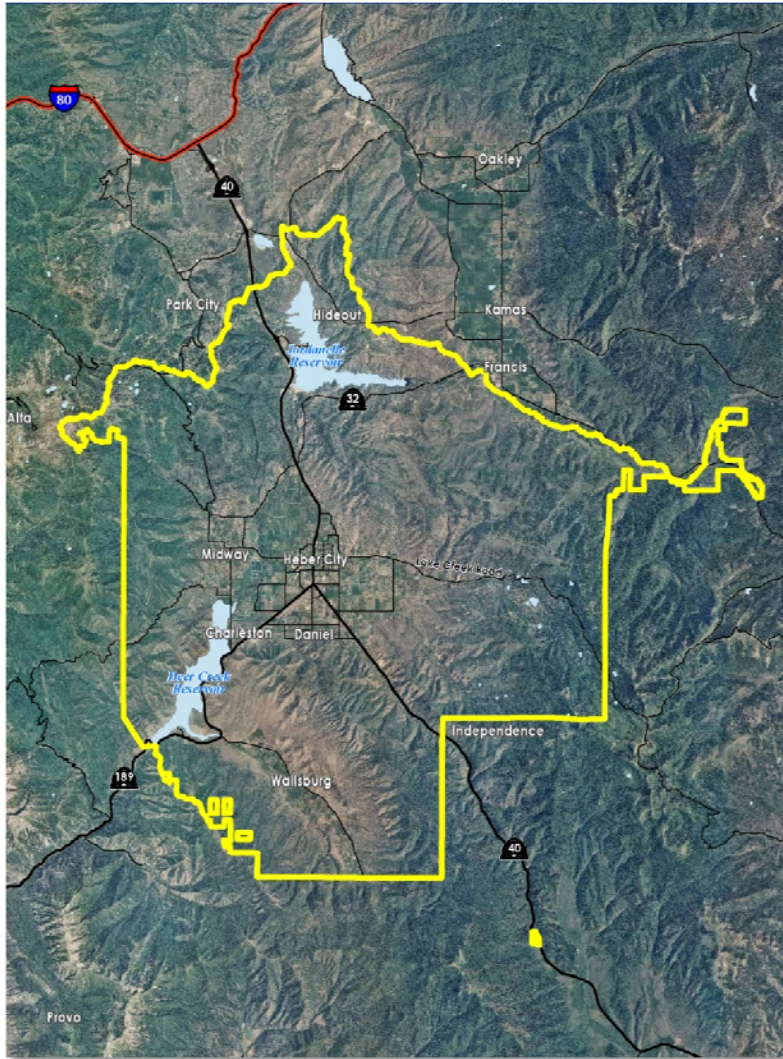

Final Environmental Assessment

Block Notice 1A

Heber Sub-Area Agricultural Water to M&I Water Conversion



Central Utah Water Conservancy District
U.S. Department of the Interior

September 2011



U.S. Department of the Interior

Final Environmental Assessment

Block Notice 1A

Heber Sub-Area Agricultural Water to M&I Water Conversion

Prepared by

Central Utah Water Conservancy District

September 2011



Don **Don A. Christiansen, General Manager**
Central Utah Water Conservancy District



Reed R. Murray, CUPCA Program Director
U.S. Department of the Interior

Final Environmental Assessment
Block Notice 1A
Heber Sub-Area Agricultural Water to M&I Water Conversion

Lead Agencies: U.S. Department of the Interior/CUPCA Office
Central Utah Water Conservancy District

Cooperating Agencies: Utah Reclamation Mitigation and Conservation Commission
U.S. Bureau of Reclamation
Wasatch County
Wasatch County Special Service Area No. 1
Jordanelle Special Service District

Responsible Officials: Sarah Sutherland
Central Utah Water Conservancy District
355 W. University Parkway
Orem, Utah 84058-7303

Reed Murray
Department of the Interior
302 East 1860 South
Provo, Utah 84606-7317

For Information, Contact: Sarah Sutherland
Central Utah Water Conservancy District
355 W. University Parkway
Orem, Utah 84058-7303
(801) 226-7100



Contents

CHAPTER 1: PURPOSE OF AND NEED FOR THE PROPOSED ACTION 1-1

1.1 Introduction.....1-1

1.1.1 National Environmental Policy Act Documentation..... 1-1

1.1.2 Cooperating Agencies..... 1-3

1.1.3 Decisions To Be Made..... 1-3

1.2 Project Background1-3

1.2.1 The Bonneville Unit of the CUP..... 1-3

1.2.2 Federal Statutes and Regulations That Pertain to Converting Water from Agricultural to M&I Use..... 1-4

1.3 Purpose of and Need for the Proposed Action.....1-6

1.3.1 Need for the Proposed Action..... 1-6

1.3.2 Purposes of the Proposed Action 1-6

1.4 Location and General Description of the Conversion Area and the Proposed Action.....1-6

1.4.1 Location and Description of the Conversion Area..... 1-6

1.4.2 Description of the Proposed Action..... 1-7

1.5 Related Projects.....1-13

1.5.1 Francis Sub-Area M&I Water Conversion EA 1-13

1.5.2 Final EIS for the Wasatch County Water Efficiency Project (WCWEP) 1-13

1.6 Permits, Licenses, and Authorizations Required1-14

CHAPTER 2: PROPOSED ACTION AND NO-ACTION ALTERNATIVE 2-1

2.1 Action Alternative (Proposed Action)2-1

2.2 Alternative to the Proposed Action.....2-1

2.3 Resources Not Addressed in This EA2-2

2.4 Summary of Impacts to Potentially Affected Resources.....2-3

CHAPTER 3: AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES.....3-1

3.1 Air Quality3-1

3.1.1 Issues 3-1

3.1.2 Affected Environment 3-1

3.1.3 Environmental Consequences 3-2

3.2 Cultural Resources.....3-3

3.2.1 Issues 3-3

3.2.2 Affected Environment 3-3

3.2.3 Environmental Consequences 3-5

3.3 Farmland and Agricultural Production.....3-6

3.3.1 Issues 3-6

3.3.2 Affected Environment 3-7

3.3.3 Environmental Consequences 3-9

3.4 Fish and Wildlife Resources and Habitat3-11

3.4.1 Issues 3-11

3.4.2 Affected Environment 3-11

3.4.3 Environmental Consequences 3-16



3.5	Soils	3-19
3.5.1	Issues	3-19
3.5.2	Affected Environment	3-19
3.5.3	Environmental Consequences.....	3-19
3.6	Invasive Species.....	3-20
3.6.1	Issues	3-20
3.6.2	Affected Environment	3-20
3.6.3	Environmental Consequences.....	3-21
3.7	Land-Use Plans and Conflicts.....	3-23
3.7.1	Issues	3-23
3.7.2	Affected Environment	3-23
3.7.3	Environmental Consequences.....	3-24
3.8	Public Facilities	3-25
3.8.1	Issues	3-25
3.8.2	Affected Environment	3-25
3.8.3	Environmental Consequences.....	3-26
3.9	Water Resources and Water Quality	3-27
3.9.1	Issues	3-27
3.9.2	Affected Environment	3-27
3.9.3	Environmental Consequences.....	3-32
3.10	Wetlands and Riparian Resources.....	3-40
3.10.1	Issues	3-40
3.10.2	Affected Environment	3-40
3.10.3	Environmental Consequences.....	3-41
3.11	Cumulative Effects.....	3-43
3.11.1	Introduction	3-43
3.11.2	Past, Present, and Reasonably Foreseeable Future Actions	3-43
3.11.3	Proposed Action.....	3-44
3.11.4	Effects Analysis	3-44
CHAPTER 4:	CONSULTATION AND COORDINATION.....	4-1
4.1	Scoping.....	4-1
4.2	Draft Environmental Assessment	4-2
4.2.1	Document Availability.....	4-2
4.2.2	Agencies Consulted during Preparation of This EA.....	4-2
4.3	Final Environmental Assessment and FONSI.....	4-2
CHAPTER 5:	DOCUMENT PREPARERS.....	5-1
CHAPTER 6:	REFERENCES	6-1
CHAPTER 7:	GLOSSARY	7-1



List of Tables

Table 2.4-1. Impact Summary	2-3
Table 3.2-1. Historic Sites in the APE by Location.....	3-4
Table 3.2-2. Historic Sites in the APE by Original Use	3-4
Table 3.3-1. Summary of Agricultural Production in Wasatch County (2005)	3-7
Table 3.3-2. Prime Farmland and Farmland of Statewide Importance in Wasatch County.....	3-7
Table 3.4-1. Federally Listed and State Sensitive Species That Could Be Present in the Study Area.....	3-13

List of Figures

Figure 1-1. Project Study Area	1-2
Figure 1-2. Temporary Pipeline and Pumping Station	1-10
Figure 1-3. Original Heber Sub-Area, Existing Francis Sub-Area, and Expanded Heber Sub-Area.....	1-12
Figure 3-1. Prime Farmland and Farmland of Statewide Importance.....	3-8
Figure 3-2. Wasatch County Planning Areas.....	3-23
Figure 3-3. Simulated Jordanelle Reservoir Storage under Baseline Conditions.	3-29
Figure 3-4. Simulated Deer Creek Reservoir Storage under Baseline Conditions.	3-30
Figure 3-5. Simulated Provo River Flow under Baseline Conditions.....	3-31
Figure 3-6. Estimated Jordanelle Reservoir Storage under the No-Action Alternative.	3-34
Figure 3-7. Estimated Deer Creek Reservoir Storage under the No-Action Alternative.	3-34
Figure 3-8. Estimated Provo River Flow under the No-Action Alternative.	3-35
Figure 3-9. Estimated Jordanelle Reservoir Storage under the Proposed Action.	3-37
Figure 3-10. Estimated Deer Creek Reservoir Storage under the Proposed Action.	3-38
Figure 3-11. Estimated Provo River Flow under the Proposed Action.....	3-39

List of Appendices

Appendix A. Wildlife Species Likely to Occur in the Study Area
Appendix B. Wasatch County Noxious Weeds List
Appendix C. Pertinent Correspondence



This page is intentionally blank.



Chapter 1: Purpose of and Need for the Proposed Action

1.1 Introduction

The Central Utah Water Conservancy District (CUWCD) and the U.S. Department of the Interior (Interior), as joint lead agencies, are proposing to administratively convert Central Utah Project (CUP) Bonneville Unit agricultural water delivered under Development Block Notice No. 1A (Block Notice 1A) and currently dedicated to the Heber Sub-Area from agricultural to municipal and industrial (M&I) use. M&I water is used for domestic, commercial, and industrial purposes. M&I water can be secondary (not treated for human consumption) or culinary (suitable for human consumption). This proposed action would also expand the area to which CUP M&I water can be delivered (expanded Heber Sub-Area). The study area is shown in Figure 1-1 below.

What proposed action is evaluated in this Environmental Assessment?

The proposed action evaluated in this EA is to administratively convert CUP Bonneville Unit water delivered under Block Notice 1A and currently dedicated to the Heber Sub-Area from agricultural to M&I use. The action would also expand the Heber Sub-Area.

The conversion would include up to 12,100 acre-feet of agricultural water in Wasatch County that is currently intended to provide agricultural water to commercially viable agricultural tracts that have been deemed irrigable under U.S. Bureau of Reclamation (Reclamation) law. The agricultural water would be converted incrementally to M&I use, when requested by petitioners and contract holders, over a period of up to 25 years.

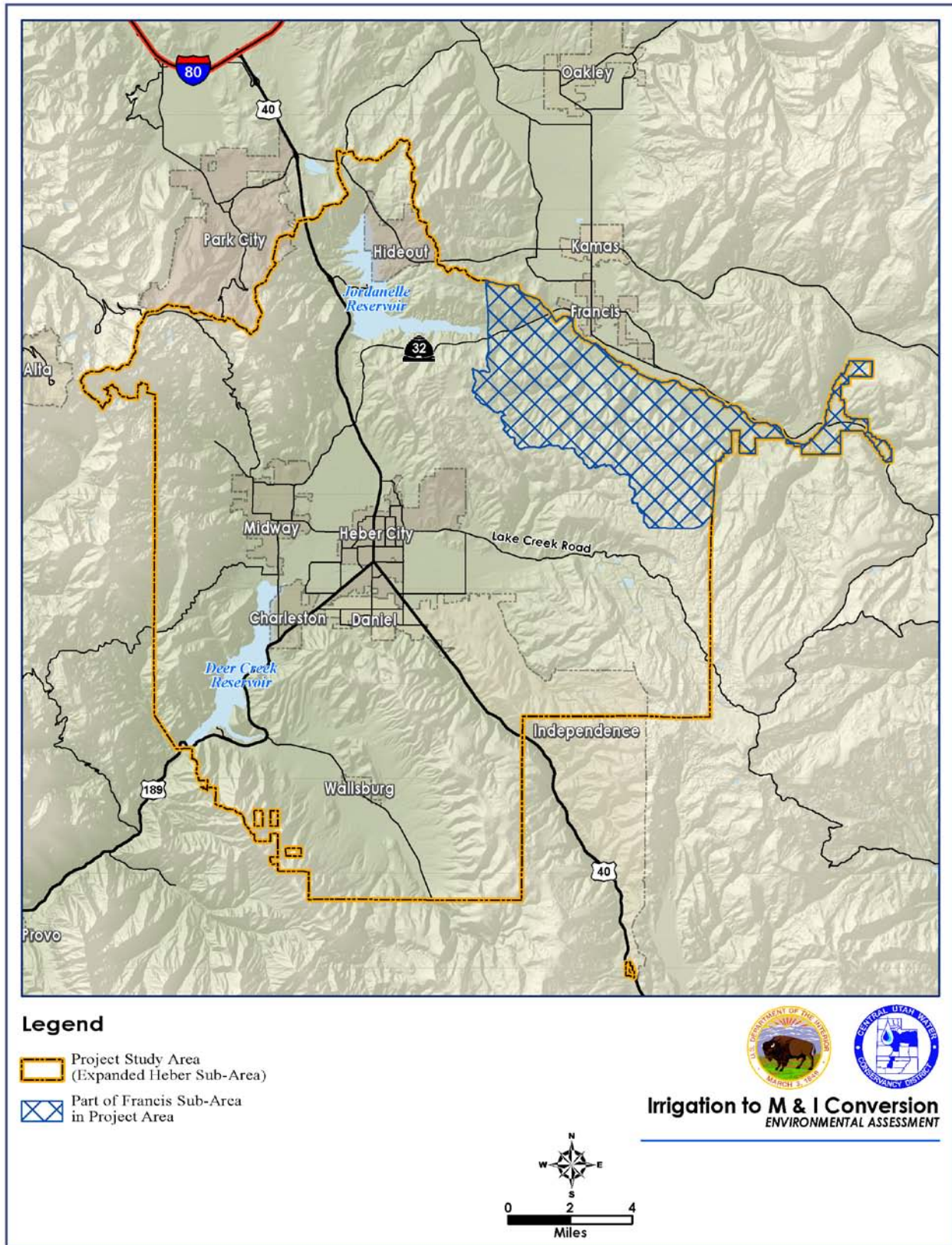
Interior will use this analysis to support a decision to issue a license agreement that would provide for emergency installation and operation of a temporary water-delivery system near the Jordanelle Special Service District's (JSSD) Keetley Water Treatment Plant (WTP). This temporary system would be installed only in the event of an emergency and would provide JSSD with a temporary method to receive its contracted portion of the Block Notice 1A water during that emergency.

1.1.1 National Environmental Policy Act Documentation

This Environmental Assessment (EA) has been prepared to analyze the expected 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 Interior regulations implementing NEPA (40 Code of Federal Regulations [CFR] Parts 1500–1508 and 43 CFR Part 46, respectively).



Figure 1-1. Project Study Area





1.1.2 Cooperating Agencies

The following agencies are acting as cooperating agencies for this EA:

- U.S. Bureau of Reclamation (Reclamation)
- Utah Reclamation Mitigation and Conservation Commission (Mitigation Commission)
- Wasatch County
- Wasatch County Special Service Area No. 1 (WCSSA #1)
- Jordanelle Special Service District

What is a cooperating agency?

A *cooperating agency* is any agency, other than a lead agency, that has jurisdiction by law and special expertise with respect to reasonable alternatives or significant environmental, social, or economic impacts associated with the proposed action (CEQ 1999).

1.1.3 Decisions To Be Made

Interior and CUWCD will decide whether to authorize the administrative conversion of CUP Bonneville Unit agricultural water delivered under Block Notice 1A and currently dedicated to the Heber Sub-Area from agricultural to M&I use. Interior and CUWCD will also decide whether to expand the Heber Sub-Area.

Interior will use this analysis to support the decision to issue a license agreement to allow emergency installation and operation of a temporary water-delivery system near the JSSD Keetley Water Treatment Plant (WTP) at Jordanelle Reservoir. This system would provide JSSD with a temporary alternative method to receive its contracted portion of the Block Notice 1A project water in the event of an emergency.

1.2 Project Background

1.2.1 The Bonneville Unit of the CUP

The CUP is a United States federal water project. It was authorized for construction under the Colorado River Storage Project Act of April 11, 1956 (CRSPA) (Public Law 84-485, 70 Stat. 105), as a participating project of the Colorado River Storage Project. Constructed by Reclamation and CUWCD, the CUP is located in the central, east-central, and northeast part of Utah and is the largest water resources development program in the state. The CUP makes use of a portion of Utah's share of the yield of the Colorado River as set out in the Colorado River Compact of 1922.

How is the proposed action related to the CUP?

The proposed action would allow the conversion of some of the agricultural water from the Bonneville Unit of the CUP—specifically water that is delivered under Block Notice 1A to the Heber Sub-Area—from agricultural to M&I use.

The CUP provides agricultural water to rural areas in the Uinta and Bonneville Basins. The CUP also provides water to meet the M&I needs of the most developed part of the state along the Wasatch Front. Water developed by the CUP is used for municipal, industrial, and



agricultural supplies; hydroelectric power; fish and wildlife; and recreation. The project also improves flood-control capability and helps control water quality.

The CUP was originally divided into six separate units to facilitate planning and construction: Vernal, Bonneville, Jensen, Upalco, Uinta, and Ute Indian. The Vernal, Bonneville, and Jensen units are the only remaining authorized units. The Bonneville Unit is the largest and most complex of these remaining units. The Bonneville Unit diverts water from the Uinta Basin (which is part of the Colorado River Basin) to the Bonneville Basin. Portions of the Bonneville Unit also develop and provide water resources that are used in the Uinta Basin. The Bonneville Unit is located in central and northeastern Utah and provides water for Salt Lake, Utah, Wasatch, Summit, and Duchesne Counties.

Bonneville Unit water is developed by collecting and storing flows of several streams (principally tributaries of the Duchesne River), purchasing water rights, using part of the existing water supply in Utah Lake, and using CUP return flows and high flows entering Utah Lake. The Bonneville Unit includes features that allow a trans-basin diversion of water from the Uinta Basin to the Bonneville Basin and development of local water resources in both basins.

What is return flow?

Return flow is water that is not fully consumed by its primary use and flows back to its source or to another water body.

Early planning for the Bonneville Unit of the CUP identified agricultural water for Wasatch and Summit Counties. In 2001, Bonneville Unit facilities were sufficiently completed to allow project agricultural water to be delivered to both counties. At that time, Reclamation issued a notice to Bonneville Unit participants, called Development Block Notice 1A, which amended the 1965 Repayment Contract. Block Notice 1A created the United States' obligation to deliver project agricultural water and CUWCD's obligation to repay the project development costs. After Reclamation issued Block Notice 1A, irrigators in Wasatch and Summit Counties entered into contracts to receive water for irrigating large, eligible tracts of land.

1.2.2 Federal Statutes and Regulations That Pertain to Converting Water from Agricultural to M&I Use

Under existing Reclamation law, project agricultural water must be converted to M&I use if it will be used for irrigating small agricultural tracts (that is, tracts less than 2 acres in size), irrigating suburban landscaping, culinary, or industrial purposes. The following regulations pertain to converting water from agricultural to M&I use.

The Reclamation Act. When Congress passed the Reclamation Act in 1902 (1902 act), it did not anticipate the use of Reclamation project water for any purpose other than agricultural irrigation. The Reclamation Project Act of 1939 (1939 act) subsequently recognized M&I use as a Reclamation project purpose. The 1902 act required water users to repay the construction costs for irrigation facilities from which they received benefits. The 1939 act introduced another benefit for project irrigators: the irrigators' obligation to repay project capital costs allocated to agriculture could be limited to their "ability to pay" provided that other project beneficiaries (generally power or M&I users) were available to pay the remainder of the irrigation obligation. Under Reclamation regulations, users of project M&I water are required to repay the full cost of developing the water, with interest. The 1939 act led to a substantial



difference between the cost for agricultural water and the rate paid for M&I water from the same project source.

The CRSPA amended and supplemented the 1939 act and authorized the Bonneville Unit of the CUP.

1965 Repayment Contract. Bonneville Unit agricultural and M&I water is made available under the 1965 Repayment Contract between CUWCD and the United States (Contract No. 14-06-400-4286). The 1965 Repayment Contract anticipated the need for conversions of Bonneville Unit agricultural water to M&I use. It acknowledges that CUWCD cannot deliver project agricultural water for any purposes other than agricultural purposes without the consent of the United States, and it describes the process for allocating the payments for agricultural water converted to M&I use. In a 1982 letter, Reclamation concluded that agricultural water could be used to support only commercial agricultural enterprises and defined a commercial enterprise by tract size. Under the 1982 letter, tracts over 10 acres were eligible to receive project agricultural water and tracts under 2 acres were not. Tracts between 2 and 10 acres could be eligible, but the petitioner is required to show evidence that the enterprise is grossing at least \$5,000 annually.

Central Utah Project Completion Act. Congress enacted the Central Utah Project Completion Act (CUPCA) on October 30, 1992 (Public Law 102-575), as an amendment to the CRSPA. Through the CUPCA, Congress provided direction for completing the CUP under a partnership among CUWCD, Interior, and the Mitigation Commission (a federal commission created by the act). The CUPCA transferred Reclamation's administrative responsibility for completing the CUP to the Office of the Secretary of the Interior. As a result, the CUPCA Office, under the Assistant Secretary–Water and Science located in Provo, Utah, administers the CUPCA and the completion of the CUP.

Authority for Converting Water from Agricultural to M&I Use. In summary, Section 9(c) of the Reclamation Project Act of 1939 (43 U.S.C. § 485h(c)) authorizes conversions of water from agricultural to M&I use. Under the CUPCA (Public Law 102-575), the Secretary of the Interior is authorized to oversee completion of the CUP, and therefore, the Secretary of the Interior has authority to convert Bonneville Unit water from agricultural to M&I use.



1.3 Purpose of and Need for the Proposed Action

1.3.1 Need for the Proposed Action

The proposed action is needed to respond to changes in land use in Wasatch County by converting agricultural water delivered under Block Notice 1A to the Heber Sub-Area from agricultural to M&I use when requested by petitioners and contract holders. The project is also needed to expand the Heber Sub-Area to address the expected future demand for M&I water within Wasatch County.

Why is the proposed action needed?

The proposed action is needed to respond to changes in land use in Wasatch County by converting water delivered under Block Notice 1A to the Heber Sub-Area from agricultural to M&I use when requested by petitioners and contract holders. The project is also needed to expand the Heber Sub-Area to address the expected future demand for M&I water within Wasatch County.

1.3.2 Purposes of the Proposed Action

The purposes of the proposed action are to:

- Continue to provide CUP water to petitioners and water contract holders.
- Improve efficiency in water delivery and application.
- Avoid adverse effects to the Wasatch County Water Efficiency Project (WCWEP).
- Avoid adverse effects to the groundwater of Wasatch County.
- Accommodate emergency delivery of Block Notice 1A water.

1.4 Location and General Description of the Conversion Area and the Proposed Action

1.4.1 Location and Description of the Conversion Area

The expanded Heber Sub-Area is situated in northwestern Wasatch County (see Figure 1-1 above, Project Study Area). The Sub-Area would include all non-United States Forest Service (USFS) land in the Provo River drainage above Deer Creek Reservoir within CUWCD boundaries. This area is generally bounded by the Wasatch County boundary to the north and west, the Bonneville Divide to the east, and the Round Valley or Main Creek drainage to the south.

The expanded Heber Sub-Area includes land surrounding Jordanelle Reservoir, Deer Creek Reservoir, the Daniels Service Area, and part of the Francis Sub-Area (for more information about the Francis Sub-Area, see Section 1.5.1, Francis Sub-Area M&I Water Conversion EA).



1.4.2 Description of the Proposed Action

The proposed action would:

- Administratively convert up to 12,100 acre-feet of CUP Bonneville Unit agricultural water, delivered under Block Notice 1A and allotted to the Heber Sub-Area, from agricultural to M&I use.
- Expand the Heber Sub-Area.

The proposed action would also require modifying Block Notice 1A to reflect these administrative changes. Completing this EA would allow the administrative changes but would not automatically convert the water. The actual conversion would be completed by CUWCD and Interior consistent with Reclamation law over time as requests are received from petitioners and contract holders.

Finally, the proposed action would provide for installation and operation of a temporary water-delivery system in the event of an emergency that affects the water supply to JSSD's Keetley WTP at Jordanelle Reservoir. During an emergency, this system would provide JSSD with a temporary method to receive its contracted portion of the Block Notice 1A water. Because the temporary water-delivery system would be installed on federal land, Interior would need to issue a license agreement to JSSD as part of the process.

1.4.2.1 CUP Water Conversion and Sub-Area Expansion

WCSSA #1 requested that CUWCD and Interior initiate the conversion process. Because it addresses how the water can be used, Block Notice 1A would need to be amended to include the expanded Heber Sub-Area to reflect this conversion. As a result of the conversion process, up to 12,100 acre-feet of CUP M&I water could be available at an unsubsidized rate under Reclamation law. The water would be intended for use on smaller tracts (less than 2 acres) or elsewhere in the expanded Heber Sub-Area as M&I water.

Block 1A was established in 2000 to provide agricultural water to commercially viable agricultural tracts deemed irrigable under Reclamation law. Since 2000, the population and housing growth rates in western Wasatch County have been among the highest in the state.

Between 2000 and 2010, the population of Wasatch County increased by about 55%, which corresponds to an annual growth rate of about 5.5%. Most of this population growth occurred in the western part of the county, an area that includes all of the proposed expanded Heber Sub-Area. During this same period, the number of housing units increased by about 61%, which corresponds to an annual increase of about 6.1%. These population and housing unit growth rates for Wasatch County were more than double the rates for Utah overall (which were about 24% for population and 28% for housing units for the 10-year period). The rate of population growth for Summit County, which abuts Wasatch County and includes Park City, was similar to that of the state as a whole, but the growth in housing units was more similar to that of Wasatch County (U.S. Census Bureau 2000, 2010).

Between September 2008 and early 2011, about 5,800 additional housing units were recorded, approved, or proposed. Some of the development proposals are conceptual (Smith 2011). Many of the 5,800 units are probably not included in the housing unit estimate in the



2010 U.S. Census, since the units are still in the planning phase or were under construction when the 2010 Census was conducted.

These recent and expected growth trends contribute to a need for culinary and secondary water on recently subdivided land and on land proposed for subdivision over the next 20 years. Many of the parcels that have been subdivided or are proposed for subdivision have historically received CUP agricultural water, particularly those in the populous Heber Valley, which makes up a large part of the existing Heber Sub-Area. As development continues, fewer of the parcels will be eligible to receive CUP agricultural water because the parcels are smaller than the minimum size that would be eligible, which is 2 acres.

The Heber Sub-Area would need to be expanded so that the entire part of Wasatch County that is above Deer Creek Reservoir in the Provo River drainage is eligible to receive CUP water. The expanded Sub-Area would not include land administered by the USFS. By expanding the Heber Sub-Area, the converted water could be delivered to any part of Wasatch County where the expected future demand would be focused.

Completing this EA would allow an administrative change for the 12,100 acre-feet of water but would not automatically convert the water. The actual conversion would be completed over time by CUWCD and Interior consistent with Reclamation law when requests are received from petitions and contract holders. CUWCD and Interior anticipate that the water could be delivered through existing WCWEP facilities; current and expanded WCWEP irrigation systems; current or future treatment plants, if needed; and exchanges with underground well water. Water rights might be exchanged to facilitate effective and efficient distribution of the water, but points of diversion would not change.

Converted water could also be used by Heber Valley irrigation companies to supply water to smaller tracts of agricultural land, such as hobby farms. Use of CUP agricultural water on these smaller tracts of land is currently not allowed. The CUP water that is not converted from agricultural to M&I use would continue to be delivered to existing contract holders. The conversion process would not affect other water deliveries.

1.4.2.2 Temporary Water-Delivery System

This EA provides information to support Interior in issuing a license agreement to JSSD that would allow emergency installation and operation of a temporary water-delivery system near the Keetley WTP. This system would include the installation and operation of a temporary pumping station on federal land at Jordanelle Reservoir. This temporary system would be installed only in the event of an emergency caused by the interruption of the water supply from the Ontario Drain Tunnel.

This temporary pumping station would enable JSSD to temporarily serve its customers until the emergency that caused the interruption of Ontario Drain Tunnel water could be resolved.

If the water supply from the Ontario tunnel were interrupted, then it would be necessary to convey JSSD's contracted portion of CUP Block Notice 1A water from Jordanelle Reservoir to the Keetley WTP to make it possible for JSSD to continue to serve its customers. This temporary water-delivery system would deliver up to 2,500 acre-feet of the 12,100 acre-feet of converted CUP water. Water pumped directly from the Jordanelle Reservoir could be accounted for from JSSD's contracted portion of CUP Block Notice 1A water.



JSSD could process a temporary change application with the Utah State Engineer's office if it needed to use the emergency water delivery system to pump non-CUP water to meet customer demand.

The temporary system would consist of temporary pipe(s) running from a portable pumping station installed on a small area of leveled ground at the current water level of Jordanelle Reservoir to pump water to the treatment plant (see Figure 1-2 below). Pump intake lines, through which the pumps would draw water, would be extended into the reservoir. The intake lines would be equipped with a device to prevent fish entrainment. Temporary buoys and shoreline protections would be deployed around the pump intake lines to protect the public. These protections would be installed in the area around the emergency pumps only and would not affect recreation activity in the area. Because the temporary pump could be required at any time of the year, the exact location of the area that would accommodate the pump needs to remain flexible. The temporary pump could be placed anywhere within the zone shown in Figure 1-2. This flexibility is needed because the lake level and shoreline location vary seasonally and from year to year. JSSD would prepare the minimum area needed to support the pump and would use already cleared areas (such as the old Keetley Road) if possible.

1.4.2.3 Efficiency Improvements

The proposed conversion should improve water-use efficiency because water users would pay a rate that reflects the full cost of developing the water. Also, the higher rate for M&I water could encourage users to invest in ways to avoid wasting water. This incentive for efficiency complements the purpose of WCWEP.

The conversion would also improve the efficiency of delivering water. Large tracts of land have been subdivided in recent years. Because of this, some CUP agricultural water remains in Jordanelle Reservoir instead of being delivered through canals and other conveyances because the tracts are now too small to qualify to receive agricultural water under Reclamation law. As a result, the canals and other conveyances are carrying less water, which reduces their operational efficiency. As land subdivision and development continue, more small tracts will be ineligible for project water, leading to even less-efficient operation of the water-delivery system.

Converting the water to M&I use would contribute to Provo River return flows by allowing what is currently CUP agricultural water to be used on small tracts of land that are currently ineligible to receive this water. Currently, agricultural water delivered to the Heber Sub-Area eventually makes its way to the Provo River through irrigation return flow from water infiltration and subsurface flow.

How would the proposed conversion improve water-use efficiency?

The proposed conversion should improve water-use efficiency because water users would pay a rate that reflects the full cost of developing the water. Also, the higher rate for M&I water could encourage users to invest in ways to avoid wasting water.



Figure 1-2. Temporary Pipeline and Pumping Station





The conversion to M&I water would improve the administrative efficiency of water distribution and use because there would be less need for irrigators and CUWCD to adjust, alter, and enforce compliance with irrigation schedules due to water shortages. Currently, the application of CUP agricultural water must be closely monitored to ensure that the water is applied only to eligible land. Monitoring requires CUWCD to complete and file Reclamation Reform Act documentation. After the water is converted to M&I use, these detailed administrative tracking requirements would no longer apply, the irrigators’ and CUWCD’s recordkeeping would be simplified, and CUWCD’s administrative costs would be reduced.

1.4.2.4 Conversion Period

Water delivered under Block Notice 1A would be converted over a period of up to 25 years.

