), or documented occurrences of the presence of any ESA species within or adjacent to the study area.

The UDCC did identify all of the area north of approximately 500 North in Heber to Wanship and from Kimball Junction to Woodland, an area of more than 150 square miles, as winter habitat for the greater sage-grouse. The Proposed Action Alternative is limited to the canals, the area immediately adjacent to the canals, and the area required for enlarging the regulating ponds. Some suitable winter habitat may exist adjacent to the canals in areas that are not developed and support sagebrush, but any impacts to these areas would be temporary and considered insignificant.

Suitable ULT habitat is present in the vicinity of the Wasatch Canal in limited locations, north of the Rock Ditch diversion. This area of the Wasatch Canal is a gaining reach, and the suitable ULT habitat is not being supported by seepage from the Wasatch Canal. This area is heavily used by recreationists for fishing and birding. It has also been previously studied as part of the Utah Reclamation Mitigation and Conservation Commission and the DOI's Provo River Restoration Project Environmental Impact Statement (EIS) which identified approximately six colonies southwest of the Proposed Action Alternative along the Provo River. UNHP data did show that the nearest ULT population to the study area is over 1,200-feet to the west of the Wasatch Canal and on the other side of US-40. This ULT population is associated with a vernal oxbow of the Provo River channel and is likely one of the colonies referenced in the Provo River Restoration Project's EIS. The population has been surveyed for each year since 1998, and a single flowering individual was last observed in 2009.

Due to the limited scope of the Proposed Action Alternative and the narrow study area along the Wasatch Canal, north of the Rock Ditch diversion, suitable ULT habitat would not likely be impacted.

The Proposed Action Alternative would have **No Effect** on the following species because there is no suitable habitat in the study area, they are not known to occur in the study area, and they are not expected to be present in the study area: yellow-billed cuckoo, greater sage-grouse, humpback chub, Colorado pikeminnow, bonytail chub, razorback sucker, and Canada lynx.

The Proposed Action **May Affect, but is Not Likely to Adversely Affect** Ute ladies'-tresses due to the limited scope of the Proposed Action Alternative and the narrow study area along the Wasatch Canal, north of the Rock Ditch diversion.

Mitigation

If the Proposed Action would impact suitable habitat for the Ute ladies'-tresses, continued coordination with USFWS would occur.

No-action Alternative

The No-action Alternative would not impact listed ESA species or any critical habitat.

3.14 VISUAL RESOURCES

This section describes the existing visual resources within the study area and the potential impacts as a result of the Proposed Action.

3.14.1 Affected Environment

Visual or scenic resources within the study area are the natural and built features of the landscape that contribute to the public's experience and appreciation of the environment. For the study area, these include mountain views; agricultural fields and vegetation along the canal corridors; and the built environment, including residential and commercial development and roadways. Visual resources or scenic impacts are generally defined in terms of a project's physical characteristics and potential visibility and the extent to which the project's presence would change the perceived visual character and quality of the environment in which it would be located.

Viewers are people who have views of the project. Viewers are usually discussed in terms of general categories of activities (such as residents, workers, motorists, and recreationists) and are referred to as "viewer groups." In the study area there are primarily two viewer groups:

- Those adjacent to the study area (residents, workers, and recreationists)
- Those traveling near the study area (motorists on adjacent roadways)

Visual Conditions of the Study Area

Existing Visual Character (Near View)

Viewers for the near view of the Timpanogos and Wasatch Canals include adjacent residential and commercial properties as well as drivers on roadways that are directly adjacent to, or cross the canals (there are no near views of the Timpanogos and Humbug regulating ponds).

The near views of the Timpanogos and Wasatch Canal are characterized by the canal itself and vary depending on the condition (earthen, concrete, or piped) and location (mountainside, valley, or developed area). See photos on next pages for near views of the existing canals.

The existing condition and location of the canals are:

- Timpanogos Canal
 - North of Center Street there is very little residential development adjacent to the canal where it is not currently concrete lined or piped. All of the mountainside sections of the canal are north of Center Street
 - From Center Street to approximately 600 South, the canal is on a mountainside cut, but there are no residential developments adjacent to the canal. The canal is unlined through this section
 - From approximately 600 South to the regulating pond at 2400 South, the canal is in a valley location with sporadic residential development nearby. The canal is unlined through this section.

- Wasatch Canal
 - From the Provo River to the Rock Ditch Diversion, the canal is in a valley location with sporadic residential development. The canal in this location has the appearance of a natural stream and is frequented by recreationists.
 - From Rock Ditch Diversion to Coyote Lane, there is very little residential development adjacent to the canal. The canal is in a mountainside location and unlined except for a 0.2-mile section of concrete-lined canal near the Utah Valley University Campus.
 - From Coyote Lane to Center Street the canal is concrete lined through approximately 90% of the current residential areas, and is mostly on a mountainside location.
 - South of Center Street, there is sporadic adjacent development and the canal is unlined through this section. The canal is in a valley.



Existing Concrete Canal through Residential Development



Existing Earthen Canal



Existing Concrete Canal Adjacent to Residential Development



Existing Earthen Canal

Existing Visual Character (Mid-Range and Long-Range Views)

Viewers for the mid-range to long-range view of the Timpanogos and Wasatch Canals include residential and commercial properties and streets in close proximity to the canals, but not directly adjacent, as well as those viewers located further away. Viewers for the mid-range to long-range view of the Timpanogos and Humbug regulating ponds include viewers from adjacent streets.

Timpanogos and Wasatch Canals

The mid-range and long-range view of the Timpanogos and Wasatch Canals are generally characterized by the surrounding environment (mountains, residential and commercial development, and agricultural fields). Generally, the canals blend in with the natural ground (even the concreted lined portions) and are not visible. This is particularly the case where viewers are looking up at the canals, and in areas where the canals are depressed in the ground. See photos below for mid-range and long-range views of the existing canals.



*Looking east towards the Timpanogos Canal from 1320 East
(canal is not visible)*



*Looking west towards the Timpanogos Canal from 1400 East
(canal is not visible)*



*Looking east towards the Timpanogos Canal from 2400 East
(canal is depressed in the ground and is not visible)*



*Looking east towards the Wasatch Canal from US-40
(canal blends in with natural ground and is not visible)*

Timpanogos and Humbug Regulating Ponds

The mid-range and long-range view of the Timpanogos and Humbug Regulating Ponds are generally characterized by the fill slopes of the ponds and the pond itself and associated facilities, with agricultural fields, low-density residential development, and the mountains in the distance. See photos below for mid-range and long-range views of the Timpanogos and Humbug Regulating Ponds.



*Looking east towards the Timpanogos Regulating Pond from
Duke Lane*



*Looking south towards the Humbug Regulating Pond from
1200 South*

3.14.2 Environmental Consequences

The Proposed Action Alternative could consist of canal bank stabilization; lining, enclosing, or piping the canal; improving maintenance access; and enlarging the Timpanogos and Humbug Regulating Ponds.

Proposed Action Alternative

Canal Bank Stabilization

Near View

Canal bank stabilization activities (clearing flow-restricting vegetation and debris from inside walls, reshaping the canal, widening and strengthening banks, and removing deep-rooted vegetation) would only occur in areas where the canal is earthen. These activities would have a minimal impact to the overall visual character. The near view would still be characterized by an earthen canal; however, some vegetation could be removed. The minor visual impact as a result of vegetation removal would remain localized for only those few viewers directly adjacent to the canal.

Mid-Range to Long-Range Views

Canal bank stabilization activities would have essentially no impact to the overall visual character for viewers in the mid-range to long-range. The mid-range to long-range views would still be characterized by the surrounding environment (mountains, residential and commercial development, agricultural fields and undeveloped areas). Generally, the canal blends in with the natural ground and is not visible. The removal of vegetation associated with canal bank stabilization activities would not be noticeable for mid-range to long-range viewers because much of the surrounding area is vegetated.

Lining Canal

Near View

Lining the canal with concrete in areas where the canal is earthen would have an impact to the overall visual character for the few viewers directly adjacent to the canal. The near view would be characterized by a concrete channel. However, this impact would be consistent with the trend to man-made features associated with adjacent development.

As stated above, the canal is concrete-lined through most of the existing development adjacent to the canal.



*Example of Concrete Lined Channel
(Near View)*

Mid-Range to Long-Range Views

Lining the canal with concrete in areas where the canal is earthen would have no impact to the overall visual character for the mid-range to long-range viewers. The mid-range to long-range views would not change over existing conditions because currently the canal blends in with the natural ground and is generally not visible. Viewers would be unable to see the concrete channel.

Enclosing Canal

Near View

Enclosing the canal would consist of lining the existing canals with concrete, placing a concrete cap over the top, and covering with soil and planting appropriately. These activities would have an impact to the overall visual character for the few viewers directly adjacent to the canal. The near view would no longer be characterized by a concrete channel or earthen canal, but by vegetated ground that could be maintained as desired by adjacent landowners as long as no permanent features are installed (incorporating into existing backyards, etc.).

Mid-Range to Long-Range Views

Enclosing the canal with concrete in areas where the canal is earthen would have no impact to the overall visual character for the mid-range to long-range viewers. The mid-range to long-range views would not change over existing conditions because currently the canal blends in with the natural ground and is generally not visible. Viewers would be unable to see were the canal used to be.

Piping Canal

Near View

Piping the canal would have an impact to the overall visual character for the few viewers directly adjacent to the canal. The near view would no longer be characterized by the canal, but by revegetated earthen ground that could be maintained as desired by adjacent landowners as long as no permanent features are installed (incorporating into existing backyards, etc.).

Mid-Range to Long-Range Views

Piping the canal would have no impact to the overall visual character for the mid-range to long-range viewers. The mid-range to long-range views would not change over existing conditions because currently the canal blends in with the natural ground and is generally not visible. Viewers would be unable to see were the canal used to be.

Improving Maintenance Access

Near View

Improving maintenance access would consist of constructing access (where not already in place) adjacent to the canal. Generally, these access areas would be revegetated with grasses (see photo to right for example). In areas where there is no access, there would be a minor change to the overall visual character. Near views would be characterized by the addition of maintenance access, but the change would be softened by the associated vegetation. Additionally, there are very few viewers that would be impacted by this change.



Example of Maintenance Access

Mid-Range to Long-Range Views

Improving maintenance access would consist of constructing access (where not already in place) adjacent to the canal. The mid-range to long-range views would not change over existing conditions because currently the canal blends in with the natural ground and is generally not visible. Viewers would be unable to see the access.

