

# RECLAMATION

*Managing Water in the West*

## **Draft Environmental Assessment Provo Reservoir Canal Increased Capacity And Central Utah Project Completion Act Section 207 Funding**

**PRO-EA-09-001**

**Provo Area Office  
Upper Colorado Region  
Provo, Utah**



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

**February 2009**

## **Mission Statements**

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

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

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Department of the Interior, Central Utah Project Completion Act Office  
Central Utah Water Conservancy District



**U.S. Department of the Interior**  
Bureau of Reclamation  
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# Introduction

This document is a draft Environmental Assessment (EA) analyzing two Federal actions related to the Provo Reservoir Canal (PRC), a feature of the Provo River Project located in Utah County, UT. The first Federal action is whether the Bureau of Reclamation (Reclamation) should authorize an increase in capacity of the PRC, from 550 cfs to 630 cfs, at approximately 800 North in Orem, Utah, and from 550 cfs to 585 cfs at the northern terminus of the canal, in order to provide reliable future delivery of water from the Central Utah Project, Utah Lake Drainage Basin Water Delivery System (ULS) to Salt Lake County via the PRC. With such a capacity increase, the enclosed canal would have a capacity of 550 cfs at the Murdock Diversion, increasing to 630 cfs at approximately 800 North to accommodate the ULS pipeline, and from that point, tapering down to 585 cfs at the northern terminus.

The second Federal action is whether the Department of the Interior, Central Utah Project Completion Act Office (Interior), should provide funding pursuant to Section 207 of the Central Utah Project Completion Act to enclose the PRC.

This Environmental Assessment (EA) has been prepared as required by the National Environmental Policy Act (NEPA), and the Council on Environmental Quality and U.S. Department of the Interior regulations implementing NEPA. This EA will analyze the potential impacts of the proposed actions. As required by the NEPA implementing regulations, if potentially significant impacts to the human environment are identified, an environmental impact statement will be prepared. If no significant impacts are identified, Findings of No Significant Impact (FONSI) will be issued by Reclamation and Interior.

# Purpose and Need

The need for the proposed action is to supply municipal and industrial water (M&I) to the Wasatch Front. The purposes of the proposed action are: to enlarge a portion of the canal to reliably accommodate delivery of Utah Lake Drainage Basin Water Delivery System (ULS) water; and allow for funding pursuant to Section 207 of CUPCA.

# Background

The PRC extends from the Murdock Diversion in Provo Canyon to the ‘Point of the Mountain’ near the Utah County/Salt Lake County boundary, a distance of approximately 22 miles. The PRC was originally built in the early 1900s by the Provo Reservoir Company, to a capacity of 180 cfs. Operation and maintenance of the Canal was later taken over by the Provo Reservoir Water Users Company (PRWUC). In the 1940s, the Canal was enlarged to its current capacity of 550 cubic feet per second (cfs) at the Murdock Diversion, tapering to 350 cfs at the northern terminus, as part of the Provo River Project, in order to deliver water developed in the Project from Deer Creek Reservoir to irrigation and M&I water users in Utah and Salt Lake Counties. The PRC is on land owned in fee title or easement by Reclamation. The Provo River Water Users Association (PRWUA) operates and maintains the PRC under an agreement with Reclamation.

Until the latter half of the 20<sup>th</sup> century, the PRC traversed farmland and open areas for most of its length. Historically, much of the water delivered in the Canal was irrigation water. As development has occurred in the last 50 years, much of the PRC now traverses subdivisions and commercial properties through Orem, Lindon, Pleasant Grove, Cedar Hills, Lehi, American Fork, Highland, and other communities in northern Utah County. As Salt Lake and Utah Counties have continued to grow, more water is delivered through the PRC for M&I purposes. Both the Jordan Valley Water Conservancy District (JWCD) and the Metropolitan Water District of Salt Lake & Sandy (MWDSL), have treatment facilities that take water from the end of the PRC near the Point of the Mountain. Presently, the State of Utah allows JWCD and MWDSL to utilize the open Canal to convey water to their treatment facilities for municipal and industrial purposes.

Annual diversions into the Canal from 1950 through 2000 averaged 76,600 acre-feet. Diversions have varied from as little as 18,500 acre-feet in 1992 (at the end of the driest period of record) to over 124,000 acre-feet in 1954. The PRC is generally used to deliver water between April 15 and October 15 of each year. Water delivered through the PRC includes direct flow and storage rights of the PRWUC, Provo River Project (PRP), and the Central Utah Project (CUP) including:

- direct flow and stored water of the Provo River;
- direct flow and stored water of the Weber River conveyed through the Weber-Provo Canal and;
- direct flow of the Duchesne River conveyed through the Duchesne Tunnel.

## **Section 207 Funding**

Section 207 of the Central Utah Project Completion Act (CUPCA), authorizes a comprehensive program to study and improve water management within the Central Utah Water Conservancy District (CUWCD). Section 207(e)(2) provides Federal funds from Interior to finance up to 65 percent of the cost of implementing water conservation measures within CUWCD, coupled with a required matching local cost share of 35 percent of non-Federal funds. The CUWCD has developed the Water Conservation Credit Program to meet the requirements of Section 207(e). It identifies, evaluates, and implements water conservation.