1.4.2.5 Change in Eligible Land in the Heber Sub-Area

Reclamation law requires that water users apply project agricultural water only to eligible land. As originally designated in Block Notice 1A, the eligible land in the Heber Sub-Area was located within the CUWCD boundary, in the Provo River drainage, and designated as irrigable. The 12,100 acre-feet of CUP agricultural water for Wasatch County addressed in Block Notice 1A were originally available for use on non-federal lands in the Heber Valley upstream of Deer Creek Reservoir and downstream of Jordanelle Reservoir.

When would the agricultural water be converted?

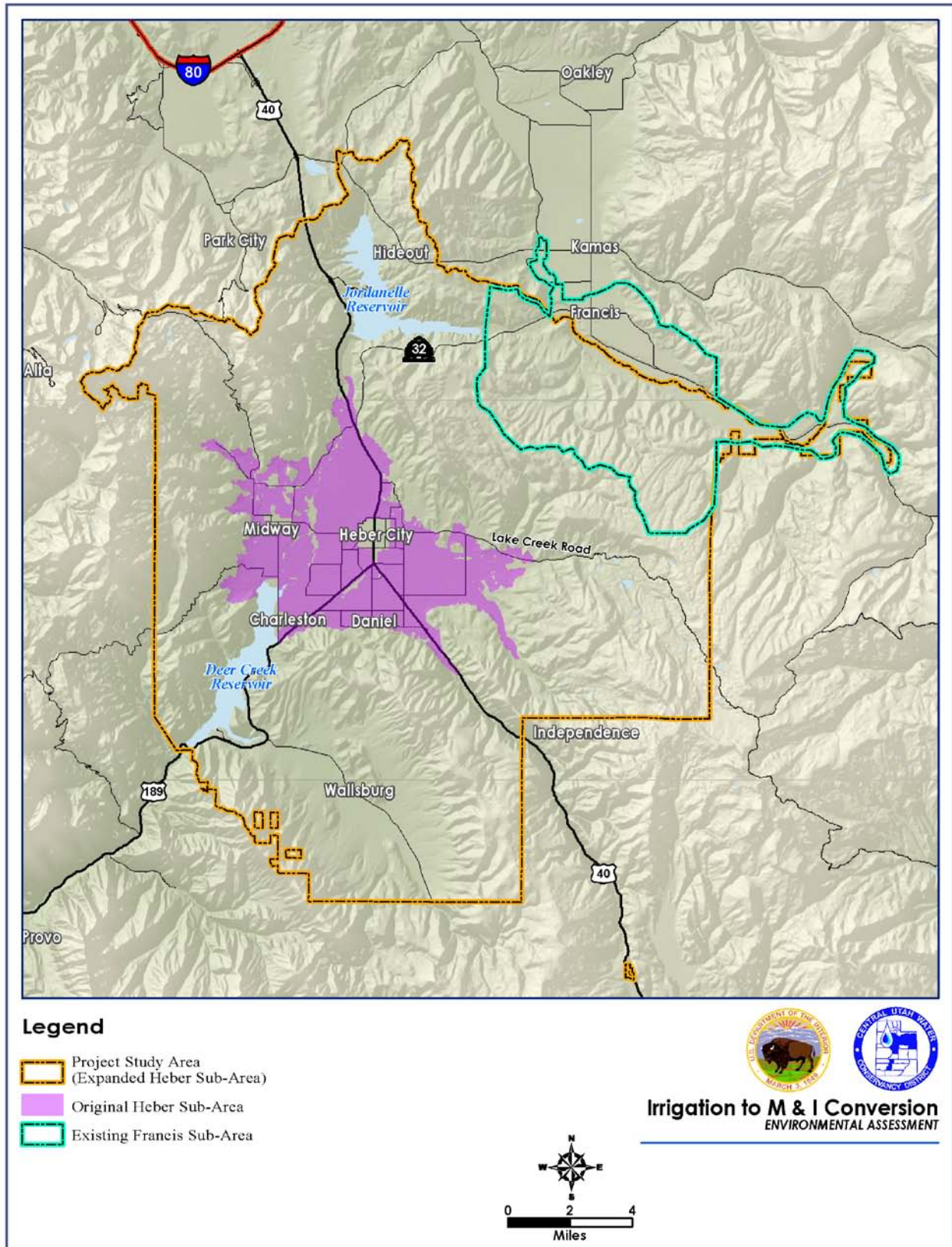
Agricultural water delivered under Block Notice 1A would be converted to M&I use over a period of up to 25 years.

When Block Notice 1A water is converted to M&I use, Reclamation requirements associated with eligible lands no longer apply. Converting CUP agricultural water to M&I water allows the area of eligible land to be expanded. The eligible land for M&I water in the expanded Heber Sub-Area would include the original Heber Sub-Area and additional area in northwestern Wasatch County (see Figure 1-3 below). Thus, after conversion, water users can apply the project M&I water to small agricultural tracts and to land that has not been classified by Reclamation as irrigable. In addition, after conversion, the range of uses for the water would expand to include irrigation of small tracts (hobby farms), landscape irrigation, culinary use, and industrial use. The water would still have to be used within the CUWCD service area boundary and returned above Deer Creek reservoir.

The proposed expanded Heber Sub-Area includes an area that is also part of the Francis Sub-Area of Block 1A. This “overlap area” is currently served by the JSSD, which serves areas of Wasatch County that are in the Heber Sub-Area. Allowing service to the overlap area using water allocated to either sub-area gives CUWCD more flexibility in delivering the water and increases the operational efficiency of water delivery (since JSSD can use existing facilities to deliver water).



Figure 1-3. Original Heber Sub-Area, Existing Francis Sub-Area, and Expanded Heber Sub-Area





1.5 Related Projects

1.5.1 Francis Sub-Area M&I Water Conversion EA

In December 2008, CUWCD and Interior completed an EA for converting Bonneville Unit agricultural water delivered under Block Notice 1A and dedicated to the Francis Sub-Area to M&I water (Interior and CUWCD 2008). That EA addressed converting 3,000 acre-feet of agricultural water in the Francis Sub-Area and expanding the original Francis Sub-Area. The 3,000 acre-feet of water addressed in the EA were historically delivered to agricultural land deemed irrigable under Reclamation law. The conversion, which was approved by Interior in 2008, allows an incremental change from agricultural to M&I use over a period of up to 25 years. The expanded Francis Sub-Area includes land within the CUWCD boundary in the upper Provo River drainage and upstream of Jordanelle Reservoir (see Figure 1-3 above, Original Heber Sub-Area, Existing Francis Sub-Area, and Expanded Heber Sub-Area).

The expansion of the Heber Sub-Area that is included in the proposed action would encompass part of the Francis Sub-Area that lies within Wasatch County (see Figure 1-1 above, Project Study Area, and Section 1.4.2.5, Change in Eligible Land in the Heber Sub-Area). Changes to Block Notice 1A that were made as a result of the Francis Sub-Area expansion do not affect the existing Heber Sub-Area.

1.5.2 Final EIS for the Wasatch County Water Efficiency Project (WCWEP)

In November 1996, CUWCD, the Mitigation Commission, and Interior issued a Final EIS for the WCWEP (CUWCD et al. 1996). CUWCD, the Mitigation Commission, and Interior planned and implemented the WCWEP pursuant to Sections 202(a)(3), 207, and 303(b) of the CUPCA. The WCWEP delivers pressurized water to irrigation company service areas through pipelines that extend from the Timpanogos, Wasatch, and Humbug Canals in the Heber Valley and improves the efficiency of water use for nine of the 12 Heber Valley irrigation companies.

Additionally, the WCWEP, in conjunction with the Daniels Replacement Project, restored flows in the upper Strawberry River that had historically been diverted by the Daniel Irrigation Company by providing water and water-conveyance facilities from Jordanelle Reservoir to the existing Daniel Irrigation Company's water-storage facilities. Restoring upper Strawberry River flows was a mitigation commitment for the Strawberry Aqueduct and Collection System of the Bonneville Unit.

The WCWEP relies on conserved water to meet the environmental commitments of the program. The WCWEP operates under the assumption that all 12,100 acre-feet of agricultural water available in Wasatch County through Block Notice 1A is delivered. As described in Section 1.3, Purpose of and Need for the Proposed Action, one of the purposes of this Heber Sub-Area conversion project is to avoid adversely affecting the WCWEP by providing for the continued delivery of the 12,100 acre-feet of CUP water.



1.6 Permits, Licenses, and Authorizations Required

Converting 12,100 acre-feet of water from agricultural to M&I will not cause any physical changes to the environment that would trigger the need for construction permits, new operating permits, or new licenses.

If Interior issues a license agreement that allows installation of the temporary water-delivery system, activity associated with installing the pump station and pipelines would not be likely to disturb 1 or more acre of ground and would not need a UPDES construction permit.

Installing and operating the pumping station would also not permanently affect waters of the United States therefore no Clean Water Act Section 404 permit would be required. In addition, no threatened or endangered species or historic resources would be affected.

This EA also documents Interior's compliance with other federal laws, regulations, and executive orders that would apply to the proposed action. These laws, regulations, and executive orders are addressed in various sections of Chapter 3, Affected Environment and Environmental Consequences.



Chapter 2: Proposed Action and No-Action Alternative

This chapter describes the project alternatives. Because the scoping process did not identify any alternatives to the proposed action, the following discussion focuses on two options: an action alternative, which is the proposed action, and a no-action alternative.

2.1 Action Alternative (Proposed Action)

The proposed action described in Section 1.4.2, Description of the Proposed Action, is the action alternative for the project. As described in Section 1.4.2, the proposed action would:

- Administratively convert up to 12,100 acre-feet of CUP Bonneville Unit agricultural water, delivered under Block Notice 1A and allotted to the Heber Sub-Area, from agricultural to M&I use.
- Expand the Heber Sub-Area.

The proposed action would also require modifying Block Notice 1A to reflect these administrative changes. Completing this EA would allow the administrative changes but would not automatically convert the water. The actual conversion would be completed by CUWCD and Interior consistent with Reclamation law over time as requests are received from petitioners and contract holders.

Finally, the proposed action would provide for installation and operation of a temporary water-delivery system in the event of an emergency that affects the water supply to JSSD's Keetley WTP at Jordanelle Reservoir. During an emergency, this system would provide JSSD with a temporary method to receive its contracted portion of the Block Notice 1A water. Because the temporary water-delivery system would be installed on federal land, Interior would need to issue a license agreement to JSSD as part of the process.

2.2 Alternative to the Proposed Action

There is one alternative to the proposed action: a no-action alternative. Under the no-action alternative, the 12,100 acre-feet of project agricultural water would not be converted to M&I use but would remain as a project agricultural supply to be used on qualifying agricultural parcels. The Heber Sub-Area would not be expanded, so areas outside the existing Heber Sub-Area boundary would not receive water from the Bonneville Unit. The 12,100 acre-feet of water could be applied only to eligible land in the Heber Sub-Area.

As land continues to be subdivided, fewer areas could legally receive Block Notice 1A agricultural water because many of the subdivided parcels would not be large enough to qualify to receive the water (a parcel must be at least 2 acres in order to receive CUP agricultural water). Water for parcels less than 2 acres would be supplied through other, non-CUP sources. If water supplies beyond those already available are needed to support ongoing



land-use changes that create parcels that are less than 2 acres from previously eligible parcels, new supplies (such as new wells or new infrastructure) might need to be developed.

2.3 Resources Not Addressed in This EA

Interior and CUWCD reviewed the proposed action and determined that there would be no direct effect to certain resources that might be studied as part of the Environmental Assessment. Additionally, Interior and CUWCD found that the administrative change associated with the proposed action would also not cause any measurable indirect effects to these same resources. Therefore, these resources are not discussed in detail in Chapter 3, Affected Environment and Environmental Consequences. The resources not discussed are:

- **Environmental justice populations** – The only potential physical changes associated with the project would result from the emergency installation of the temporary water-delivery system from Jordanelle Reservoir near JSSD’s Keetley WTP that would be authorized through a license agreement with JSSD. Because there is no residential development in the area that would be temporarily affected, activities performed under the license agreement could not affect environmental justice populations.
- **Indian trust assets** – There are no Native American reservations or other Indian trust assets in the project area, so there is no effect on Native American access to resources in the project area. Native American consultation is discussed in the Cultural Resources section of Chapter 3.
- **Recreation** – There are no physical changes that would affect existing recreational facilities or opportunities for dispersed recreation.
- **Socioeconomics** – There are no physical changes that would affect community character or the local economy. Potential indirect effects associated with land use will be discussed in the Land Use and Indirect Impacts sections in Chapter 3.
- **Wild and scenic rivers** – Little Provo Deer Creek on USFS-administered land outside the project area is eligible for listing as wild and scenic under the recreation classification. Because the proposed action would not affect this river, there would be no effect on the characteristics that make it eligible for listing.
- **Noise** – The temporary water-delivery system installed under the license agreement would not be in an area that has sensitive noise receptors. The proposed conversion would not result in any noise impacts.



2.4 Summary of Impacts to Potentially Affected Resources

Table 2.4-1 summarizes the effects of implementing the action alternative compared to the effects of the no-action alternative. The complete analysis of these affected resources is provided in Chapter 3, Affected Environment and Environmental Consequences.

Table 2.4-1. Impact Summary

Subject	No-Action Alternative	Action Alternative
Air quality	<ul style="list-style-type: none"> No effect. 	<ul style="list-style-type: none"> No long-term effect. Potential short-term effects associated with temporary pump operation, but this effect is not significant.
Cultural resources	<ul style="list-style-type: none"> No effect. 	<ul style="list-style-type: none"> No effect.
Farmland and agricultural production	<ul style="list-style-type: none"> About 22% of currently eligible agricultural land no longer eligible to receive CUP agricultural water because of parcel size changes (to less than 2 acres). The amount of ineligible land would likely increase over time as development continues. 	<ul style="list-style-type: none"> No adverse effect. Potential expansion of agriculture on smaller parcels (less than 2 acres).
Fish and wildlife resources and habitat (including threatened and endangered species)	<ul style="list-style-type: none"> No effect. 	<ul style="list-style-type: none"> Potential short-term, minor effects to locally common wildlife near temporary pumping station if the station is installed. Potential impacts to fish living in Jordanelle Reservoir at temporary pumping station if plant is installed; with mitigation, this effect is not significant. No effect to special-status species.
Soils	<ul style="list-style-type: none"> No effect. 	<ul style="list-style-type: none"> No long-term effect. Temporary short term effects at temporary pumping station if station is installed; these effects are not significant.
Invasive species	<ul style="list-style-type: none"> No effect. 	<ul style="list-style-type: none"> Potential inadvertent transfer or spread of zebra or quagga mussels possible if these species become established in Jordanelle Reservoir, the temporary pumping station is installed and potentially infected pumps are not thoroughly cleaned before next use. With mitigation, this effect is not significant.



Table 2.4-1. Impact Summary

Subject	No-Action Alternative	Action Alternative
Land-use plans and conflicts	<ul style="list-style-type: none"> • Possible effects on land-use patterns due to lack of or restrictions on M&I water, but extent of effects unknown. Non-CUP agricultural water would be converted consistent with the Wasatch County General Plan, but additional water sources might need to be developed. 	<ul style="list-style-type: none"> • Potential changes in rate of expected development, but no overall effect to land-use types, patterns, or densities; this effect is not significant.
Public facilities	<ul style="list-style-type: none"> • No effect. 	<ul style="list-style-type: none"> • No effect.
Water resources and water quality	<ul style="list-style-type: none"> • Changes in baseline water balance by reducing outflows from Jordanelle Reservoir and changing outflow timing. • Jordanelle Reservoir storage would increase by storing undelivered agricultural water; water would be stored in the reservoir until it reaches capacity and water is spilled downstream. • Deer Creek Reservoir would have the potential to divert additional water to storage because of slight differences in the volume and timing of releases from Jordanelle Reservoir and return flows from CUP agricultural water deliveries. • Negligible increase in Provo River flows during wet years. • Potential increase in groundwater pumping. • No effect on water quality. • Developing new culinary water sources could require changes in water rights. 	<ul style="list-style-type: none"> • No effect to baseline water balance in Jordanelle Reservoir, Deer Creek Reservoir, Provo River, or Heber Valley groundwater aquifer. • Negligible changes in return flow timing. • No effect on water quality or water rights.
Wetlands and riparian resources	<ul style="list-style-type: none"> • Potential effects to wetlands and riparian areas related to development of new water sources (such as new groundwater wells) and a reduction in water applied to land (and related reduction in return flows to the Provo River). 	<ul style="list-style-type: none"> • Installing temporary pumping station could temporarily affect poor-quality riparian habitat on Jordanelle Reservoir shoreline; this effect is not significant.



Chapter 3: Affected Environment and Environmental Consequences

This chapter describes the geographic areas or resources that would be affected by the proposed action and the effects of the proposed action and the no-action alternative. The following subjects are discussed in this chapter:

- Air quality
- Cultural resources
- Farmland and agricultural production
- Fish and wildlife resources and habitat (including threatened and endangered species)
- Soils
- Invasive species
- Land-use plans and conflicts
- Public facilities
- Water resources and water quality
- Wetlands and riparian resources

Cumulative effects are discussed at the end of the chapter.

For the subjects listed above, the area described for the affected environment is the expanded Heber Sub-Area unless otherwise noted.

3.1 Air Quality

3.1.1 Issues

No issues regarding air quality were identified during the project scoping process. Operating the temporary water-delivery system near the Keetley WTP at Jordanelle Reservoir could temporarily reduce local air quality.

3.1.2 Affected Environment

The levels of air pollutants in the study area are below all National Ambient Air Quality Standards (NAAQS). Although several counties in Utah have persistent air quality problems (such as Salt Lake and Cache Counties), the levels of air pollutants in Wasatch County have not significantly exceeded the NAAQS. However, the levels of particulate matter are higher at times due to wood burning in the winter and automobile traffic. The study area is ranked high in terms of the National Air Quality Index (3.0) compared to the national average (3.42) (Interior and CUWCD 2008).



3.1.3 Environmental Consequences

3.1.3.1 Regulatory Considerations

In the study area, the federal Clean Air Act is administered by the Utah Division of Air Quality. The Clean Air Act and state rules specify conditions under which operating permits for activities such as pump operation are required.

Pump use associated with the temporary pumping station would probably be exempt from the need to obtain an operating permit since this activity could operate under Utah Administrative Code (UAC) Rule 307-401-9, Small Source Exemption. To qualify for exemption under this rule, an activity must meet the following conditions:

- a) Actual emissions are less than 5 tons per year per air contaminant of any of the following air contaminants: sulfur dioxide, carbon monoxide, nitrogen oxides, PM₁₀ (particulate matter 10 microns in diameter or less), ozone, or volatile organic compounds.
- b) Actual emissions are less than 500 pounds per year of any hazardous air pollutant and less than 2,000 pounds per year of any combination of hazardous air pollutants.
- c) Actual emissions are less than 500 pounds per year of any air contaminant not listed in (a) or (b) above and less than 2,000 pounds per year of any combination of air contaminants not listed in (a) or (b) above.
- d) Air contaminants that are drawn from the environment through equipment in intake air and then are released back to the environment without chemical change, as well as carbon dioxide, nitrogen, oxygen, argon, neon, helium, krypton, and xenon, should not be included in emission calculations when determining applicability under (a) through (c) above.

3.1.3.2 Effects of the No-Action Alternative

Under the no-action alternative there would not be any air quality impacts.

3.1.3.3 Effects of the Proposed Action

The project team assumes the pumping station would be self contained and that diesel or gasoline motors or an electric generator would be used to supply power to the pumps. If a diesel or gasoline motor is used, operating the motors would emit some air pollutants (mainly carbon monoxide) that could reduce local air quality. However, the temporary station would be installed and operated only in the event of an emergency. There would be no long-term use of pumps at the temporary station. Temporary, short-term use of the pumps is not expected to cause the NAAQS to be exceeded or cause any other air quality impacts that would adversely affect human health or the environment.

How would the proposed action affect air quality?

The proposed action would not affect air quality.

The proposed action would not affect the overall air quality in the study area.



3.2 Cultural Resources

3.2.1 Issues

No issues regarding cultural resources were identified during the project scoping process. To ensure compliance with the National Historic Preservation Act (NHPA), CUWCD and Interior completed a records search through the Utah Division of State History and analyzed project-related impacts to cultural resources. In addition, a Class III Cultural Resource Survey was conducted in the area of the temporary pumping station.

What are cultural resources?

Cultural resources are physical or other expressions of human activity or occupation.

3.2.2 Affected Environment

Cultural resources are physical or other expressions of human activity or occupation. Cultural resources include culturally significant landscapes, prehistoric and historic archaeological sites as well as isolated artifacts or features, traditional cultural properties, Native American and other sacred places, and artifacts and documents of cultural and historic significance.

The affected environment for cultural resources is called the *area of potential effects* (APE) in compliance with Section 106 of the NHPA (16 U.S.C. § 470(f); implemented by 36 CFR 800.16). The APE is defined as the geographic area within which federal actions may directly or indirectly cause alterations in the character or use of historic properties. The APE is the expanded Heber-Sub Area including the area of potential ground disturbance associated with the temporary pumping station. CUWCD and Interior consulted the Utah Historic Sites database for information about historic properties within the APE.

What is the area of potential effects (APE) for cultural resources?

The APE includes the area of potential ground disturbance associated with the temporary pumping station.

Excluding properties that are already listed on the National Register of Historic Places, 1,239 existing buildings and structures aged 50 years or more have been previously documented in the APE. National Register eligibility evaluations have been made for 1,179 of these structures, and 565 buildings or structures are considered eligible for listing on the National Register or are considered contributing features of eligible properties. Table 3.2-1 and Table 3.2-2 below list the total number of historic sites in the APE by location and original use, respectively.



Table 3.2-1. Historic Sites in the APE by Location

Location	Number
Wasatch County	32
Charleston	15
Daniel	2
Heber City	909
Midway	210
Soldier Summit	1
Wallsburg	9
Keetley	1
Total	1,179

Table 3.2-2. Historic Sites in the APE by Original Use

Original Use	Number
Agriculture	38
Commercial/trade	61
Education	4
Funerary	1
Government	7
Health care	2
Industrial/mining	5
Religion	9
Military/defense	1
Recreation/cultural	3
Residential	1,019
Transportation	17
Not recorded	12
Total	1,179

CUWCD conducted a records search and Class III Cultural Resource Survey (Class III survey) of the temporary pumping station site. In addition to reviewing the Utah Historic Sites database, the project team also conducted a records search at the Utah State Division of History, accessed the National Register online database, and reviewed historic General Land Office maps for uses of the Class III survey area during the historic period. The purpose of this background research was to find previous surveys in the area and to understand the types of sites that might be encountered during the field investigation. Details of the records search findings are presented in a Class III survey report. Findings pertinent to the temporary pumping station are discussed below.

What is the historic period?

The *historic period* is the period between the onset of written records and 50 years ago.

In 1981, Interior conducted a Class III survey of about 10,300 acres for the creation of the Jordanelle Reservoir (McCarty et al. 1987). The survey covered most of the temporary pumping station site, including the part of the site that is on federal land. Two sites, 42WA75 and 42WA76, were identified in the vicinity of the Keetley WTP during Interior’s 1981 survey. Additional information gathered by the project team does not indicate that there are any other eligible or listed sites in the area of the pump station that could be affected by the proposed action.

Site 42WA75. Site 42WA75 is an old, abandoned Union Pacific Railroad spur. The railroad ended service on this line in the early 1960s, and the rails and ties were removed shortly thereafter. Interior recorded the railroad segment through the study area as part of the 1981 reservoir survey and recommended it as not eligible for listing on the National Register, mainly due to its late date, overall lack of integrity, and heavy disturbance along many sections (McCarty et al. 1987). Apart from some remnant cuts into the hillside, the segment of the railroad through the APE was completely obliterated by the construction of the Keetley WTP.



Site 42WA76. Site 42WA76 was a residential mining community that included several bungalow houses. The houses were built during the 1940s or 1950s. In 1981, at the time the site was recorded, the community had not reached the 50-year threshold for consideration as a historical resource. Reclamation recommended the site as not eligible for listing on the National Register (McCarty et al. 1987). Since that time, all the buildings have been removed or razed; therefore, it has completely lost its integrity as a historical settlement. The proposed action would skirt the site's boundary in an area that was completely disturbed by construction of the Keetley WTP.

3.2.3 Environmental Consequences

3.2.3.1 Regulatory Considerations

Section 106 of the NHPA mandates that Interior take into account the effects of a proposed federal undertaking on historic properties. *Historic properties* are any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register. The effects of the proposed action on historic properties are the primary focus of this analysis.

What are historic properties?

Historic properties are any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register.

Consultation History

Interior and CUWCD consulted with the State Historic Preservation Officer (SHPO) regarding the proposed action's effects on known historic or prehistoric sites that might be listed on or eligible for listing on the National Register. Documentation of that consultation is provided in Appendix C, Pertinent Correspondence.

Because the water-conversion aspects of the proposed action would not disturb any ground and the area of the temporary pumping station was previously surveyed, CUWCD and Interior did not complete a paleontological file search through the Utah Geological Survey for this project.

Native American Consultation

Interior consulted with local representatives of Native American groups that might have an interest in the APE in order to understand the cultural resource environment and the magnitude of project effects on cultural resources. Even though the proposed action would not cause any physical changes in the environment, Interior and CUWCD wanted to ensure that any concerns of Native American groups are addressed in this EA.

Interior sent letters to representatives of the Ute Indian Tribe of the Uintah and Ouray Reservation and the Northwestern Band of the Shoshone Nation asking for input on the proposed action. This consultation was conducted in compliance with 36 CFR 800.2(c)(2) on a government-to-government basis. Through this consultation, the tribes are given a reasonable opportunity to identify any concerns about historic properties; to advise on the identification and evaluation of historic properties, including those of traditional religious and cultural importance; to express their views on the effects of the proposed action on such



properties; and to participate in the resolution of adverse effects. Interior received no response regarding effects to historic properties from any of the tribes contacted.

3.2.3.2 Effects of the No-Action Alternative

The no-action alternative would not affect any historic or prehistoric resources or conflict with the regulations listed in Section 3.2.3.1, Regulatory Considerations.

3.2.3.3 Effects of the Proposed Action

As shown in Table 3.2-2 above, Historic Sites in the APE by Original Use, the SHPO identified 1,179 historic properties in the APE. The proposed action would not involve any ground disturbance or any other activity that might affect these sites. Because of this, the proposed action would have no effect on any historic resources.

How would the proposed action affect historic or cultural resources?

The proposed action would have no effect on historic or cultural resources in the APE.

Installation of the temporary water-delivery system, if authorized through a license agreement, could involve minor ground disturbance, but, as described in Section 3.2.2, Affected Environment, the historic sites identified in the APE are not eligible for listing on the National Register. Furthermore, the temporary pumping station, if constructed, would not affect the intact parts of the ineligible historic resources that are present. Therefore, the temporary pump station would also have no effect on historic or cultural resources in the APE.

3.3 Farmland and Agricultural Production

3.3.1 Issues

No issues regarding farmland or agricultural protection were identified during the project scoping process. Because the water to be converted is currently allocated for agricultural irrigation, Interior and CUWCD analyzed the effects of the project on farmland and agricultural production.



3.3.2 Affected Environment

Wasatch County has a long history of agricultural production. Historically, farmers in the valley raised high numbers of sheep and many acres of peas. Although many dairies participated in a USDA dairy buyout in the 1970s, there are still eight active dairies in the county. Currently, 15,617 acres of cropland are irrigated, primarily through sprinkler irrigation. Most existing farms are between 10 and 49 acres (USDA NRCS 2005).

Because 70% of the land in the county is federally owned, most agricultural production is concentrated in the valley surrounding Heber City. All of this valley production area is in the existing Heber Sub-Area. Some land in the valley and National Forest land are used for grazing. Table 3.3-1 summarizes agricultural production in the county.

Table 3.3-1. Summary of Agricultural Production in Wasatch County (2005)

Use	Area (acres)
Crops	
Alfalfa	5,768
Small-grain hay	614
Tame hay	774
Harvested cropland (various crops)	8,332
Barley	319
Oats	40
Grazing	711,970

Source: USDA NRCS 2005

Figure 3-1 below and Table 3.3-2 show the distribution of prime farmland (if irrigated) and farmland of statewide importance in Wasatch County. This farmland, which is identified based on soil types and not parcel size, is entirely within the study area.

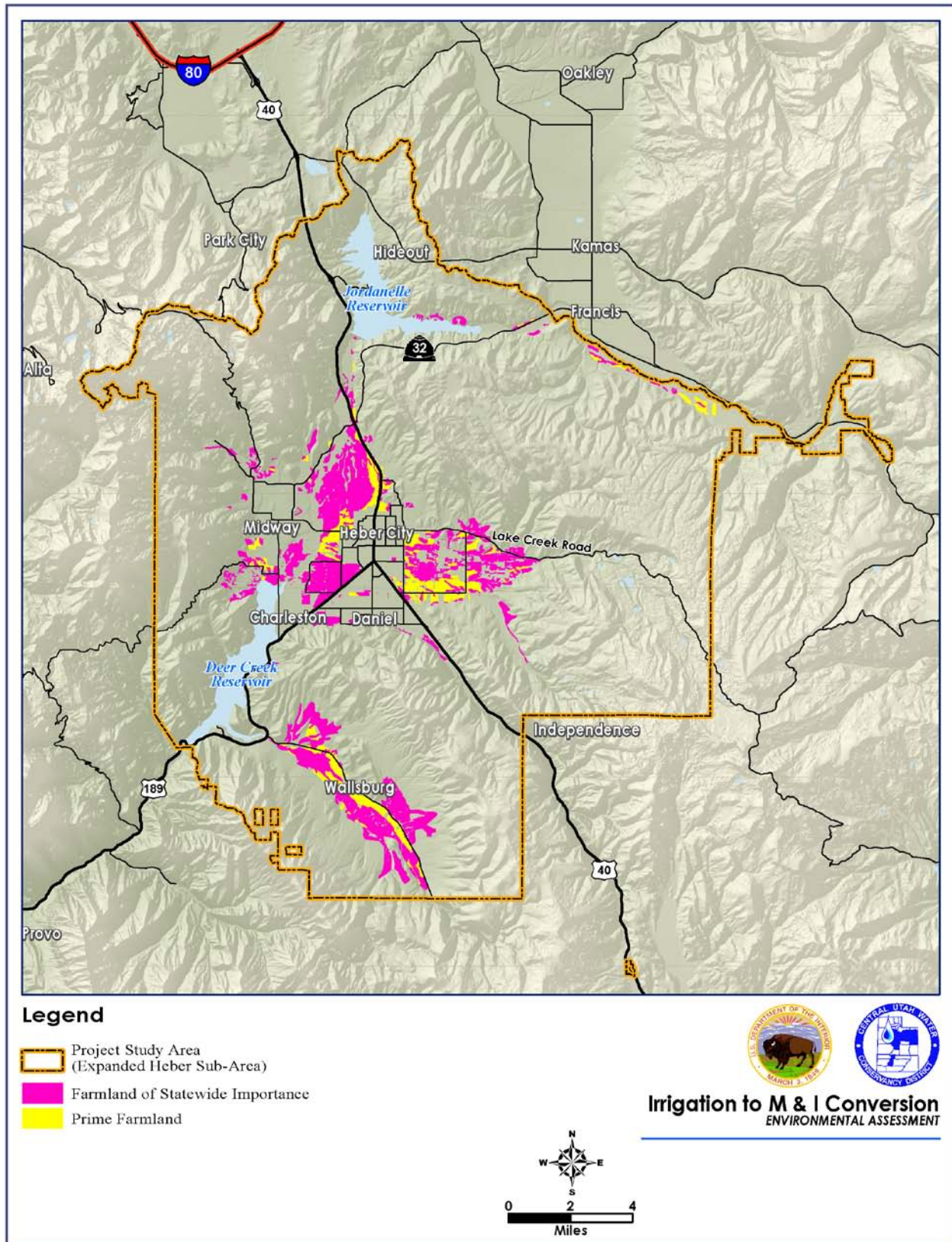
Table 3.3-2. Prime Farmland and Farmland of Statewide Importance in Wasatch County

Type of Farmland	Acres in Study Area
Prime farmland (if irrigated)	3,016
Farmland of statewide importance	10,026

Source: USDA NRCS, no date



Figure 3-1. Prime Farmland and Farmland of Statewide Importance





3.3.3 Environmental Consequences

3.3.3.1 Regulatory Considerations

The Farmland Protection Policy Act (FPPA) of 1981 is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. The FPPA assures that federal programs are administered to be compatible with state, local government, and private programs and policies to protect farmland to the extent possible. The FPPA does not authorize the federal government to regulate the use of private or nonfederal land or to in any way affect the property rights of owners.

For the purpose of the FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forest land, pastureland, cropland, or other land, but not water or developed urban land. The FPPA does not normally apply to federal permitting and licensing activities or to projects on land that is already in urban development (incorporated cities or towns) or that is used for water storage.