Enlarging Regulating Ponds

The Proposed Action could include enlarging the Timpanogos and Humbug Regulating Ponds to accommodate the changing patterns of water demand.

Near View

There are no near views of the Timpanogos and Humbug Regulating Ponds.

Mid-Range to Long-Range Views

Enlarging the Timpanogos and Humbug Regulating Ponds would have minor impacts to the overall visual character for the mid-range to long-range viewers. The pond itself would be larger, but views would still be characterized by agricultural fields, low-density residential development, and the mountains in the distance.

3.15 VEGETATION AND INVASIVE SPECIES

This section evaluates the existing vegetation in the study area, along with the likelihood of the alternatives to introduce invasive species or noxious weeds. Executive Order 13112 requires that Federal agency activities prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause. The Utah Noxious Weed Act (Section 4-17-3) defines noxious weeds as “any plant that is especially injurious to public health, crops, livestock, land, or other property.”

3.15.1 Affected Environment

Vegetation

In some areas, the land adjacent to the Timpanogos and Wasatch Canals is vegetated with various trees, shrubs, grasses, and forbs, including cottonwoods, Russian olives, willow species, wild rose, rabbit brush, sagebrush, wheat grasses, reed canary grass, cheat grass, and showy milkweed.

Invasive Species and Noxious Weeds

The noxious weeds that are known to exist within and near the study area include (see Figure 3-4):

- Broad-leaved peppergrass
- Dalmatian toadflax
- Hoary cress
- Leafy spurge
- Musk thistle
- Scotch thistle

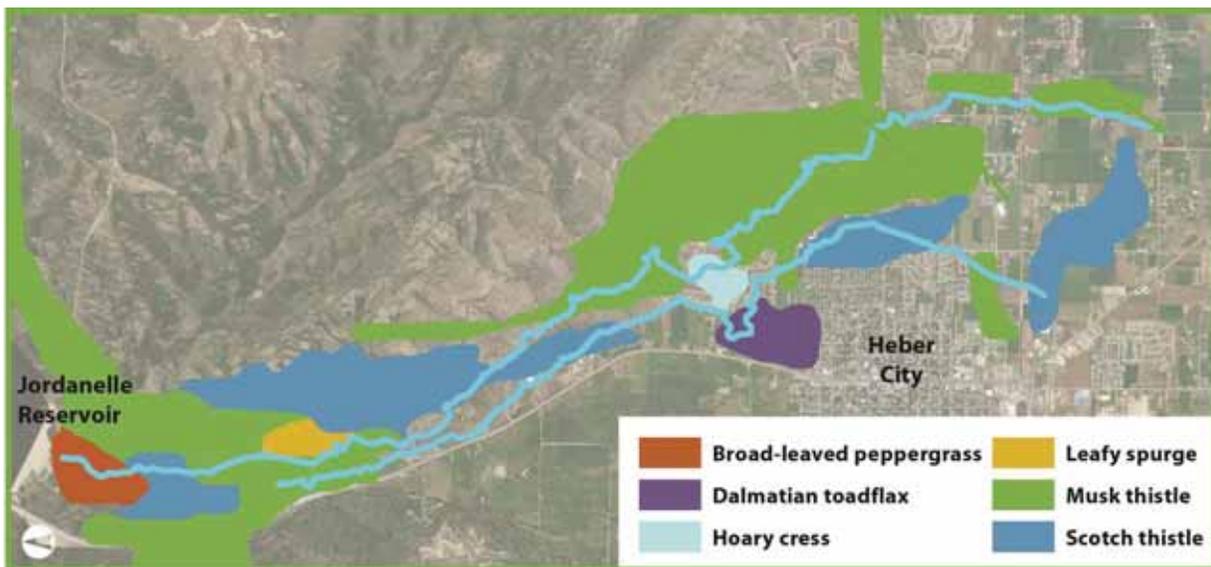


Figure 3-4 Noxious Weeds (from the Automated Geographic Reference Center (AGRC))

3.15.2 Environmental Consequences

Proposed Action

Vegetation

The Proposed Action Alternative could consist of canal bank stabilization (including removal of deep-rooted vegetation); lining, enclosing, or piping the canal; improving maintenance access; and enlarging the Timpanogos and Humbug Regulating Ponds.

Figure 3-5 shows the deep-rooted vegetated areas that could potentially be impacted by Proposed Action activities. These areas include locations where the canals have not been lined or piped and where deep-rooted vegetation currently exists (based on visual inspection).

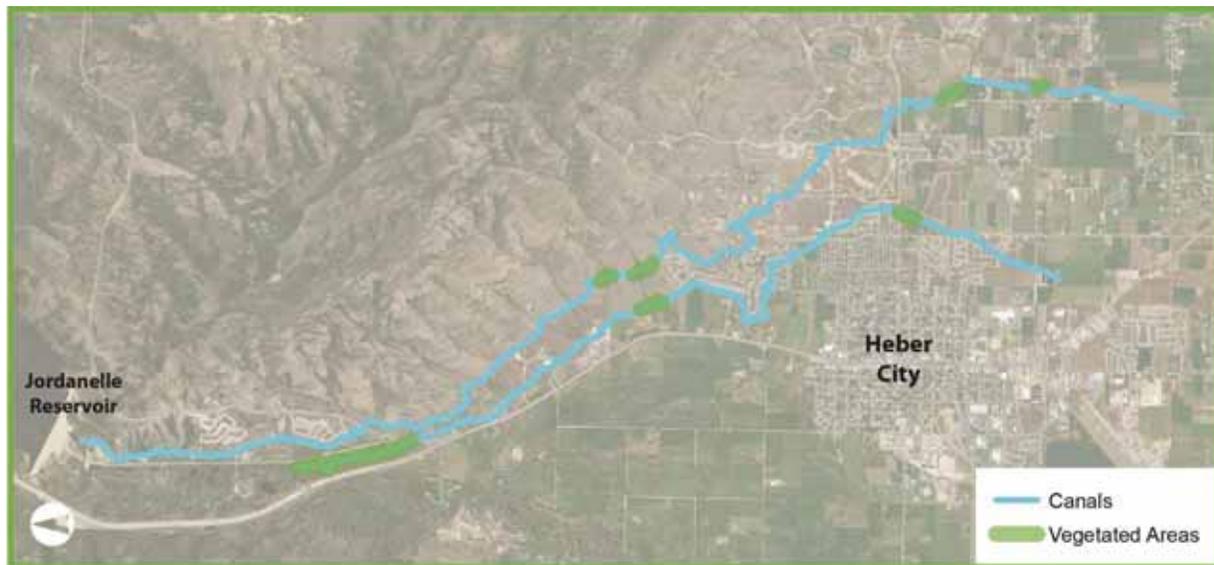


Figure 3-5 Vegetated Areas

The Proposed Action could potentially impact approximately 6-acres of vegetated areas along the Timpanogos and Wasatch Canals. Generally, these areas would be revegetated with grasses. The alteration of the small amount of vegetated area would have a very minimal impact to vegetation in the Heber Valley overall.

The functions of the removed vegetation, including bird habitat and visual resources are addressed in other sections, including Section 3.12 Wildlife, Section 3.13 Threatened and Endangered Species and Section 3.14 Visual Resources.

In areas where the removal of deep-rooted vegetation occurs as part of Proposed Action activities, adjacent property owners are permitted to plant trees and other vegetation outside of the canal easements.

Invasive Species and Noxious Weeds

As detailed in the CUWCD's Integrated Pest Management (IPM) Plan, the CUWCD incorporates IPM concepts into its daily operations and maintenance program. These concepts include herbicide treatments, mechanical removal of noxious weeds (hand digging, sawing, and cutting), and seeding of native grasses in disturbed areas. Proposed Action activities would make implementing the IPM Plan more effective for CUWCD maintenance crews by providing OM&R access.

The Proposed Action would include construction activities that would disturb the ground surface. This disturbance could allow for the establishment or spread of invasive species and noxious weeds.

Mitigation

BMPs would be implemented to limit the establishment or spread of invasive species and noxious weeds (see Section 3.16 Construction Impacts).

No-action Alternative

There would be no impacts to vegetation under the No-action Alternative and no ground disturbance would occur to facilitate the spread of invasive species and noxious weeds.

3.16 CONSTRUCTION IMPACTS

It should be noted that it is only in areas where it is determined that work needs to occur, in accordance with the conditions set forth in Chapter 2, that the following temporary construction impacts may occur.

3.16.1 Air Quality

Construction during the Proposed Action may result in temporary impacts to air quality in areas of construction due to increased fugitive dust and particulates (PM₁₀). PM₁₀ emissions from construction activities are usually local and short-term and last only for the duration of the construction period.

Mitigation

BMPs would be employed during construction to mitigate for temporary impact on air quality due to construction related activities. The BMPs may include:

- The application of dust suppressants and watering to control fugitive dust
- Minimizing the extent of disturbed surfaces
- Restricting earthwork activities during times of high wind
- Limiting the use of and speeds on unimproved road surfaces

To mitigate potential air quality impacts during construction, CUWCD would follow American Public Work Association (APWA) specifications for Abatement of Air Pollution and Dust Control which are summarized below:

- **Abatement of Air Pollution:** CUWCD would be required to utilize reasonable methods and devices to prevent, control, and otherwise minimize atmospheric emissions or discharges of air contaminants. Equipment and vehicles that show excessive emissions of exhaust gases would not be allowed to operate until corrective repairs or adjustments are made to reduce emissions to acceptable levels.
- **Dust Control:** CUWCD would be required to comply with all applicable federal, state, and local laws and regulations, regarding the prevention, control, and abatement of dust pollution. CUWCD would attend to all dust control requirements within 500-feet of residences and buildings. The methods of mixing, handling, and storing cement and concrete aggregate would include means of eliminating atmospheric discharges of dust.

3.16.2 Farmlands

Construction activities (staging areas, haul roads, etc.) may temporarily impact agricultural operations; however, all agricultural areas would be restored after construction.

Mitigation

Access would be maintained to farmland and agricultural areas during construction and construction work would generally be completed during the non-irrigation season in the Heber Valley. The Joint Lead Agencies would coordinate with affected property owners and irrigation companies to address their concerns to the extent possible.

3.16.3 Hazardous Materials

Construction activities have the potential to discover unknown hazardous materials. In addition, typical construction activities may involve the use of known hazardous chemicals or materials which must be disposed of in accordance with federal, state, and local regulations.