In addition, Section 207(b)(4) of CUPCA, allows for water that is saved from projects funded under the Water Conservation Credit Program to be made available to the Department of the Interior for instream flows. In exchange for the water, the Department of the Interior provides a credit to CUWCD for the annual contractual repayment obligation in proportion to the water provided for instream flows. The CUWCD in turn provides a credit to the petitioner for the water.

In accordance with Section 207 of CUPCA, Interior would provide up to \$39,000,000 of Federal funds to CUWCD toward the cost of enclosure of the Provo Reservoir Canal. As provided in Section 207(b)(4) of CUPCA, Jordan Valley Water Conservancy District (JVWCD) and Metropolitan Water District of Salt Lake and Sandy (MWDSL) together will dedicate to CUWCD, a total of 8,000 acre-feet of their allocation of CUP water annually and in perpetuity. CUWCD would then provide 8,000 acre-feet of water to the Department of the Interior for instream flows, specifically to assist in the recovery of the endangered June sucker. Interior would reduce CUWCD's annual contractual repayment obligation and CUWCD would in turn provide a credit to JVWCD and MWDSL for the water provided.

Section 207 funding, if approved, would comprise part of the total enclosure project funding along with other Federal and non-Federal funds.

## **Participating Agencies and Decisions to be Made**

Reclamation is the lead agency in preparing this EA. Interior and CUWCD are cooperating agencies.

If the proposed action is selected, an increase in capacity through a portion of the PRC would be authorized, and the PRC Enclosure Project would be eligible for funding pursuant to Section 207 of CUPCA.

# Related Projects and Analysis Pursuant to the National Environmental Policy Act (NEPA)

1. **Provo Reservoir Canal Enclosure Project:** The PRWUA asked Reclamation to authorize enclosure of the PRC, in order to improve water quality, increase public safety and reduce liability, reduce interference to PRC operations resulting from adjacent development, reduce maintenance costs, conserve water, and provide added security for water delivery facilities. In April 2003, Reclamation completed an EA analyzing the effects of enclosing the PRC. On May 1, 2003, Reclamation issued the final EA (PRO-EA-03-006) and a FONSI (PRO-FONSI-03-006) authorizing enclosure of the PRC but specifying that the PRC's capacity and operations should remain unchanged.

The PRC Enclosure Project EA, PRO-EA-03-006, is incorporated by reference into this EA as discussed further below.

2. **Title Transfer of Provo Reservoir Canal, Salt Lake Aqueduct and Pleasant Grove Property, Provo River Project:** Following Reclamation's authorization to enclose the PRC, Reclamation was asked to consider transferring three of its Provo River Project facilities, including the PRC, to non-Federal ownership. An EA was prepared to analyze the potential environmental effects of this request, with Reclamation serving as lead agency and Interior, the United States Department of Agriculture Forest Service (Uinta and Wasatch-Cache National Forests), and the National Park Service participating as cooperating agencies. In October 2004, Reclamation and the cooperating agencies issued a final EA (PRO-EA-04-001) and FONSI (PRO-FONSI-04-006) supporting title transfer for all three facilities. These documents are available on the Internet at <http://www.usbr.gov/uc/envdocs/ea/provoResTT/index.html>. Congressional authorization is required for all title transfers, and this was provided through enactment in October 2004 of the Provo River Project Transfer Act, P.L. 108-382.

Ownership of the Salt Lake Aqueduct has been transferred pursuant to P.L. 108-382, but title transfer for the PRC and the Pleasant Grove Property has not yet occurred and so these facilities remain in Federal ownership.

3. **Utah Lake Drainage Basin Water Delivery System (ULS):** Implementation of the ULS, the last component of the Bonneville Unit of the Central Utah Project, was analyzed in an EIS prepared by Interior, CUWCD, and the Utah Reclamation Mitigation and Conservation Commission (URMCC) as joint lead agencies, with eight other agencies including Reclamation serving as cooperating agencies. The draft EIS (INT DEIS 04-16) was published in March 2004, and following a public comment period and review and incorporation of comments received, a final EIS (INT FEIS 04-41) was published in September 2004. A Record of Decision (ROD) authorizing implementation of the Spanish Fork Canyon – Provo Reservoir Canal Alternative including the conveyance of ULS water in the PRC was issued on December 22, 2004. These documents are available on the Internet at <http://www.cuwcd.com/cupca/projects/uls/environmentalimpact.htm>.

The ULS EIS discussed on p. 1-50 the plan to hook up the pipeline coming from Spanish Fork Canyon to the Provo Reservoir Canal (PRC) at approximately 800 North in Orem, Utah. However, although this new pipeline would deliver 80 cfs into the PRC, the EIS did not discuss or analyze any changes in PRC capacity of 550 cfs. The EIS did specify that 30,000 acre-feet per year of M&I water would be delivered to water treatment plants in Salt Lake County via existing water delivery infrastructure.