The federal agency responsible for overseeing compliance with the FPPA is the Natural Resources Conservation Service (NRCS).

3.3.3.2 Effects of the No-Action Alternative

Under the no-action alternative, CUP water that is currently available for agricultural use on parcels 2 acres and larger would remain dedicated to that use. However, as parcels are subdivided into lots that are less than 2 acres, the CUP agricultural water would not be made available. If the owners of these smaller parcels intend to continue to farm, then they would need to find an alternate source of agricultural irrigation water. The more likely scenario is that these small parcels would no longer be used for agricultural production.

About 22% of the land currently eligible in the existing Heber Sub-Area is planned to become subdivided into smaller lots based on current zoning in the study area (Wasatch County 2010). This land will become ineligible to receive CUP agricultural water under the no-action alternative.

3.3.3.3 Effects of the Proposed Action

The proposed conversion would not cause any physical changes that would result in the loss of prime farmland or farmland of statewide importance, but it could affect whether landowners choose to use their parcels for agricultural production.

The proposed action would allow landowners to irrigate small (less than 2-acre) parcels using the converted water. These small parcels are currently not eligible to receive CUP agricultural water, so providing the opportunity for the landowners to apply water that was previously available for irrigating the land would allow more

How would the proposed action affect farmland and agricultural production?

The proposed action would not cause any physical changes that would result in the loss of prime farmland, unique farmland, or farmland of local importance, but it could affect whether landowners choose to use their parcels for agricultural production.



agricultural production on smaller parcels. By providing more opportunities for irrigating parcels less than 2 acres, the proposed action could increase the amount of farmed land in the Heber Sub-Area compared to the no-action alternative if landowners choose to irrigate smaller parcels. New agricultural production would probably be in the form of small hobby farms on which residents might raise small numbers of livestock, keep horses, or raise crops for personal use.

However, once the water becomes available, landowners might prefer to use it for residential, commercial, and industrial development and not for agricultural production. Also, the cost of the converted water would be higher than that of agricultural water and might affect landowners' decisions to produce agricultural crops that require regular irrigation. Farmers using these small parcels might switch to crops requiring less water or might stop irrigating altogether and use their land for other purposes.

Expanding the Heber Sub-Area and converting the water could also increase agricultural production on parcels that are outside of the existing eligible area (regardless of size) because water would be available in an area that previously did not receive CUP agricultural water. However, as with land in the existing Heber Sub-Area, landowners might decide against pursuing agricultural production in favor of other uses. Landowners might make such decisions because the converted water would be more expensive than CUP agricultural water, or they might switch to producing crops that do not require as much water.

Installing the temporary pumping station would not affect any agricultural land.

In summary, the administrative change that would allow converting agricultural water and expanding the Heber Sub-Area would not adversely affect agricultural production or directly convert any prime, unique, or locally important farmland to other uses. However, the change could lead to long-term changes in agricultural production depending on what landowners choose to do with their land and how they use the converted water. Interior and CUWCD do not have control over landowners' decisions that might increase or decrease the amount of land farmed or convert prime, unique, or locally important farmland to other uses.

In addition, installing the temporary pumping station would not affect agricultural production or convert any prime, unique, or locally important farmland to other uses.

3.4 Fish and Wildlife Resources and Habitat

3.4.1 Issues

Several issues regarding fish and wildlife were identified during scoping. The U.S. Fish and Wildlife Service (USFWS) requested that the EA evaluate the project's effects on riparian habitat, listed and candidate species under the Endangered Species Act, migratory birds, bald and golden eagles, and conservation agreement species. For a discussion of riparian habitat, see Section 3.10,

Wetlands and Riparian Resources. USFWS also requested that the EA evaluate the potential for the project to induce growth in the area. For a discussion of induced growth, see Section 3.7, Land-Use Plans and Conflicts. Also, a member of the public voiced concern about wildlife access to water.

What is riparian habitat?

Riparian habitat is habitat along a river, creek, or other waterway. Riparian habitat provides different value to wildlife than the surrounding upland habitat.



3.4.2 Affected Environment

3.4.2.1 Aquatic Fish and Wildlife and Habitat

The study area includes the Provo River, Jordanelle and Deer Creek Reservoirs, both of which are impoundments on the Provo River, and several smaller tributaries and ponds. Generally, the Provo River and smaller streams provide habitat for cool- and cold-water fishes, and the reservoirs provide habitat for cool- to warm-water fishes.

The study area contains the section of the Provo River locally known as the Middle Provo River. The Provo River in this section is a low-gradient valley river characterized by low velocities and developing riparian cover. Cold-water fish species that inhabit the Provo River include brown trout (*Salmo trutta*), rainbow trout (*Oncorhynchus mykiss*), mountain whitefish (*Prosopium williamson*), mottled sculpin (*Cottus bairdii*), and Utah sucker (*Catostomus ardens*). Appendix A, Wildlife Species Likely to Occur in the Study Area, lists many of the fish species that inhabit this part of the Provo River watershed.

The study area also contains a number of streams that flow to Deer Creek Reservoir, which is at the terminus of the Middle Provo River. Streams that flow directly to Deer Creek Reservoir include Daniels Creek and Main Creek. Daniels Creek begins in upper Daniels Canyon and flows westerly to Deer Creek Reservoir. The WCWEP EIS (CUWCD et al. 1996) notes that Daniels Creek supports brown trout (lower reaches only) and rainbow trout. Cutthroat trout were restocked in Daniels Creek following a 1990 rotenone treatment of Strawberry Reservoir (CUWCD et al. 1996).

Main Creek begins in the mountains southeast of Wallsburg, flows through Wallsburg and into the southern part of Deer Creek Reservoir. According to the URMCC, Main Creek supports four native fish species, including Bonneville cutthroat trout (BCT) and Southern leatherside (URMCC no date). BCT and southern leatherside are discussed in Section 3.4.2.3, Special-Status Species. Native fish habitat in Main Creek is highly fragmented by diversion structures, impassible culverts, and seasonally dewatered reaches. Predation, competition and hybridization with nonnative fish impact the unique native fish community in Main Creek. In March 2011, URMCC issued a scoping notice that asked for public input on the need to construct a fish barrier in Main Creek to prevent non-native fish from moving into the Main Creek drainage (URMCC no date).

Several introduced sport fishes also inhabit the reservoirs in the study area. The most common sport fish present in Jordanelle Reservoir and Deer Creek Reservoir are smallmouth bass (*Micropterus dolomieu*), bluegill (*Lepomis macrochirus*) and yellow perch (*Perca flavescens*). Appendix A lists many of the fish species that inhabit Jordanelle and Deer Creek Reservoirs.

Open waters, including Jordanelle Reservoir and Deer Creek Reservoir, also provide habitat for waterfowl and shorebirds. Species that routinely visit the open water in the study area include American coot (*Fulica americana*), belted kingfisher (*Megaceryle alcyon*), Franklin's gull (*Larus pipixcan*), gadwall (*Anas strepera*), great blue heron (*Ardea herodias*), great egret (*Ardea alba*), green-winged teal (*Anas crecca*), and similar species. Deer Creek Reservoir in particular is considered important habitat for these species.



3.4.2.2 Terrestrial Wildlife and Habitat

The study area contains the Heber Valley and the surrounding foothills. Valley habitats contain remnant shrub-steppe and grassland habitats that have been largely converted to cultivated agriculture and pastures. The surrounding foothills consist of a mosaic of sagebrush-dominated shrub-steppe, oak/maple woodlands, and large meadows typical of the mid-elevation Wasatch Range. The Provo River and its historic floodplain provide some riparian habitat, although historic and ongoing diversion and agricultural development have affected the river and floodplain and riparian habitat quality. Recent improvements that are part of the Provo River Restoration Project (PRRP) have restored many areas affected since settlement of the region.

What is shrub-steppe habitat?

Shrub-steppe habitat is upland habitat characterized by arid climate and perennial grass and shrub ground cover.

The wildlife species that are expected to inhabit the study area are those typical of the mountain valleys and foothills of Utah. The foothill and valley habitats throughout the study area provide critical and high-value habitat for elk (*Cervus canadensis*) and critical and substantial-value habitat for mule deer (*Odocoileus hemionus*). The study area also contains a small amount of critical-value and limited-value habitat for moose (*Alces alces*) (UCDC, no date).

The foothill woodlands and shrublands and the valley meadows in the study area provide abundant habitat for a variety of migratory raptors, waterfowl, and songbirds. The birds that have been observed or are likely to inhabit the Heber Valley and its surrounding foothills include the species listed in Appendix A, Wildlife Species Likely to Occur in the Study Area. Appendix A also includes a listing of small mammals and reptiles that are likely to inhabit the foothill woodlands and shrublands in the study area.

The large, irrigated meadows and pastures in the study area provide habitat for a variety of migratory songbirds such as bobolink (*Dolichonyx oryzivorus*) and long-billed curlew (*Numenius americanus*). Some of the meadows and pastures support wetland habitats.

There is some amount of riparian habitat along all of the perennial streams in the study area and many of the numerous ditches and canals. The ditches and smaller streams in the valley have patchy riparian habitat consisting of individual, scattered mature trees. The larger tracts of contiguous, structurally complex riparian habitat are along the Provo River, especially in the southern half of the valley to Deer Creek Reservoir; along Snake Creek; and along Daniels Creek from Daniel's Canyon to 1200 West in Daniel.

3.4.2.3 Special-Status Species

Methods Used To Identify Special-Status Species in the Study Area

The project team consulted with the Utah Natural Heritage Program (UNHP) and reviewed the Utah Conservation Data Center's (UCDC) online databases (UDWR 2010a) to develop a list of federally listed and candidate species, conservation agreement species, and state sensitive species that have been recorded in the study area or that have mapped habitat in the study area. UNHP's initial correspondence provided federally listed as well as state sensitive species whose presence has been recorded in the study area. This initial correspondence from UNHP was received on September 16, 2010. The Utah Division of Wildlife Resources



(through the Utah Public Lands Policy Coordination Office, Office of the Governor) and U.S. Fish and Wildlife Service provided additional information about Southern leatherside, a conservation agreement species, in their comments on the Draft EA.

UNHP identified several species of state concern and four species that are listed or are candidates for listing under the federal Endangered Species Act and that could be present the study area. The entire list of species of concern (state and federal lists) provided by UNHP and conservation agreement species noted by the Utah Division of Wildlife Resources and U.S. Fish and Wildlife Service is included in Table 3.4-1. The following sections discuss Endangered Species Act species and conservation agreement species.

Table 3.4-1. Federally Listed and State Sensitive Species That Could Be Present in the Study Area

Common Name	Scientific Name	Status ^a
American three-toed woodpecker	<i>Picoides tridactylus</i>	SPC
Bald eagle	<i>Haliaeetus leucocephalus</i>	SPC
Black swift	<i>Cypseloides niger</i>	SPC
Bobolink	<i>Dolichonyx oryzivorus</i>	SPC
Bonneville cutthroat trout	<i>Oncorhynchus clarkia utah</i>	CS
Canada lynx	<i>Lynx canadensis</i>	T
Columbia spotted frog	<i>Rana luteiventris</i>	CS
Ferruginous hawk	<i>Buteo regalis</i>	SPC
Grasshopper sparrow	<i>Ammodramus savannarum</i>	SPC
Greater sage-grouse	<i>Centrocercus urophasianus</i>	C
Lewis's woodpecker	<i>Melanerpes lewis</i>	SPC
Long-billed curlew	<i>Numenius americanus</i>	SPC
Northern goshawk	<i>Accipiter gentilis</i>	CS
Short-eared owl	<i>Asio flammeus</i>	SPC
Smooth greensnake	<i>Opheodrys vernalis</i>	SPC
Southern leatherside	<i>Lepidomeda aliciae</i>	CS
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	SPC
Western (boreal) toad	<i>Bufo boreas</i>	SPC
Ute ladies'-tresses	<i>Spiranthes diluvialis</i>	T
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	C

^a Status designations:

SPC State species of concern (state sensitive species)

CS Species managed under a conservation agreement

C Candidate for listing under the federal Endangered Species Act

T Listed as threatened under the federal Endangered Species Act

Threatened, Endangered, and Candidate Species under the Endangered Species Act

This section focuses on species that are listed under or that are candidates for listing under the Endangered Species Act. The federally listed species identified by UNHP and UCDC are the threatened Canada lynx and Ute ladies'-tresses. The federal candidates are the greater sage-grouse and yellow-billed cuckoo.



Canada Lynx. Canada lynx generally require mature forests with dense undergrowth (Fox and Murphy 2002). In Utah, they prefer mountain conifer forests. The greatest current threats to Canada lynx populations are loss and alteration of habitat from logging and road construction. Lynx are exclusively carnivorous and rely heavily on snowshoe hares for food (UCDC, no date). The study area includes mountain conifer forests. However, the quality of the study area as habitat for Canada lynx is reduced by high road density in the forests, fragmentation by large highways, and proximity to large human populations.

Ute Ladies'-Tresses. Ute ladies'-tresses are found in wet meadows; near streams, springs, seeps, and lake shores; and in floodplains. In Utah, it is found in Daggett, Duchesne, Garfield, Salt Lake, Tooele, Uintah, Utah, Wayne, Wasatch, and Weber Counties at elevations up to about 7,000 feet. The Utah Division of Wildlife Resources reports that "most surviving populations are small and appear to be relict in nature" (UCDC, no date). There are documented populations in the study area near Jordanelle Reservoir and along the Provo River and in the river's associated floodplain wetlands.

What is a relict population?

A *relict* population is a remnant of a once larger, more widely distributed population.

Greater Sage-Grouse. The greater sage-grouse is strongly associated with sagebrush (*Artemisia* spp.) and lives in most places where there is a lot of sagebrush. Wet meadows are also critical components of greater sage-grouse habitat and provide habitat for young birds. Habitat loss is the greatest threat to greater sage-grouse and has reduced the range of greater sage-grouse by 50% (UCDC, no date). There is relatively good habitat for the greater sage-grouse in the study area. Known population distributions include areas in the northern part of the study area by Jordanelle Reservoir and in the foothills southwest of Wallsburg.

Yellow-Billed Cuckoo. Yellow-billed cuckoos are riparian obligates that prefer large tracts of cottonwood or willow trees with a dense sub-canopy of regenerating trees. Nesting habitat in Utah is generally found below 6,500 feet elevation, and evidence suggests they might require large tracts of contiguous riparian forest for nesting (UCDC, no date).

What are obligate species?

Obligate species are those that can live in a particular habitat only. For example, a riparian obligate species requires riparian habitat.

There is some migratory stop-over habitat for the yellow-billed cuckoo along the Provo River above Deer Creek Reservoir. However, few large tracts of native riparian trees are still present in the area, so nesting habitat is limited. There is additional riparian forest along Center Creek, but this habitat is also fragmented and laterally truncated, which makes it an unlikely nesting habitat for yellow-billed cuckoos. The upper Provo River above Jordanelle Reservoir provides more-extensive riparian canopies, but the elevation is at or above what is generally considered the breeding range (which is below 6,500 feet elevation). The PRRP, which is substantially complete, restored a more natural river channel and gave the river access to a larger floodplain. The changes made through the restoration project should gradually increase the amount of riparian vegetation along the middle Provo River (URMCC, no date).



Conservation Agreement Species

Conservation agreement species are species that are managed under a conservation agreement to preclude the need for listing them under the federal Endangered Species Act.

Bonneville Cutthroat Trout. The special-status fish species that is likely to be present in the study area is the Bonneville cutthroat trout (BCT). The BCT is a race of cutthroat trout native to the Bonneville Basin. The BCT evolved in the prehistoric Lake Bonneville, but, since the Bonneville Flood, the species has been isolated in high mountain streams and lakes (UDWR 2010b). Like other cutthroat trout, the BCT requires clear, cool, well-oxygenated water. The BCT inhabits a wide range of stream and lake habitats from steep mountain streams to lowland rivers. The BCT spawns in the spring in streams with gravel beds and requires an intact riparian zone for structure, cover, and bank stability (UCDC, no date).

What was the Bonneville Flood?

The *Bonneville Flood* was a catastrophic flood that drained part of prehistoric Lake Bonneville.

The study area lies in the Northern Bonneville Geographic Management Unit for the BCT. The *Status Review for Bonneville Cutthroat Trout* published by the U.S. Fish and Wildlife Service in 2001 (USFWS 2001) notes that remnant populations were known or suspected to exist in two reaches of the South Fork Provo River, a reach of the upper North Fork Provo River, and Main Creek. BCT were reintroduced to the Middle Provo River in 2002 and 2003 to increase angling opportunities by providing more diversity in the fish community (Hepworth and others 2004).

The habitat conditions in the Middle Provo River have been severely degraded by channelization and flow diversions during the last century. The substantially complete PRRP restored the river's access to the active floodplain and reconstructed bends, meanders, and side channels, which should improve the quality of the Middle Provo River as BCT habitat. Even though BCT have been planted in the river in the past, there is no sustained population in this reach of the Provo River (URMCC 2002). The smaller tributaries in the study area, such as Main Creek, have been channelized and have reduced flows and are probably not high-quality habitat for the BCT. According to the *Range-Wide Conservation Agreement and Strategy for Bonneville Cutthroat Trout* (Utah Division of Wildlife Resources 2000), the confirmed BCT population in Main Creek is being managed for persistence.

Northern Goshawk. The northern goshawk is an uncommon, year-round resident in Utah. The northern goshawk nests and hunts in mature forests, especially conifer forests. Its diet relies heavily on small mammals and birds. There is primary nesting habitat for northern goshawk at the fringes of the study area where there are mature forests. This habitat is primarily in the hills south of Francis and Daniel and the high mountains west of Jordanelle Reservoir.

Columbia Spotted Frog. The Columbia spotted frog inhabits seeps and springs with a permanent water source and to a lesser extent small streams, lakes, and ponds. Riparian corridors often provide migration routes between breeding, summer feeding, and winter hibernation habitats. Known locations of Columbia spotted frog are concentrate south of Jordanelle Dam and north of Deer Creek Reservoir, including creeks such as Spring Creek (CUWCD et al. 1996). Ponds below Jordanelle Reservoir that are part of the PRRP area provide habitat for Columbia spotted frog. The study area contains additional limited-value



habitat for Columbia spotted frog, as classified by the Utah Division of Wildlife Resources, in the vicinity of Cascade Springs and the Wasatch Mountain State Park.

Southern leatherside. Southern leatherside is a small desert fish that occurs only in streams located in Southern and eastern parts of the Bonneville Basin in Utah. According to the Utah Division of Wildlife Resources, Southern leatherside populations have been declining in the species' historic range (UDWR 2010c). Southern leatherside is known to inhabit the Main Creek drainage, which is located in the southern part of the expanded sub-area. The Main Creek Southern leatherside population is the only significant population within the Provo River drainage and has been identified as one of the most genetically distinct (URMCC no date). In its comments on the Draft EA, the Utah Division of Wildlife Resources noted that the Main Creek drainage is highly fragmented with diversion structures, impassable culverts, and seasonally dewatered reaches, all of which adversely affect Southern leatherside populations as well as other aquatic species. Predation, competition and hybridization with nonnative fish adversely affect the native fish community in Main Creek.

In addition to being the subject of a conservation agreement, conservation of the leatherside chub (now called the Southern leatherside) is a mitigation commitment of the Utah Lake Drainage Basin Water Delivery System (ULS), the final component of the Bonneville Unit of the CUP.

3.4.3 Environmental Consequences

3.4.3.1 Regulatory Considerations

Federal Endangered Species Act. The federal Endangered Species Act (Act) regulates activity that could affect species listed as threatened or endangered under the Act. Section 7 of the Act requires federal agencies to ensure that their actions neither jeopardize the continued existence of species listed as endangered or threatened nor result in the destruction or adverse modification of the critical habitat of these species. Under Section 7, federal agencies must consult with USFWS if an action would result in “take” of a listed animal species, where “take” means to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect... [an individual of a protected species]” (16 U.S.C. §§1532 et seq.).

Migratory Bird Treaty Act of 1918. The Migratory Bird Treaty Act of 1918 with Canada, Mexico, and Japan (16 U.S.C. §§ 703–712) makes it unlawful at any time, by any means, or in any manner, to pursue, hunt, take, capture, kill, or sell migratory birds. The law grants full protection to any bird parts (such as feathers) and applies to the removal of nests (such as swallow nests on bridges) occupied by migratory birds during the breeding season. This statute applies to all migratory birds in the U.S. with the exception of a few exotic species such as the European starling and house sparrow.

Executive Order 13186, signed by President Bill Clinton on January 10, 2001, directs federal agencies whose activities are likely to have a measurable negative effect on migratory birds to undertake actions in support of the Migratory Bird Treaty Act. One of these actions is for federal agencies to ensure that the environmental analyses required by NEPA evaluate the effects of actions and agency plans on migratory birds, with an emphasis on species of concern.



Bald and Golden Eagle Protection Act. The Bald and Golden Eagle Protection Act prohibits the take, sale, purchase, possession, barter, or transport, or offer to do any of the above, of either the bald eagle (*Haliaeetus leucocephalus*) or golden eagle (*Aquila chrysaetos*) at any time or in any manner (16 U.S.C. § 668a–d).

Conservation Agreement Species. The Utah Division of Wildlife Resources manages many species of wildlife under conservation agreements. Conservation agreements are intended to preclude the need for listing a species under the Act. Conservation agreement species are considered Tier I management species along with federally listed endangered and threatened species and federal candidate species.

3.4.3.2 Effects of the No-Action Alternative

Under the no-action alternative, there would be no direct impacts to fish or wildlife resources or habitat. The distribution system for CUP agricultural water would not change, and CUP agricultural water would not be used on parcels under 2 acres. Development of the area would continue, and water for these developments would be supplied by existing M&I water providers or new water sources. As development of smaller parcels continues, less CUP agricultural water would be applied to land in the Heber Sub-Area, which could affect the amount of agricultural return flows. This could affect aquatic species living in or relying on aquatic habitats such as the Provo River. Continued development would also cause the incremental loss of upland habitats.

What is return flow?

Return flow is water that is not fully consumed by its primary use and flows back to its source or to another water body.

3.4.3.3 Effects of the Proposed Action

The proposed conversion of CUP water from agricultural to M&I use would not physically affect any fish or wildlife resources or habitat. Because the proposed action would allow what was formerly CUP agricultural water to be applied to parcels less than 2 acres, it would make more water available to more parcels within the Heber Sub-Area, and it would increase the area eligible for the converted water by expanding the Heber Sub-Area. These actions would maintain existing flow patterns to the Provo River.

How would the proposed action affect fish and wildlife resources and habitat?

The proposed action would not significantly affect wildlife resources or habitat.

The proposed conversion would not physically change any habitat or affect any individuals of species that are listed under the Endangered Species Act.

If the temporary pumping station is installed, pump operation could cause noise that would disturb wildlife. The sensitive and special-status species that could be affected include raptors (bald eagle, ferruginous hawk, short-eared owl) and greater sage-grouse. Bald eagles have been observed foraging near the Keetley WTP, which would be upslope from the temporary pumping station. Bald eagle nesting locations, however, have not been documented in the area. Implementing the emergency measure when bald eagles are present could disturb individual birds. If the pumping station needs to operate when the eagles are present, monitoring could be used to observe whether individual birds are disturbed. However,



individual birds would probably leave the area voluntarily and roost elsewhere along the shore of Jordanelle Reservoir. This potential effect is not significant.

Operating the temporary pumping station could also directly affect common fish species living in Jordanelle Reservoir. To prevent fish from being drawn into the emergency pipeline, the emergency pumps would be fitted with a device that would prevent fish entrainment and would prevent fish from entering the temporary water-delivery system. Because the fish species that could be affected are common, and many are not native, this potential effect is not significant.

Finally, due to the local nature of the potential disturbances from the temporary pumping station and the wide availability of similar shrub-steppe, shoreline habitat, any wildlife disturbance from the pumping station would be negligible.

Effects of the Proposed Action on Threatened and Endangered Species

Canada Lynx (Threatened). The proposed conversion from agricultural to M&I water would not affect any conifer forests or forest fragmentation. If implemented, the temporary pumping station would not affect any conifer forests. The proposed action is determined to have no effect on individual lynx, mating pairs, populations, or habitat.

Ute Ladies'-Tresses (Threatened). The proposed conversion from agricultural to M&I water would maintain existing return flow patterns (see Section 3.9, Water Resources and Water Quality) and would, therefore, maintain wetland hydrology in the floodplain and spring-fed wetlands that provide habitat for Ute ladies'-tresses. The proposed action would not alter the current patterns of development or encourage development in wetlands. The proposed action and temporary pumping station are determined to have no effect on individual Ute ladies'-tresses plants, populations, or habitat.

Greater Sage-Grouse (Candidate). The proposed conversion from agricultural to M&I water would not affect sagebrush vegetation or associated vegetation communities. The proposed action would not alter development patterns or rates in sagebrush habitat. If implemented, the temporary pumping station would not disturb any sagebrush vegetation or communities. The proposed action and temporary pumping station are determined to have no effect on individual greater sage-grouse, mating pairs, populations, or habitat.

Yellow-Billed Cuckoo (Candidate). The proposed conversion from agricultural to M&I water is expected to maintain return flows to the Provo River (see Section 3.9, Water Resources and Water Quality), which should maintain the existing quantity and quality of available nesting riparian habitat for yellow-billed cuckoos. Converting the agricultural water to M&I use would not physically affect any yellow-billed cuckoo habitat along the Provo River. If implemented, the temporary pumping station would not disturb any yellow-billed cuckoo habitat. The proposed action and temporary pumping station are determined to have no effect on individual yellow-billed cuckoos, nesting pairs, populations, or habitat.

Effects of the Proposed Action on Conservation Agreement Species

Bonneville Cutthroat Trout. Return flows to the Provo River would be maintained as water is gradually converted to M&I uses. The quality of BCT habitat in the Provo River would continue to improve as a result of the PRRP, even though the species is not currently



present. Converting the agricultural water to M&I use would not physically affect any suitable BCT habitat in the Provo River.

The proposed conversion could change return flows to Main Creek if and when converted water is applied to land in the Main Creek drainage. However, because the rate and timing of applying converted water in this area is unknown (if it were to occur at all), it is speculative to estimate the magnitude of potential return flow increases to Main Creek. Since infrastructure to deliver the converted water to this area does not currently exist and constructing such infrastructure is not part of this project, estimating potential beneficial or adverse effects to BCT in Main Creek is speculative. Interior and CUWCD do not expect the conversion to affect Main Creek BCT habitat.

If implemented, the temporary pumping station would not disturb any known or potential habitat.

The proposed action and temporary pumping station are determined to have no effect on individual BCT, populations, or habitat.

Northern Goshawk. The proposed conversion would have no effect on high-elevation forests. The proposed action would not alter development patterns in the privately owned forested areas because it provides only a very small proportion of the total anticipated converted water supply (see Section 3.9, Water Resources and Water Quality). The proposed action and temporary pumping station are determined to have no effect on northern goshawk individuals, populations, or habitat.

Columbia Spotted Frog. The proposed action would eventually lead to the application of more water on the landscape. The proposed action would not affect return flow to the Provo River or Spring Creek, which means that water levels in existing habitat (including ponds in the PRRP area) would be maintained. Other limited-value habitat that is not on or near the Provo River would not be affected. Converting the agricultural water to M&I use would not physically affect any Columbia spotted frog habitat. If implemented, the temporary pumping station would not disturb any known or potential Columbia spotted frog habitat. The proposed action and temporary pumping station are therefore determined to have no effect on individual Columbia spotted frogs, populations, or habitat.

Southern Leatherside. The proposed conversion would not cause any physical changes to the Main Creek drainage and would not affect existing return flows to the creek, which supports Southern leatherside. This drainage was not included in the original Heber Sub-Area, so return flows were not historically affected by the application of Block Notice 1A water. The proposed conversion could change return flows to Main Creek if and when converted water is applied to land in the Main Creek drainage. However, because the rate and timing of applying converted water in this area is unknown (if it were to occur at all), it is speculative to estimate the magnitude of potential return flow increases to Main Creek. The temporary pumping station would not affect any land in the Main Creek drainage. The proposed action and temporary pumping station are determined to have no effect on Southern leatherside individuals, populations, or habitat.



3.5 Soils

3.5.1 Issues

No issues regarding soils were identified during the project scoping process. However, because the temporary water-delivery system would allow construction of a temporary pumping station and construction could disturb a minor amount of the ground surface, this section addresses the potential affects to soils near the temporary pumping station.

3.5.2 Affected Environment

The soils in the area of the temporary pumping station consist entirely of the Horrocks-Broadhead, steep (HWE) (USDA NRCS, no date). Horrocks soils are a mountain stony loam typically associated with mountain big sagebrush and bluebunch wheatgrass communities. Broadhead soils are a mountain loam associated with Gambel oak communities. According to the NRCS Web Soil Survey database, HWE soils have a moderate off-road/off-trail erosion hazard rating, a severe road/trail erosion hazard rating, and a high resistance to creating fugitive (airborne) dust. The HWE soils in the area around the Keetley WTP are not categorized as those that could support prime farmland.

3.5.3 Environmental Consequences

3.5.3.1 Regulatory Considerations

The CEQ NEPA guidelines (CEQ 1983) do not directly address potential effects related to soils.

3.5.3.2 Effects of the No-Action Alternative

The no-action alternative would not cause any ground disturbances.

3.5.3.3 Effects of the Proposed Action

The proposed water conversion and expanding the Heber Sub-Area would not affect area soils.

Installing the temporary pumping station would disturb a minor amount of soil. The temporary pipeline would be placed aboveground on top of an existing access road or in an area that has been historically altered and would probably not require any excavation or depositing of permanent fill. The emergency-measure structures would be installed and removed according to standard best management practices to prevent erosion and to protect water quality. JSSD would restore the affected area to pre-construction conditions once the temporary system is taken out of service and removed.

How would the proposed action affect soils?

The proposed action would not affect area soils.



3.6 Invasive Species

3.6.1 Issues

Installing the temporary pumping station could disturb a minor amount of the ground surface, and this disturbance could allow the establishment or spread of invasive plant species. In addition, installing the temporary pumping station could allow the spread of the invasive zebra and quagga mussels (*Dreissena* spp.) if Jordanelle Reservoir were to become infested in the future.

3.6.2 Affected Environment

The Keetley WTP is near the shore of Jordanelle Reservoir on the Old Keetley Road, which is asphalt paved and runs to the bottom of the reservoir. The surrounding landscape is dominated by mountain big sagebrush and Gambel oak vegetation communities with some cottonwoods and willows near the reservoir.

Wasatch County classifies noxious weeds (that is, invasive plant species) as Class A, B, or C. The Wasatch County weed list (Wasatch County 2009) is provided in Appendix B, Wasatch County Noxious Weeds List.

- Class A noxious weeds are not native to Utah, pose a serious threat to the state, and should be considered a very high priority for control.
- Class B noxious weeds are not native to Utah, pose a threat to the state, and should be considered a high priority for control.
- Class C noxious weeds are not native to Utah, are widely spread, and pose a threat to the agricultural industry and agricultural products. The focus should be on stopping their expansion.

Recently, the invasive zebra and quagga mussels have been discovered in several Utah water bodies. The invasive mussels were introduced into the U.S. in the late 1900s through shipping routes into the Great Lakes. From there, these invasive and destructive mussels have infested major waterways within the eastern United States and caused millions of dollars of damage to power-generating infrastructure as well as water-conveyance systems. Currently, only Sand Hollow Reservoir in Washington County is confirmed to be infested with this mussel, but preliminary results indicate that the species could be present in several other water bodies.

3.6.3 Environmental Consequences

3.6.3.1 Regulatory Considerations

Federal agencies are subject to the provisions of the Federal Noxious Weed Act of 1974 (Public Law 93-629) as amended in 1990 (Section 15, Management of Undesirable Plants on Federal Lands). This amendment of the Federal Noxious Weed Act of 1974 requires that federal agencies enter into agreements with appropriate state and local agencies to coordinate the management of noxious weeds. Due to the destructive potential of invasive aquatic



mussels, Utah has enacted the Aquatic Invasive Species Interdiction Act (Title 23, Chapter 27, Rule R657-60). NEPA requires federal agencies to coordinate their activities with each State.

Invasive species are also managed consistent with direction of the National Invasive Species Council, which was created as a result of Executive Order 13112 in 1999.

3.6.3.2 Effects of the No-Action Alternative

Under the no-action alternative, no ground disturbance would occur to facilitate the spread of invasive species.

3.6.3.3 Effects of the Proposed Action

The proposed action would not contribute to the spread of invasive species.