Mitigation

To prevent hazardous material from entering the canals, BMPs would be implemented and would likely include performing construction activities outside of the irrigation season, the placement of sediment control structures within areas of construction, and the monitoring of the construction area to control runoff and sediment from construction activities. CUWCD would be required to follow APWA standard specification for handling hazardous materials which is summarized below:

- **Waste Disposal:** Hazardous materials (defined by 40 CFR 261.3; Federal Standard No. 313) used by CUWCD or discovered during work would be disposed of in accordance with applicable federal, state, and local laws and regulations. Waste materials discovered at the construction site would be immediately reported to the appropriate officials.

3.16.4 Cultural Resources

Construction activities have the potential to discover previous, unknown, cultural resources and Native American artifacts.

Mitigation

For cultural resources and Native American artifacts discovered during construction, CUWCD would be required to suspend all activities in the vicinity and to notify the Project Manager. A treatment plan would be developed and coordination with SHPO would occur immediately. CUWCD would be required to follow APWA standard specification (and CUWCD requirements) for preservation of cultural resources which is summarized below:

- **Preservation of Cultural Resources:** CUWCD would cease work in the vicinity of any historical, prehistorical, or archaeological materials discovered during construction. A qualified archaeologist would determine the importance of the discovery. All accesses, construction staging areas, fill disposal sites or other areas impacted as a result of construction activities would have a cultural clearance completed prior to disturbance. Cultural clearances must be done in advance to allow for coordination with SHPO, and the SHPO's response of concurrence or non-concurrence with findings.

3.16.5 Noise

Residents and businesses adjacent to the construction area would experience temporary inconvenience due to construction noise. Extended disruption of normal activities is not anticipated, since no single area is expected to be exposed to construction noise of long duration.

Mitigation

Construction noise impacts are considered temporary and would be minimized through adherence to APWA standard specification for noise levels in the construction area (see below):

- **Noise Levels in the Construction Area:** CUWCD would be required to comply with applicable federal, state, and local laws, orders, and regulations concerning the prevention, control, and abatement of excessive noise. CUWCD would monitor construction noise levels within the

construction area. Mufflers on construction equipment shall be checked regularly to minimize noise.

3.16.6 Vibration

Vibration would be generated during the construction of the Proposed Action Alternative and could be an inconvenience to nearby residents and businesses. However, the impacts would be temporary and only occur during the construction phase of this project. The majority of construction vibration is a result of heavy equipment use.

Mitigation

CUWCD would be required to adhere to APWA specification for Compliance with Laws and Regulations.

3.16.7 Water Quality

Construction work would generally be completed during the non-irrigation season in the Heber Valley when there would be no water in the canals; therefore, water quality impacts during construction would be minimal.

Mitigation

Construction activities that disturb more than one acre require the development of a Storm Water Pollution Prevention Plan (SWPPP) to comply with the Utah Pollutant Discharge Elimination System permit (UPDES). The SWPPP may include such measures as using silt fences, fiber rolls, check-dams, or other techniques to minimize impacts to the surrounding receiving waters. CUWCD would be required to adhere to APWA standard specification for Drainage and Sediment Control.

3.16.8 Wildlife

Construction related activities may disturb wildlife and their habitats due to higher than usual noise levels, proximity of construction equipment, and other effects.

Mitigation

CUWCD would be required to follow APWA specification for Wildlife Species Protection.

Due to the close proximity of suitable habitat for state sensitive species (specifically the Columbia spotted frog) adjacent to the Wasatch Canal north of the Rock Ditch Diversion, at least one survey must be completed prior to the commencement of any proposed construction project that would remove vegetation, line or pipe the canal in this area. The survey should be conducted by a qualified biologist and be during the frog breeding season (typically late March to early May).

If spotted frogs are discovered adjacent to or within the construction zone, coordination with UDWR is required. Coordination with UDWR should address the need to capture and relocate the species and potential mitigation measures for direct or indirect effects.

To minimize any potential take of migratory birds, vegetation removal should only occur outside of the nesting season. Generally, migratory birds that could utilize these habitats would be done nesting by August and return to nest as early as April.

If it is necessary to remove vegetation during the nesting season (April 15 through July 31), nesting surveys would be conducted to verify that no migratory birds are nesting in the vegetation to be removed. These pre-construction nesting bird surveys would be conducted within the construction footprint and within a 100-foot buffer zone directly adjacent to the project boundary. The survey area

for active bird nests would include areas where vegetation removal and disturbance is necessary. If an active nest of a protected species is located, a 100-foot buffer area would be designated until the nestlings have fledged.

3.16.9 Threatened, Endangered and Sensitive Species

Mitigation

If the Proposed Action would impact suitable habitat for the Ute ladies'-tresses, continued coordination with USFWS would occur.

3.16.10 Wetlands and Waters of the U.S.

Mitigation

All proposed areas to be disturbed, including staging areas, accesses, borrow and waste sites, would be inventoried for the presence of wetlands. If wetlands are present, CUWCD may be required to follow APWA standard specification for Wetlands and Riparian Areas which is summarized below:

- **Wetlands and Riparian Areas:** A plan would be prepared by CUWCD outlining methods to protect wetlands and riparian vegetation during construction. Procedures to avoid wetland impacts may include the use of silt fencing and avoiding impacts on surface waters. Heavy equipment in wetland areas would be operated on temporary earth fills placed on geotextile mats (or other appropriate measures) to minimize soil disturbance. No excavated material would be placed in wetland areas. Impacted wetland soils would be removed, segregated and stockpiled in upland areas for reuse, if appropriate. Disturbed areas would be graded to match previous contour elevations and revegetated with a mixture of wetland plant species.

3.16.11 Vegetation and Invasive Species

Construction activities associated with the Proposed Action Alternative have the potential to introduce or increase invasive species and/or noxious weeds in the study area. In addition, staging areas, accesses, and other construction activities would temporarily require the removal of native vegetation.

Mitigation

CUWCD would be required to comply with CUWCD's IPM program. Earth-moving equipment would be cleaned prior to mobilizing onto the project site. Also, known locations of invasive species would be sprayed with an appropriate and approved herbicide 10 days prior to construction activities. CUWCD would be required to follow APWA standard specification for invasive weed control, the use of herbicide and pesticides, and revegetation which are summarized below:

- **Invasive Weed Control:** CUWCD shall identify target species for treatment to avoid treating or removing non-target, native species.
- **Use of Herbicides and Pesticides:** Should CUWCD find it necessary to use herbicides and pesticides, a plan would be submitted for such use for approval. Permitted herbicides and pesticides would be only those approved in the CUWCD's IPM program.
- **Revegetation:** CUWCD would be required to reestablish vegetation in impacted construction areas. Vegetated areas disturbed during construction would be returned to their natural contours and be revegetated.

3.16.12 Socioeconomics

During construction of the Proposed Action, there would be a small number of jobs created, including construction workers and local suppliers of construction materials. Temporary noise, dust, and construction traffic would result from the construction of canal linings and piping, bank stabilization, and pump and pond upgrades. However, in the future, these impacts would be less with reduced maintenance required on the canals.

3.16.13 Health and Safety

During Construction of the Proposed Action, there would be some traffic increase with construction traffic moving equipment, materials, and workers to the construction site, which would cause a minor increase in the risk of accidents.

Mitigation

BMPs would minimize the risks of construction hazards.

3.16.14 Public Information and Coordination

The Joint Lead Agencies would continue to coordinate with the general public and appropriate federal, state, and local officials during construction of the proposed project. CUWCD may be required to follow APWA standard specification for a Public Information Program.

3.16.15 Construction Work Hours

The work hours would be coordinated with the local jurisdictions prior to construction. CUWCD would be required to adhere to APWA standard specification for Compliance with Laws and Regulations.

3.17 CUMULATIVE IMPACTS

Cumulative impacts are the impacts to the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions (40 CFR §1508.7). Cumulative impact analysis is focused on the sustainability of the environmental resource in light of all the forces acting upon it and can result from individually minor but collectively significant actions taking place over time. For a project to have a cumulative effect, however, it must first have a direct or indirect effect on the resource in question. The geographic area addressed for this cumulative impact analysis is the Heber Valley.

3.17.1 Past, Present, and Reasonably Foreseeable Future Actions

The cumulative effects analysis considered the following past, present, and reasonably foreseeable actions:

Past Actions

- **Land Development** – Land development occurred as the Heber Valley was settled by pioneers in the late 1850s. They converted undisturbed lands within the valley to agricultural uses (mostly dairy farms and cattle ranching). As growth along the Wasatch Front has occurred, the Heber Valley has also grown, with residents commuting from the Heber Valley to their areas of work in Orem, Provo, Park City, and Salt Lake City. This growth has converted agricultural land to residential and commercial uses.
- **Expansion of US-40** – The Utah Department of Transportation (UDOT) widened US-40 in the Heber Valley from the River Road intersection to the northern boundary of Heber City from two lanes to four lanes.

- **Construction of Jordanelle Reservoir and Dam** – The Jordanelle Dam and Reservoir is located on the Provo River about six miles north of Heber City. Construction of the reservoir and dam occurred between 1987 and 1992 and currently provides water storage at an upstream site by exchange for Bonneville Unit water in Utah Lake and Strawberry Reservoir and for most of the water presently regulated in small reservoirs on the headwaters of the Provo River. The reservoir functions as a long term holdover reservoir to provide storage through a six year drought period. The municipal and industrial water stored in Jordanelle Reservoir is delivered to Salt Lake County by way of the Provo River and Jordan Aqueduct, and to northern Utah County by way of the Provo River and Alpine Aqueduct. Jordanelle is also a recreational destination for camping, fishing, waterskiing, and wildlife viewing.
- **Provo River Restoration Project (PRRP)** – The PRRP modified and restored the existing Provo River channel between Jordanelle and Deer Creek reservoirs. The project goal was to realign the river to a more natural pattern, regain vegetative and wildlife resources once supported by the river, and provide a protected 800 to 2,200-foot-wide public corridor along the restored river. The project’s purpose was to advance the sequence of natural succession, providing additional habitat diversity instream and in the surrounding forest in order to make up for fish, wildlife and related recreational losses caused by federal water reclamation projects in Utah, particularly the Central Utah Project (CUP).

Present Actions

- **Land Development** – The conversion of agricultural land to residential and commercial developments is ongoing within the Heber Valley.