If allowed, the temporary pumping station would place portable pumps near the shore of Jordanelle Reservoir and near an existing asphalt surface of the Old Keetley Road. The project team anticipates that a temporary pipeline system would run west about 1,800 feet from the pumps to the Keetley WTP along the asphalt road and other existing maintenance roads. Installing the temporary pipeline could disturb previously disturbed soils along existing access roads, which could contribute to the spread of invasive species. The contractor would implement best management practices (BMPs) to reduce the potential to spread invasive weeds. These BMPs would include pre-treating weeds in the area and promptly revegetating the construction area using an appropriate native seed mix.

Applying the following measure would reduce effects associated with invasive aquatic mussels:

- If zebra or quagga mussels are discovered in Jordanelle Reservoir when the temporary pumping station is needed, and if the equipment is not dedicated to the Jordanelle Reservoir, all equipment should be cleaned with high pressure/high temperature water to minimize the potential to spread invasive mussels to other waters. If zebra or quagga mussels have not been discovered in Jordanelle Reservoir when the temporary pumping station is needed and the pumping equipment is coming from another water body that could have invasive mussels, all equipment will be cleaned with high-pressure, high-temperature water to minimize the potential to spread invasive mussels to Jordanelle Reservoir.

How would the proposed action affect invasive species?

The proposed action would not contribute to the spread of invasive species.



3.7 Land-Use Plans and Conflicts

3.7.1 Issues

During the scoping process, USFWS requested that the EA address the potential for induced growth as an indirect effect of the proposed conversion.

3.7.2 Affected Environment

The area encompassed by the proposed expanded Heber Sub-Area boundary includes several small cities and towns as well as unincorporated land administered by Wasatch County. The cities and towns include Heber City, Midway, Hideout, Charleston, Daniel, Independence, and Wallsburg.

Between 2000 and 2007, Wasatch County (including incorporated areas) had the second-highest rate of growth of all Utah counties (MAG 2008). In 2009, the population of unincorporated areas was 6,137, which represented about 28% of the total Wasatch County population of 21,600 (MAG 2009). Most of the rest of the population is in cities and towns in western Wasatch County.

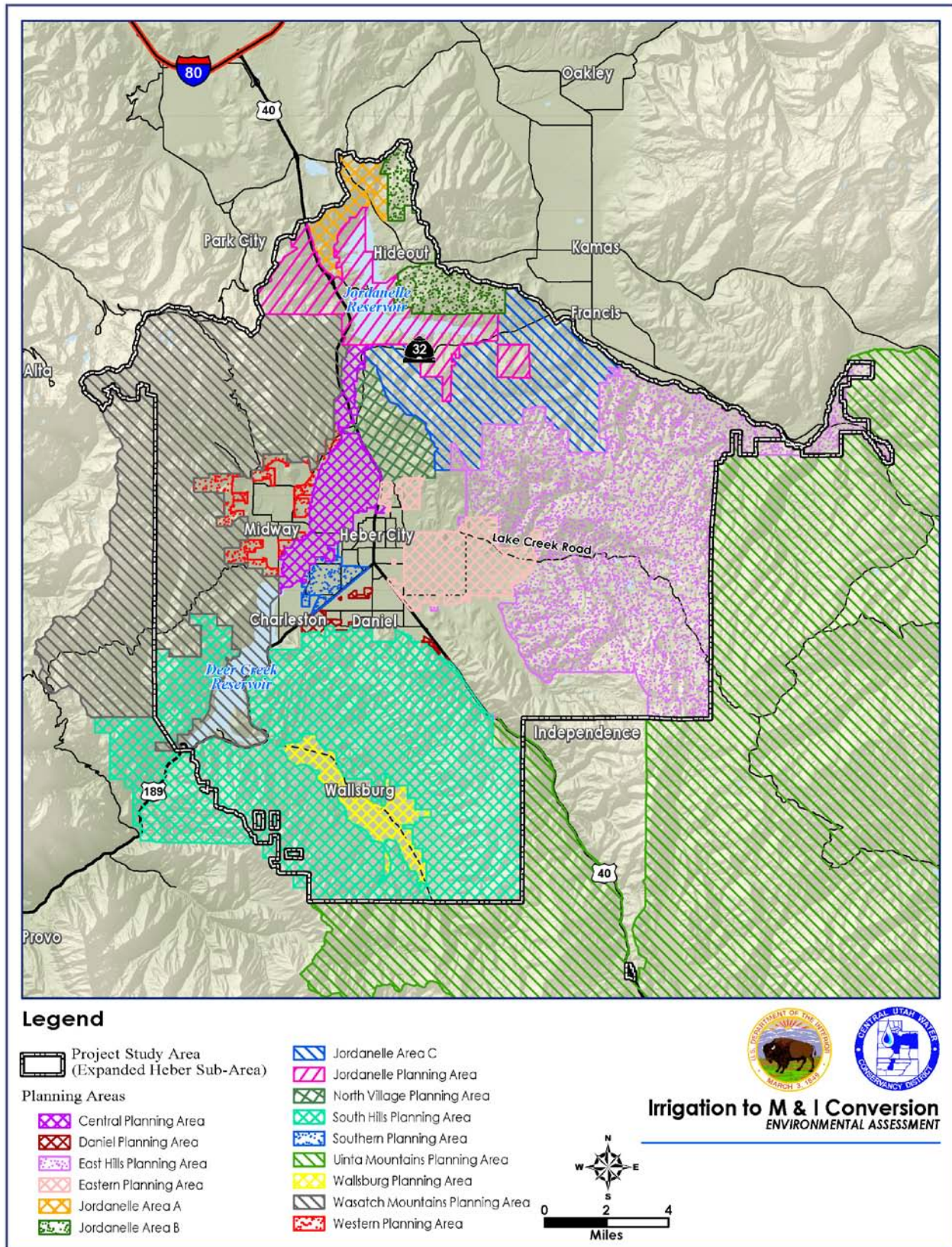
The Wasatch County General Plan was originally adopted in 2001 but has been amended several times. The County incorporated the most recent plan changes in February 2010. The land-use section of the general plan describes the county's planning areas. The expanded Heber Sub-Area includes all or part of several of these planning areas (see Figure 3-2 below).

In general, planning area maps included in the Wasatch County General Plan identify most of the unincorporated land in the study area for agricultural and grazing uses. Several small residential subdivisions that are partially or fully built out are scattered throughout the study area. According to the land-use plan maps and information from the County's Planning Department, additional developments (subdivisions and master plan areas) are in the planning stage or have been approved but not yet constructed. Like most residential development in the region, these developments will primarily support low-density residential uses. The rate at which these areas would be developed would depend on market conditions. Master plan areas will also support some mixed commercial and residential uses, but overall densities will remain low. Recent proposed residential subdivisions and master plans have been concentrated in the Eastern and Jordanelle Planning Areas. Land administered by federal, state, and local governments accounts for a substantial amount of land in the study area.

The County cannot approve subdivisions and master plans without evidence that the proposed development will be served by the appropriate water provider (such as WCSSA #1 and JSSD). The general plan identifies a total of over 58,000 acre-feet of water held by irrigation companies in the Heber Valley. This total excludes water allocated to the county's central planning area (see Figure 3-2 below) and excludes the 12,100 acre-feet that would be converted through the proposed action.



Figure 3-2. Wasatch County Planning Areas





The general plan states that, as development occurs, adequate agricultural irrigation water rights “shall be provided to each lot in amounts approved by the County.” The plan recognizes that agricultural water would need to be converted if it is to be used for culinary purposes.

As noted in Section 1.4.2.1, CUP Water Conversion and Sub-Area Expansion, Wasatch County reports that about 5,800 additional units were recorded, approved, or proposed between September 2008 and early 2011 (Smith 2011). While some of the proposals are conceptual, the General Plan assumes that such proposed development would be completed. Most of the 5,800 units are in the project study area.

3.7.3 Environmental Consequences

3.7.3.1 Regulatory Considerations

The CEQ NEPA guidelines (CEQ 1983) do not direct agencies to evaluate potential effects related to land use.

3.7.3.2 Effects of the No-Action Alternative

Under the no-action alternative, no CUP water would be converted from agricultural to M&I use, and planned development in the cities, towns, and unincorporated areas would continue to rely on existing and planned water supplies assumed to be available in the Wasatch County General Plan (Wasatch County 2001, as amended). The county plan does not specifically identify the 12,100 acre-feet of Block 1A water as available for development in Wasatch County.

Because less CUP agricultural water would be delivered in the Heber Valley than what was planned under the WCWEP, less CUP agricultural water would be available as return flow. Individual water right holders in the Heber Valley might also take their water out of the WCWEP system to provide water for new development. This would reduce the amount of water conserved under the accounting procedures developed by and for the WCWEP and would result in a smaller supply of conserved water available to offset the return flow effects from WCWEP. These reduced releases would not be available to downstream water users. The secondary effect of using other water supplies to meet the needs of future development would be to reduce stream flows and groundwater levels in the Heber Valley, although the magnitude of these effects is not known and making predictions is speculative.

Because there are no plans for development, not installing the temporary pumping station would not affect land uses near the Keetley WTP.

3.7.3.3 Effects of the Proposed Action

Land uses in the study area are expected to change over time with or without the proposed action. Converting up to 12,100 acre-feet from agricultural to M&I use could change the *rate* of planned development, but it is not likely to change the overall *pattern* of development because development is limited by several factors: the

How would the proposed action affect land-use plans?

The proposed action could change the rate of planned development in the study area, but it is not likely to change the pattern of development.



location of existing systems that would be used to deliver water, the mountainous terrain, and the existing ownership pattern (a high percentage of public land is not available for development).

The 12,100 acre-feet proposed for conversion would be available on an as-needed basis at an unsubsidized cost consistent with Reclamation law. Delivering this water would not directly affect other existing and future culinary and agricultural water deliveries assumed in the Wasatch County General Plan.

Converting 12,100 acre-feet would not induce growth beyond what is already planned for the region for the same reasons that the growth patterns would not change: development is limited by the location of existing systems that would be used to deliver water (no new systems would be constructed as part of the proposed action), the mountainous terrain, and the existing ownership pattern.

If Interior issues a license agreement for installing and operating a temporary pumping station, construction and use of the station would not affect land use near the Keetley WTP.

3.8 Public Facilities

3.8.1 Issues

During scoping, the Metropolitan Water District of Salt Lake and Sandy requested that the EA evaluate how the proposed action might affect existing sanitary sewer systems and wastewater treatment facilities in the Heber Valley and the effects to the Provo River, one of its water sources. The project team assessed the need for or impacts to additional public facilities for this project.

3.8.2 Affected Environment

The Heber Valley Special Service District (HVSSD) oversees wastewater treatment for Heber City, Midway City, Charleston Town, Midway Sanitation District, Twin Creeks Special Service District, JSSD, and the North Village Special Service District. All of these entities currently receive service from HVSSD except Charleston Town. The HVSSD system was originally approved as having no discharge of effluent in order to protect the water quality of Deer Creek Reservoir. According to the Utah Division of Water Rights, all of the treated water associated with the HVSSD treatment system is consumed and none of it returns to a stream or aquifer. Therefore, when agricultural water rights are exchanged for culinary water and wastewater treatment is to be provided by HVSSD, additional water rights might be required to maintain return flows.

JSSD has constructed a wastewater reclamation facility that will be used to treat wastewater from developed areas near and above Jordanelle Reservoir. This facility will eventually discharge reclaimed water into the WCWEP canal system for distribution as recycled agricultural water within the Heber Valley.

There are three types of culinary water systems in Wasatch County: publicly owned, private for profit, and mutual companies.



3.8.3 Environmental Consequences

3.8.3.1 Regulatory Considerations

The CEQ NEPA guidelines (CEQ 1983) do not directly address potential effects related to public facilities.

3.8.3.2 Effects of the No-Action Alternative

Under the no-action alternative, up to 12,100 acre-feet of CUP agricultural water would not be available for M&I use. Water that could not be delivered would remain in Jordanelle Reservoir and would not affect water delivery or water-treatment systems. In addition, a temporary pumping station at the Keetley WTP would not be installed and operated, and, therefore, no existing public facilities would be affected.

3.8.3.3 Effects of the Proposed Action

The proposed action does not include construction of any new or permanent water-treatment or water-delivery facilities. The converted water would be delivered using existing systems that connect to the Wasatch Canal and Timpanogos Canal. The proposed conversion would also not require construction of any new wastewater treatment facilities. If the temporary pumping station is needed, constructing this system would enable the Keetley WTP to continue functioning during an emergency. The temporary pumping station would not require constructing any additional permanent water-treatment or water-delivery facilities.

How would the proposed action affect public facilities?

The proposed action would not require the construction of additional public facilities.

The conversion of agricultural water to M&I water would occur over time. The converted water could be used to support planned development in the study area as a secondary water source or could be used as culinary water. Most of the converted water would be used as secondary water for irrigation on small hobby farms, gardens, or landscapes on developed parcels in the same general areas that the water is used today. Only a very small amount of the water that would be converted (about 1,000 acre-feet of the 2,500 acre-feet of water assumed to be conveyed above Jordanelle Reservoir) would be used for strictly culinary purposes. The effluent would be processed in JSSD's existing wastewater reclamation facility, which has the capacity to process this water, prior to being discharged back to WCWEP canals. Therefore, the conversion is not expected to result in the need for additional or expansion of wastewater treatment facilities. Section 3.9 below provides more information about return patterns for this small, sewered return flow.

New water treatment and wastewater reclamation facilities would be needed as population and housing growth continues and additional non-CUP water supplies are developed to meet growing M&I demands. The effects of these future facilities would be evaluated when the need for and location of these facilities is identified. Speculating on the location, capacity, and effects of any new facilities is beyond the scope of this EA. Interior and CUWCD assume that the parties responsible for siting and constructing any new facilities would ensure that



they comply with applicable state and federal laws and that any impacts would be identified, evaluated, and mitigated (if necessary) at that time.

3.9 Water Resources and Water Quality

3.9.1 Issues

Scoping comments were received about the effects of the alternatives on stream flow in the Provo River and tributary streams in the Heber Valley. In particular, USFWS asked how flows in the Provo River could change downstream of Jordanelle Reservoir.

Changes in the volume and pattern of CUP agricultural water that is delivered in the Heber Valley could affect reservoir levels in Jordanelle and Deer Creek Reservoirs, stream flow in the Provo River between the two reservoirs, and recharge to groundwater in the Heber Valley (due to unconsumed deliveries). If return flow patterns are significantly changed, groundwater levels and downstream water right holders could be affected.

3.9.2 Affected Environment

The affected area for water resources includes Jordanelle and Deer Creek Reservoirs, the Provo River from Jordanelle Reservoir to Deer Creek Reservoir, and the tributary streams and shallow groundwater aquifer in the Heber Valley. Changes in the volume or timing of releases from Jordanelle Reservoir to CUP contract holders associated with the proposed conversion to M&I use could affect water levels and flows in these water bodies.

The management of CUP water in Jordanelle and Deer Creek Reservoirs includes providing for the WCWEP and Bonneville Unit M&I system operations. The WCWEP includes irrigation efficiency and water-management improvements, such as pressurized irrigation delivery systems, that conserve water in the Heber Valley.

What is a trans-basin diversion?

A *trans-basin diversion* is a transfer of water from one drainage basin to another.

The specific environmental commitments of the WCWEP that affect water resources, water rights, and water quality in the study area are as follows:

1. The release and delivery from Jordanelle Reservoir of 2,900 acre-feet of replacement water to the Daniel Irrigation Company;
2. Water conserved by increased irrigation efficiency is stored in Jordanelle Reservoir and is released as necessary to mimic historic return flow patterns to protect downstream water rights from impairment. This water also mitigates any potential impacts on groundwater, wetlands, or other environmental resources; and
3. Releases of conserved water are routed in a manner to supplement flows in several Heber Valley streams, including Rock Ditch, Spring Creek, and lower Lake Creek.



Instead of discussing current conditions, this section discusses *baseline conditions*. Unlike the other resources discussed in this chapter, the availability of water resources in the study area varies widely throughout the year and from year to year. For example, reservoirs store varying amounts of water, and rivers have varying amounts of flow. For this reason, the project team developed a computer model that simulates the water resource conditions in the study area throughout multiple years and during average, wet, and dry years. These conditions are collectively referred to as the baseline conditions.

What are baseline conditions for water resources?

The *baseline conditions* for water resources are the conditions of water resources in the study area (for example, reservoir storage and river flow) throughout the entire year and during average, wet, and dry years. These baseline conditions have been simulated for a 50-year period using a computer model.

This computer model was used to estimate the future conditions in the study area under the baseline scenario, with the no-action alternative, and with the proposed action. The computer model uses historical data from an extended 50-year study period. This allowed the project team to simulate full operation of Jordanelle Reservoir under current conditions and future impacts from changes associated with the conversion of CUP agricultural water for a range of historically based dry-year and wet-year conditions.

The baseline conditions of water resources in the study area were determined from computer models of the Provo River system under WCWEP operations, as documented in the EIS for the Utah Lake Drainage Basin Water Delivery System (Utah Lake System, or ULS) (DOI et al. 2004). This EA uses modeled rather than historically observed data to describe baseline conditions because the WCWEP operations and CUP diversions from the Bonneville Unit M&I system had not yet fully developed and the effects of using CUP agricultural water in the Heber Valley had not been observed. This is the same approach used in several previous NEPA analyses completed for projects in the region, including the WCWEP EIS and the ULS EIS.

The spreadsheet model used to estimate the effects of the proposed action is based on a detailed hydrologic and water rights analysis of the Provo River system and uses historic flow and diversion data for 1950 through 1999. Using this 50-year historical period allows the project team to evaluate the effects of the project for a wide range of conditions.

The Provo River Spreadsheet Model (developed for the ULS EIS) incorporates the CUP deliveries to agriculture and M&I users that were assumed in the WCWEP EIS. For the current project, the model was modified and used to estimate flows, water deliveries, and water storage on the Provo River and in Jordanelle and Deer Creek Reservoirs under the no-action alternative and the proposed action. The Provo River Spreadsheet Model was also modified to simulate the effects of moving CUP water from the Heber Valley to the area around Jordanelle Reservoir.

Figures are used in this section to show the estimated impacts to water resources under various scenarios. Monthly average flow and storage volumes represent the average of monthly values from the 50 simulated years. Dry year average flow and storage is the average of monthly values from 1961, 1977, and 1992. Wet year average flow and storage is the average of monthly values from 1952, 1983, and 1986.

The following sections describe the baseline conditions of water resources in the study area.



3.9.2.1 Jordanelle Reservoir

Jordanelle Dam and Reservoir is the major control feature of the CUP M&I system. With a capacity of 314,006 acre-feet and a surface area of 3,024 acres, the reservoir is a major hydrographic and recreation resource in northern Utah. Jordanelle Reservoir receives water from the Upper Provo River, Drain Tunnel Creek, the Weber and Duchesne Rivers by exchange, and the local watershed. Water is developed in Jordanelle Reservoir by storing and exchanging surplus Provo River water that historically flowed into Utah Lake.

What is developed water?

Developed water is water that is brought into a water system through the efforts of people rather than through a natural process.

Figure 3-3 shows the simulated baseline conditions of Jordanelle Reservoir during average, wet, and dry years. The simulated average monthly amount of water in Jordanelle Reservoir over the 50-year (1950–1999) study period ranges from 205,000 acre-feet up to 270,000 acre-feet. The simulated average monthly amount in wet years ranges from 245,000 acre-feet to 310,000 acre-feet. During dry years, the simulated average end-of-summer amount is as low as 85,000 acre-feet.

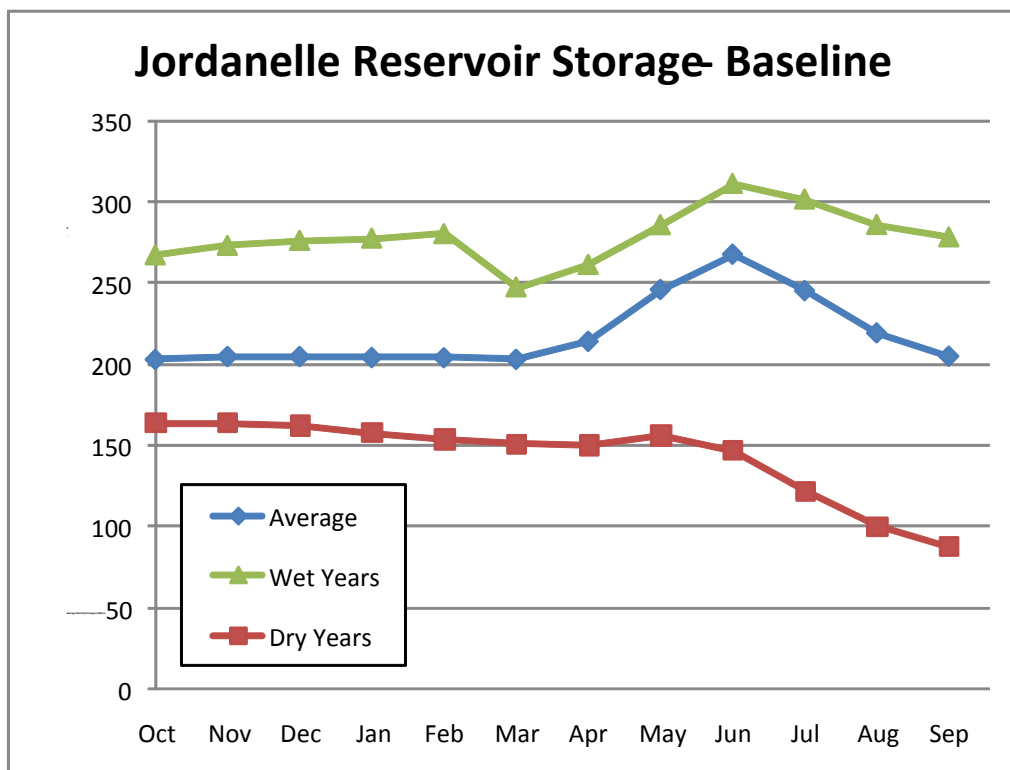


Figure 3-3. Simulated Jordanelle Reservoir Storage under Baseline Conditions.



3.9.2.2 Deer Creek Reservoir

Deer Creek Reservoir is a feature of the Provo River Project at the downstream and southern end of the Heber Valley and above Provo River Canyon. Deer Creek Reservoir has a capacity of 152,564 acre-feet and a surface area of 2,602 acres. In addition to the Provo River, the major tributaries that flow into Deer Creek Reservoir are Daniels Creek and Main Creek. These creeks flow into Deer Creek Reservoir from the east/southeast.

Deer Creek Reservoir is operated by the Provo River Water Users Association to develop M&I and agricultural water for the Wasatch Front. Water in Deer Creek Reservoir is developed by storing surplus Provo River water along with trans-basin diversions from the Duchesne and Weber Rivers.

Figure 3-4 shows the simulated baseline conditions of Deer Creek Reservoir during average, wet, and dry years. The simulated average monthly amount of water in Deer Creek Reservoir over the 50-year (1950–1999) study period ranges from 80,000 acre-feet up to 115,000 acre-feet. The simulated average monthly amount in wet years ranges from 115,000 acre-feet to 150,000 acre-feet. During dry years, the simulated end-of-summer amount is as low as 5,000 acre-feet.

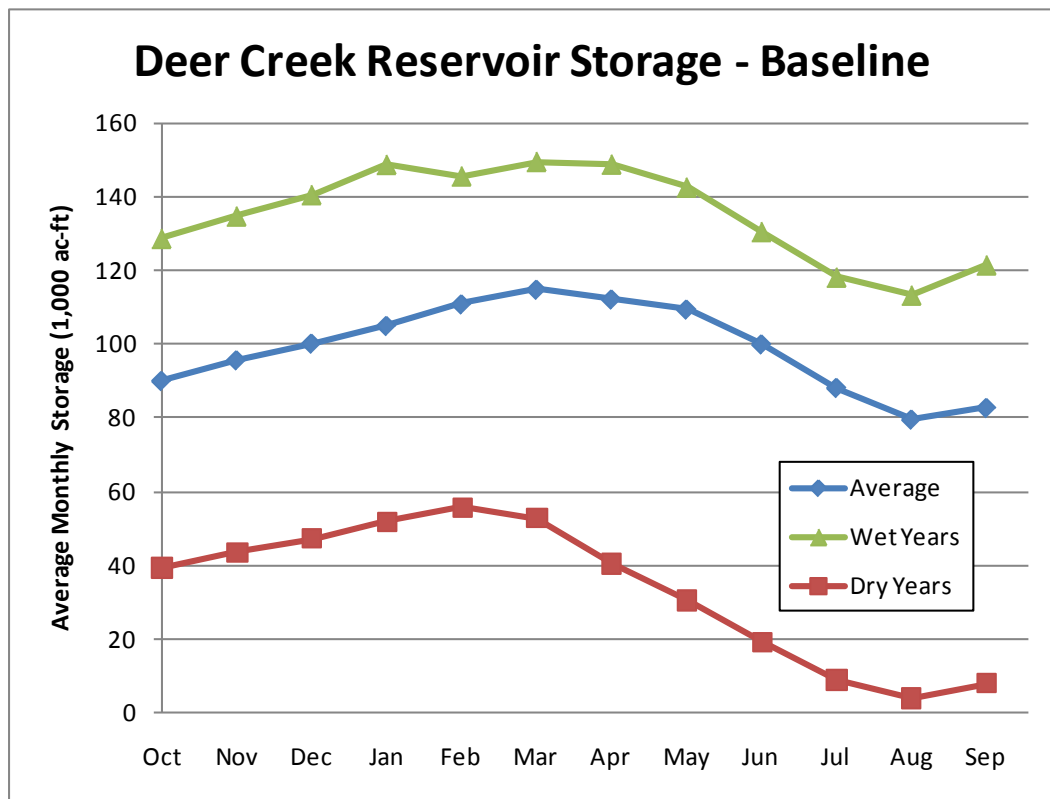


Figure 3-4. Simulated Deer Creek Reservoir Storage under Baseline Conditions.



3.9.2.3 Provo River

Within the study area, the Provo River flows from Jordanelle Reservoir to Deer Creek Reservoir. This reach of the river is an important resource for recreation and aquatic habitat. In addition to conveying outflow from Jordanelle Reservoir, the Provo River conveys inflow from Snake Creek, Spring Creek, Lake Creek, Center Creek, smaller tributaries, and agricultural return flows from irrigated land in the Heber Valley. Diversions to canals and to water users affect flow in the creeks and tributaries.

The simulated average monthly flow in the Provo River ranges from 130 cubic feet per second (cfs) to 700 cfs. During wet years, the simulated average monthly flow is as high as 1,300 cfs. During dry years, the simulated average monthly flow does not exceed 270 cfs. Figure 3-5 shows the simulated baseline conditions of the Provo River during average, wet, and dry years (the modeled location is below the Midway River Ditch diversion). The minimum in-stream flow in the Provo River between Jordanelle and Deer Creek Reservoirs is set by the agreement associated with the construction of Jordanelle Reservoir at 125 cfs.

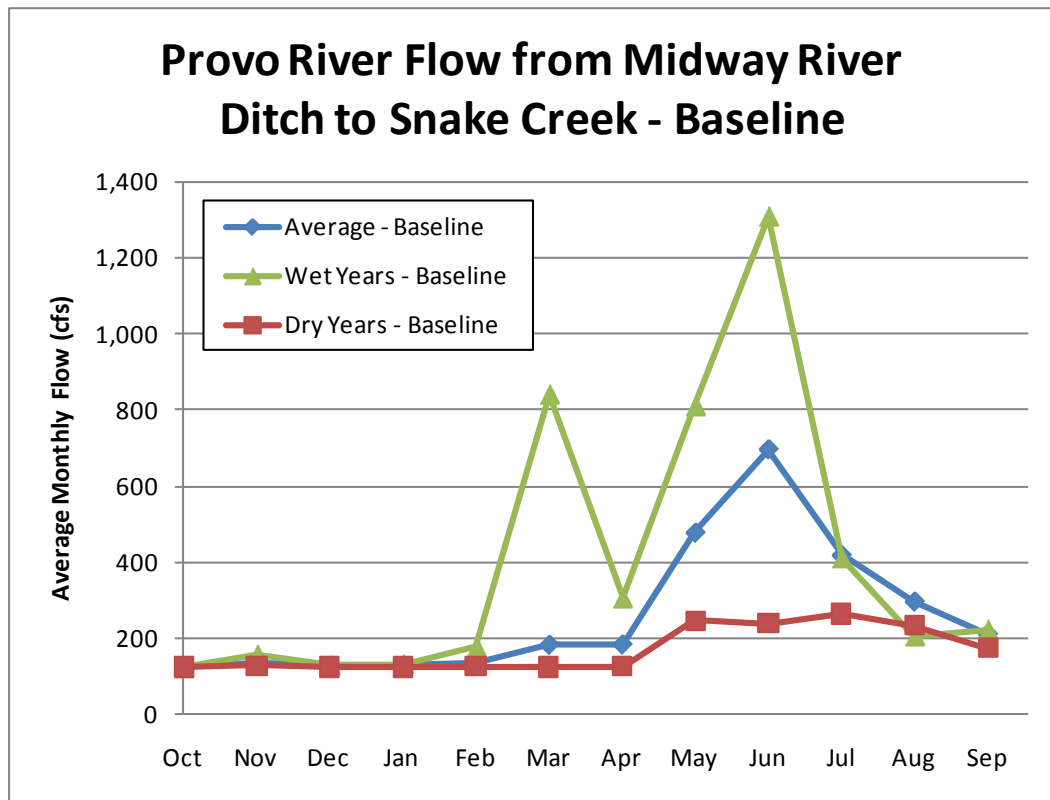


Figure 3-5. Simulated Provo River Flow under Baseline Conditions.



3.9.2.4 Heber Valley Water Balance and Groundwater

The Heber Valley water balance can be summarized by major inflows and outflows to provide an overall estimate of sources and quantities of water entering and leaving the valley. The average inflow of water is about 425,000 acre-feet, with contributions from Jordanelle Reservoir (265,000 acre-feet) plus combined, net inflows from tributaries and groundwater to Deer Creek Reservoir of about 160,000 acre-feet. This combined inflow includes the net effects of diversions, return flows, and seepage losses, with total valley-wide recharge to groundwater of about at 112,000 acre-feet (Roark et al. 1991). Outflows from the valley are summarized by losses from Deer Creek Reservoir evaporation (5,000 acre-feet), Deer Creek reservoir releases (320,000 acre-feet), and evapotranspiration losses from agriculture and non-agriculture consumptive use (about 100,000 acre-feet).

What is a water balance?

A *water balance* is an equation that shows the amount of water entering and leaving a water system. It includes the accumulation of water through inflow and precipitation and the loss of water through outflow and evaporation.

3.9.3 Environmental Consequences

3.9.3.1 Regulatory Considerations

The minimum flow of the Provo River between Jordanelle and Deer Creek Reservoirs is set at 125 cfs. This rate is maintained by a combination of natural flow, trans-basin inflow from the Duchesne and Weber Rivers, deliveries from Jordanelle Reservoir to CUP contract holders, and releases to meet the minimum flows that are recaptured in Deer Creek Reservoir. This minimum flow would be continued under the no-action alternative and the proposed action.

Utah water law requires that the rights of senior rights holders are protected from impairment by the actions of junior water rights holders. The water rights under which the CUP operates are junior compared to those of other water users on the Provo River system. The development and operation of the WCWEP incorporates specific measures to maintain the supply of water to downstream water users and supplement the flows of several Heber Valley tributary streams.

What are junior and senior water rights?

The terms *junior* and *senior* indicate which water rights take precedence over others. Senior water rights were established before junior water rights and take precedence over junior water rights when there is not enough water to satisfy everyone.



3.9.3.2 Effects of the No-Action Alternative

The effects of the no-action alternative on flow and water levels in the study area were evaluated by changing the assumed agricultural water deliveries of 12,100 acre-feet of CUP agricultural water to Heber Valley agricultural users to projected deliveries without the proposed conversion. The total deliveries of CUP agricultural water were reduced from 12,100 acre-feet per year to 4,000 acre-feet per year to represent projected use of CUP agricultural water. (In 2010, the delivery was 4,571 acre-feet, and CUWCD expects the delivery total to continue to decline under the no-action alternative.)

In the computer model (see Section 3.9.2, Affected Environment), excess water volumes (representing the difference between [1] the volume of deliveries assumed in the WCWEP EIS, which is the baseline condition, and [2] the volume of no-action alternative deliveries) were held in Jordanelle Reservoir and allowed to accumulate until water levels were projected to reach the top of active storage elevation. If the water level was projected to reach the top of the active storage elevation, slightly increased releases were made in April, May, and June to release excess water without impacts. These actions reflect current operational procedures and are necessary to avoid adverse effects to downstream water users, Provo River flows, and Deer Creek Reservoir.

The change to the baseline water balance in the Heber Valley due to the no-action alternative is estimated to be a reduced outflow of about 3,050 acre-feet per year. This is equal to the unconsumed portion (37.7%) of the baseline CUP agricultural deliveries (12,100 acre-feet) less the projected CUP agricultural deliveries (4,000 acre-feet) under the no-action alternative. This amount is less than 1% of the outflow portion of the Heber Valley water balance (425,000 acre-feet, as described in Section 3.9.2, Affected Environment).

Not installing and operating a temporary pumping station at Jordanelle Reservoir would not change the overall Heber Valley water balance.

Jordanelle Reservoir and Deer Creek Reservoir. The estimated impacts of the no-action alternative on the amount of water in Jordanelle and Deer Creek Reservoirs are shown in Figure 3-6 and Figure 3-7 below. Jordanelle Reservoir would have an average of between 10,000 and 15,000 acre-feet more water in storage because the reduced deliveries of CUP agricultural water would accumulate there. This would affect the ability of the CUP to store WCWEP conserved water in Jordanelle Reservoir and would cause these water rights to be released and stored downstream. Deer Creek Reservoir would then have the potential to store additional water under the no-action alternative because of slight differences in the volume and timing of releases from Jordanelle Reservoir and return flows from CUP agricultural water deliveries. Depending on the timing of these releases, extra Deer Creek Reservoir storage could be credited as CUP water that would be exchanged back upstream to Jordanelle Reservoir. This is the assumption used in this analysis.

The Main Creek drainage has not historically received Block 1A water, so the amount of water available in the Main Creek drainage would not change under the no-action condition.

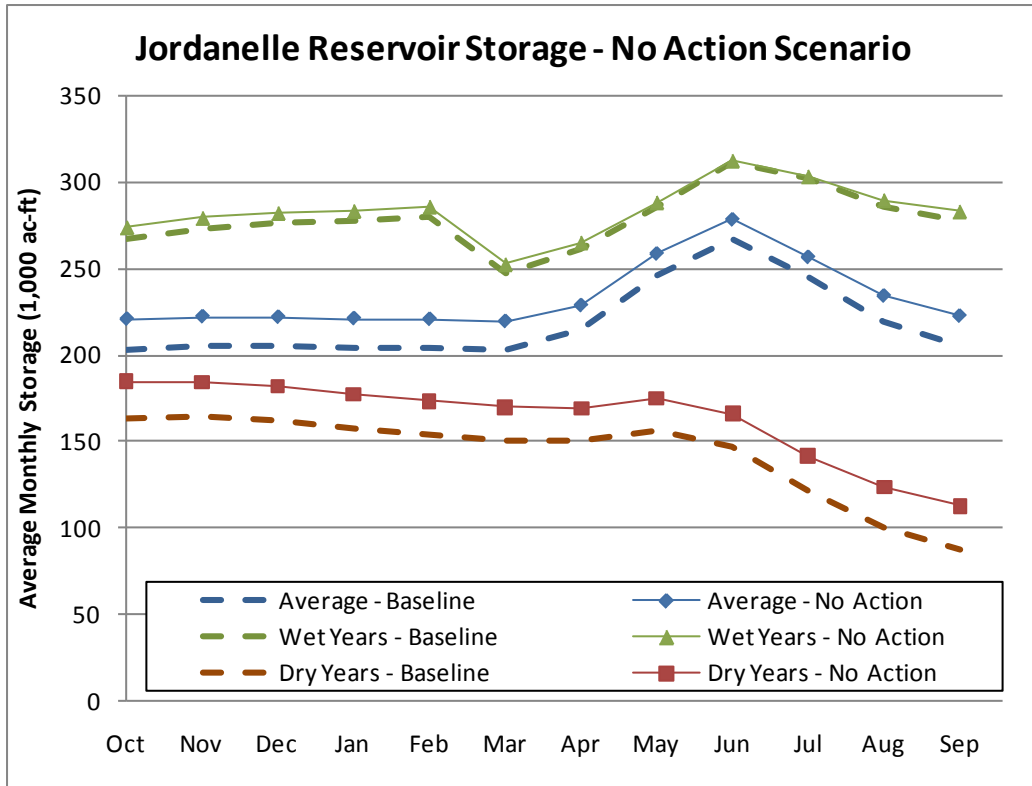


Figure 3-6. Estimated Jordanelle Reservoir Storage under the No-Action Alternative.

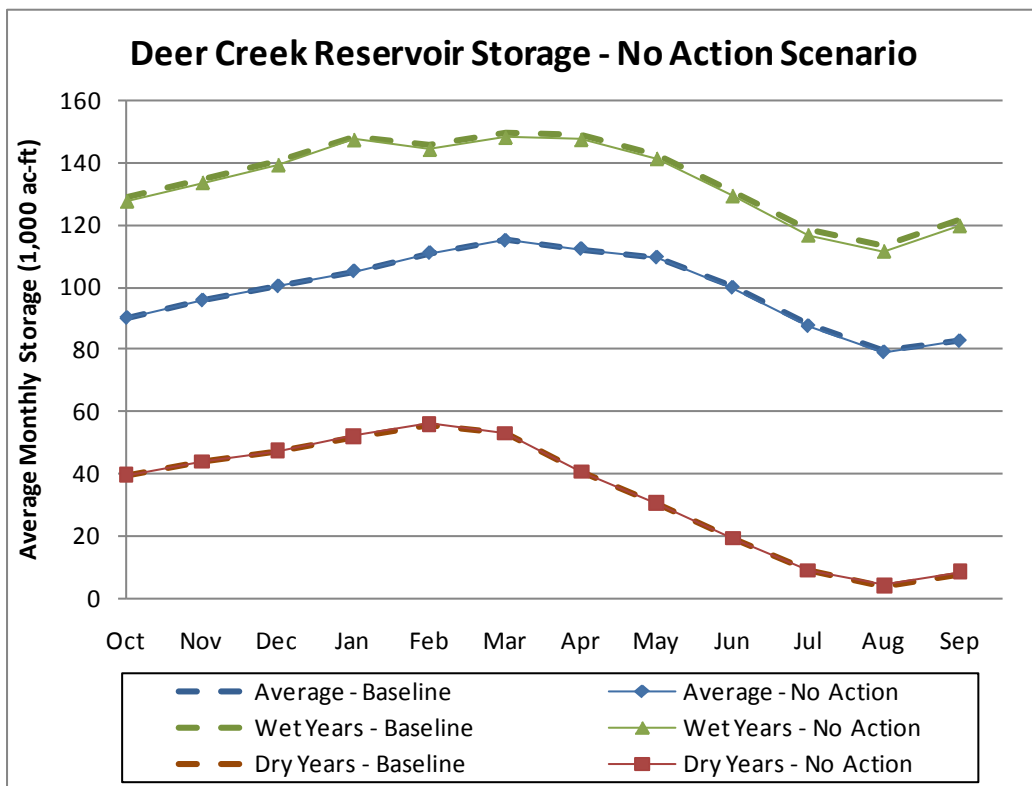


Figure 3-7. Estimated Deer Creek Reservoir Storage under the No-Action Alternative.



Provo River and Tributary Creeks. The estimated impacts of the no-action alternative on the flow in the Provo River are shown in Figure 3-8. The no-action alternative would increase Provo River flow slightly (by between 27 and 31 cfs) during April, May, and June of some average and wet years. These flow increases are negligible compared with the normal variations in Provo River flow. They are made (primarily in wet years) when the reduced CUP agricultural deliveries under the no-action alternative would otherwise cause water to be released from Jordanelle Reservoir.

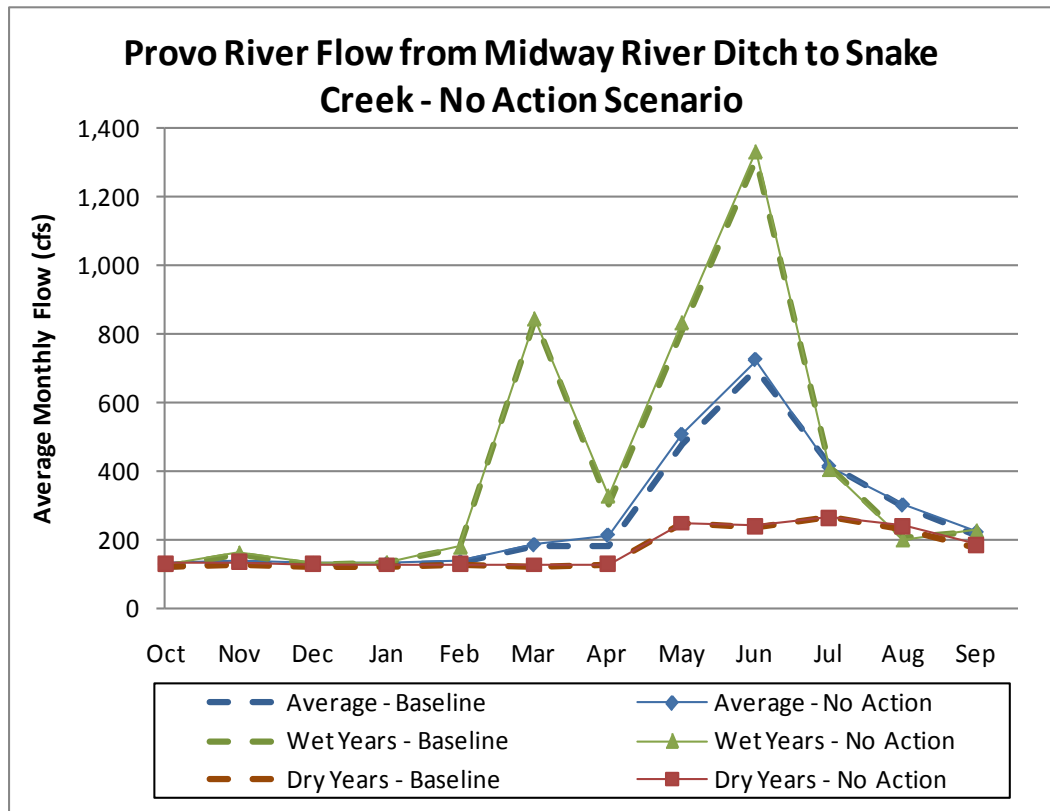


Figure 3-8. Estimated Provo River Flow under the No-Action Alternative.

The no-action alternative would not substantially affect the baseline flows in the Provo River tributaries. These drainages could experience slightly less flow due to less return flow from reduced CUP agricultural deliveries, but these flow changes would be small because the minor change in return flow associated with the no-action alternative would be spread over the entire existing Heber Sub-Area, including groundwater flow paths.

Groundwater. Based on the overall water balance, the impacts of the CUP water under the no-action alternative on the groundwater level and flow in the Heber Valley are estimated to be small. However, if CUP agricultural water cannot be delivered, new development in the Heber Valley would need to use existing sources of water and/or find new sources of water. Based on the projections in the Wasatch County General Plan, water needs could be met using existing culinary sources combined with the conversion of non-CUP agricultural water. These water supplies could be diverted from irrigation company canals and small streams or extracted through groundwater pumping. The expected increases in diversions from canals, streams, and groundwater due to development using non-CUP water could reduce tributary



flows and groundwater levels. Changes in the way and location in which agricultural water is used could also require extensive changes to existing water rights.

WCWEP. Under the no-action alternative, because of minimum land size restrictions, smaller volumes of CUP agricultural water would be delivered to Heber Valley irrigators than what was planned under the WCWEP. However, releases to supplement tributary flows and releases to maintain return flows lost due to WCWEP irrigation efficiency improvements would be maintained to the extent possible given the amount of available conserved water in storage.

Summary of Effects. The small changes in stream flow, water deliveries, water use, and return flow patterns under the no-action alternative would not significantly affect the quality of surface water or groundwater in the Heber Valley.

3.9.3.3 Effects of the Proposed Action

The maximum effects of the proposed action were estimated by changing the assumptions about CUP agricultural water delivery in the computer model. Under the proposed action, the entire 12,100 acre-feet of CUP agricultural water deliveries assumed under WCWEP and under the baseline conditions were assumed to be converted to M&I deliveries. Although this change would take many years to complete, it would be a “worst-case” assumption that would produce the maximum impacts on stream flows and water levels in the Heber Valley.

With this change, the return flow pattern of the CUP water was assumed to remain the same. This is because it is anticipated that most if not all of the converted agricultural water would continue to be used for irrigation only, changing from large tracts to small hobby farms, gardens, or developed parcels. Thus the return flow from this converted agricultural water would not change in volume and would change only slightly in timing.

The proposed action assumes that a 2,500 acre-foot portion of the 12,100 acre-feet of converted water would be used on developing land above and around Jordanelle Reservoir. Return flow from the indoor-use portion of this converted water is estimated to be about 1,000-acre-feet. The indoor portion of this upstream M&I delivery was assumed to return with little consumptive use to the Wasatch and Timpanogos Canals below Jordanelle Reservoir using a faster, 1-month-long return flow pattern. This faster return flow pattern represents the culinary water supply treatment of return flows in JSSD’s wastewater reclamation facility. Return flow from the remainder of the converted CUP agricultural water (1,500 acre-feet) that is assumed to be delivered above Jordanelle Reservoir would flow into Jordanelle Reservoir, where it would be available to be released.

Under the proposed action, there would be no effect on the total water balance in the reservoirs, the Provo River and its tributaries, or the Heber Valley groundwater aquifer because estimates show that the consumptive portion of M&I and agricultural deliveries would be essentially the same. The only change to the water balance in the study area or to reservoir storage would be due to the slight changes in the timing of water deliveries and return flows associated with M&I versus agricultural use of the CUP water. The CUP water used indoors above Jordanelle Reservoir, and returned through the JSSD wastewater reclamation facility (1,000 acre-feet) would experience less consumptive use and more return flow compared to agricultural uses. This increase in return flow, which totals a few hundred acre-feet, would be very small compared to the inflows and outflows in the Heber Valley



groundwater aquifer. However, this water would undergo the biggest change in return flow timing. The use and recapture of this water above the point of diversion would also allow the return flow portion to be reused within the Heber Valley, thereby producing a very small increase in the overall water balance. None of the actions associated with the proposed action would affect water rights associated with the CUP or those of other water rights holders in the study area.

Operation of the pumping station near the Keetley WTP would not significantly affect the level of Jordanelle Reservoir because the temporary pumping would be short term.

Jordanelle Reservoir and Deer Creek Reservoir. The estimated effect of the proposed action on the amount of water in Jordanelle Reservoir is shown in Figure 3-9. The proposed action is not estimated to have a significant effect on the amount of water in Jordanelle Reservoir.

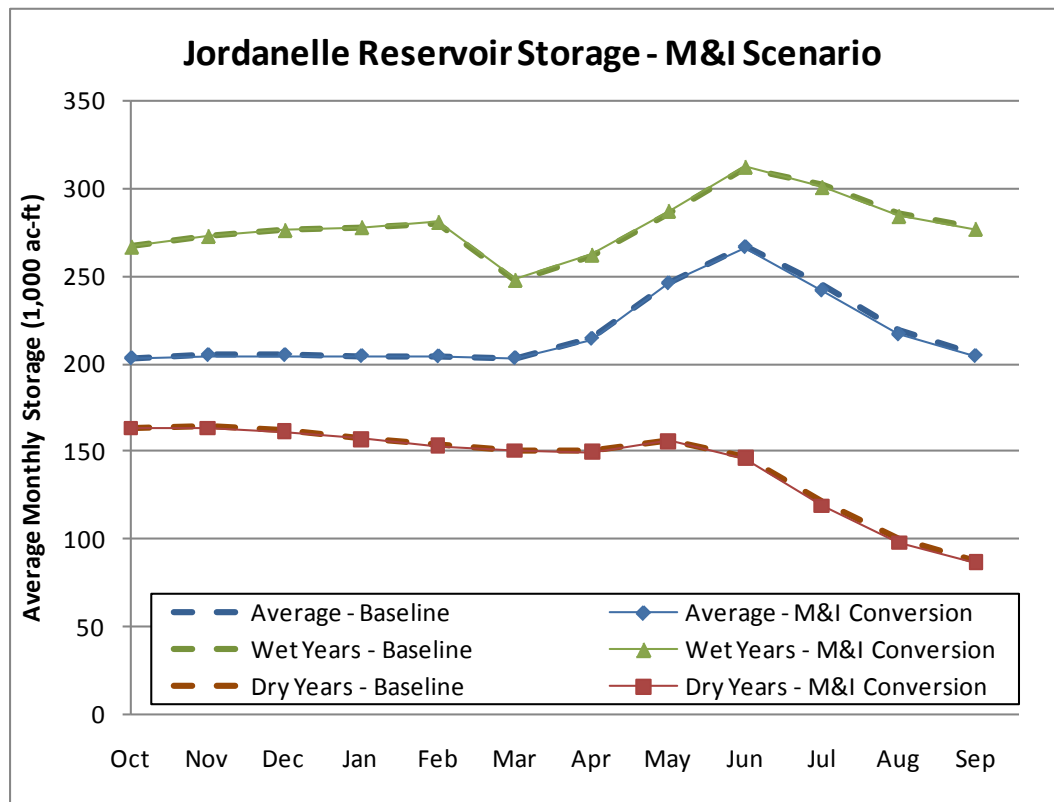


Figure 3-9. Estimated Jordanelle Reservoir Storage under the Proposed Action.

The estimated effect of the proposed action on the amount of water in Deer Creek Reservoir is shown in Figure 3-10 below. The estimated amount of water in wet years would be essentially the same as under baseline conditions. The estimated amount of water in dry years would be between 1,800 and 2,100 acre-feet more than under baseline conditions. The average monthly amount of water in Deer Creek Reservoir with the proposed action is within a few hundred acre-feet of baseline conditions.

Differences in the amount of water stored in Deer Creek Reservoir would likely be credited to CUP storage (and possibly exchanged back to Jordanelle Reservoir) depending on which entity has the right to store surplus Provo River flows when the surplus flows occur. This EA



does not include a detailed water rights accounting, so this conclusion is an estimate of potential conditions under the proposed action.

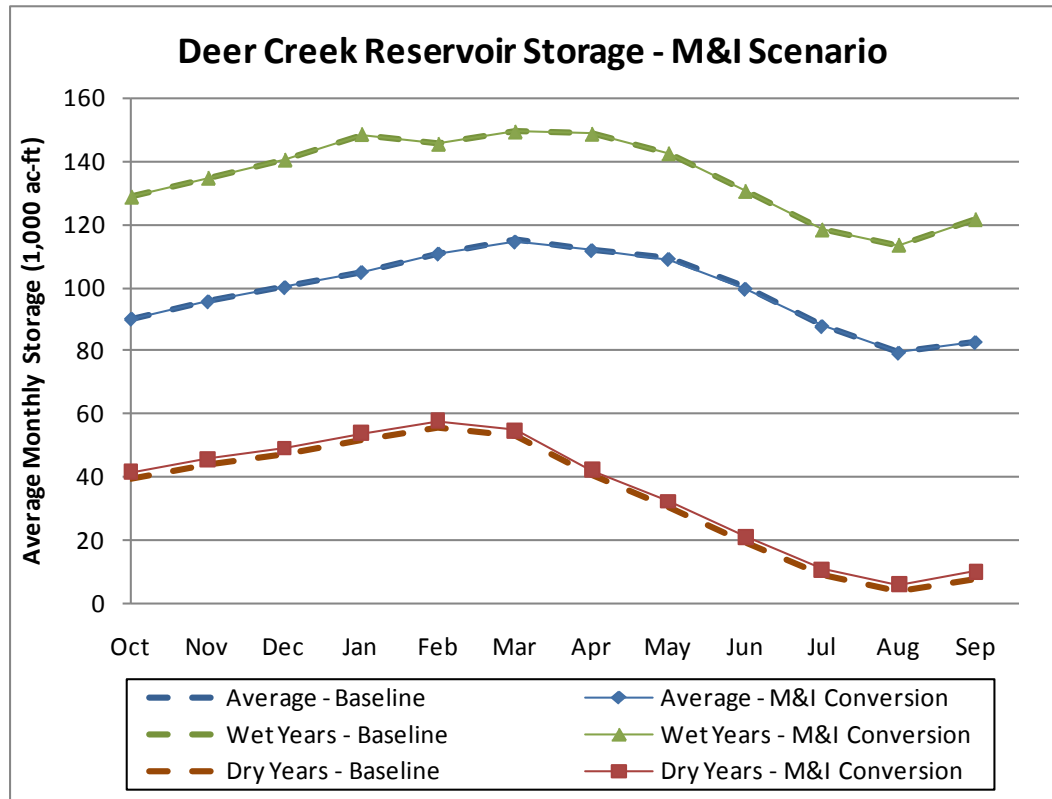


Figure 3-10. Estimated Deer Creek Reservoir Storage under the Proposed Action.

The proposed action is not expected to affect the flows in Main Creek, which flows into Deer Creek Reservoir. As described in Section 3.4.2.3, Special-Status Species, the proposed conversion could change return flows to Main Creek if and when converted water is applied to land in the Main Creek drainage. However, because the rate and timing of applying converted water in this area is unknown (if it were to occur at all), it is speculative to estimate the magnitude of potential return flow increases to Main Creek. Since infrastructure to deliver the converted water to this area does not currently exist and constructing such infrastructure is not part of this project, estimating potential effects to the flow of Main Creek is speculative. Interior and CUWCD do not expect the conversion to affect Main Creek flows.



Provo River and Tributaries. The estimated effect of the proposed action on Provo River flow below the Timpanogos and Midway River Ditch diversions is shown in Figure 3-11. The changes to Provo River flow below the Timpanogos and Midway River Ditches would be very minor (within a few cubic feet per second or less) and would be due to slight changes in delivery timing.

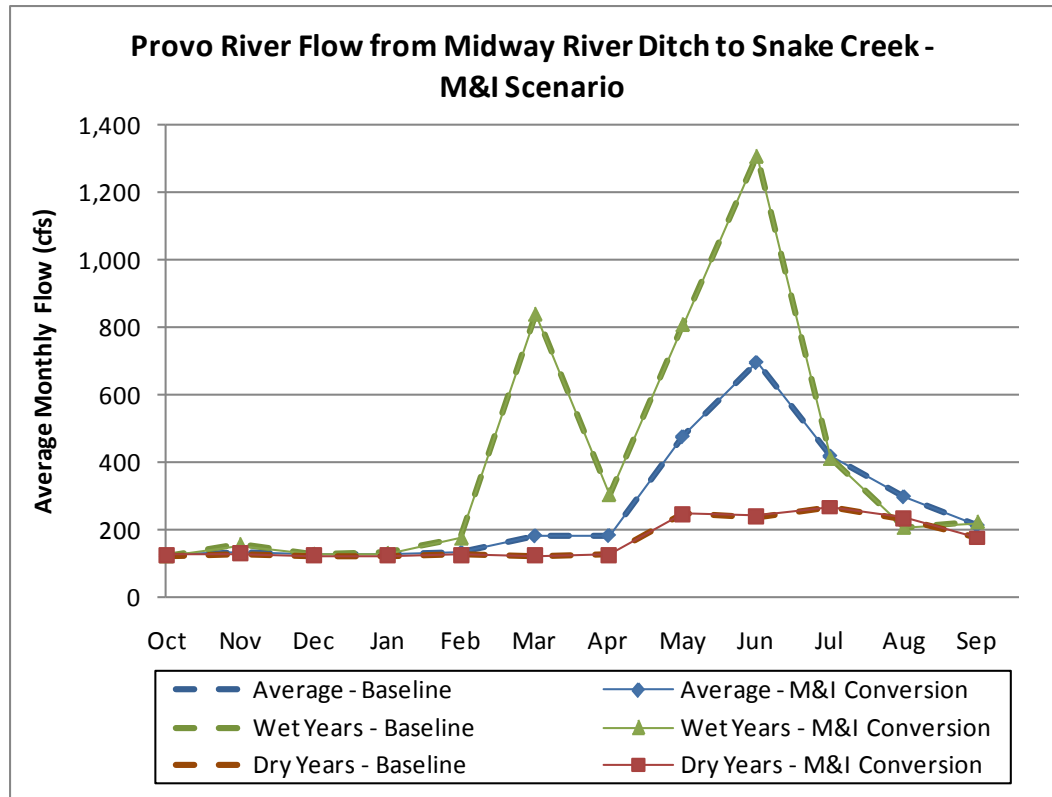


Figure 3-11. Estimated Provo River Flow under the Proposed Action.

The action alternative would not substantially affect the flows of tributary creeks such as Spring Creek, Lake Creek, Snake Creek, and Center Creek. Return flows could increase slightly and thus provide some additional flow in the lower reaches of these creeks, but the amount and timing is unknown. Given the existing fluctuations in flow patterns that are a result of irrigation practices and natural runoff patterns, any change in flows in these creeks would probably be minor. In general, flows could change slightly over time if more or less CUP water is applied. Once again, predicting if and when more or less water would be applied to these areas is speculative.

Groundwater. Based on the overall water balance, the impacts of the proposed action on groundwater levels and flow in the Heber Valley are estimated to be negligible. To the extent that water users request conversion of water from agricultural irrigation water to M&I water, the proposed action would reduce deliveries of CUP agricultural water to Heber Valley irrigators compared to the baseline conditions. However, these reduced agricultural deliveries would be offset by increased deliveries of CUP M&I water, which is assumed to be applied as an irrigation supply on small farms, on residential gardens, or as landscape irrigation around homes located in the expanded Heber Sub-Area. A portion of these CUP M&I deliveries would be made around Jordanelle Reservoir, and some of this water would be



returned to the canal system through the JSSD wastewater reclamation facility. These changes would result in very little or no change in groundwater recharge or return flow patterns.

WCWEP. WCWEP releases to supplement tributary flows and releases to maintain return flows lost due to WCWEP irrigation efficiency improvements would still continue under the proposed action. These releases could change slightly in response to changes in delivery timing associated with the converted water, but overall the effect would be negligible.

Summary of Effects. The relatively small changes in stream flow, water deliveries, and return flows under the proposed action would not affect surface or groundwater quality in the Heber Valley. As described in Section 3.8, Public Facilities, the effects of future water and wastewater treatment facilities would be evaluated when the need for and location of these facilities is identified. Speculating on the location, capacity, and effects of any new facilities is beyond the scope of this EA. Interior and CUWCD assume that the parties responsible for siting and constructing any new facilities would ensure that they comply with applicable state wastewater discharge permitting and federal laws and that any adverse impacts would be identified, evaluated, and mitigated (if necessary) at that time.

Operation of a temporary pumping station near the Keetley WTP would not affect the quality of surface water or groundwater in the Heber Valley.

3.10 Wetlands and Riparian Resources

3.10.1 Issues

During scoping, USFWS requested that the EA evaluate the effects of the project on riparian resources. This section also discusses wetlands, which are subject to regulation under Section 404 of the federal Clean Water Act (CWA).

3.10.2 Affected Environment

Riparian resources are present along the Provo River, Snake Creek, Daniels Creek, Lake Creek, Center Creek, and the upper reaches of Main Creek and to a lesser extent along Rock Ditch and other ditches in the Heber Valley. The Provo River provides the largest tract of multi-storied riparian habitat in the study area.

The study area has many freshwater emergent marsh, wet meadow, scrub-shrub, and forested wetlands. Many of the wetlands in the study area are in pastures and are probably supported by irrigation practices that also contribute to groundwater and seeps in nearby floodplains and help recharge shallow aquifers.

The historic Provo River floodplain has extensive complexes of emergent marsh and meadow wetlands fed by groundwater under the floodplain and the many streams, sloughs, and ditches in the floodplain. There are some forested and shrub-scrub wetlands along the Provo

What is an oxbow?

An *oxbow* is a sharp, U-shaped curve in a river. A historic oxbow is a crescent-shaped area of water that is cut off from but alongside or near a winding river. These types of oxbows are created over time as erosion and deposits of soil change a river's course. Historic oxbows can be temporarily reconnected to the main river channel when river flows are high.



River, especially in historic oxbows, side channels, and backwaters. There are also many emergent marsh and meadow wetlands near the mouth of Snake Creek Canyon.

Above the Provo River and Snake Creek floodplains, most wetlands appear to be emergent and supported by waterways, irrigated fields, and shallow groundwater. Many of the small tributaries and canals in the valley have scrub-shrub and forested wetlands along them and wet meadows associated with the downstream fields.

The shoreline of Jordanelle Reservoir is affected by water-level fluctuations. Most areas of the shoreline are dominated by common upland plant species. The area around the proposed temporary pumping station location supports these common upland plants but also supports limited amounts of riparian vegetation. This very limited and poor-quality riparian area is sparse and highly disturbed.

Recently, the Mitigation Commission substantially completed the PRRP. The PRRP restored a more natural Provo River channel, which had historically been channelized. The PRRP acquired property, removed levees, and restored natural meanders to the river, which has given the river increased access to the floodplain. The PRRP disturbed much of the channel but has resulted in a much healthier riparian corridor and a net increase in riparian wetlands. As the river develops its floodplain and as the riparian vegetation matures, the amount of groundwater under the greater floodplain will also increase and should increase the amount of water available to support wetlands in the study area.

3.10.3 Environmental Consequences

3.10.3.1 Regulatory Considerations

Section 404 of the CWA regulates the filling or dredging of wetlands and other waters of the U.S. Any activity subject to authorization under Section 404 must also demonstrate compliance with Section 401 of the CWA, which requires a water quality certification. Currently, the State of Utah has issued a statewide Section 401 certification for the Nationwide Permit program. The terms of that statewide certification would apply to any activity that requires authorization under Section 404.

In general, riparian zones and riparian vegetation are not regulated under federal law. Riparian areas can be regulated if they support species listed under the Endangered Species Act or if riparian wetlands are directly connected to a water of the U.S.

3.10.3.2 Effects of the No-Action Alternative

Under the no-action alternative, CUP agricultural water would not be used on parcels less than 2 acres. As a result, some wetlands supplied by agricultural irrigation runoff could be adversely affected. Additionally, riparian areas that depend on agricultural runoff could be adversely affected if the water is not applied. These types of effects on wetlands and riparian areas would depend on the rate and pattern of land-use changes that would cause a change in irrigation patterns. Converting non-CUP agricultural water to culinary water and changing the patterns of delivery of non-CUP agricultural water could also affect the hydrology of wetlands and the extent of remaining riparian areas if such changes significantly change the distribution of water to these resources. Increased groundwater pumping could also adversely affect wetland hydrology depending on the location of the new groundwater wells.



3.10.3.3 Effects of the Proposed Action

Converting CUP agricultural water to M&I water would not directly affect wetlands or riparian resources. The proposed action would allow what was formerly CUP agricultural water to be applied to parcels less than 2 acres. The continued irrigation of smaller parcels could help maintain the amount of water recharging shallow aquifers and the supporting wetlands in the Provo River floodplain. The proposed action would not directly or indirectly fill or dredge wetlands or other waters of the U.S.

How would the proposed action affect wetlands and riparian areas?

The proposed action would not adversely affect wetlands or riparian areas.

Jordanelle Reservoir is a water of the U.S., and installing the temporary pumping station could require authorization under the CWA if installing the station would discharge fill to the reservoir. Interior and CUWCD do not expect pumping station installation to disturb any wetlands or place fill in any waters of the U.S.

Installing the temporary pumping station could affect some poor-quality riparian vegetation on the Jordanelle Reservoir shoreline if the station is installed when the reservoir's water level is high enough that clearing an area for the station would disturb vegetation. However, most of the time, the reservoir level is well below the existing vegetated shoreline, so for most of the year, clearing an area for the pumping station would not affect any riparian or wetland vegetation.

There are also previously cleared areas in the zone that the pumping station could be placed within, and JSSD would likely use one of these areas if possible. For example, JSSD would probably use part of the paved Old Keetley Road, which runs through the pumping station zone and into the reservoir rather than clear a new area. However, if a new area must be cleared to accommodate the temporary pumping station, the clearing could affect riparian vegetation. Given the likelihood of needing to clear vegetation, the poor condition of the existing vegetation, and small area that would be cleared, this potential effect would not be significant.



3.11 Cumulative Effects

3.11.1 Introduction

The Council on Environmental Quality (CEQ) regulations (40 CFR 1500–1508) for implementing the procedural provisions of NEPA, as amended (42 U.S.C. §§ 4321 et seq.), define cumulative effects as follows: “The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (40 CFR 1508.7).

A single project may have individually minor impacts; however, when considered together with other local projects, the effects may be collectively significant. Therefore, a cumulative impact is the additive effect of all past, present, and reasonably foreseeable future actions in the local area.

Other federal, state, and local projects not addressed in this EA could affect resources in the Heber Sub-Area. These other project effects might or might not be adversely affected by the proposed action. The scope of this section of the EA is to address the cumulative impacts on resources that could be adversely affected by this proposed conversion.