Reasonably Foreseeable Future Actions

- **Land Development** – Urban development in the Heber Valley is expected to continue. The driving forces of growth in the Heber Valley, population and employment growth along the Wasatch Front and in Summit County are expected to continue in the foreseeable future. Heber Valley will continue to be an attractive bedroom community. Heber’s City population is expected to grow from 11,362 in 2010 (U.S. Census) to 22,683 by 2040 (Governor’s Office of Planning and Budget).
- **Transportation** – The following projects are included in UDOT’s Long Range Transportation Plan:
 - US-40 at MP 13.2, SR-32 (Phase 1: 2011-2020) – Improve capacity and safety by upgrading signal to new interchange or consider other treatment to improve transition from freeway section to Heber Main Street.
 - US-189 at MP 28.9, US-40 Heber Hub Intersection (Phase 1: 2011-2020) – Improve capacity and safety of Hub intersection between US-40 and US-189 and improve access to and from local streets such as 1200 South and Daniels Road.
 - US-40 MP 4.7 to MP 32.6, from Heber to Daniels Canyon (Phase 3: 2030-2040) – Improve capacity and safety by providing passing lanes.
 - US-40 MP 18.0 to MP 19.5 from US-189 to Mill Road (Unfunded) – Improve safety and capacity by providing shoulders, center turn lane, and possibly additional travel lanes and intersection improvements.
 - US-40 MP 19.5 to MP 20.5, from Mill Road to 3600 South (Unfunded) – Improve safety and capacity by providing turn lanes and/or travel lanes.

3.17.2 Cumulative Impacts

The cumulative impact analysis focuses on environmental resources which would have direct or indirect impacts. Most resources will either not have direct impacts or they are not of a nature to result in

cumulative impacts. The Proposed Action would have no effect or a minimal effect on many environmental resources; therefore, there would be no cumulative effect to these resources. These resources include:

- Air Quality
- Environmental Justice
- Socioeconomics
- Recreation
- Floodplains
- Water Resources – Groundwater
- Water Resources – Waters of the U.S. and Wetlands
- Aquatic Resources
- Visual Resources

The incremental impacts resulting from the Proposed Action taken into consideration with the past, present, and reasonably foreseeable future actions are discussed by each resource that would have a minor impact.

Health and Safety

The principle reason for the Proposed Action is to reduce the risk of canal failure and the associated hazard to the development that is occurring adjacent to the canals. A long-term safety benefit would result from the Proposed Action as development occurs.

Prime, Unique, and Statewide Important Farmland

The Proposed Action would not impact prime, unique, or statewide important farmland; however, the expansion of the regulating ponds would impact a small amount of land currently in agricultural use. It is anticipated that farmlands would continue to convert to residential and commercial uses with or without implementing the Proposed Action Alternative.

Cultural Resources

The Proposed Action would have an adverse effect on the canal segments that are piped and could remove them from eligibility to the NRHP. CUWCD would provide the following mitigation, which reduces the cumulative impact:

- Produce a brochure that summarizes the historic context of the Wasatch, Timpanogos, and Humbug canals. The brochure will include:
 - The development of irrigation and agriculture in Wasatch County and the importance of these events to local history; the various irrigation companies in Wasatch County; and the histories of the Wasatch, Timpanogos, and Humbug canals.
 - The brochure will be developed through already completed cultural resource reports prepared for WCWEP and will be supplemented with research at the Division of State History, Wasatch County, CUWCD, historic photograph archives, and other relevant archives or libraries.
- Produce a digital recording of oral history interviews with persons knowledgeable in the area's history and the development of irrigation in Wasatch County including:
 - Preparation of a DVD containing the oral history interviews.
 - A list of interviewees will be provided by the Heber City CLG.

- The brochure and the oral history interviews DVD will be disseminated by the Heber City CLG with the assistance of CUWCD and include:
 - Local school libraries, local newspapers, Heber City Chamber of Commerce, Wasatch County Chamber of Commerce, and other groups or agencies as determined by the Heber City CLG and CUWCD.
 - A digital copy of the brochure and the video of the oral history interview on CUWCD's webpage.

Water Resources – Water Quality

Minor increases in nutrient and sediment concentrations in streams and canals can be expected during construction activities but decreases in nutrient and sediment concentrations would occur after construction when the sites are stabilized. Herbicide use would decrease as additional sections of canal are lined, enclosed, or piped. The sediment load would also be reduced in proportion to the amount of canal lined, enclosed, or piped.

Wildlife Resources

There will be a minimal impact to wildlife with some trees and other vegetation along the canals being removed by the Proposed Action. Mitigation measures, such as wildlife crossing bridges and wildlife escape ramps, would reduce the cumulative impact.

Threatened & Endangered Species

The Proposed Action **May Affect, but is Not Likely to Adversely Affect** Ute ladies'-tresses due to the limited scope of the Proposed Action Alternative and the narrow study area along the Wasatch Canal, north of the Rock Ditch diversion. If the Proposed Action would impact suitable habitat for the Ute ladies'-tresses, continued coordination with USFWS would occur. The incremental impact would result from land use changes as the study area continues to develop to residential and commercial uses.

Vegetation

The Proposed Action could potentially impact approximately 6-acres of vegetated areas along the Timpanogos and Wasatch Canals. Generally, these areas would be revegetated with grasses. The alteration of the small amount of vegetated area would have a very minimal impact to vegetation in the Heber Valley overall. The incremental impact would result from land use changes as the study area continues to develop to residential and commercial uses.



CHAPTER FOUR: CONSULTATION AND COORDINATION

Chapter 4 describes the early and ongoing coordination activities and summarizes key issues and pertinent information received from the public and agencies.

4.1 PUBLIC AND AGENCY SCOPING PROCESS

As a part of the process for preparing this Environmental Assessment (EA), the Joint Lead Agencies initiated a public scoping process to inform the public and agencies about the study and its purpose and gather input regarding issues to be analyzed in the EA.

4.1.1 Notice of Intent (NOI)

The formal scoping process for the Proposed Action was initiated with a Notice of Intent (NOI) to prepare an EA published in the Federal Register on May 6, 2013 (FR Doc. 2013-10675). See Appendix B.

4.1.2 Scoping Package

A scoping package was mailed to all adjacent property owners along the canal system, individuals having previously expressed interest in the proposed project, and to agencies that might have an interest in the study. The scoping package identified the Joint Lead Agencies and included an overview of the study, Wasatch County Water Efficiency Project (WCWEP) background information, frequently asked questions, a study area map, the purpose and process of the study with a brief description of alternatives being considered, public scoping open house information, and contact information.

4.1.3 Cooperating Agencies

Three entities accepted an invitation to participate in the EA process as a Cooperating Agency. These agencies included: U.S. Bureau of Reclamation, Wasatch County, and Heber City. A cooperating agencies involvement entails those areas under its permitting authority and technical expertise.

4.1.4 Public Scoping Meeting

A public open house was held on May 21, 2013 from 6-8 p.m. at the Old Mill Elementary School in Heber, Utah. The open house was advertised through the following methods:

- Public and Agency Scoping Package
- Project Website
- Links posted on the Central Utah Water Conservancy District (CUWCD) and Central Utah Project Completion Act (CUPCA) websites
- Wasatch Wave project article on May 15, 2013
- WCWEP Irrigation Schedule Mailer
- Wasatch Wave, Deseret News, Salt Lake Tribune, Legal Notice on May 6, 2013

Attendees were able to view a project video that outlined the history of the WCWEP system and the purpose and need of the study. Attendees were then able to view project displays, which explained what agencies are involved in the study; why the open house was being held; what is WCWEP and what is the purpose of the study; project area maps, the anticipated benefits of the project; the Proposed Action; what is the no action alternative; what environmental resources are being evaluated; and the anticipated schedule. Fifty-three individuals signed into the meeting and a total of 100 comments were received during the public scoping process.

4.1.5 Issues Raised by General Public and Agencies

Respondents to the scoping process expressed a variety of concerns relating to the Proposed Action. These concerns have been organized into comment focus topics that helped build the framework for development and analysis of alternatives in the EA. Specific comment focus topics included: Purpose and Need clarification; water conservation; deep-rooted vegetation; no-action alternative for Wasatch Canal north of SR-32; Proposed Action on a “wholesale basis”; noise; wildlife and habitat; aquatic resources; threatened, endangered, and sensitive species; livestock; visual resources; wetlands and waters of the U.S.; water resources; vegetation and invasive species; recreation; economics; and safety. A Scoping Report has been prepared containing a more detailed summary of comments received during the scoping process.

4.2 CONSULTATION AND COORDINATION

4.2.1 Public Outreach Activities

Public outreach activities included:

- Development of a project website that contained project information and updates, a comment form, and methods for contacting the project team
- Public notices, including the scoping package, postcards, and news articles

4.2.2 Agency Meetings

The project team met with several agencies to discuss comments and concerns. A brief summary of the agency meetings is provided below:

State Historic Preservation Office (SHPO)

The project team met with the State Historic Preservation Office (SHPO) on June 25, 2013 to discuss potential impacts to cultural resources as a result of Proposed Action activities. The original WCWEP was previously determined to have an adverse effect on the canals. SHPO indicated that piping the Timpanogos, Wasatch, and Humbug Canals would have additional adverse effects and could potentially remove them from eligibility to the National Register of Historic Places (NRHP). To account for the impacts from the WCWEP Operation, Maintenance, and Replacement (OM&R) EA, SHPO requested that additional mitigation be provided. See attached Memorandum of Agreement (MOA) in Appendix A.

Utah Division of Wildlife Resources (UDWR)

The project team met with the Utah Division of Wildlife Resources (UDWR) at the WCWEP Office in Heber, Utah on July 29, 2013 and August 22, 2013 along with a site visit. The UDWR made several comments during the scoping process and the meetings were intended to discuss their comments and to obtain additional information. The following items were discussed:

- The need for water sources, especially for large game.
- The potential use of removable bridges over lined section to provide safe passage for deer trying to cross the canals.
- The use of access ramps as escape ramps to provide areas for wildlife to get out of lined sections of the canal.
- Potential impact to riparian vegetation.
- The use of fencing along the canals. Fencing may keep animals from getting into the canal, but it also inhibits the deer and elk movement on the east side of the valley.
- Fish screens at the head of canals to prevent fish from getting into canals.

Environmental Protection Agency (EPA)

The project team had a phone conversation with Melanie Wasco of the Environmental Protection Agency (EPA) on August 6, 2013. The following items were discussed:

- Brief history of the Strawberry Aqueduct Collection System, the mitigation requirement to return water to the Strawberry River and the opportunity to replace the Strawberry water being diverted to Daniel with Jordanelle water.
- The purpose of WCWEP.
- The need to change how WCWEP operates and maintains the canals based on the change in development in the Heber Valley.
- Ongoing coordination with the U.S. Army Corps of Engineers (USACE), UDWR, and SHPO.