3.11.2 Past, Present, and Reasonably Foreseeable Future Actions

This cumulative effects analysis considers the following past, present, and reasonably foreseeable actions:

- **Francis Sub-Area Irrigation to M&I Conversion:** See Section 1.5.1, Francis Sub-Area M&I Water Conversion EA, for a description of this project. This action allowed for the conversion of 3,000 acre-feet of CUP agricultural water to M&I water.
- **WCWEP:** See Section 1.5.2, Final EIS for the Wasatch County Water Efficiency Project (WCWEP), for a description of this project. This action provided a framework for water use efficiency water management in Wasatch County.
- **Past, ongoing, and future residential development in Wasatch County:** The Wasatch County General Plan provides a framework for growth in the county. This framework, which considers past growth patterns, describes how different areas of the county are expected to grow over time. The plan is based on the availability of existing and potential water sources, both of which are identified in the plan.



3.11.3 Proposed Action

The proposed action has two principal elements. The action would:

- Permit conversion of CUP agricultural water to M&I water.
- Permit converted CUP water to be applied to land within the expanded Heber Sub-Area.

As described in this document, installing and operating a temporary water-delivery system near the JSSD Keetley WTP at Jordanelle Reservoir is the only activity that could result in the following minor adverse effects:

- Operating the temporary pumping station could directly affect common fish species living in Jordanelle Reservoir. To prevent fish from being drawn into the emergency pipeline, the emergency pumps would be fitted with a device that would prevent fish entrainment and would prevent fish from entering the temporary system. Because the fish species that could be affected are common, and many are not native, this potential effect is not significant.
- If *Dreissena* mussel is present in Jordanelle Reservoir and the temporary pumping station is needed, added precautions would be implemented to ensure pumping equipment used in the reservoir is thoroughly decontaminated when the temporary station is dismantled. If the mussel is present in the reservoir at the time a pumping station is installed, additional measures would also be required to ensure that the mussel is not introduced to the Keetley WTP. If the equipment for the pumping station is being brought in from another location that is infested with mussels, it would be thoroughly decontaminated before being used at Jordanelle Reservoir.

Neither of these effects is significant. Installing the temporary pumping station would only occur in the event of an emergency and such an emergency is unlikely. Additionally, both of these effects would be minimized through application of measures described in this EA, these potential effects are not expected to cause any permanent effects.

3.11.4 Effects Analysis

This section describes the cumulative effects of the project elements.

Change in Use of CUP Agricultural Water. As CUP agricultural water is converted to M&I use, the predominant new uses of this water would be the irrigation of small tracts, although the water could also be used for culinary or industrial purposes. Interior and CUWCD anticipate that the water would gradually be converted over 25 years and that most of the water would be used on small farms and gardens and for irrigating landscaping. Initially, the water would continue to be applied to land within the Heber Sub-Area and application would gradually be expanded to include the additional lands in the expanded Heber Sub-Area. Because this change would take place gradually, the cumulative effect of the change in the use of what was formerly CUP agricultural water would be insignificant. The change in use would not require the construction of any new Bonneville Unit water delivery facilities. As described in Section 3.9, Water Resources and Water Quality, conversion would have a negligible effect on return flow patterns and, therefore, would have little effect on wildlife and wildlife habitat. It would not require a major change in water



rights. It would not measurably change the pace or pattern of development (because, as discussed in Section 3.7, Land-Use Plans and Conflicts, the project water is only one of a number of potential sources of available water in the area).

Change in Area of Application. The application of CUP agricultural water is currently limited to lands that have been classified as irrigable. The existing Heber Sub-Area represents the sum of all classified irrigation lands in the area. If the water is converted to M&I use, its application would not be restricted to irrigable lands; it could be applied to any lands within the expanded Heber Sub-Area. The cumulative effect of this change in area of application is insignificant because the project team anticipates that the bulk of the water would continue to be applied to lands within the existing Heber Sub-Area and application would gradually be expanded to include the lands within the expanded Heber Sub-Area. The change in area of application would not require changes to the existing water-delivery system or the construction of new Bonneville Unit facilities. Most converted water moved to the expanded Heber Sub-Area lands would probably be used by exchange. Some water might be exchanged to wells, but the amount would be minor. In all cases, the water would remain within the expanded Heber Sub-Area and would contribute to return flows.

The change in the type and location of water application could require minor modifications to water rights, including replacing or modifying water contracts or the filing of change applications for water exchanged to wells. Since most of the water would continue to be applied to land within the current Heber Sub-Area and the amount of water applied within the expanded Heber Sub-Area would only gradually increase, the change in the area of application would not significantly alter or affect the pace or pattern of development in the area.

In summary, the cumulative effects are minimal. It is important to note that no concerns regarding cumulative impacts were identified during the agency scoping process. Also, no alternatives (in addition to the no-action alternative) were identified. The proposed action does not have any significant direct impacts or indirect impacts. Finally, there are no other federal, state, or local projects in any stage of development that, when combined with the proposed action, would result in significant cumulative effects. As noted above, development and sub-division of agricultural lands will continue with or without implementation of the proposed action.



Chapter 4: Consultation and Coordination

This chapter describes the public involvement and consultation and coordination activities that have been conducted to date.

4.1 Scoping

Interior and CUWCD initiated the public and agency involvement process through project scoping. The scoping process helps to:

- Identify issues, concerns, and possible impacts
- Identify existing information sources
- Develop alternatives

Interior and CUWCD initiated scoping through a notice in the *Federal Register* published on April 9, 2010. The agencies asked for comments during a public and agency scoping period held from April 9 to July 16, 2010. To facilitate public involvement in the scoping process, the agencies also sponsored a public scoping meeting on June 16, 2010. The scoping meeting was used to gather additional input from interested and affected individuals, organizations, agencies, and government entities. Five people attended the scoping meeting.

During scoping, Interior and CUWCD solicited comments on the scope of the analysis, the proposed action, and project alternatives. Copies of scoping comments are included in Appendix C, Pertinent Correspondence. The following individuals or agencies submitted comments during scoping:

- Larry Crist, U.S. Fish and Wildlife Service, Utah Field Office

Comments submitted under USFWS responsibilities pursuant to the National Environmental Policy Act (42 U.S.C. § 4321–4347); the Migratory Bird Treaty Act (16 U.S.C. § 703–712); the Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 et seq.); the Bald and Golden Eagle Protection Act (16 U.S.C. § 668–668c); and the Fish and Wildlife Coordination Act (16 U.S.C. § 661–666c).

- Michael L. Wilson, General Manager, Metropolitan Water District of Salt Lake & Sandy

Comment regarding potential project impacts on sanitary sewer systems and wastewater treatment facilities in the Heber Valley.

- Philip Jensen, Trout Unlimited

Comment in support of the project.

- Jean Public

Comment regarding potential adverse effects on wildlife.

Appendix C also contains pertinent correspondence with other agencies and tribal representatives. Interior and CUWCD coordinated or consulted with the Utah Natural Heritage

What is scoping?

As defined in the CEQ regulations of 1978, *scoping* is an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action.



Program of the Utah Division of Wildlife Resources, the Utah State Historic Preservation Officer, the Northwestern Band of the Shoshone Nation, and the Ute Indian Tribe.

4.2 Draft Environmental Assessment Comments and Responses

Interior and CUWCD released a Draft EA on June 27, 2011. The agencies asked for public and agency comments on the Draft EA through July 2011. The following agencies submitted comments during the comment period:

- Larry Crist, U.S. Fish and Wildlife Service, Utah Field Office
- Utah Division of Wildlife Resources (comments transmitted by John Harja, Public Lands Policy Coordination Office, Utah Governor's Office)

No other comments were received.

The following items summarize and respond to the comments received.

4.2.1 Larry Crist, U.S. Fish and Wildlife Service

Comment: We request that you disclose and analyze the potential effect of the proposed project to Southern leatherside chub in Main Creek.

Response: The proposed conversion would not cause any physical changes to the Main Creek drainage and would not affect existing return flows to the creek. This drainage was not included in the original Heber Sub-Area, so return flows were not historically affected by the application of Block Notice 1A water. The proposed conversion could change return flows to the Main Creek drainage if and when converted water is applied to land that drains to the creek. This project also does not propose to construct new facilities to deliver converted CUP water to the expanded sub-area. The rate and timing of applying converted water in this area is unknown (if it were to occur at all); other parties would need to install infrastructure to deliver the water. Therefore, it is speculative to estimate the magnitude of potential return flow increases to Main Creek in the future. The text of Section 3.4.3.3, Effects of the Proposed Action, has been amended to include this information.

Comment: We recommend that you investigate opportunities to further the conservation of Southern leatherside chub by augmenting and/or maintaining in-stream flow for Main Creek.

Response: Please see the response to the comment above. Because this project does not include constructing any infrastructure that would deliver water to the Main Creek drainage, it cannot include augmenting the in-stream flow of Main Creek.



4.2.2 Utah Division of Wildlife Resources through John Harja, Public Lands Policy Coordination Office, Utah Governor's Office

Comment: The study area defines Provo River and Jordanelle and Deer Creek reservoirs. As the expanded Heber Sub-Area will include the Main Creek and Spring Creek drainages, these waters should also be described in this section.

Response: Spring Creek is identified as a tributary to the Provo River in Section 3.9.2.3, Provo River. Main Creek flows directly into Deer Creek Reservoir; the Deer Creek Reservoir section now identifies Main Creek as a tributary to the reservoir. Information about Main Creek has been added to Section 3.4, Fish and Wildlife Resources and Habitat, and Section 3.9, Water Resources and Water Quality.

Comment: Southern leatherside should also be addressed in Section 3.4.3.3, Effects of the Proposed Action on Conservation Agreement Species.

Response: Section 3.4.3.3 has been updated to include Southern leatherside.

Comment: In Section 3.4.3.3, the effect of the conversion of irrigation water to M&I water in the Main Creek and Spring Creek drainages of Round Valley should also be described for Bonneville cutthroat trout and Columbia spotted frog.

Response: Section 3.4.3.3 has been amended to include information about Bonneville cutthroat trout in Main Creek and Columbia spotted frog in the Spring Creek drainage.

Comment: In Appendix B, Southern leatherside should be listed as a species likely to occur in the study area as it is present in Main Creek and Spring Creek.

Response: Appendix B of the Draft EA is now Appendix A. The appendix has been amended to include Southern leatherside.



4.3 Final Environmental Assessment and FONSI

This Final EA reflects changes made in response to comments received on the Draft EA. Interior and CUWCD have determined that they will issue a Finding of No Significant Impact (FONSI) for the proposed action. The FONSI terminates the NEPA process for the project.

4.4 Agencies Consulted during Preparation of This EA

Interior and CUWCD provided notice of this EA to and asked for comment from the following agencies:

- Utah Reclamation Mitigation and Conservation Commission (cooperating agency)
- U.S. Bureau of Reclamation (cooperating agency)
- U.S. Fish and Wildlife Service
- U.S. Environmental Protection Agency
- Governor's Office of Planning and Budget, Resource Development Coordinating Committee (this committee distributes the document to appropriate state agencies)
- Wasatch County (cooperating agency)
- Wasatch County Special Service Area No. 1 (cooperating agency)
- Jordanelle Special Service District (cooperating agency)



Chapter 5: Document Preparers

Name	Degree(s)	Role
<i>Central Utah Project Completion Act Office</i>		
Lynn Hansen	—	Program coordinator
<i>Central Utah Water Conservancy District</i>		
Sarah Sutherland	BS, Outdoor Recreation and Resource Management	Project manager, CUWCD Environmental Programs Manager
Devin McKrola, PE	BS, Civil and Environmental Engineering	Project manager, CUWCD WCWEP Operation and Management
Bridget Atkin	MS, Plant Science BS, Horticulture	NEPA compliance coordinator
Chris Elison, PE	MS, Civil Engineering BS, Civil and Environmental Engineering	NEPA compliance coordinator
Daryl Devey	—	Project review
<i>Consultant Team</i>		
Mark Brodbeck, HDR Engineering	MA, Anthropology BA, Anthropology	Cultural resources
Rosemary Fasselín, HDR Engineering	GIS certificate BA, English	Geographic information systems (GIS)
Donovan Gross, HDR Engineering	MS, Ecology BS, Fisheries	Fish and wildlife resources and habitat, cumulative effects
Terry Hickman, Terry J. Hickman, Inc.	MS, Fish and Wildlife Biology BS, Zoology	Fish and wildlife resources and habitat, project review
Nate Nichols, HDR Engineering	BS, Environmental Sciences	Invasive species
Sue Lee, HDR Engineering	BS, Forest Management	Document manager Air quality, soils, land use, public facilities, wetlands, and riparian resources
Deil Lundin, HDR Engineering	MA, Anthropology BA, Anthropology	Cultural resources
Heidi Spoor, HDR Engineering	BS, Civil Engineering BA, English Language and Literature	Farmland and agriculture
Steve Thurin, HDR Engineering	MS, Civil Engineering BS, Civil Engineering	Water resources
Carrie Ulrich, HDR Engineering	MS, English BS, Environmental Studies	Technical editor



Name	Degree(s)	Role
Terry Warner, HDR Engineering	ME, Civil Engineering BS, Civil and Environmental Engineering	Consultant project manager



Chapter 6: References

- [CEQ] Executive Office of the President, Council on Environmental Quality
- 1983 Guidance regarding NEPA regulations. 40 CFR Part 1500.
 - 1999 Memorandum regarding designation of non-federal agencies to be cooperating agencies in implementing the procedural requirements of the National Environmental Policy Act. July 28.
- [CUWCD et al.] Central Utah Water Conservancy District, U.S. Department of the Interior, and Utah Reclamation Mitigation and Conservation Commission
- 1996 Wasatch County Water Efficiency Project and Daniel Replacement Project Final Environmental Impact Statement.
- [DOI et al.] U.S. Department of the Interior, Central Utah Water Conservancy District, and Utah Reclamation Mitigation Conservation Commission
- 2004 Final Environmental Impact Statement, Utah Lake Drainage Basin Water Delivery System. September.
- Fox, D., and T. Murphy
- 2002 *Lynx canadensis*. animaldiversity.ummz.umich.edu/site/accounts/information/Lynx_canadensis.html. Accessed September 27, 2010.
- Hepworth, Richard D., Donald E. Wiley, and Michael T. Slater.
- 2004 Middle Provo River Fish Population Surveys 2003. Prepared for the Utah Department of Natural Resources Division of Wildlife Resources. March.
- [Interior and CUWCD] U.S. Department of the Interior and Central Utah Water Conservancy District
- 2008 Final Environmental Assessment, Block Notice No. 1A Francis Sub-Area M&I Water Conversion. December.
- [MAG] Mountainland Association of Governments
- 2008 Utah Counties Population 2000–2008. November.
 - 2009 State of Utah Municipal Populations 2000–2009. July.
- McCarty, Tara, Richard McCarty, Denise Evans, and Carol Wiems
- 1987 Cultural Resources Survey of the Jordanelle Reservoir Area, Wasatch and Summit Counties, Utah. Project U87BE0861 Upper Colorado Region, Bureau of Reclamation, Provo.
- Roark, D.M., W.F. Holmes, and H.K. Shlosar
- 1991 Hydrology of Heber and Round Valleys, Wasatch County, Utah, with emphasis on simulation of ground-water flow in Heber Valley. Utah State Technical Publication 101.
- Smith, Doug
- 2011 E-mail and telephone conversations with Sue Lee of HDR Engineering regarding development status report for Wasatch County. April 7.



[UCDC] Utah Conservation Data Center

No date Utah Conservation Data Center website. dwrcdc.nr.utah.gov/ucdc. Accessed November 9, 2010.

[UDWR] Utah Division of Wildlife Resources

- 2000 Range-Wide Conservation Agreement and Strategy for Bonneville Cutthroat Trout (*Oncorhynchus clarki utah*). Publication Number 00-19. December.
- 2010a County lists of Utah's federally listed threatened, endangered, and candidate species. dwrcdc.nr.utah.gov/ucdc/ViewReports/te_cnty.pdf. Last updated June 24, 2010. Accessed September 24, 2010.
- 2010b *Oncorhynchus clarki utah*. wildlife.utah.gov/cutthroat/BCT. Accessed November 9, 2010.
- 2010c Conservation agreement and strategy for southern leatherside (*Lepidomeda aliciae*) in the State of Utah. Publication number 10-19. May.

[URMCC] Utah Reclamation Mitigation Conservation Commission

- No date Provo River Restoration Project website. www.mitigationcommission.gov/prrp/prrp.html. Accessed November 17, 2010 and August 22, 2011.
- 2002 Provo River Restoration Project: Fish and Wildlife Studies. Utah Reclamation Mitigation Conservation Commission, Salt Lake City. January.

U.S. Census Bureau

- 2000 2000 Census Summary File 1.
- 2010 2010 Census Redistricting Data.

[USDA NRCS] U.S. Department of Agriculture, Natural Resources Conservation Service

- No date Web Soil Survey online. websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx. Accessed November 12, 2010.
- 2005 Wasatch County Resource Assessment. Prepared in cooperation with Utah Department of Agriculture and Food and Utah Association of Conservation Districts.

[USFWS] U.S. Fish and Wildlife Service

- 2001 Status Review for Bonneville Cutthroat Trout (*Oncorhynchus clarki Utah*). October.

Wasatch County

- 2001 Wasatch County General Plan.
- 2009 General Notice to Control Noxious Weeds. May 1.
- 2010 Heber Valley (Northern County) Land Use map. July.



Chapter 7: Glossary

acre-foot A volume of water 1 foot deep and 1 acre in area, or 43,560 cubic feet.

action alternative An alternative considered during the National Environmental Policy Act process that requires a Federal agency to take action and therefore consider the environmental consequences of that action.

active storage elevation The high and low elevations between which a reservoir is designed to operate normally.

affected environment The parts of the environment that would be affected by the proposed action.

air contaminants, air pollutants Chemicals, particulate matter, or biological materials that cause harm or discomfort to humans or other living organisms or that cause damage to the natural environment or built environment.

alternative A proposition or situation offering a choice between two or more proposals, only one of which may be chosen. An opportunity for deciding between two or more courses or propositions.

aquatic Occurring in or on water.

aquifer, groundwater A subsurface body of water.

area of potential effects (APE) The geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties are present.

average annual flow Average annual flow (the sum of all monthly average flows for a 12-month period) can be calculated for one year or as an average of all the years in the period of record.

base flow The component of stream flow that is relatively constant from year to year, in contrast to the total flow that is affected by snowmelt and rainfall.

baseline The set of starting conditions from which changes and impacts are quantified.

best management practices (BMPs) Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Block Notice 1A Amended the 1965 Repayment Contract. Block Notice 1A created the United States' obligation to deliver Central Utah Project irrigation water and the Central Utah Water Conservancy District's obligation to repay the project development costs.

Bonneville Basin One of two basins located within the Bonneville Unit, which is a unit of the Great Basin.

Bonneville Unit The largest of the six units of the Central Utah Project. The Bonneville Unit diverts water from the Uinta Basin to the Bonneville Basin.

candidate species A species of plant or animal for which the U.S. Fish and Wildlife Service has enough information on its biological status to propose it as threatened or endangered under the Endangered Species Act of 1973.



canopy The overstory of vegetation in a forest.

capacity, reservoir The amount of water a reservoir was designed to safely hold.

Central Utah Project (CUP) A United States Federal water project. It was authorized for construction under the Colorado River Storage Project Act of 1956 (Public Law 485 and 70 Statute 105) as a participating project.

Central Utah Water Conservancy District (CUWCD) A political subdivision of the State of Utah that was formally established in 1964 to act as the local entity to contract with the Federal government in connection with constructing, operating, and financing the Central Utah Project. The CUWCD oversees the management of project water in the Bonneville Basin.

Class III cultural resource survey An intensive data and field survey conducted by professional archaeologists by walking through an entire target area. The intent of a Class III survey is to locate and record all historic properties. This survey is consistent with the standards in the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 *Federal Register* 44716).

conifer A cone-bearing seed plant with vascular tissue. Typical examples of conifers are cedars, firs, junipers, pines, hemlocks, redwoods, and spruces.

conservation agreement species A species that is protected from a specific threat through an agreement between States, agencies, or other involved interest groups in an effort to not have the species listed under the Endangered Species Act of 1973.

consumptive use The use of a resource that reduces the supply of the resource.

contract holder An entity designated as responsible for water-use contracts and the use of water assigned to those contracts.

contributing feature A building, structure, object, or feature that adds to the historic integrity or architectural qualities that make a cultural resource significant.

conversion As used in this document, a change in the designation of water use from irrigation use to municipal and industrial use.

conveyance A system of pipes, ditches, canals, tunnels, and other structures used for transporting water from one place to another.

cooperating agency A Federal agency, other than a lead agency, that has jurisdiction by law or special expertise with respect to any environmental impact associated with the proposed action or an alternative.

Council on Environmental Quality (CEQ) An advisory council to the President of the United States established by the National Environmental Policy Act of 1969. It reviews Federal programs for their effect on the environment, conducts environmental studies, and advises the President on environmental matters.

critical habitat – elk, deer, and moose An area that provides sensitive biological and/or behavioral requirements to sustain the existence and/or perpetuation of elk, deer, and moose.

critical habitat – ESA A specific area, within a geographical area occupied by a species, that is essential to the conservation of the species and that could require special management considerations or protection.

cubic feet per second (cfs) A volume measurement of water flow.



- culinary water** A water-use classification that designates water to be used for indoor human consumption or use.
- cultural resource** Something of cultural character. Commonly, this term is used when describing historic or archaeological items that show or could provide data on historical trends.
- cumulative effects, cumulative impacts** As defined in Section 1508.7 of the Council on Environmental Quality regulations, cumulative impacts are “the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”
- discharge** The amount of water taken out of a hydrologic system or feature.
- diversion** A particular structure within a conveyance system that changes the destination of a volume of water.
- dry year** A water year during which a geographical area received less than the historical average amount of precipitation.
- effect** *See impact.*
- eligible land** Land that is considered prime, unique, or of special importance as described in the Farmland Protection Policy Act of 1981.
- emergent marsh** A meadow-like area overgrown with herbaceous aquatic plants such as cattail, rushes, and sedges.
- emission** A substance discharged into the air (as by automobiles or construction equipment engines).
- endangered species** A species of plant or animal that is in danger of extinction throughout all or a significant portion of its range. Plant or animal species identified by the Secretary of the Interior as endangered in accordance with the Endangered Species Act of 1973.
- entrainment** As used in this document, the act of drawing in and trapping fish within a water conveyance system.
- Environmental Assessment (EA)** A concise public document prepared by a responsible Federal agency. An EA provides enough evidence and analysis for determining whether to prepare an Environmental Impact Statement or a Finding of No Significant Impact and includes brief discussions of the need for the proposal, of alternatives, of the environmental impacts of the proposed action and alternatives, and a listing of agencies and persons consulted. This documentation is required for compliance with the National Environmental Policy Act.
- Environmental Impact Statement (EIS)** An assessment of the expected positive or negative impacts that a proposed Federal project would have on the environment, including its natural, social, and economic impacts. This documentation is required for compliance with the National Environmental Policy Act.
- environmental justice** The fair treatment and meaningful involvement of all people regardless of race, color, sex, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.
- erosion** The carrying away of surface material by wind or water.



exchange The water rights process under which water in one location or under one owner's control is traded for water in another location or under another owner's control.

farmland of statewide importance Land other than prime farmland that has a good combination of physical and chemical characteristics for the production of crops.

Federal water project A project authorized and funded by the Federal government. As used in this document, the Federal water project is the Central Utah Project.

Finding of No Significant Impact (FONSI) A statement that an environmental analysis and interagency review during the Environmental Assessment process found that a project would have no significant impacts on the quality of the environment.

floodplain The area covered by flood water when a body of water overflows. A floodplain is generally associated with a particular recurrence interval (for example, a 100-year floodplain is the area covered by flood water from a 100-year flood, or a flood elevation that occurs on average once every 100 years).

forb An herbaceous plant that is not a grass.

fragmented habitat Habitat that has become discontinuous throughout a species' preferred range.

Francis Sub-Area An expanded sub-area within the Bonneville Unit.

gradient The slope of a streambed or groundwater level.

grassland Land dominated by grasses and small forbs.

groundwater recharge The process of adding water to a subsurface body of water; also, the amount of water added.

groundwater Water beneath the ground surface that feeds wells and springs and maintains the level of rivers and lakes in dry weather.

habitat The place or type of site where a plant or animal naturally or normally lives and grows.

Heber Sub-Area A sub-area within the Bonneville Unit that encompasses nearly all of the Heber Valley.

high-value habitat – elk, deer, and moose An area that allows intensive use by elk, deer, and moose.

historic property As used in this document, a property that is listed on, or eligible for listing on, the National Register of Historic Places.

hydrographic Containing water.

hydrology The local conditions of surface or subsurface water in an area.

impact An effect due to a project alternative. Impacts can be adverse or beneficial.

in-stream flow The volume of water per unit of time (usually cubic feet per second) flowing within a stream channel.

Indian trust assets Legal interests in property held in trust by the United States for Indian tribes or individuals.

industrial water Water designated for use in industrial processes.



ineligible land Land that is not considered prime, unique, or of special importance as described in the Farmland Protection Policy Act of 1981.

infiltration As used in this document, the absorption of precipitation into existing groundwater systems.

inflow The volume or flow of water brought into a system.

invasive species Non-indigenous (non-native) plants or animals that cause adverse economic, environmental, and/or ecological effects on the habitats and bioregions they invade.

irrigable land, irrigable tract Agricultural land that is productive or more productive when irrigated.

irrigation water Water designated to be applied to agricultural land to supplement or sustain grazing or crop production.

lead agency A Federal agency whose action is determined to require documentation under the National Environmental Policy Act.

license agreement An agreement between the U.S. Department of the Interior and the Central Utah Water Conservancy District to construct and operate a pumping station.

limited-value habitat – elk, deer, and moose An area that supports occasional use by elk, deer, and moose.

listed species A species that is considered to be threatened with extinction (threatened species) or that is listed on the Federal endangered species list (endangered species).

migratory Shifting seasonally from one habitat to another.

mitigate To cause to become less severe or harmful.

mitigation Actions to avoid, minimize, reduce, eliminate, compensate, or rectify impacts to resources.

municipal and industrial (M&I) water Water designated to be used for domestic, commercial, or industrial purposes. M&I water can be secondary (not treated for human consumption) or culinary (suitable for human consumption).

National Ambient Air Quality Standards (NAAQS) Standards set by the U.S. Environmental Protection Agency (40 Code of Federal Regulations, Part 50) for pollutants considered harmful to public health and the environment.

National Environmental Policy Act (NEPA) A congressional act requiring an Environmental Impact Statement on all major Federal actions that would significantly affect the quality of the human environment [42 United States Code 4332 2(2)(C)].

National Register of Historic Properties (National Register) Authorized by the National Historic Preservation Act of 1966, the National Register of Historic Places is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect America's historic and archaeological resources.

need for the project The reason why the Federal action is needed.

No-Action Alternative A required part of National Environmental Policy Act documentation to determine if there is an alternative that requires no Federal action.

noxious weed *See* invasive species.

outflow As used in this document, the flow or volume of water exiting a system.



- oxbow** A U-shaped bend in a river or stream.
- particulate matter** A mixture of solid particles and liquid droplets in the air.
- perennial stream** A stream or river (channel) that has continuous flow in parts of its bed all year during years of normal rainfall.
- petitioner** A consumer and owner of a Central Utah Water Conservancy District water share who asks for a change in a water-use designation.
- point of diversion** A place where water is diverted from a river or reservoir.
- pressurized water** Water delivered through a system that remains under pressure, by means of gravity or mechanical pumping.
- primary jurisdiction area** As used in this document, the area in which the Bureau of Reclamation has control to operate Jordanelle Reservoir.
- prime farmland** A designation assigned by the U.S. Department of Agriculture. Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is also available for these uses.
- project water** Water delivered by the Central Utah Project.
- proposed action** The change being considered and for which National Environmental Policy Act documentation is required.
- purpose of the project** The outcome that is to be accomplished by the Federal action.
- raptor** A bird of prey.
- recharge, groundwater** Water returned to the underground aquifer through wells or infiltration basins.
- relict population** A remnant of a population that was once larger and more widely distributed.
- reptiles** A class of air-breathing vertebrates that includes alligators, crocodiles, lizards, snakes, turtles, and extinct related forms.
- return flow** The flow of unconsumed water back to the stream, river, or reservoir after delivery. Also, groundwater discharge to surface water.
- riparian** Related to, living, or located on the bank of a natural water course such as a river or lake.
- sanitary sewer** A separate underground system for transporting sewage from houses and commercial buildings to treatment or disposal facilities. The flows that are carried are referred to as “sewered” flows.
- scoping** An early and open process for determining the scope of issues to be addressed in a National Environmental Policy Act document and for identifying the significant issues related to a proposed action.
- seep** A moist or wet place where water, usually groundwater, reaches the earth’s surface from an underground aquifer.
- shallow aquifer** A geologic formation that consists of rock or gravel material that allows water closest to the ground surface to collect.
- shrub-steppe** A type of low-rainfall natural grassland. Unlike a desert, a shrub-steppe has enough moisture to support a cover of perennial grasses and/or shrubs.



significant impact An impact that is determined to be severe enough that it is identified during the National Environmental Policy Act process.

slough A soft, wet, or marsh-like area.

songbird A bird belonging to the suborder *Passeri* of the perching birds, which produce diverse and elaborate bird calls.

spawning Egg-laying by aquatic animals, including fish and amphibians.

special-status species A species that is listed, or proposed for listing, as threatened or endangered by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service under the provisions of the Endangered Species Act, as well as all sensitive species and species of concern identified by the State of Utah.

Stat. Federal statute.

State species of concern A species that is listed by the State of Utah and that is not included on the Federal endangered species list.

State sensitive species A species that is listed as endangered or threatened under the Endangered Species Act that is identified by the State of Utah as a species of concern. State sensitive species include species that are determined to require additional conservation measures to sustain healthy populations.

study area The geographic area that is established during the National Environmental Policy Act process that encompasses all alternatives to be studied.

subdivision As used in this document, the act of dividing land into smaller areas that can be sold and developed as individual lots. Also, a name to describe the former single area as a whole.

substantial-value habitat – elk, deer, and moose An area that supports frequent use by elk, deer, and moose.

subsurface flow The velocity and direction of groundwater migration.

supplemental flow A volume of water that is above the amount required for functionality, agreement, or other purposes.

temporary change application An application to the Utah Division of Water Rights to change a water use. The change can be temporarily established, and the Division can later grant a permanent change.

temporary pumping station As used in this document, a system that would be set up to move water from Jordanelle Reservoir to an existing treatment plant.

terrestrial Living predominantly on land.

threatened species An animal or plant species that likely to become endangered within the foreseeable future throughout all or a significant part of its range. Plant or animal species identified by the Secretary of the Interior as threatened in accordance with the Endangered Species Act of 1973.

trans-basin diversion As used in this document, a diversion of water from one basin to another within the Bonneville Unit.

tributary A stream that flows into a large stream, river, or other body of water.



- Uinta Basin** A geologic structural basin in eastern Utah east of the Wasatch Mountains and south of the Uinta Mountains.
- unincorporated land** A geographic area that is not incorporated into adjacent cities.
- unique farmland** Land, other than prime farmland, that has the combined conditions to produce sustained high quality and high yields of specialty crops, such as citrus, nuts, fruits, and vegetables when properly managed.
- upland** As used in this document, an area that does not qualify as a wetland because it is not wet enough to support the development of vegetation, soils, and/or hydrologic characteristics associated with wetlands.
- Wasatch County Water Efficiency Project (WCWEP)** An action taken by the Central Utah Water Conservancy District to reduce irrigation water use by making pressurized water available for sprinkler systems.
- Wasatch Front** An urban area in the north-central part of Utah that includes Utah, Salt Lake, Davis, and Weber Counties.
- water balance** The calculated difference between the volume of water available within a watershed and the amount that is taken out of storage for consumptive use.
- water right** A legal right to take water and put it to beneficial use. Water rights are prioritized in a first-come, first-use system by which senior and junior water right priorities are assigned.
- water-use efficiency** The reduction of water loss from evaporation, system leaks, and ground penetration.
- water year** The period that starts October 1 and ends September 30 of the following year. For example, the 1995 water year started October 1, 1994, and ended September 30, 1995.
- waterfowl** Birds that live in aquatic habitats.
- wet meadow** A type of wetland with enough water to support various wetland species such as sedges, rushes, forbs, and grasses.
- wet year** A water year during which a geographical area received more than the historical average amount of precipitation.
- wetland** An area that is inundated by surface or groundwater often enough to support—and under normal circumstances does or would support—vegetation or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction.
- wetland obligate species** As used in this document, a species of plant that is found only in wetland conditions.

APPENDIX A

Wildlife Species Likely to Occur in the Study Area



Appendix A: Wildlife Species Likely to Occur in the Study Area

Common Name	Scientific Name	Comments
<i>Mammals</i>		
American beaver	<i>Castor canadensis</i>	Mountain valley streams.
American mink	<i>Mustela vison</i>	Riparian, wetland areas in foothills, mountains
Badger	<i>Taxidea taxus</i>	Foothills and mountains, shrub-steppe
Big brown bat	<i>Eptesicus fuscus</i>	Woodland and urban areas
Black bear	<i>Ursus americanus</i>	Forested foothills and mountains
Bobcat	<i>Lynx rufus</i>	Forests
Bushy-tailed woodrat	<i>Neotoma cinerea</i>	Mountains, high rocky areas
Coyote	<i>Canis latrans</i>	Throughout study area
Elk	<i>Cervus canadensis</i>	Foothills and valley areas, meadows
Ermine	<i>Mustela erminea</i>	Valley, riparian areas
Hoary bat	<i>Lasiurus cinereus</i>	Woodlands, forests, Jordanelle Reservoir
Least chipmunk	<i>Neotomias minimus</i>	Throughout study area
Little brown myotis	<i>Myotis lucifugus</i>	Woodland and urban areas
Long-eared myotis	<i>Myotis evotis</i>	Forests, rock outcrops, Jordanelle Reservoir
Long-legged myotis	<i>Myotis volans</i>	Forests, riparian, shrubland
Long-tailed vole	<i>Microtus longicaudus</i>	Throughout study area
Long-tailed weasel	<i>Mustela frenata</i>	Entire study area, especially foothills
Masked shrew	<i>Sorex cinereus</i>	Mountain wetlands, meadows, riparian
Montane shrew	<i>Sorex monticolus</i>	Mountains, forests
Montane vole	<i>Microtus montanus</i>	Valley meadows
Moose	<i>Alces alces</i>	Foothills and mountains, near water
Mountain cottontail	<i>Sylvilagus nuttallii</i>	Foothills
Mountain lion	<i>Puma concolor</i>	Foothills and mountains, forests and woodlands
Mule deer	<i>Odocoileus hemionus</i>	Foothills, mountains, woodlands
Muskrat	<i>Ondatra zibethicus</i>	Streams
North American porcupine	<i>Erethizon dorsatum</i>	Forests, riparian
Northern pocket gopher	<i>Thomomys talpoides</i>	Throughout study area
Northern river otter	<i>Lontra canadensis</i>	Streams and rivers throughout study area, Deer Creek Reservoir
Red fox	<i>Vulpes vulpes</i>	Foothills and valley open areas
Western small-footed myotis	<i>Myotis ciliolabrum</i>	Throughout study area
White-tailed jackrabbit	<i>Lepus townsendii</i>	Throughout study area
Yellow-bellied marmot	<i>Marmota flaviventris</i>	Meadows throughout study area



Common Name	Scientific Name	Comments
<i>Birds</i>		
American redstart	<i>Setophaga ruticilla</i>	Riparian, woodlands
Bald eagle	<i>Haliaeetus leucocephalus</i>	Valley areas (winter roosting)
Band-tailed pigeon	<i>Patagioenas fasciata</i>	Pine/conifer forests
Black swift	<i>Cypseloides niger</i>	Mountain riparian, waterfalls. Very rare, known to breed at Bridal Veil Falls and Aspen Grove, near the study area.
Blue grosbeak	<i>Passerina caerulea</i>	Woodland, scrub, riparian
Bobolink	<i>Dolichonyx oryzivorus</i>	Wetlands, meadows, pastures, hayfields
Cedar waxwing	<i>Bombycillia cedrorum</i>	Foothills and valleys; meadows and shrublands
Common yellowthroat	<i>Geothlypis trichas</i>	Marshes, riparian, pastures
Evening grosbeak	<i>Coccothraustes vespertinus</i>	Woodlands, conifer forests.
Golden eagle	<i>Aquila chrysaetos</i>	Open areas, shrub-steppe, foothills, valley
Grasshopper sparrow	<i>Ammodramus savannarum</i>	Open, foothill areas
Gray catbird	<i>Dumetella carolinensis</i>	Dense shrublands, woodlands, forests
Great egret	<i>Ardea alba</i>	Wetlands, open water, especially near Deer Creek Reservoir
Greater sage-grouse	<i>Centrocercus urophasianus</i>	Sagebrush
Lazuli bunting	<i>Passerina amoena</i>	Forests, woodlands, meadows
Long-billed curlew	<i>Numenius americanus</i>	Wetlands, meadows, pastures, hayfields
MacGillivray's warbler	<i>Oporornis tolmiei</i>	Foothill and valley woodlands, shrublands, meadows
Osprey	<i>Pandion haliaetus</i>	Mountain lakes, reservoirs
Short-eared owl	<i>Asio flammeus</i>	Grasslands, shrublands, open habitats
Swainson's hawk	<i>Buteo swainsoni</i>	Shrublands and grasslands
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	Riparian
<i>Reptiles</i>		
Common gartersnake	<i>Thamnophis sirtalis</i>	Moist areas throughout study area
Common sagebrush lizard	<i>Sceloporus graciosus</i>	Shrubland, pinyon-juniper woodland
Eastern fence lizard	<i>Sceloporus undulates</i>	Foothill shrublands, woodlands
Eastern racer	<i>Coluber constrictor</i>	Meadows, fields, woodlands, forests
Gopher snake	<i>Pituophis catenifer</i>	Throughout study area
Great Basin (western) rattlesnake	<i>Crotalus oreganus lutosus</i>	Foothills, open woodland and forested areas
Greater short-horned lizard	<i>Phrynosoma hernandesi</i>	Grassland, shrubland, mountain meadows
Milksnake	<i>Lampropeltis triangulum</i>	Foothill areas, variety of habitats
Ring-necked snake	<i>Diadophis punctatus</i>	Mountainous areas near water, Jordanelle Reservoir
Rubber boa	<i>Charina bottae</i>	Mountain forest, meadow, riparian
Smooth greensnake	<i>Opheodrys vernalis</i>	Meadows, grasslands, wetlands
Striped whipsnake	<i>Masticophis taeniatus</i>	Foothills, near streams
Terrestrial gartersnake	<i>Thamnophis elegans</i>	Throughout study area
Western skink	<i>Eumeces skiltonianus</i>	Oak woodlands, sagebrush, grasslands



Common Name	Scientific Name	Comments
<i>Amphibians</i>		
Columbia spotted frog	<i>Rana luteiventris</i>	Springs, riparian
Great Basin spadefoot	<i>Spea intermontana</i>	Sagebrush, forests, woodlands
Northern leopard frog	<i>Rana pipiens</i>	Variety of aquatic areas, marshes
Tiger salamander	<i>Ambystoma tigrinum</i>	Variety of aquatic areas
Western chorus frog	<i>Pseudacris triseriata</i>	Marshes, grasslands, agricultural land
Western toad	<i>Bufo boreas</i>	Streams, wetlands, meadows, woodlands
Woodhouse's toad	<i>Bufo woodhousii</i>	Throughout foothill areas
<i>Fish</i>		
Bluegill	<i>Lepomis macrochirus</i>	Jordanelle and Deer Creek Reservoirs
Bonneville cutthroat trout	<i>Oncorhynchus clarkii utah</i>	Possibly in mountain streams
Brook trout	<i>Salvelinus fontinalis</i>	Provo River and tributaries
Brown trout	<i>Salmo trutta</i>	Provo River and reservoirs
Common carp	<i>Cyprinus carpio</i>	Jordanelle and Deer Creek Reservoirs
Largemouth bass	<i>Micropterus salmoides</i>	Jordanelle and Deer Creek Reservoirs
Longnose dace	<i>Rhinichthys cataractae</i>	Provo River and tributaries
Mottled sculpin	<i>Cottus bairdii</i>	Provo River and reservoirs
Mountain sucker	<i>Catostomus platyrhynchus</i>	Provo River and tributaries
Mountain whitefish	<i>Prosopium williamsoni</i>	Provo River and tributaries
Rainbow trout	<i>Oncorhynchus mykiss</i>	Provo River and reservoirs
Redside shiner	<i>Richardsonius balteatus</i>	Provo River and reservoirs
Smallmouth bass	<i>Micropterus dolomieu</i>	Jordanelle and Deer Creek Reservoirs
Southern leatherside	<i>Lepidomeda aliciae</i>	Main Creek and Spring Creek drainages
Speckled dace	<i>Rhinichthys osculus</i>	Provo River and tributaries
Utah chub	<i>Gila atraria</i>	Jordanelle and Deer Creek Reservoirs
Utah sucker	<i>Catostomus ardens</i>	Provo River and reservoirs
Walleye	<i>Sander vitreus</i>	Jordanelle and Deer Creek Reservoirs
Yellow perch	<i>Perca flavescens</i>	Jordanelle and Deer Creek Reservoirs



This page is intentionally blank.

APPENDIX B

Wasatch County Noxious Weeds List



Appendix B: Wasatch County Noxious Weeds List

Common Name	Scientific Name
<i>Class A</i>	
Black henbane	<i>Hyoscyamus niger</i>
Diffuse knapweed	<i>Centaurea diffusa</i>
Leafy spurge	<i>Euphorbia esula</i>
Medusahead	<i>Taeniatherum caput-medusae</i>
Oxeye daisy	<i>Chrysanthemum leucanthemum</i>
Perennial sorghum spp. (including Johnson grass, Sorghum alum)	<i>Sorghum halepense, Sorghum alum</i>
Purple loosestrife	<i>Lythrum salicaria</i>
Spotted knapweed	<i>Centaurea maculosa</i>
Squarrose knapweed	<i>Centaurea virgata (Centaurea squarrosa)</i>
St. Johnswort	<i>Hypericum perforatum</i>
Sulfur cinquefoil	<i>Potentilla recta</i>
Yellowstar thistle	<i>Centaurea solstitialis</i>
Yellow toadflax	<i>Linaria vulgaris</i>
<i>Class B</i>	
Bermuda grass	<i>Cynodon dactylon</i>
Broadleaved pepperweed (perennial pepperweed)	<i>Lepidium latifolium</i>
Dalmation toadflax	<i>Linaria dalmatica</i>
Dyers woad	<i>Isatis tinctoria</i>
Hoary cress	<i>Cardaria draba</i>
Musk thistle	<i>Carduus nutans</i>
Poison hemlock	<i>Conium maculatum</i>
Russian knapweed	<i>Centaurea repens</i>
Scotch thistle	<i>Onopordum acanthium</i>
<i>Class C</i>	
Canada thistle	<i>Cirsium arvense</i>
Field bind weed	<i>Convolvulus arvensis</i>
Houndstonge	<i>Cynoglossum officinale</i>
Quackgrass	<i>Agropyron repens</i>
Salt cedar	<i>Tamarix ramosissima</i>

Source: Wasatch County 2009



This page is intentionally blank.

APPENDIX C

Pertinent Correspondence



United States Department of the Interior
FISH AND WILDLIFE SERVICE

UTAH FIELD OFFICE
2369 WEST ORTON CIRCLE, SUITE 50
WEST VALLEY CITY, UTAH 84119

In Reply Refer To

FWS/R6

ES/UT

10-CPA-0109

July 16, 2010

Central Utah Water Conservancy District
Attn: Bridget Atkin
355 W. University Parkway
Orem, Utah 84058

RE: Block 1A: Heber Sub-area M&I Conversion, Central Utah Project, Wasatch County,
Utah

Dear Ms. Atkin:

We received your scoping notice of May 25, 2010 to prepare an environmental assessment (EA) for the subject project. The Central Utah Water Conservancy District (District) and the U.S. Department of the Interior (Interior) propose to convert Central Utah Project (CUP) Bonneville Unit water delivered under Development Block Notice No. 1A to the Heber sub-area from irrigation to municipal and industrial (M&I) use, and to expand the Heber sub-area. The purpose and need of the conversion is to provide CUP water to petitioners and water contract holders in order to respond to changes in land use within Wasatch County.

Pursuant to the National Environmental Policy Act (NEPA) (42 U.S.C. 4321-4347), the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-712), the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*), the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668-668c), and the Fish and Wildlife Coordination Act (FWCA) (16 U.S.C. 661-666c), we are identifying issues that should be addressed relative to fish and wildlife resources for this project. In Section 1 of this letter we provide comment on the scope of your EA. In Section 2, we address your ESA section 7 responsibilities.

Section 1

Wildlife Resources

The Heber Valley is drained by the Provo River and its tributaries, a system that supports extensive mountain riparian habitat. This habitat type is very rare in Utah, comprising less than 1 percent of total land cover in the state (Utah Division of Wildlife Resources, 2005). It is the

most important habitat for overall vertebrate biodiversity and one of the most important to sensitive species in Utah, yet its quality is declining. UDWR documents specific threats to mountain riparian habitat including stream channelization from increased water velocity, lack of riparian vegetation and increased sedimentation. It also describes water development as a threat to mountain riparian habitat, specifically as it leads to a reduction in the amount of water available for riparian vegetation and wildlife, a lack of natural hydrological events, such as seasonal overbank flooding, and the impairment of riparian vegetation recruitment.

The Provo River and its tributaries within the Heber Valley support the Middle Provo Important Bird Area (IBA), a site that provides essential habitat for several Utah Wildlife Species of Concern including black swift (*Cypseloides niger*), grasshopper sparrow (*Ammodramus savannarum*), and bobolink (*Colichonyx oryzivorus*). The Heber Valley also supports wintering habitat for bald eagles (*Haliaeetus leucocephalus*).

We have documented the presence of greater sage-grouse (*Centrocercus urophasianus*) and western yellow-billed cuckoo (*Coccyzus americanus*) within the Heber sub-area. Both are candidate species under the ESA. Greater sage-grouse use accessible and exposed sagebrush for winter cover and forage and the Heber sub-area may also be a core breeding area for this species. Finally, surveys have documented the presence of western yellow-billed cuckoo along the Provo River.

In the baseline conditions section of the EA, we recommend that you identify the habitat and wildlife resources that exist within the Heber sub-area. The EA should subsequently consider these resources in the evaluation of direct, indirect and cumulative effects of the proposed project.

Direct Effects

The proposed water conversion may directly affect migratory birds protected under the MBTA if it requires surface disturbing activities such as construction of new water withdrawal and delivery systems. The MBTA prohibits the take of migratory birds, their parts, nests, eggs, and nestlings. Executive Order 13186, issued on January 11, 2001, affirmed the responsibilities of Federal agencies to comply with the MBTA. We recommend that you identify and analyze specific project components in the EA that may require surface disturbance and analyze the effects to migratory birds. The EA should also explain how flow regimes may change downstream of Jordanelle Reservoir and consequently how those changes may impact migratory bird populations. In your evaluation of short- and long-term impacts to migratory bird habitat, we recommend that you focus on species on the USFWS's 2008 List of Birds of Conservation Concern and species that are listed as Partners in Flight Priority Species. Species on these lists are considered high conservation priorities.

Please note that we removed the bald eagle from the Federal list of endangered and threatened species. While bald eagles are no longer protected under the ESA, they are still protected under the Bald and Golden Eagle Protection Act (BGEPA) and MBTA. BGEPA prohibits the take of eagles and eagle nests without a permit.

Indirect Effects

We recommend that you include induced growth as an indirect effect of the proposed water conversion in your EA. Specifically, you should describe the target population that will use project water, as well as when and how it will use it (i.e. potable versus non-potable purposes). The EA should further identify and analyze how project related induced growth will affect wildlife resources in the Heber sub-area.

Cumulative Effects

Cumulative effects are those effects that result from incremental impacts of a proposed action when added to other past, present, and reasonably foreseeable future actions. They can result from individually minor but collectively significant actions that take place over a period of time. The proposed water conversion may induce minor growth in the Heber Valley, however in combination with past, present and reasonably foreseeable water development projects, the effect of induced growth on the human environment may be cumulatively significant. In the EA, we recommend that you evaluate:

- which wildlife resources may be especially vulnerable to the incremental effects of growth inducing projects in the Heber Valley;
- whether other water development activities in the area have similar effects on the resource;
- whether these effects have been historically significant for this resource; and,
- whether other analyses in the area have identified a cumulative effects concern.

Alternatives

In order to ensure that impacts to wildlife resources are minimized, we recommend that you consider water conservation as an alternative to achieve the project purpose. The EA should identify existing M&I water consumption rates and pricing structures among the areas allocated to receive project water. Existing consumption rates and structures should be compared with 1) state water conservation goals; and, 2) other communities in high elevation desert environments. The EA should also analyze how existing water supplies can be used more efficiently to delay and possibly avoid additional water development for M&I purposes. Ultimately, the price of project water to the consumer should reflect the full cost of water development and the social and environmental “opportunity costs” of losing other benefits of water in its natural state (e.g. impacts to fisheries, recreational opportunities, and watershed health).

Local water suppliers can work independently and with local government to achieve efficient water use by implementing measures such as aggressive water rate structures, low water-use landscaping ordinances, and rebate programs for water efficient appliances. For example, the use of an increasing block rate structure can communicate the true value of water to consumers. The unit price for water increases as the volume consumed increases, with prices set for each “block” of water use. Customers who use low or average volumes of water are charged a modest unit price and rewarded for conservation; those using significantly higher volumes pay higher unit prices.

Local municipalities can implement landscaping ordinances to promote water conservation in new construction. Traditional bluegrass lawn consumes 18 gallons of water per square foot annually as compared to 3 gallons per square foot annually for a xeriscaped landscape. By requiring new residential and commercial construction to xeriscape, water suppliers can reduce demand for outdoor water use by 15 gallons of water annually for every square foot. Because outdoor irrigation application techniques on residential and commercial properties are often inefficient, water suppliers can also decrease water waste by offering rebates to consumers who purchase landscape irrigation controllers, rainfall or soil moisture sensors.

Section 2

Federal agencies have specific additional responsibilities under section 7 of the Endangered Species Act (ESA). You may find current county species lists at the following website: <http://www.fws.gov/utahfieldoffice/EndSpp.html>. We recommend that the District review the proposed action and determine if it will affect any listed species or their critical habitat. If you determine, with the written concurrence of our office, that the action is not likely to adversely affect listed species or critical habitat, the consultation process is complete, and no further action is necessary.

Formal consultation (50 CFR 402.14) is required if you determine that an action is “likely to adversely affect” a listed species or will result in jeopardy or adverse modification of critical habitat (50 CFR 402.02). You should also confer with our office on any action which is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat (50 CFR 402.10). A written request for formal consultation or conference should be submitted to us with a completed biological assessment and any other relevant information (50 CFR 402.12).

Your attention is also directed to section 7(d) of the ESA, as amended, which underscores the requirement that the Federal agency or the applicant shall not make any irreversible or irretrievable commitment of resources during the consultation period which, in effect, would deny the formulation or implementation of reasonable and prudent alternatives regarding their actions on any endangered or threatened species.

Candidate species have no legal protection under the ESA. Candidate species are those species for which we have on file sufficient information to support issuance of a proposed rule to list under the ESA. Identification of candidate species can assist environmental planning efforts by providing advance notice of potential listings, allowing resource managers to alleviate threats and, thereby, possibly remove the need to list species as endangered or threatened. Even if we subsequently list this candidate species, the early notice provided here could result in fewer restrictions on activities by prompting candidate conservation measures to alleviate threats to this species.

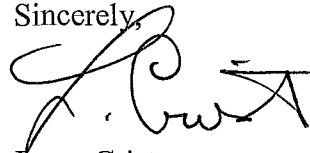
Only a Federal agency can enter into formal ESA section 7 consultations with the U.S. Fish and Wildlife Service. A Federal agency may designate a non-Federal representative to conduct informal consultation or prepare a biological assessment by providing written notice of such a

designation to our office. The ultimate responsibility for compliance with ESA section 7, however, remains with the Federal agency.

Columbia spotted frog (*Rana luteiventris*) exists within the Heber sub-area and is managed under a Conservation Agreement/Strategy. Conservation Agreements are voluntary cooperative plans among resource agencies that identify threats to a species and implement conservation measures to pro-actively conserve and protect species in decline. Threats that warrant a species listing as a sensitive species by state and federal agencies and as threatened or endangered under the ESA should be significantly reduced or eliminated through implementation of the Conservation Agreement. Project plans should be designed to meet the goals and objectives of these Conservation Agreements. We recommend that you reference the Conservation Agreement for Columbia spotted frog and work with Utah Division of Wildlife Resources and our office to evaluate project effects, avoidance and minimization measures.

We appreciate the opportunity to provide these comments. For further assistance, please contact Amy Defreese, Ecologist, at (801) 975-3330 ext.134.

Sincerely,

A handwritten signature in black ink, appearing to read 'Larry Crist', with a stylized flourish at the end.

Larry Crist
Utah Field Supervisor

cc: UDWR – Springville (Attn: Doug Sakaguchi)
URMCC – Salt Lake City (Attn: Mark Holden)

References

Utah Division of Wildlife Resources. 2005. Utah comprehensive wildlife conservation strategy. Publication Number 05-19.

From: Philip Jensen [PJensen@tu.org]
Sent: Friday, July 23, 2010 1:50 PM
To: bridget@cuwcd.com
Subject: Trout Unlimited Comment on CUWCD's Scoping Document for Block 1A: Heber Sub-area M&I Conversion

Trout Unlimited (TU) is a non-profit sportsmen's group with approximately 1,500 members in the State of Utah. Our mission is to conserve, protect, and restore wild and native trout and salmon and their habitats in Utah and across North America. TU writes in support of the Central Utah Water Conservancy District's Scoping Document for Block 1A: Heber Sub-area M&I Conversion. This document proposes converting up to 12,100 acre-feet of Central Utah Project (CUP) water from irrigation to municipal and industrial use, as well as expanding the Heber sub-area from its current area, mostly contained within the Heber valley, to a larger area comprising much of western Wasatch County.

Having reviewed the scoping documents and discussed the proposal with local landowners, TU believes that the proposal:

- (1) Expands opportunities for local landowners to use CUP water set aside for use in Wasatch County, water that has gone unused to date due to a lack of qualifying irrigation projects; and
- (2) Opens the door for collaborative solutions—including possible leases to improve stream flows—in the Main Creek drainage that would benefit both water users and fish and wildlife, particularly native Bonneville cutthroat trout, the only trout native to the region and Utah's state fish.

TU believes in working cooperatively with the Utah Division of Wildlife Resources, water resource managers, and local communities to find win/win solutions when it comes to allocating scarce water resources, and believe this project will aid those efforts.

Trout Unlimited's Utah Water Project

Contact person:
Philip Jensen
pjensen@tu.org
435-671-0027

From: Mike Wilson [Wilson@mwdsls.org]
Sent: Friday, July 16, 2010 2:41 PM
To: bridget@cuwcd.com
Cc: Rich Tullis; Dave Pitcher
Subject: Scoping of Environmental Assessment for the Block 1A: Heber Sub-Area M&I

This email is in response to the notice dated May 25, 2010 regarding the subject item. On behalf of the Metropolitan Water District of Salt Lake & Sandy, I suggest that the scope of the Environmental Assessment (EA) include an analysis of the impacts of the proposed action to the sanitary sewer systems and wastewater treatment facilities in the Heber Valley. This may have been contemplated as part of the "Water Quality" review but is not specifically identified in the scoping document.

As properties in the Heber Valley subdivide into smaller parcels, the need for additional sanitary sewer facilities will likely increase. Proper planning needs to account for adequate treatment facilities that will not adversely impact the Provo River system. As you know, the drinking water supply to populations in Utah and Salt Lake counties rely heavily on the Provo River system. It is of critical importance to continue to put a high priority on maintaining the water quality of the Provo River system. The EA should take a close look at this planning aspect.

I appreciate the opportunity to provide input into this discussion. Please contact me if you have any questions or desire additional information.

Thanks.

Michael L. Wilson, General Manager
Metropolitan Water District of Salt Lake & Sandy
3430 East Danish Road
Cottonwood Heights, UT 84093
phone 801.942.9685

Subject: what provisions have you made for animals and birds to get
a drink before they die from no water

From: bk1492@aol.com [<mailto:bk1492@aol.com>]

Sent: Saturday, April 10, 2010 5:10 AM

To: Hansen, Lynn; americanvoices@maill.house.gov; comments@whitehouse.gov; humanelines@hsus.org;
info@defenders.org; info@peta.org; melissa@idausa.org; info@mercyforanimals.org; info@godscreaturesministry.org
Cc: info@emagazine.com; info@starmagazine.com

Subject: public comment on federal register Fwd: what provisions have you made for animals and birds to get a drink
before they die from no water

this plan appears to take all the water for profiteer maximization.
~~what plans have you made so that gods' creatures -~~
birds/wildlife/reptiles can get water to drink. i think none so the
plan is totally unacceptable. ~~in all takings of water, the other~~
~~creatures here on earth deserve to get some water to drink in a safe~~
~~manner. far too often, they are left with zero water.~~ this attitude
needs to change. people are not the only creatures trying to stay alive
on earth. any plan that does not include provisions for these other
creatures that protect our ecological heritage are completely
unacceptable and i urge their dissolution.
jean public 8 winterberry court whitehouse station nj 08889

[Federal Register: April 9, 2010 (Volume 75, Number 68)][Notices]
[Page 18231-18232]From the Federal Register Online via GPO
Access [wais.access.gpo.gov][DOCID:fr09ap10-110]

From: Gross, Donovan
Sent: Tuesday, September 07, 2010 11:57 AM
To: 'sarahlindsey@utah.gov'
Cc: Lee, Susan
Subject: Request for Information about Rare Species Occurrences in the Heber Sub-Area Irrigation to M&I Water Conversion Project Area, Wasatch County, Utah
Attachments: Conversion_Boundary_20100901.zip; CUWCD_M&I Conversion_ProjectArea.pdf

Sarah Lindsey
Utah Division of Wildlife Resources
1594 W. North Temple, Suite 2110
Salt Lake City, Utah 84116
sarahlindsey@utah.gov

Subject: Request for Information about Rare Species Occurrences in the Heber Sub-Area Irrigation to M&I Water Conversion Project Area, Wasatch County, Utah

Dear Ms. Lindsey:

The U.S. Department of the Interior (DOI) and Central Utah Water Conservancy District (District) are completing an Environmental Assessment of the potential effects associated with the Heber Sub-Area Irrigation to M&I Water Conversion Project in Wasatch County, Utah. We are requesting information about recorded occurrences of federally-listed species or species given special status by the state of Utah in the project area (see attached map).

The proposed action is an administrative change that would allow the conversion of 12,100 acre-feet of water currently designated for irrigation use as part of the Central Utah Project (CUP) to municipal and industrial (M&I) use. The proposed action would also increase the size of the CUP's Heber Sub-Area, which would allow for more widespread use of the converted water. The proposed action does not involve any physical changes (that is, no construction) but could affect water distribution and availability in the project area.

I have attached a GIS shape file of the project area. In general, the expanded Heber Sub-Area is situated in northern Wasatch County in the Provo River basin. We also request, if possible, that a GIS shape file of the resulting UNHP database output be emailed to me at my email address below.

Please call me at (801) 743-7843 if you have any questions. Thank you very much for your assistance.

Sincerely,

Donovan H. Gross

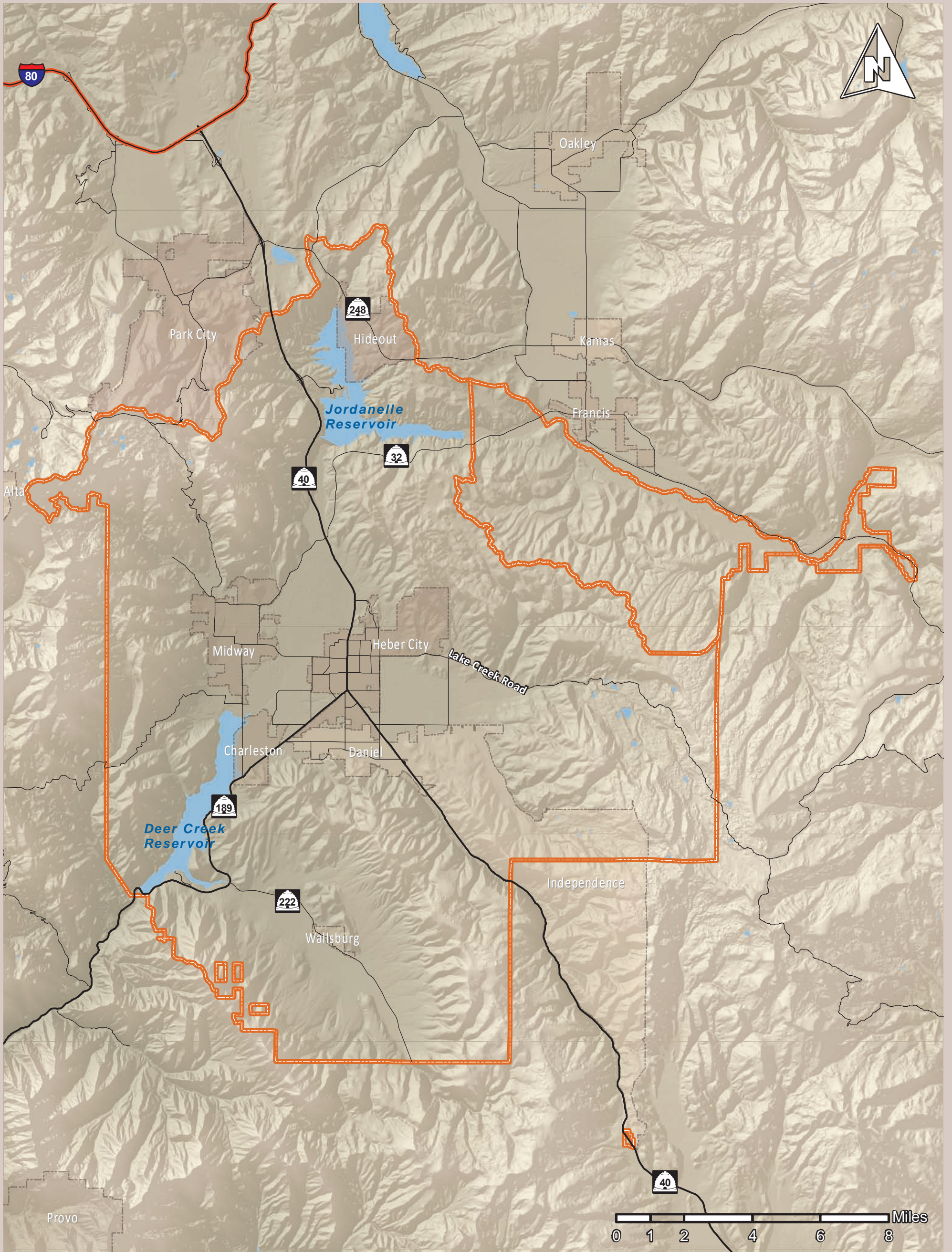
Biologist

HDR ONE COMPANY | *Many Solutions*

3949 South 700 East, Suite 500 | Salt Lake City, UT | 84107

Phone: 801-743-7843 | Fax: 801-743-7878 | Email: Donovan.Gross@hdrinc.com

Cell: 801-520-3218



LEGEND

 Project Area



Block 1A Heber Sub-Area
Irrigation to M&I Water Conversion
Environmental Assessment

Project Area Map



From: Sarah Lindsey [sarahlindsey@utah.gov]
Sent: Thursday, September 16, 2010 6:54 PM
To: Gross, Donovan
Subject: Re: Request for Information about Rare Species Occurrences in the Heber Sub-Area Irrigation to M&I Water Conversion Project Area, Wasatch County, Utah
Attachments: 3799_unhp_masked_pts.ZIP
Categories: CUWCD

Donovan,

Attached is a shapefile in response to your request. Our data classifications under state law prohibit us from releasing exact species locality data to non-government agencies; therefore, the data attached contains locations masked to within one square mile of the actual location.

Sincerely,
Sarah Lindsey

Utah Natural Heritage Program
Division of Wildlife Resources
1594 W. North Temple
Salt Lake City, UT 84116
(801) 538-4759

>>> "Gross, Donovan" <Donovan.Gross@hdrinc.com> 9/7/2010 11:56 AM >>>

Sarah Lindsey
Utah Division of Wildlife Resources
1594 W. North Temple, Suite 2110
Salt Lake City, Utah 84116
sarahlindsey@utah.gov<<mailto:sarahlindsey@utah.gov>>

Subject: Request for Information about Rare Species Occurrences in the Heber Sub-Area Irrigation to M&I Water Conversion Project Area, Wasatch County, Utah

Dear Ms. Lindsey:

The U.S. Department of the Interior (DOI) and Central Utah Water Conservancy District (District) are completing an Environmental Assessment of the potential effects associated with the Heber Sub-Area Irrigation to M&I Water Conversion Project in Wasatch County, Utah. We are requesting information about recorded occurrences of federally-listed species or species given special status by the state of Utah in the project area (see attached map).