U.S. Army Corps of Engineers (USACE)

The project team met with the USACE at the CUWCD Office in Orem, Utah on August 8, 2013. The following items were discussed:

- To streamline potential permitting issues, CUWCD may want to consider having the USACE be a signatory on any Memorandum of Agreement with the Utah Department of History/SHPO.
- How canals/ditches may be considered jurisdictional waters of the U.S. and protected under the Clean Water Act. If canals are considered jurisdictional, then exemptions outlined in a Regulatory Guidance Letter (dated July 4, 2007) for Exemption for Construction and Maintenance of Irrigation Ditches may apply.

4.2.3 Native American Consultation

The U.S. Department of the Interior – Central Utah Project Completion Act Office sent Native American consultation letters to various tribes to solicit comments regarding the Proposed Action on May 10, 2013 and May 13, 2013 (see Appendix A). No tribal representatives responded to the letters or associated follow-up calls.

4.2.4 Correspondence

Correspondence letters (both sent and received) are show in Table 4-1 and are included in Appendix A.

Table 4-1 Correspondence

Date	To	From	Subject
May 10, 2013	Kellie Youngbear Superintendent, Bureau of Indian Affairs	Reed Murray U.S. Department of the Interior	Tribal Consultation
May 10, 2013	Johnna Blackhair, Superintendent, Uintah and Ouray Agency	Reed Murray U.S. Department of the Interior	Tribal Consultation
May 10, 2013	Dean Fox, Superintendent, Uintah and Ouray Agency	Reed Murray U.S. Department of the Interior	Tribal Consultation
May 13, 2013	Jeanine Borchardt, Chairwoman, Paiute Indian Tribe	Reed Murray U.S. Department of the Interior	Tribal Consultation
May 13, 2013	Chairman, Ute Tribe Business Committee	Reed Murray U.S. Department of the Interior	Tribal Consultation
May 13, 2013	Lori Bear Chairwoman, Skull Valley Band of Goshute Indians	Reed Murray U.S. Department of the Interior	Tribal Consultation

Date	To	From	Subject
May 13, 2013	Jason S. Walker Chairman, Northwestern Band of Shoshoni Nation of Utah	Reed Murray U.S. Department of the Interior	Tribal Consultation
June 19, 2013	Sarah Johnson CUWCD	Philip S. Strobel EPA	EPA Scoping Comments
June 21, 2013	Sarah Johnson CUWCD	Kathleen Clarke Public Lands Policy Coordination Office	UDWR Scoping Comments
October 4, 2013	Chris Merritt Utah Division of State History	Chris Elison CUWCD	SHPO Consultation
October 10, 2013	Chris Elison CUWCD	Chris Merritt Utah Division of State History	Concurrence on Adverse Effect determination
October 30, 2013	Judy Imlay Horrocks Engineers	Mike Domeier Natural Resources Conservation Service	Prime and Statewide Important Farmlands and Form AD-1006
			Memorandum of Agreement (MOA)



CHAPTER FIVE: LIST OF PREPARERS

Name/Title	Degree(s)	Project Role
U.S. Department of the Interior, Central Utah Project Completion Act Office		
Lee Baxter, P.E.	M.S. Water Resource Engineering B.S. Civil Engineering	Project Review
Central Utah Water Conservancy District		
Sarah Johnson	B.S. Outdoor Recreation/Resource Management	Environmental Programs Manager
Chris Elison, P.E.	M.S. Civil and Environmental Engineering B.S. Civil and Environmental Engineering	NEPA Compliance Coordinator
Devin McKrola, P.E.	B.S. Civil and Environmental Engineering	WCWEP Operation and Management
Tom Bruton	B.S. Geology	Project Review
Rich Tullis, P.E.	M.S. Civil Engineering B.S. Civil Engineering	Project Review
Daryl Devey		Project Review
Kirk Beecher	B.S. Construction Management	Project Review
Utah Reclamation Mitigation and Conservation Commission		
Mark Holden	M.S. Fisheries and Wildlife B.S. Biology and Chemistry	Project Review
Maureen Wilson	M.S. Limnology B.S. Wildlife Biology	Project Review
Horrocks Engineers		
Stan Jorgensen, P.E.	M.S. Civil and Environmental Engineering B.S. Civil and Environmental Engineering	Consultant Project Manager
Nicole Tolley, P.E.	M.S. Civil and Environmental Engineering B.S. Civil and Environmental Engineering	Document Preparation
Ryan Pitts, P.L.A.	Masters in Landscape Architecture B.S. Horticulture	Document Preparation
Tom Allen	B.S. Civil Engineering	Document Preparation
Judy Imlay	J.D. B.A. Political Science	Document Preparation
Jennifer Hale, P.L.A.	Masters in Landscape Architecture B.A. Humanities	Document Preparation
Sandi Lampshire	B.A. Mass Communications	Public Outreach
Nancy Calkins	B.S. Botany	Cultural Resources
Logan Simpson Design		
Danny Mullins	M.S. Anthropology B.S. Anthropology	Cultural Resources



APPENDIX A: CORRESPONDENCE



IN REPLY REFER TO:

United States Department of the Interior

OFFICE OF THE SECRETARY
Program Director
CUP Completion Act Office
302 East 1860 South
Provo, Utah 84606-7317



CA-1200
ENV-6.00

MAY 10 2013

Ms. Kellie Youngbear
Superintendent, Bureau of Indian Affairs
P.O. Box 720
St. George, Utah 84771

Subject: Consultation Regarding Proposed Performance of Additional Operation, Maintenance, and Replacement (OM&R) Activities Associated With the Wasatch County Water Efficiency Project (WCWEP) – Section 202(a)(3) – Central Utah Project Completion Act

Dear Ms. Youngbear:

The Department of the Interior, the Central Utah Water Conservancy District (District), and the Utah Reclamation Mitigation and Conservation Commission (Commission), as Joint Lead Agencies, are preparing an Environmental Assessment (EA) for proposed performance of additional OM&R activities associated with the WCWEP water delivery system. These additional activities include: stabilizing canal banks; lining, enclosing, or piping the canals for safety and continued efficiency; improving access; and updating pump stations and regulating ponds to accommodate the changing pattern of water demand. We have enclosed a scoping document prepared for the EA process in order to provide additional detail of the location and extent of the proposed project.

In compliance with Federal responsibilities to honor its fiduciary relationship concerning trust responsibilities to Indian tribes through Federal statutes, agreements, executive orders, and treaty obligations, the Department is initiating this consultation with you concerning Indian Trust Assets which may be affected by the proposed project. A response within 30 days would be appreciated.

We appreciate your time and consideration of the proposed project and our inquiry in regard to Indian Trust Assets. We would be glad to meet with you to discuss the proposed project, should you desire.

1.B.15.084.E0.091

If you have questions, or if there is additional information that you would like to receive, please contact Mr. Elison at 801-226-7166. We look forward to hearing from you in the near future.

Sincerely,

REED MURRAY

Reed R. Murray
Program Director

Enclosure: Scoping Document

cc: Ms. Sarah Johnson
Environmental Programs Manager
Central Utah Water Conservancy District
355 West University Parkway
Orem, Utah 84058

Mr. Michael C. Weland
Executive Director, Utah Reclamation
Mitigation and Conservation Commission
230 South 500 East, Suite 230
Salt Lake City, UT 84102
(each w/o encl)

Identical letters sent to persons on next page.

Identical Letters Sent To:

Ms. Johnna Blackhair
Superintendent, Uintah and Ouray Agency
Bureau of Indian Affairs
P.O. Box 130
Fort Duchesne, Utah 84026

Mr. Dean Fox
Superintendent, Fort Hall Agency
Bureau of Indian Affairs
P.O. Box 220
Fort Hall, Idaho 83203



IN REPLY REFER TO:

United States Department of the Interior

OFFICE OF THE SECRETARY

Program Director
CUP Completion Act Office
302 East 1860 South
Provo, Utah 84606-7317



MAY 13 2013

CA-1200
ENV-6.00

Honorable Jeanine Borchardt
Chairwoman, Paiute Indian Tribe
440 North Paiute Drive
Cedar City, UT 84720

Subject: Consultation Regarding Proposed Performance of Additional Operation, Maintenance, and Replacement (OM&R) Activities Associated with the Wasatch County Water Efficiency Project (WCWEP) – Section 202(a)(3) – Central Utah Project Completion Act

Dear Chairwoman:

The Department of the Interior, the Central Utah Water Conservancy District (District), and the Utah Reclamation Mitigation and Conservation Commission (Commission), as Joint Lead Agencies, are preparing an Environmental Assessment (EA) for proposed performance of additional OM&R activities associated with the WCWEP water delivery system. These additional activities include: stabilizing canal banks; lining, enclosing, or piping the canals for safety and continued efficiency; improving access; and updating pump stations and regulating ponds to accommodate the changing pattern of water demand. We have enclosed a scoping document prepared for the EA process in order to provide additional detail of the location and extent of the proposed project.

The purpose of this letter is to invite comments regarding the proposed project from the Paiute Tribe. If, after reviewing the material included in this letter, you feel that the proposed project might affect any properties of religious or cultural importance, we request your notification and participation as a consulting party during the EA process. A response within 30 days would be appreciated. Mr. Chris Elison of the District will be following up this letter with a telephone call to you in the next few weeks. We would be glad to meet with you to discuss the proposed project, should you desire.

1.B.15.084.EO.091

We appreciate your time and consideration of the proposed project. If you have questions, or if there is additional information that you would like to receive, please contact Mr. Elison at 801-226-7166.

Sincerely,

REED MURRAY

Reed R. Murray
Program Director

Enclosure: Scoping Document

cc: Ms. Sarah Johnson
Environmental Programs Manager
Central Utah Water Conservancy District
355 West University Parkway
Orem, Utah 84058

Mr. Michael C. Weland
Executive Director, Utah Reclamation
Mitigation and Conservation Commission
230 South 500 East, Suite 230
Salt Lake City, Utah 84102

Ms. Dorena Martineau
Cultural Resources Director
Paiute Indian Tribe
440 North Paiute Drive
Cedar City, Utah 84720

Ms. Kellie Youngbear
Superintendent
Bureau of Indian Affairs
P.O. Box 720
St. George, Utah 84771
(each w/o encl)

Similar letters sent to persons on next page.

Similar Letters Sent To:

Chairman, Ute Tribe Business Committee

P.O. Box 190

Fort Duchesne, Utah 84026-0190

Similar change in second paragraph, first sentence: "The purpose of this letter is to invite comments regarding the proposed project from the Ute Tribe."

cc: Ms. Betsy Chapoose
 Director, Cultural Resources
 P.O. Box 190
 Fort Duchesne, Utah 84026-0190

Ms. Johnna Blackhair
 Superintendent, Uintah and Ouray Agency
 Bureau of Indian Affairs
 P.O. Box 130
 Fort Duchesne, Utah 84026
 (w/o encl to each)

Honorable Lori Bear
 Chairwoman, Skull Valley Band
 of Goshute Indians
 P.O. Box 448
 Grantsville, Utah 84029

Similar change in second paragraph, first sentence: "The purpose of this letter is to invite comments regarding the proposed project from the Skull Valley Bank of Goshute Indians."

cc: Ms. Johnna Blackhair
 Superintendent, Uintah and Ouray Agency
 Bureau of Indian Affairs
 P.O. Box 130
 Fort Duchesne, Utah 84026
 (w/o encl)

Honorable Jason S. Walker
 Chairman, Northwestern Band of
 Shoshoni Nation of Utah
 707 North Main Street
 Brigham City, Utah 84302

Similar change in second paragraph, first sentence: "The purpose of this letter is to invite comments regarding the proposed project from the Northwestern Band of Shoshoni Nation of Utah."



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8**

1595 Wynkoop Street
Denver, CO 80202-1129
Phone 800-227-8917
www.epa.gov/region08

JUN 19 2013

Ref: 8EPR-N

Sarah Johnson, Environmental Programs Manager
Central Utah Water Conservancy District
355 West University Parkway
Orem, Utah 84058

Re: Wasatch County Water Efficiency
Project; Operation, Maintenance and
Replacement, May 2013 EA Scoping
Package

Dear Ms. Johnson:

The U.S. Environmental Protection Agency Region 8 (EPA) appreciates the invitation to provide scoping comments to the Central Utah Conservancy District, the Utah Reclamation Mitigation and Conservation Commission, and the U.S. Department of Interior, as Joint Lead Agencies, for the proposed Operation, Maintenance and Replacement (OM&R) activities on the Wasatch County Water Efficiency Project (WCWEP) water delivery system. Tiering from the 1997 WCWEP EIS, the Joint Lead Agencies have initiated the preparation of an Environmental Assessment (EA) to analyze environmental impacts of the project's conservation objectives and infrastructure upgrade proposals. The OM&R activities include stabilizing canal banks; lining, enclosing, or piping the canals for safety and continued efficiency; improving access; and updating pump stations and regulating ponds to accommodate the changing needs associated with water demand. In preparing for the EA, the Joint Lead Agencies have created a scoping package to help determine the potential environmental impact concerns to be addressed.

The EPA supports the planning efforts of the Joint Lead Agencies to maintain canal safety and implement measures to meet conservation objectives of the WCWEP. We offer the following recommendations to consider as you further evaluate this project in the NEPA process.

We recommend that the analysis of aquatic resources include a baseline evaluation of: the in-stream habitats provided by the canals; the riparian habitats associated with the canal zone; and the adjacent wetland areas that are likely fed by canal seepage. Because it is likely that over the life of the project, aquatic resources have been enhanced and/or created due to the presence of water in the canals and the seepage associated with unlined channels, it will be important to evaluate effects to these additional aquatic resources as part of the EA. We recommend that the EA characterize existing or baseline conditions, including functional or condition assessments

and wetland delineations, and evaluate potential impacts to these resources from the proposed operation and maintenance activities.

Functional or condition assessments assign functional units to wetland complexes and determine wetland quality in order to facilitate the replacement of wetland functions and values through mitigation. These assessments will also help identify wetland types such as fens, which are considered difficult to replace resources. In designing mitigation plans that include wetlands replacement, the EPA recommends replacing wetland functions in addition to replacing wetland acreage in an ecosystem; considering acreage only does not assure that replacement wetlands are of a similar quality or functioning condition. We have seen the following methods applied effectively: the Utah Department of Transportation has a rapid wetland assessment method for use in highway and other linear projects that may be applicable; the National Wetland Condition Assessment methodology; as well as rapid assessment methods in the neighboring states of Montana and Colorado. The EPA recommends that a functional or condition assessment be conducted on the following wetland areas during the EA process: irrigation induced wetlands, fens, and riverine wetlands. Functional or condition assessments will allow the Joint Lead Agencies to better identify potential areas for mitigation.

The aquatic resource areas enhanced or created by this project likely represent normal circumstance, and as such any impacts to these resources should be coordinated with the U.S. Army Corps of Engineers to determine if Clean Water Act (CWA) Section 404 permits will be required for the project. In order to comply with CWA and also Executive Order 11990 to protect wetlands, we recommend that alternative actions be considered that avoid or minimize impacts to these resources, and also recommend the EA include proposed mitigation measures that could offset any unavoidable impacts to aquatic resources.

We appreciate the opportunity to provide comments during the scoping process. Thank you for considering our input. If we may provide further explanation of our comments during this stage of your planning process, management may contact Phil Strobel at 303-312-6704, or staff may contact Melanie Wasco, Lead NEPA Reviewer, at 303-312-6540, or Julia McCarthy in the Aquatic Resource Protection and Accountability Unit at 303-312-6153.

Sincerely,



Philip S. Strobel, Deputy Director
NEPA Compliance and Review Program
Office of Ecosystems Protection and Remediation



State of Utah

GARY R. HERBERT
Governor

GREG BELL
Lieutenant Governor

Office of the Governor
PUBLIC LANDS POLICY COORDINATION OFFICE

KATHLEEN CLARKE
Director

June 21, 2013

Sarah Johnson
Environmental Programs Manager
Central Utah Water Conservancy District
355 West University Parkway
Orem, UT 84058

Subject: Scoping for the Wasatch County Water efficiency Project (WCWEP)
Operation, Maintenance, and Replacement (OM&R) EA
RDCC Project No. 38781

Dear Ms. Johnson:

The State of Utah, through the Public Lands Policy Coordination Office (PLPCO), has reviewed this project. Utah Code (Section 63J-4-601, et. seq.) designates PLPCO as the entity responsible to coordinate the review of technical and policy actions that may affect the physical resources of the state, and to facilitate the exchange of information on those actions among federal, state, and local government agencies. As part of this process, PLPCO makes use of the Resource Development Coordinating Committee (RDCC). The RDCC includes representatives from the state agencies that are generally involved or impacted by public lands management.

**Department of Natural Resources
Division of Wildlife Resources**

The Utah Division of Wildlife Resources (UDWR) appreciates the opportunity to comment on the Wasatch County Water Efficiency Project.

The proposed action of lining existing canals with concrete will result in several negative impacts to a variety of wildlife. These include riparian habitat loss, entrapment and drowning, and travel barrier. Canals that have been in existence for several years create riparian habitat for a variety of wildlife. Lining those canals eliminates most of that vegetation that animals have come to rely on. In addition, concrete lined canals create a formidable barrier for many wildlife species. Deer cannot jump across and often fall in where they become trapped and cannot climb out. Due to the steep sides, most animals cannot even drink out of these lined

Sarah Johnson
Environmental Programs Manager
June 21, 2013
Page 2

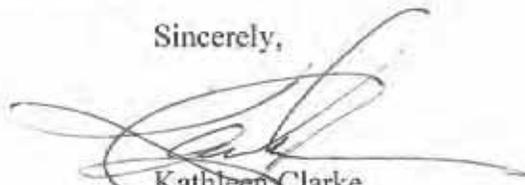
canals. This may cause unintended consequences of forcing deer and other wildlife to find a drink in other areas, perhaps across a highway.

Piping canals will eliminate some of these issues but would not provide riparian habitat and watering opportunities. Providing some wildlife watering structures (drinkers) along the canal route would mitigate the watering issue.

The UDWR would like to be of assistance with this project. If you have any questions concerning these comments, please contact Mark Farmer, Habitat Program Manager at (801) 491-5678 (Springville office).

The State of Utah appreciates the opportunity to review this proposal and we look forward to working with you on future projects. Please direct any other written questions regarding this correspondence to the Public Lands Policy Coordination Office at the address below, or call Sindy Smith at (801) 537-9193.

Sincerely,



Kathleen Clarke
Director



Central Utah Water Conservancy District

355 WEST UNIVERSITY PARKWAY, OREM, UTAH 84058-7303
TELEPHONE (801) 226-7100, FAX (801) 226-7107
TOLL FREE 800-281-7103
WEBSITE www.cuwcd.com

OFFICERS
Michael H. Jensen, President
Randy Crozier, Vice President

Don A. Christiansen, General Manager
Secretary/Treasurer

October 4, 2013

Christopher W. Merritt, Ph.D., RPA
Senior Preservation Specialist
Utah Division of State History
300 South Rio Grande Street
Salt Lake City, Utah 84101

RE:

- Section 106 Consultation for the Wasatch County Water Efficiency Project, Heber City and Wasatch County, Utah.
- Transmittal of Class III Cultural Resources Inventory and updated IMACS site forms for the Wasatch, Humbug, and Timpanogos canals
- Adverse Effect determination for the Wasatch, Humbug, and Timpanogos canals

Dear Mr. Merritt:

The Central Utah Water Conservancy District (District), a political subdivision of the State of Utah, U.S. Department of the Interior, Central Utah Project Completion Act (Interior) Office, and the Utah Reclamation Mitigation and Conservation Commission (Mitigation Commission), as Joint Lead Agencies, are preparing an Environmental Assessment in accordance with National Environmental Policy Act for the Wasatch County Water Efficiency Project (WCWEP) in Heber Valley. In compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. § 470 et seq.), and U.C.A.9-8-404, the Joint Lead Agencies have considered the effects of WCWEP on historic resources. As such, the District is submitting the enclosed Class III Cultural Resources Inventory prepared by Logan Simpson Design (LSD) of Salt Lake City, Utah.

Project History and Background

Since the late 1800s a portion of the upper Strawberry River (a tributary of the Duchesne River) had been diverted into Daniels Creek for irrigation purposes in the Heber Valley. Congress, through CUPCA, authorized the elimination of the upper Strawberry River diversion as well as provided measures to replace this lost water supply through implementing WCWEP in Heber Valley. Accordingly, the WCWEP EIS was completed with the Records of Decision signed by Interior and the Mitigation Commission in March 1997. WCWEP implemented water conservation measures in Heber Valley including converting farmlands from flood irrigation to sprinkler irrigation and canal lining to minimize water loss. Other water conserving and efficiency efforts were implemented as well.