The proposed action is an administrative change that would allow the conversion of 12,100 acre-feet of water currently designated for irrigation use as part of the Central Utah Project (CUP) to municipal and industrial (M&I) use. The proposed action would also increase the size of the CUP's Heber Sub-Area, which would allow for more widespread use of the converted water. The proposed action does not involve any physical changes (that is, no construction) but could affect water distribution and availability in the project area.

I have attached a GIS shape file of the project area. In general, the expanded Heber Sub-Area is situated in northern Wasatch County in the Provo River basin. We also request, if possible, that a GIS shape file of the resulting UNHP database output be emailed to me at my email address below.

Please call me at (801) 743-7843 if you have any questions. Thank you very much for your assistance.

Sincerely,

Donovan H. Gross

Biologist

HDR ONE COMPANY | Many Solutions

3949 South 700 East, Suite 500 | Salt Lake City, UT | 84107

Phone: 801-743-7843 | Fax: 801-743-7878 | Email: Donovan.Gross@hdrinc.com

Cell: 801-520-3218



Central Utah Water Conservancy District

355 WEST UNIVERSITY PARKWAY, OREM, UTAH 84058-7303
TELEPHONE (801) 226-7100, FAX (801) 226-7107
TOLL FREE 1-800-261-7103
WEBSITE www.cuwcd.com

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

Don A. Christiansen, General Manager
Secretary/Treasurer

December 10, 2011

Lori Hunsaker
Deputy State Historic Preservation Officer
Utah Division of State History
300 Rio Grande Street
Salt Lake City, UT 84101

Re: Section 106 Consultation for the U.S. Department of the Interior and Central Utah Water Conservancy District's Proposed Heber Sub-Area Irrigation to M&I Water Conversion Project, Wasatch County, Utah

Dear Ms. Hunsaker:

The Central Utah Water Conservancy District (CUWCD) and the U.S. Department of the Interior (Interior), as Joint Lead Agencies, are preparing an Environmental Assessment (EA) for the proposed conversion of 12,100 acre-feet of Central Utah Project (CUP) Bonneville Unit irrigation water to municipal and industrial (M&I) water. This water is currently delivered under Development Block Notice No. 1A to an area in the Heber Valley called the Heber Sub-Area.

This letter serves as our initiation of the Section 106 process with your office under the requirements of 36 Code of Federal Regulations (CFR) 800, the implementing regulations for the National Historic Preservation Act. With this letter we formally request your engagement in the Section 106 process for this project, your concurrence with our proposed area of potential effects (APE), and our proposed approach for identifying potential effects to historic properties.

Description of the Proposed Action

The proposed action is an administrative change that would convert up to 12,100 acre-feet of irrigation water to M&I water and would expand the Heber Sub-Area. Although approval of the proposed action would allow the conversion of 12,100 acre-feet of water, it would not automatically convert the water. The actual conversion would be completed over time by CUWCD and Interior consistent with Bureau of Reclamation law when requests are received from petitioners and contract holders. The proposed action would also allow the installation and temporary operation of an emergency pumping facility and pipeline between the Jordanelle Special Services District's Keetley Water Treatment Plant and Jordanelle Reservoir. This temporary facility would only be installed if an emergency results in the closure of the

BOARD OF TRUSTEES

2-Y.M10.Wasatch.EO.758

Gary J. Anderson
Randy A. Brailsford
Brent Brotherson

David R. Cox
Randy Crozier
Michael K. Davis

Tom Dolan
Claude R. Hicken
Jani Iwamoto

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

Rondal R. McKee
Kent R. Peatross
Stanley R. Smith

Gawain Snow
Mark Wilson
Boyd Workman

Ontario Drain Tunnel. The emergency facility would be taken out of service and completely removed once the emergency situation is resolved.

CUWCD and Interior anticipate that the converted water could be delivered through existing Wasatch County Water Efficiency Project (WCWEP) facilities; current and expanded WCWEP irrigation systems; current or future treatment plants, if needed; and exchanges with underground well water. Water rights might be exchanged to facilitate effective and efficient distribution of the water, but points of diversion would not change. Converted water could also be accessed through other Heber Valley irrigation companies' secondary systems that have historically been used for applying water to smaller tracts of agricultural land (less than 2 acres).

Use of CUP water on these smaller tracts of land is currently not allowed. The CUP irrigation water that is not converted would continue to be delivered to existing contract holders. The conversion process would not affect other water deliveries.

The administrative change would not have any physical, on-the-ground impacts (that is, it would not require construction of water delivery or storage facilities). Therefore, the change is not expected to affect any historic properties, which are defined as prehistoric or historic districts, sites, buildings, structures, or objects included in or eligible for inclusion in the National Register of Historic Places (NRHP). Installation of the emergency measure at the Keetley Water Treatment Plant would result in temporary impacts but the affected area would be returned to preconstruction conditions once the emergency situation is resolved.

Area of Potential Effects

The APE, which is shown in the attached figure, is the proposed expanded Heber Sub-Area. In general, it includes non-federal land in northwestern Wasatch County. The area is roughly bounded by the county line on the north, the Wasatch Mountains on the west, the Round Valley area on the south, and the limits of privately controlled land on the east. If the conversion is approved, the M&I water could be used anywhere in the expanded Heber Sub-Area.

Interior and CUWCD completed a search of the Utah Historical Data Management System and the National Register online database for the APE and to identify properties that are listed on or eligible for listing on the NRHP in the APE. Interior and CUWCD also completed a Class III survey of the area that could be affected by installation of the emergency pumping measure at the Keetley treatment Plant. The results of the records searches and the Class III survey are attached.

Because the administrative change would not result in any physical changes, we do not expect any effect to historic properties. As described in the Class III report, no new archaeological or historic sites were identified during the survey at the Keetley Water Treatment Plant. Portions of sites 42WA75 and 42WA76 within the surveyed area but were thoroughly disturbed by the construction of the treatment plant. Neither site would be affected by construction of the emergency pipeline, should it ever be necessary. Based on the results of the Class III investigation, we believe that a finding of "no adverse effect" is appropriate for that part of the project that includes the area around the Keetley Treatment Plant.

Thank you for your participation in this project. If you have any questions about the project, please contact Sarah Sutherland with CUWCD at (801) 226-7147 or Sue Lee with HDR Engineering at (801) 743-7811. We look forward to hearing from you.

Sincerely,



Sarah Sutherland
Environmental Programs Manager

cc: Sarah Sutherland, CUWCD
Sue Lee, HDR Engineering
File

Enclosures: Map of APE
Summary of Records Search
Class III Survey Report



State of Utah

GARY R. HERBERT
Governor

GREG BELL
Lieutenant Governor

Department of Community and Culture

MICHAEL HANSEN
Acting Executive Director

State History

PHILIP F. NOTARIANNI
Division Director

December 21, 2010

Sara Sutherland
Environmental Programs Manager
Central Utah Water Conservancy District
355 West University Parkway
Orem Utah 84058-7303

RE: Central Utah Water Conservancy District's Proposed Heber Sub-Area Irrigation to M&I Water Conversion Project, Wasatch County, Utah

In Reply Please Refer to Case No. 10-0827

Dear Ms. Sutherland: *Sara*

The Utah State Historic Preservation Office received your request for our comment on the above-referenced project on December 14, 2010.

USHPO concurs with the BOR determination of **No Adverse Effect, 36CFR 800.5** for the undertaking.

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 801-533-3555 or Lhunsaker@utah.gov or contact Jim Dykman at 801-533-3523 or Jdykman@utah.gov

Sincerely,

Lori Hunsaker
Deputy State Historic Preservation Officer
Archaeology

UTAH STATE
HISTORY

UTAH STATE HISTORICAL SOCIETY
ANTIQUITIES
HISTORIC PRESERVATION
RESEARCH CENTER & COLLECTIONS

300 S. RIO GRANDE STREET, SALT LAKE CITY, UT 84101-1182 · TELEPHONE 801 533-3500 · FACSIMILE 801 533-3503 · HISTORY.UTAH.GOV

2.y.mio.wasatch.EO.758



IN REPLY REFER TO:

CA-1500
ENV-6.00

United States Department of the Interior

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

DEC 2 1 2010



H D R

REC: DEC 27 2010
PROJ: _____
FILE: _____
DIST: _____

Ms. Gwen Davis
Northwestern Band of Shoshone Nation
707 North Main Street
Brigham City, UT 84302

Subject: Invitation to Comment on the United States Department of the Interior and Central Utah Water Conservancy District's Proposed Heber Sub-Area Irrigation to Municipal and Industrial Water Conversion Project – Wasatch County Water Efficiency Project – Section 202(a)(3) – Central Utah Project Completion Act

Dear Ms. Davis:

The United States Department of the Interior, Central Utah Project Completion Act Office (Interior) and the Central Utah Water Conservancy District (CUWCD), as Joint Lead Agencies, are preparing an Environmental Assessment (EA) for the proposed conversion of 12,100 acre-feet of Central Utah Project (CUP) Bonneville Unit irrigation water to municipal and industrial (M&I) water. In compliance with 36 CFR Part 800, Section 106 of the National Historic Preservation Act of 1966, and all other laws, regulations, and directives that are pertinent to this federal undertaking, Interior is consulting with you, on behalf of itself and CUWCD, regarding the Proposed Heber Sub-Area M&I Conversion project. The purpose of this letter is to invite comments from the tribe that you represent.

If, after reviewing the material included in this letter, you feel that the proposed action 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.

Description of the Proposed Action

The proposed action is an administrative change that would convert up to 12,100 acre-feet of irrigation water to M&I water and would expand the Heber Sub-Area. Although approval of the proposed action would allow the conversion of 12,100 acre-feet of water, it would not automatically convert the water. The actual conversion would be completed over time by CUWCD and Interior consistent with Bureau of Reclamation law when requests are received from petitioners and contract holders. The proposed action would also allow the installation and temporary operation of an emergency pumping facility and pipeline between the Jordanelle

Special Services District's Keetley Water Treatment Plant and Jordanelle Reservoir. This temporary facility would only be installed if an emergency results in the closure of the Ontario Drain Tunnel. The emergency facility would be taken out of service and completely removed once the emergency situation is resolved.

Interior and CUWCD anticipate that the water could be delivered through existing Wasatch County Water Efficiency Project (WCWEP) facilities; current and expanded WCWEP irrigation systems; current or future treatment plants, if needed; and exchanges with underground well water. Water rights might be exchanged to facilitate effective and efficient distribution of the water, but points of diversion would not change. Converted water could also be accessed through other Heber Valley irrigation companies' secondary systems that have historically been used for applying water to smaller tracts of agricultural land (less than 2 acres).

Use of CUP water on these smaller tracts of land is currently not allowed. The CUP irrigation water that is not converted would continue to be delivered to existing contract holders. The conversion process would not affect other water deliveries.

The administrative change would not have any physical, on-the-ground impacts (that is, it would not require construction of water delivery or storage facilities). Therefore, the change is not expected to affect any historic properties, which are defined as prehistoric or historic districts, sites, buildings, structures, or objects included in or eligible for inclusion in the National Register of Historic Places (NRHP). Installation of the emergency measure at the Keetley Water Treatment Plant would result in temporary impacts but the affected area would be returned to preconstruction conditions once the emergency situation is resolved.

Area of Potential Effects

Interior and CUWCD completed a search of the Utah Historical Data Management System and the National Register online database for the Area of Potential Effects (APE) and to identify properties that are listed on or eligible for listing on the NRHP in the APE. Interior and CUWCD also completed a Class III survey of the area that could be affected by installation of the emergency pumping measure at the Keetley treatment Plant. We have enclosed a copy of the list of archaeological sites located within the APE. The Class III survey did not locate any new archaeological or historic sites. Portions of two historic sites (a rail station and a mining community) are within the surveyed area but were thoroughly disturbed by the construction of the treatment plant.

At this time, Interior and CUWCD are also inquiring whether you have any concerns regarding historic properties of religious or cultural importance to your community within the APE. If you have such concerns, any information you provide within 30 days of receiving this letter will be considered in the project planning.

If you have any questions about the project, please contact Ms. Sarah Sutherland with CUWCD at 801-226-7147 or Ms. Sue Lee with HDR Engineering, Inc., at 801-743-7811. We look forward to hearing from you.

Sincerely,

REED MURRAY

Reed R. Murray
Program Director

Enclosures: Map of APE
List of Archaeological Sites Located within the APE

cc: Ms. Betsy Chapoose
Director, Cultural Resources
Ute Indian Tribe
P.O. Box 190
Fort Duchesne, UT 84026
(w/encls)

Mr. Daniel Picard
Superintendent, Bureau of Indian Affairs
Uintah and Ouray Agency
P.O. Box 130
Fort Duchesne, UT 84026
(w/encls)

Ms. Sarah Sutherland
Central Utah Water Conservancy District
355 West University Parkway
Orem, UT 84058-7303
(w/o encls)

Ms. Sue Lee
HDR Engineering, Inc.
3949 South 700 East, Suite 500
Salt Lake City, UT 84107
(w/o encls)



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-1500
ENV-6.00

DEC 21 2010

Mr. Richard Jenks, Jr.
Chairman, Ute Indian Tribe
P.O. Box 190
Fort Duchesne, UT 84026

Subject: Invitation to Comment on the United States Department of the Interior and Central Utah Water Conservancy District's Proposed Heber Sub-Area Irrigation to Municipal and Industrial Water Conversion Project – Wasatch County Water Efficiency Project – Section 202(a)(3) – Central Utah Project Completion Act

Dear Mr. Jenks:

The United States Department of the Interior, Central Utah Project Completion Act Office (Interior) and the Central Utah Water Conservancy District (CUWCD), as Joint Lead Agencies, are preparing an Environmental Assessment (EA) for the proposed conversion of 12,100 acre-feet of Central Utah Project (CUP) Bonneville Unit irrigation water to municipal and industrial (M&I) water. In compliance with 36 CFR Part 800, Section 106 of the National Historic Preservation Act of 1966, and all other laws, regulations, and directives that are pertinent to this federal undertaking, Interior is consulting with you, on behalf of itself and CUWCD, regarding the Proposed Heber Sub-Area M&I Conversion project. The purpose of this letter is to invite comments from the tribe that you represent.

If, after reviewing the material included in this letter, you feel that the proposed action 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.

Description of the Proposed Action

The proposed action is an administrative change that would convert up to 12,100 acre-feet of irrigation water to M&I water and would expand the Heber Sub-Area. Although approval of the proposed action would allow the conversion of 12,100 acre-feet of water, it would not automatically convert the water. The actual conversion would be completed over time by CUWCD and Interior consistent with Bureau of Reclamation law when requests are received from petitioners and contract holders. The proposed action would also allow the installation and temporary operation of an emergency pumping facility and pipeline between the Jordanelle

Special Services District's Keetley Water Treatment Plant and Jordanelle Reservoir. This temporary facility would only be installed if an emergency results in the closure of the Ontario Drain Tunnel. The emergency facility would be taken out of service and completely removed once the emergency situation is resolved.

Interior and CUWCD anticipate that the water could be delivered through existing Wasatch County Water Efficiency Project (WCWEP) facilities; current and expanded WCWEP irrigation systems; current or future treatment plants, if needed; and exchanges with underground well water. Water rights might be exchanged to facilitate effective and efficient distribution of the water, but points of diversion would not change. Converted water could also be accessed through other Heber Valley irrigation companies' secondary systems that have historically been used for applying water to smaller tracts of agricultural land (less than 2 acres).

Use of CUP water on these smaller tracts of land is currently not allowed. The CUP irrigation water that is not converted would continue to be delivered to existing contract holders. The conversion process would not affect other water deliveries.

The administrative change would not have any physical, on-the-ground impacts (that is, it would not require construction of water delivery or storage facilities). Therefore, the change is not expected to affect any historic properties, which are defined as prehistoric or historic districts, sites, buildings, structures, or objects included in or eligible for inclusion in the National Register of Historic Places (NRHP). Installation of the emergency measure at the Keetley Water Treatment Plant would result in temporary impacts but the affected area would be returned to preconstruction conditions once the emergency situation is resolved.

Area of Potential Effects

Interior and CUWCD completed a search of the Utah Historical Data Management System and the National Register online database for the Area of Potential Effects (APE) and to identify properties that are listed on or eligible for listing on the NRHP in the APE. Interior and CUWCD also completed a Class III survey of the area that could be affected by installation of the emergency pumping measure at the Keetley treatment Plant. We have enclosed a copy of the list of archaeological sites located within the APE. The Class III survey did not locate any new archaeological or historic sites. Portions of two historic sites (a rail station and a mining community) are within the surveyed area but were thoroughly disturbed by the construction of the treatment plant.

At this time, Interior and CUWCD are also inquiring whether you have any concerns regarding historic properties of religious or cultural importance to your community within the APE. If you have such concerns, any information you provide within 30 days of receiving this letter will be considered in the project planning.

If you have any questions about the project, please contact Ms. Sarah Sutherland with CUWCD at 801-226-7147 or Ms. Sue Lee with HDR Engineering, Inc., at 801-743-7811. We look forward to hearing from you.

Sincerely,

REED MURRAY

Reed R. Murray
Program Director

Enclosures: Map of APE
List of Archaeological Sites Located within the APE

cc: Ms. Betsy Chapoose
Director, Cultural Resources
Ute Indian Tribe
P.O. Box 190
Fort Duchesne, UT 84026
(w/encls)

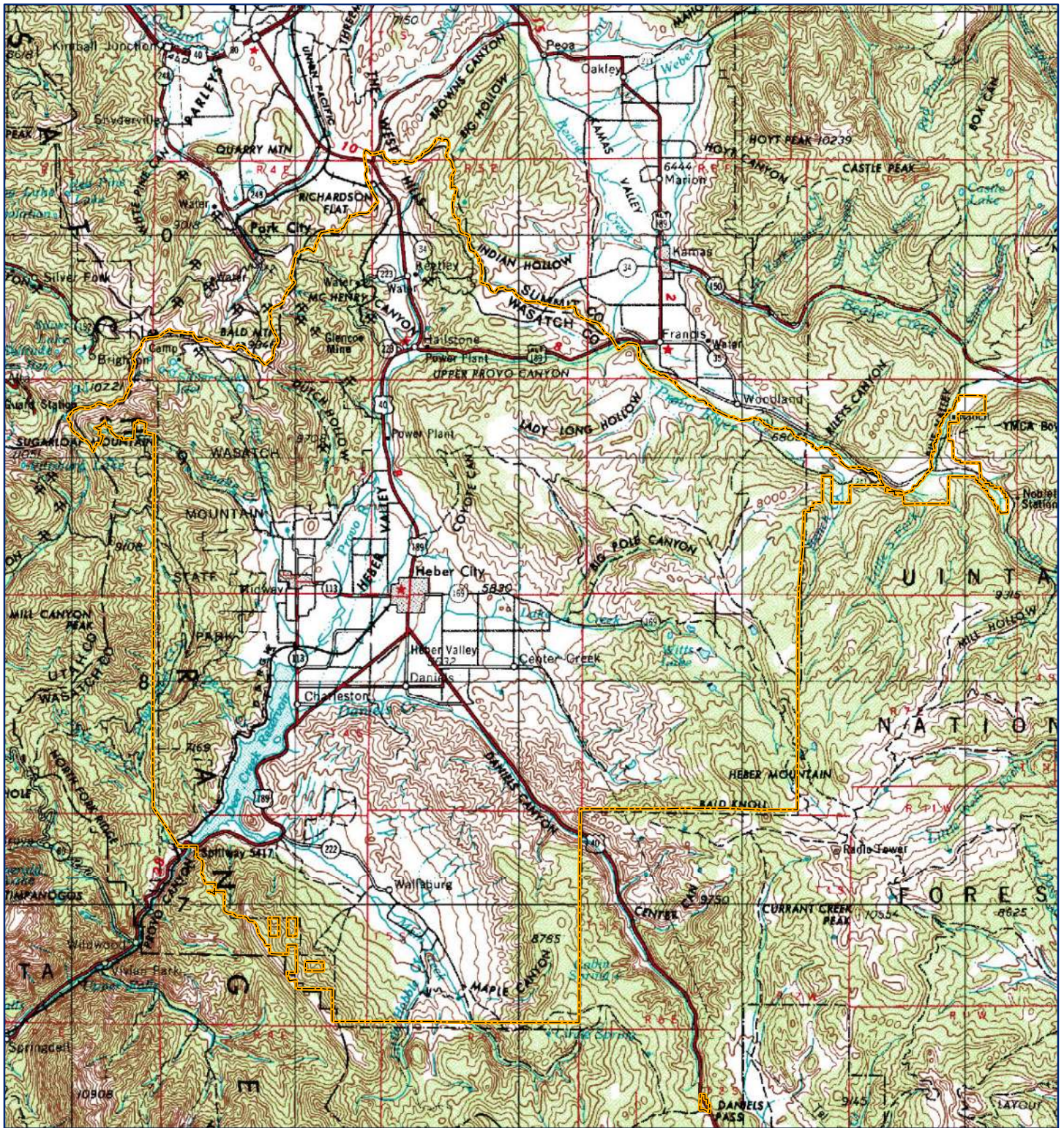
Mr. Daniel Picard
Superintendent, Bureau of Indian Affairs
Uintah and Ouray Agency
P.O. Box 130
Fort Duchesne, UT 84026
(w/encls)

Ms. Sarah Sutherland
Central Utah Water Conservancy District
355 West University Parkway
Orem, UT 84058-7303
(w/o encls)


Ms. Sue Lee
HDR Engineering, Inc.
3949 South 700 East, Suite 500
Salt Lake City, UT 84107
(w/o encls)

Identical Letter Sent To:

Ms. Gwen Davis
Northwestern Bank of Shoshoni Nation
707 North Main Street
Brigham City, UT 84302

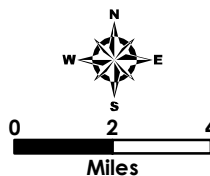


Legend

 Area of Potential Effects (APE)



Irrigation to M & I Conversion
ENVIRONMENTAL ASSESSMENT



Area of Potential Effects (APE)
Expanded Heber Sub-Area

Attachment: List of archaeological sites located within the APE

Data derived from Utah Division of State History – Historical Data Management System

No.	Site	Type	Township	Range	Section	Map Reference	Land Ownership	National Register Eligible
1	42SM273	Historic mining site	2S	4E	30	Brighton	Private	Yes (R)
2	42SM447	Historic mining site	2S	4E	30	Brighton	Private	Yes (R)
3	42SM451	Historic mining site	2S	4E	30	Brighton	Private	Yes (R)
4	42WA7	Lithic scatter	4S	4E	28	Aspen Grove	Private	Unknown
5	42WA8	Prehistoric/historic	4S	4E	28	Aspen Grove	Reclamation	Yes (R)
6	42WA9	Lithic scatter	4S	4E	33	Aspen Grove	Private	Unknown
7	42WA10	Lithic scatter	4S	4E	32	Aspen Grove	State	No (R)
8	42WA32	Lithic scatter	4S	4E	10	Charleston	Reclamation	No (R)
9	42WA33	Lithic scatter	4S	4E	28	Charleston	Reclamation	No (R)
10	42WA34	Lithic scatter	4S	4E	28	Aspen Grove	Reclamation	No (R)
11	42WA35	Lithic scatter	4S	4E	28	Aspen Grove	Reclamation	No (R)
12	42WA36	Lithic scatter	4S	4E	32	Aspen Grove	Reclamation	No (R)
13	42WA37	Lithic scatter	3S	3E	32	Aspen Grove	Reclamation	No (R)
14	42WA38	Lithic scatter	3S	3E	32	Aspen Grove	Reclamation	No (R)
15	42WA39	Prehistoric	5S	4E	5	Aspen Grove	Reclamation	No (R)
16	42WA43	Prehistoric/historic	4S	4E	34	Charleston	Reclamation	Yes (R)
17	42WA44	Prehistoric/historic	4S	4E	27	Charleston	Reclamation	Yes (R)
18	42WA45	Prehistoric/historic	4S	4E	23	Charleston	Reclamation	No (R)
19	42WA46	Prehistoric	4S	4E	23	Charleston	Reclamation	Yes (R)
20	42WA47	Lithic scatter	5S	4E	3	Charleston	Reclamation	No (R)
21	42WA48	Lithic scatter	5S	4E	3	Charleston	Reclamation	No (R)
22	42WA49	Prehistoric/historic	5S	4E	3	Charleston	Reclamation	Unknown
23	42WA50	Lithic scatter	5S	4E	3	Charleston	Reclamation	No (R)
24	42WA51	Lithic scatter	5S	4E	3	Charleston	Reclamation	No (R)
25	42WA52	Prehistoric	2S	4E	36	Heber City	Private	No (R)

Attachment: List of archaeological sites located within the APE

No.	Site	Type	Township	Range	Section	Map Reference	Land Ownership	National Register Eligible
26	42WA56	Prehistoric/historic	2S	5E	18	Park City East	Private	No (R)
27	42WA57	Lithic scatter	2S	5E	17	Park City East	Private	No (R)
28	42WA58	Lithic scatter	2S	5E	35	Francis	State	No (R)
29	42WA59	Lithic scatter	2S	5E	35	Francis	State	No (R)
30	42WA60	Lithic scatter	2S	5E	35	Francis	State	No (R)
31	42WA61	Lithic scatter	2S	5E	27	Francis	Private	No (R)
32	42WA67	Lithic scatter	2S	5E	29	Heber City	Private	No (R)
33	42WA68	Lithic scatter	3S	5E	5	Heber City	Private	No (R)
34	42WA69	Lithic scatter	3S	5E	5	Heber City	Private	No (R)
35	42WA70	Historic	2S	5E	31	Heber City	BLM	No (R)
36	42WA71	Historic	3S	5E	6	Unknown	Unknown	Yes (R)
37	42WA73	Unknown	2S	5E	31	Heber City	Private	Yes (R)
38	42WA74	Historic	2S	5E	28	Heber City	Unknown	No (R)
39	42WA75	Historic	2S	5E	7	Park City East/ Heber City	Private	No (R)
40	42WA76	Unknown	2S	5E	24	Park City East	Private	No (R)
41	42WA77	Unknown	2S	5E	20	Park City East	Private	Yes (R)
42	42WA78	Historic	3S	4E	1	Heber City	Unknown	No (R)
43	42WA79	Unknown	2S	5E	35	Francis	Private	No (R)
44	42WA80	Unknown	2S	5E	4	Heber City	Private	No (R)
45	42WA81	Unknown	2S	4E	24	Park City East	Private	Yes (R)
46	42WA89	Historic	4S	4E	10	Charleston	State	Yes (R)
47	42WA93	Unknown	2S	5E	31	Heber City	Private	No (R)
48	42WA94	Unknown	2S	5E	29	Heber City	Private	No (R)
49	42WA95	Unknown	2S	5E	32	Heber City	Private	No (R)
50	42WA96	Unknown	2S	5E	30	Heber City	Private	No (R)
51	42WA97	Unknown	2S	5E	20	Park City East	Private	No (R)
52	42WA98	Unknown	2S	4E	25	Heber City	Private	No (R)

Attachment: List of archaeological sites located within the APE

No.	Site	Type	Township	Range	Section	Map Reference	Land Ownership	National Register Eligible
53	42WA99	Unknown	2S	5E	35	Francis	Private	No (R)
54	42WA101	Unknown	2S	4E	24	Park City East	Private	No (R)
55	42WA102	Unknown	2S	5E	29	Heber City	Private	No (R)
56	42WA103	Unknown	2S	5E	18	Park City East	Private	No (R)
57	42WA104	Unknown	2S	5E	19	Park City East	Private	No (R)
58	42WA105	Unknown	2S	5E	33	Heber City	Private	No (R)
59	42WA106	Unknown	2S	5E	31	Heber City	Private	No (R)
60	42WA107	Unknown	2S	5E	29	Heber City	Private	No (R)
61	42WA112	Historic	4S	4E	10	Aspen Grove	State	Yes (D)
62	42WA177	Historic	5S	4E	7	Charleston	BLM	No (R)
63	42WA181	Green Monster Mine	3S	3E	11	Brighton	Private	Yes (D)
64	42WA183	Wasatch Marble Quarry	3S	3E	11	Brighton	Private	No (R)
65	42WA184	Tantamount Adit	3S	3E	11	Brighton	Private	No (R)
66	42WA185	Flagstaff Mine	2S	4E	33	Brighton	Private	No (R)
67	42WA190	Prehistoric/historic	2S	5E	26	Francis	Reclamation	Yes (D)
68	42WA192	Historic	3S	4E	17	Brighton	City	Yes (D)
69	42WA198	Riverdale Ranch	3S	5E	18	Heber City	Private	Yes (D)
70	42WA199	Historic	3S	5E	29	Heber City	Private	No (R)
71	42WA200	Historic	4S	5E	10	Center Creek	Private	Yes (D)
72	42WA201	Prehistoric	3S	5E	33	Heber City	Private	Yes (D)
73	42WA215	Prehistoric	5S	5E	12	Center Creek	Private	Yes (D)
74	42WA217	Wasatch Canal	3S	5E	7	Heber City	Other	Yes (D)
75	42WA218	Timpanagos Canal	3S	5E	6	Heber City	Other	Yes (D)
76	42WA219	Humbug Canal	4S	5E	4	Heber City	Other	Yes (D)
77	42WA220	Historic	4S	4E	9	Charleston	State	No (R)
78	42WA221	Historic	4S	4E	9	Charleston	Unknown	No (R)
79	42WA222	Huber Farmstead	3S	4E	21	Heber City	State	Yes (D)
80	42WA224	Upper Charleston Canal	4S	4E	1	Charleston	Private	Yes (D)

Attachment: List of archaeological sites located within the APE

No.	Site	Type	Township	Range	Section	Map Reference	Land Ownership	National Register Eligible
81	42WA225	Historic	4S	4E	23	Charleston	Private	No (R)
82	42WA226	Historic	4S	4E	14	Charleston	Private	No (R)
83	42WA227	Historic	4S	5E	18	Charleston	Private	No (R)
84	42WA228	Epperson Ditch	3S	4E	34	Charleston	Private	No (R)
85	42WA229	West Bench Ditch	3S	4E	21	Charleston	Private	No (R)
86	42WA242	Historic	3S	5E	34	Francis	Private	No (R)
87	42WA243	Lake Creek Channel	3S	5E	2	Francis	Private	Yes (D)
88	42WA244	Little Pole Can. Ditch	4S	5E	1	Center Creek	Private	Yes (D)
89	42WA246	Unknown	3S	4E	25	Heber City	Private	No (R)
90	42WA247	Historic	3S	4E	36	Heber City	Private	No (R)
91	42WA248	Historic	3S	4E	36	Heber City	Private	No (R)
92	42WA250	Historic	4S	4E	11	Charleston	Reclamation	No (R)
93	42WA251	Historic	3S	5E	18	Heber City	Private	No (R)
94	42WA252	Historic	3S	5E	34	Francis	Private	Yes (D)
95	42WA253	Historic	2S	4E	34	Heber City	BLM	No (R)
96	42WA258	Historic	2S	4E	31	Brighton	Private	Yes (R)
97	42WA259	Historic mine and domestic debris scatter	2S	4E	32	Brighton	Private	Yes (R)
98	42WA260	Historic mining site	2S	4E	32	Brighton	Private	Yes (R)
99	42WA261	Historic mining site	2S	4E	31	Brighton	Private	Yes (R)
100	42WA262	Historic mining site	2S	3E	36	Brighton	Private	Yes (R)
101	42WA263	Historic mining site	2S	4E	31	Brighton	Private	Yes (R)
102	42WA265	Historic	3S	4E	35	Heber City	Private	No (R)
103	42WA266	Historic	4S	4E	1	Heber City	State	Yes (D)
104	42WA267	Historic	3S	4E	36	Heber City	State	Yes (D)
105	42WA274	Historic dam	2S	4E	31	Brighton	Private	Yes (R)
106	42WA275	Historic dam	2S	4E	31	Brighton	Private	Yes (R)
107	42WA276	Historic dam	2S	4E	31	Brighton	Private	Yes (R)

Attachment: List of archaeological sites located within the APE

No.	Site	Type	Township	Range	Section	Map Reference	Land Ownership	National Register Eligible
108	42WA277	Historic dam	2S	4E	31	Brighton	Private	Yes (R)
109	42WA316	Hawkeye McHenry Mine	2S	4E	26	Heber City	Private	Yes (D)
110	42WA317	Historic	2S	4E	26	Heber City	Private	No (R)
111	42WA318	Liberty Tunnel	2S	4E	26	Heber City	Private	Yes (D)
112	42WA319	Ingersol Tunnel	2S	4E	26	Heber City	Private	No (R)
113	42WA320	Homestake Mine	2S	4E	26	Heber City	Private	Yes (D)
114	42WA321	Star Tunnel	2S	4E	26	Heber City	Private	Yes (D)
115	42WA374	Historic	4S	4E	15	Charleston	Private	Nominated

(D) – Determined, (R) – Recommended