BOARD OF TRUSTEES

Gary J. Anderson
Randy A. Brailsford
Kirk L. Christensen

David R. Cox
Randy Crozier
Michael K. Davis

Tom Dolan
Claude R. Hicken
Jani Iwamoto

George R. Jackson
Dallin W. Jensen
Michael H. Jensen

Michael J. McKee
Rondal R. McKee
Kent R. Peatross

Stanley R. Smith
Gawain Snow
Mark Wilson
1.8.15.084.E0.091

Description of the Proposed Action

Canal Bank Stabilization – This includes rehabilitating and maintaining the Timpanogos, Wasatch, and Humbug canals to their proper working condition for safety and structural integrity. The inside walls and bottom of the canals would be cleared of flow-restricting vegetation and debris and reshaped to reduce flow friction losses. Eroded or narrow banks would be widened and strengthened. Deep-rooted vegetation having root systems within 25-feet of the canals would be removed. Canal bank stabilization activities would occur as needed, as part of routine maintenance.

Lining or Piping the Canals – This includes a phased process of lining or piping the canals as necessary to maintain their safety, integrity, and efficiency. Canal lining would consist of lining the canals with reinforced concrete, or other suitable materials, and possibly enclosing the canal by placing a cap over the top. Piping would include installation of pipe; screening at the pipe inlet and outlet would be used to prevent debris, people, and animals from entering the pipe. Piped reaches of the canals would be covered to an appropriate depth and revegetated.

Improved Access – This includes the construction of OM&R access along both sides of the canals (where practicable) to associated facility features. Generally, this would be done within the existing easements by leveling the canal banks, clearing debris and vegetation, and adding additional stabilizing material as necessary.

Upgrading Facilities – This includes improved screening and filtering of secondary irrigation water intakes, pump station upgrades and modifications, and the enlargement of regulating ponds to accommodate the changing patterns of water demand.

Area of Potential Effects

The Area of Potential Effect (APE) for the WCWEP OM&R project consists areas adjacent to the Timpanogos and Humbug regulating ponds. The canals were originally surveyed as part of WCWEP EIS. The APE is approximately 28.5 acres in size (see map in Cultural Resources Inventory).

Cultural Resources Survey Results

Prior to conducting the field work portion of the inventories, LSD completed a Class I file search of relevant records, literature, and geographical information system (GIS) files archived at the Utah Division of State History. The purpose of these searches was to identify previously conducted cultural resource projects and documented archaeological/historical sites located in or within ½ mile of the APE. Previous research and associated sites within the project APE are found in tables 1 and 2 in the cultural resources inventory respectively.

LSD conducted an intensive level Class III inventory within the APE. Segments of the Humbug Canal originally passed through the APE but have been removed. In addition, the segments of the Timpanogos (42WA218), Wasatch (42WA217), and Humbug (42WA219) canal which have been modified have been updated in the IMACS Site Forms (enclosed).

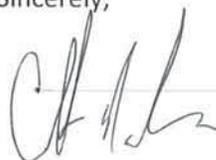
Recommendations

As documented in the WCWEP EIS, an “Adverse Effect” determination was reached for the historic Wasatch, Timpanogos, and Humbug Canals; mitigation efforts have since been completed. The proposed action for WCWEP OM&R, described above, would result in an **Adverse Effect** as defined by Section 106 of the National Historic Preservation Act. As discussed during our June 25th meeting, the District has prepared a draft Memorandum of Agreement outlining specific measures the District will undertake to mitigate for the Adverse Effect of the WCWEP OM&R.

In addition, the District recommends (as suggested by LSD) that the Humbug Canal be eligible for the NRHP under criterion A only; originally, the Humbug Canal was recommended eligible for the NRHP under criteria A and C. Some of this canal has been removed and the majority of the existing canals has been modified.

Thank you for your time and consideration. If you have any questions about this project or the cultural resources inventory please contact Chris Elison with the District at (801) 226-7166 (chrise@cuwcd.com).

Sincerely,



Chris Elison
NEPA Compliance Coordinator

Enclosures: Cover Page
 Class III Cultural Resources Inventory
 Updated IMACS Site Forms

cc (without enclosures):

Lori Hunsaker, Utah Division of State History
Sarah Johnson, District
Lee Baxter, Interior
Maureen Wilson, Mitigation Commission



GARY R. HERBERT
Governor

GREG BELL
Lieutenant Governor

Julie Fisher
Executive Director
Department of
Heritage & Arts



Brad Westwood
Director

October 10, 2013

Chris Elison
NEPA Compliance Coordinator
Central Utah Water Conservancy District
355 West University Parkway
Orem, Utah 84058-7303

RE: Wasatch County Water Efficiency Project, Heber City and Wasatch County - Wasatch,
Humbug and Timpanogos Canals

For future correspondence, please reference Case No. 13-1240

Dear M. Elison:

The Utah State Historic Preservation Office received your request for our comment on the above-referenced undertaking on October 8, 2013.

We concur with your determinations of Adverse Effect, and look forward to working with you on an MOA to resolve these effects.

This letter serves as our comment on the determinations you have made, within the consultation process specified in §36CFR800.4. If you have questions, please contact me at 801-245-7263 or Lori Hunsaker at 801-245-7241 lhunsaker@utah.gov.

Sincerely,

Chris Merritt, Ph.D.
Senior Preservation Specialist
cmerritt@utah.gov



Natural Resources Conservation Service
125 South State Street, Room 4402
Salt Lake City, UT 84138-1100
(801) 524-4550
FAX (801) 524-4403

October 30, 2013

Judy Imlay, Esq.
Horrocks Engineers
2162 W. Grove Parkway, Suite 400
Pleasant Grove, Utah 84062

RE: Prime Farmland Status
Wasatch County Water Efficiency Project

Dear Ms. Imlay:

The proposed development for the Timpanogos pond will impact Prime and Statewide Important Farmlands. The attached AD-1006 land evaluation section was completed for 2 alternatives. Alternative A is for the area of interest outlined on the shapefile that you provided. Alternative B is for the area of interest outlined on the shapefile that you provided minus the area of the existing pond and structures.

The following Prime Farmland map units were identified in the Timpanogos pond area:
Ca – Center Creek loam
DcA – Deer Creek loam, 1 to 3 percent slopes
RdA – Rasband loam, 1 to 3 percent slopes

The following Statewide Important Farmland map units were identified in the Timpanogos pond area: HR – Holdaway silt loam

According to the Farmland Protection Policy Act, it is the responsibility of the Federal agency that is funding a project to report the number of acres of farmland actually converted. At the end of the fiscal year, NRCS compiles a report on the acres of farmland proposed for conversion and the acres actually converted. At your convenience please provide us the number of acres actually converted for this project.

I hope you find this information helpful. Please call (801.524.4574) or email (mike.domeier@ut.usda.gov) with any further questions.

Sincerely,

A handwritten signature in black ink that reads "Mike Domeier".

Mike Domeier
State Soil Scientist, NRCS, Utah

FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)	Date Of Land Evaluation Request 10/29/13
Name Of Project Wasatch County Watter Efficiency Project	Federal Agency Involved Mitigation Commission & DOI
Proposed Land Use Holding Pond	County And State Wasatch County, Utah

PART II (To be completed by NRCS)		Date Request Received By NRCS	
Does the site contain prime, unique, statewide or local important farmland? (If no, the FPPA does not apply -- do not complete additional parts of this form).		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Major Crop(s) Alfalfa		Acres Irrigated 13787	Average Farm Size 183
Farmable Land In Govt. Jurisdiction Acres: 23244 % 3		Amount Of Farmland As Defined in FPPA Acres: 16796 % 2	
Name Of Land Evaluation System Used Utah NRCS LE		Name Of Local Site Assessment System None	
		Date Land Evaluation Returned By NRCS 10/30/13	

PART III (To be completed by Federal Agency)	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	42.0	22.0		
B. Total Acres To Be Converted Indirectly	0.0	0.0		
C. Total Acres In Site	42.0	22.0	0.0	0.0

PART IV (To be completed by NRCS) Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	36.0	18.0		
B. Total Acres Statewide And Local Important Farmland	3.0	3.0		
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	0.0	0.0		
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value				

PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)	41	41	0	0
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PART VI (To be completed by Federal Agency) Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))	Maximum Points				
1. Area In Nonurban Use	15	15	15		
2. Perimeter In Nonurban Use	10	10	10		
3. Percent Of Site Being Farmed	20	19	19		
4. Protection Provided By State And Local Government	20	20	20		
5. Distance From Urban Builtup Area	15	5	5		
6. Distance To Urban Support Services	15	10	10		
7. Size Of Present Farm Unit Compared To Average	10	6	6		
8. Creation Of Nonfarmable Farmland	10	10	10		
9. Availability Of Farm Support Services	5	5	5		
10. On-Farm Investments	20	1	1		
11. Effects Of Conversion On Farm Support Services	10	0	0		
12. Compatibility With Existing Agricultural Use	10	0	0		
TOTAL SITE ASSESSMENT POINTS	160	101	101	0	0

PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)	100	41	41	0	0
Total Site Assessment (From Part VI above or a local site assessment)	160	101	101	0	0
TOTAL POINTS (Total of above 2 lines)	260	142	142	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Reason For Selection:



APPENDIX B: NOTICE OF INTENT

Chain Management in Intellectual Property Rights Compliance.

Dated: April 30, 2013.

Maria Luisa Boyce,

Senior Advisor for Private Sector Engagement, Office of Trade Relations.

[FR Doc. 2013-10647 Filed 5-3-13; 8:45 am]

BILLING CODE 9111-14-P

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

[Docket No. FR-5703-N-01]

Annual Indexing of Basic Statutory Mortgage Limits for Multifamily Housing Programs

AGENCY: Office of the Assistant Secretary for Housing—Federal Housing Commissioner, HUD.

ACTION: Notice.

SUMMARY: In accordance with Section 206A of the National Housing Act, HUD has adjusted the Basic Statutory Mortgage Limits for Multifamily Housing Programs for Calendar Year 2013.

DATES: *Effective Date:* January 1, 2013.

FOR FURTHER INFORMATION CONTACT: Thomas L. Goade, Director, Technical Support Division, Office of Multifamily Development, Office of Housing, Department of Housing and Urban Development, 451 Seventh Street SW., Washington, DC 20410-8000, telephone (202) 402-2727 (this is not a toll-free number). Hearing or speech-impaired individuals may access this number through TTY by calling the toll-free Federal Relay Service at (800) 877-8339.

SUPPLEMENTARY INFORMATION: The FHA Downpayment Simplification Act of 2002 (Pub. L. 107-326, approved December 4, 2002) amended the National Housing Act by adding a new Section 206A (12 U.S.C. 1712a). Under Section 206A, the following sections of the National Housing Act are affected:

- I. Section 207(c)(3)(A) (12 U.S.C. 1713(c)(3)(A));
- II. Section 213(b)(2)(A) (12 U.S.C. 1715e (b)(2)(A));
- III. Section 220(d)(3)(B)(iii)(I) (12 U.S.C. 1715k (d)(3)(B)(iii)(I));
- IV. Section 221(d)(4)(ii)(I) (12 U.S.C. 1715l(d)(4)(ii)(I));
- V. Section 231(c)(2)(A) (12 U.S.C. 1715v(c)(2)(A)); and
- VI. Section 234(e)(3)(A) (12 U.S.C. 1715y(e)(3)(A)).

The dollar amounts in these sections are the base per unit statutory limits for FHA's multifamily mortgage programs collectively referred to as the "Dollar Amounts." They are adjusted annually

(commencing in 2004) on the effective date of the Consumer Financial Protection Bureau's adjustment of the \$400 figure in the Home Ownership and Equity Protection Act of 1994 (HOEPA) (Pub. L. 103-325, approved September 23, 1994). The adjustment of the Dollar Amounts shall be calculated using the percentage change in the Consumer Price Index for All Urban Consumers (CPI-U) as applied by the Consumer Financial Protection Bureau for purposes of the above-described HOEPA adjustment.

HUD has been notified of the percentage change in the CPI-U used for the HOEPA adjustment and the effective date of the HOEPA adjustment. The percentage change in the CPI-U is 2.3% and the effective date of the HOEPA adjustment is January 1, 2013. The Dollar Amounts have been adjusted correspondingly and have an effective date of January 1, 2013.

The adjusted Dollar Amounts for Calendar Year 2013 are shown below:

Basic Statutory Mortgage Limits for Calendar Year 2013

Multifamily Loan Program

- Section 207—Multifamily Housing
 - Section 207 pursuant to Section 223(f)—Purchase or Refinance Housing
 - Section 220—Housing in Urban Renewal Areas

Bedrooms	Non-Elevator	Elevator
0	\$48,646	56,134
1	53,887	62,869
2	64,367	77,091
3	79,336	96,552
4+	89,818	109,173

- Section 213—Cooperatives

Bedrooms	Non-Elevator	Elevator
0	\$52,719	56,134
1	60,785	63,598
2	73,310	77,335
3	93,837	100,047
4+	104,540	109,823

- Section 234—Condominium Housing

Bedrooms	Non-Elevator	Elevator
0	\$53,795	56,611
1	62,026	64,897
2	74,805	78,914
3	95,753	102,089
4+	106,673	112,062

- Section 221(d)(4)—Moderate Income Housing

Bedrooms	Non-Elevator	Elevator
0	\$48,413	52,296

Bedrooms	Non-Elevator	Elevator
1	54,955	59,951
2	66,427	72,900
3	83,378	94,308
4+	94,482	103,522

- Section 231—Housing for the Elderly

Bedrooms	Non-Elevator	Elevator
0	\$46,029	52,296
1	51,456	59,951
2	61,446	72,900
3	73,947	94,308
4+	86,937	103,522

- Section 207—Manufactured Home Parks

Per Space—\$22,333

Dated: April 30, 2013.

Carol J. Galante,

Assistant Secretary for Housing—Federal Housing Commissioner.

[FR Doc. 2013-10676 Filed 5-3-13; 8:45 am]

BILLING CODE 4210-67-P

DEPARTMENT OF THE INTERIOR

[A1R-17549897-100-00-0-0, CUPCA00]

Environmental Assessment of the Proposed Increase in Operation, Maintenance and Replacement Activities Associated With the Wasatch County Water Efficiency Project

AGENCY: Central Utah Project Completion Act Office, Interior.

ACTION: Notice of intent.

SUMMARY: Pursuant to Section 102(2)(c) of the National Environmental Policy Act of 1969, as amended, the Department of the Interior, the Central Utah Water Conservancy District, and the Utah Reclamation Mitigation and Conservation Commission, as joint leads, are initiating an Environmental Assessment of potential impacts associated with a proposed change in Operation, Maintenance and Replacement activities associated with the Wasatch County Water Efficiency Project (WCWEP). The WCWEP Operation, Maintenance, and Replacement Proposed Action includes: stabilizing canal banks; lining, piping, or enclosing the canals for safety and continued efficiency; improving access; and updating pump stations and regulating ponds to accommodate the changing pattern of water demand and increased urbanization.

DATES: Date and location for public scoping will be announced locally.

FOR FURTHER INFORMATION CONTACT: Mr. Lee Baxter at (801) 379-1174, or by email at lbaxter@usbr.gov.

Dated: April 30, 2013.

Reed R. Murray,

*Program Director, Central Utah Project
Completion Act, Department of the Interior.*

[FR Doc. 2013-10675 Filed 5-3-13; 8:45 am]

BILLING CODE 4310-MN-P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

[FWS-R6-ES-2013-N099;
FXES1113060000D2-123-FF06E00000]

Endangered and Threatened Wildlife and Plants; Recovery Permit Applications

AGENCY: Fish and Wildlife Service,
Interior.

ACTION: Notice of availability; request
for comments.

SUMMARY: We, the U.S. Fish and Wildlife Service, invite the public to comment on the following application to conduct certain activities with endangered or threatened species. With some exceptions, the Endangered Species Act of 1973, as amended (Act), prohibits activities with endangered and threatened species unless a Federal permit allows such activity. The Act requires that we invite public comment before issuing these permits.

DATES: To ensure consideration, please send your written comments by June 5, 2013.

ADDRESSES: You may submit comments or requests for copies or more information by any of the following methods. Alternatively, you may use one of the following methods to request hard copies or a CD-ROM of the documents. Please specify the permit you are interested in by number (e.g., Permit No. TE-106387).

- *Email:* permitsR6ES@fws.gov.

Please refer to the respective permit number (e.g., Permit No. TE-106387) in the subject line of the message.

- *U.S. Mail:* Ecological Services, U.S. Fish and Wildlife Service, P.O. Box 25486-DFC, Denver, CO 80225

- *In-Person Drop-off, Viewing, or Pickup:* Call (303) 236-4212 to make an appointment during regular business hours at 134 Union Blvd., Suite 645, Lakewood, CO 80228.

FOR FURTHER INFORMATION CONTACT: Kathy Konishi, Permit Coordinator Ecological Services, (303) 236-4212 (phone); permitsR6ES@fws.gov (email).

SUPPLEMENTARY INFORMATION:

Background

The Act (16 U.S.C. 1531 *et seq.*) prohibits activities with endangered and

threatened species unless a Federal permit allows such activity. Along with our implementing regulations in the Code of Federal Regulations (CFR) at 50 CFR part 17, the Act provides for permits, and requires that we invite public comment before issuing these permits.

A permit granted by us under section 10(a)(1)(A) of the Act authorizes the permittee to conduct activities with United States endangered or threatened species for scientific purposes, enhancement of propagation or survival, or interstate commerce (the latter only in the event that it facilitates scientific purposes or enhancement of propagation or survival). Our regulations implementing section 10(a)(1)(A) for these permits are found at 50 CFR 17.22 for endangered wildlife species, 50 CFR 17.32 for threatened wildlife species, 50 CFR 17.62 for endangered plant species, and 50 CFR 17.72 for threatened plant species.

Application Available for Review and Comment

We invite local, State, and Federal agencies, and the public to comment on the following application. Documents and other information the applicant has submitted are available for review, subject to the requirements of the Privacy Act (5 U.S.C. 552a) and Freedom of Information Act (5 U.S.C. 552).

Permit Application Number: TE-106387

Applicant: U.S. Forest Service, Bridger-Teton National Forest, P.O. Box 220, 29 E. Freemont Lake Road, Pinedale, WY 82941

The applicant requests the renewal of an existing permit to take (capture, handle, and release) Kendall Warm Springs dace (*Rhinichthys osculus thermalis*) under permit TE-106387 for the purpose of enhancing the species' survival.

National Environmental Policy Act

In compliance with the National Environmental Policy Act (42 U.S.C. 4321 *et seq.*), we have made an initial determination that the proposed activities in this permit are categorically excluded from the requirement to prepare an environmental assessment or environmental impact statement (516 DM 6 Appendix 1, 1.4C(1)).

Public Availability of Comments

All comments and materials we receive in response to this request will be available for public inspection, by appointment, during normal business hours at the address listed in the **ADDRESSES** section of this notice.

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Authority

We provide this notice under section 10 of the Act (16 U.S.C. 1531 *et seq.*).

Dated: April 30, 2013.

Michael G. Thabault,

*Assistant Regional Director, Mountain-Prairie
Region.*

[FR Doc. 2013-10669 Filed 5-3-13; 8:45 am]

BILLING CODE 4310-55-P

DEPARTMENT OF THE INTERIOR

Bureau of Indian Affairs

Indian Entities Recognized and Eligible To Receive Services From the United States Bureau of Indian Affairs

AGENCY: Bureau of Indian Affairs,
Interior.

ACTION: Notice.

SUMMARY: This notice publishes the current list of 566 tribal entities recognized and eligible for funding and services from the Bureau of Indian Affairs by virtue of their status as Indian tribes. The list is updated from the notice published on August 10, 2012 (77 FR 47868).

FOR FURTHER INFORMATION CONTACT: Gail Veney, Bureau of Indian Affairs, Division of Tribal Government Services, Mail Stop 4513-MIB, 1849 C Street NW., Washington, DC 20240. Telephone number: (202) 513-7641.

SUPPLEMENTARY INFORMATION: This notice is published pursuant to Section 104 of the Act of November 2, 1994 (Pub. L. 103-454; 108 Stat. 4791, 4792), and in exercise of authority delegated to the Assistant Secretary—Indian Affairs under 25 U.S.C. 2 and 9 and 209 DM 8.

Published below is a list of federally acknowledged tribes in the contiguous 48 states and in Alaska.

Amendments to the list include name changes and name corrections and two additions. To aid in identifying tribal name changes, the tribe's former name is included with the new tribal name. To aid in identifying corrections, the tribe's previously listed name is included with the tribal name. We will continue to list the tribe's former or