4. **Provo Reservoir Canal Trails EA:** In September 2008, the Federal Highway Administration (FHWA), Utah Department of Transportation (UDOT), and Reclamation, as joint lead agencies, published a draft EA to analyze the effects of using funds appropriated to the FHWA by Congress for the purpose of constructing non-motorized trails in the PRC right-of-way after it is enclosed. Because transfer of the PRC from Federal ownership has not yet occurred, Reclamation must authorize use of the PRC right-of-way for trails. If Reclamation authorizes trail construction, it would be subject to certain conditions, including 1) enclosure of the PRC must be completed, and 2) use of the trails would be secondary to the continued priority of the right-of-way for water delivery systems. The final EA for this project was published in November 2008, along with FONSI's by both FHWA and Reclamation.
5. **SR-92: Lehi to Highland EA:** In September 2008, FHWA, UDOT and Reclamation published a draft EA to analyze the effects of improvements to State Road 92 in Utah County, Utah, between Interstate 15 and the mouth of American Fork Canyon. Depending on project design, Reclamation may need to authorize work within federal lands or easements associated with the PRC as well as the Jordan

Aqueduct. The final EA for this project and FHWA's FONSI were published in November 2008; Reclamation's FONSI was signed on December 1, 2008.

## **Scope of Analysis and Assumptions for this EA**

As noted above, enclosure of the PRC has already been analyzed and authorized by Reclamation and conveyance of ULS water in the PRC was authorized by the Assistant Secretary – Water and Science. The environmental effects of the construction activity required to enclose the PRC were found to be minimal and temporary, except for an adverse effect under the National Historic Preservation Act of modifying the PRC which is an eligible historic structure. Mitigation for this adverse effect was agreed upon among Reclamation, the PRWUA, and the Utah State Historic Preservation Office. A Memorandum of Agreement to complete the mitigation was executed, and mitigation has been completed even though the enclosure project has not yet been initiated.

The scope of analysis for this EA is therefore limited to whether there would be any additional effects, when compared to the originally authorized PRC Enclosure Project, as a result of allowing an increase in capacity from 550 cfs to 630 cfs at the point of tie-in of the ULS pipeline at approximately 800 North in Orem. From its highest capacity of 630 cfs at the point of ULS pipeline tie-in, its capacity would decrease in stages to a capacity of 585 cfs at the PRC's northern terminus.

In particular, the following assumptions apply to this EA:

- Conveyance of CUP water in a PRP facility is acceptable and would not interfere with PRP operations.
- No change in PRP operations, including diversions from Provo River, and therefore no effect on Threatened & Endangered Species, in particular the endangered June sucker.
- This EA only covers the enlargement of the PRC to reliably accommodate delivery of ULS water and the Section 207 funding associated with the enclosure of the PRC. Any other, as yet unknown and unforeseen conveyance of water would be subject to additional NEPA compliance as appropriate.
- The project area is PRC from ULS pipeline at approximately 800 North, to the canal's northern terminus. From Murdock Diversion to ULS pipeline; capacity remains 550 cfs as authorized in 2003.
- Enclosure of the canal and conveyance of ULS water is a given, it has already been authorized. The issue is 1) whether Reclamation should authorize the additional capacity and 2) whether Interior should provide 207 funds for the enclosure project.

## **No Action Alternative**

Under the No Action alternative, Reclamation would not authorize a change to the capacity of the PRC, and Interior would not provide Section 207 funding for the PRC enclosure project.

If Reclamation decides not to authorize an increase in PRC capacity, the canal capacity would remain at 550 cfs capacity for the entire length of the PRC so long as it remains in Federal ownership. As a result, when the ULS pipeline is constructed and connected to the PRC, this would cause the ULS water to be delivered through the PRC and Jordan Aqueduct on a space available basis, severely impacting the delivery of ULS water to Salt Lake County. Under the No Action alternative, the 30,000 acre-foot per year of ULS water could not be reliably and efficiently delivered.

If Interior decides not to provide Section 207 funding for enclosure of the PRC, this might mean that the enclosure of the canal may not occur. Presently, the PRC's capacity is 550 cfs at the Murdock Diversion and 350 cfs at its northern terminus. Thus, continued operation of the present canal would create a situation where there is insufficient capacity to reliably transport ULS water. In addition, without Section 207 funding, 8,000 acre feet of water would not be provided by JVVCD and MWDSLs to benefit June suckers.

## **Proposed Action Alternative**

Under the Proposed Action alternative, Reclamation would authorize the increase in the capacity of the PRC from approximately 800 North in Orem to the canal's northern terminus, and Interior would provide Section 207 funding for the enclosure of the PRC.

The PRC Enclosure Project specifications would be as described in Section 2.3 of the 2003 final EA, except that the size of the box culvert used would be approximately 12' x 10' rather than 12' x 8'. If pipe is used instead of box culvert, the diameter of the pipe would be approximately 12' rather than 10'. These sizes may be subject to further change during final design, but the construction footprint and procedures would be the same as described and analyzed in the 2003 final EA. The construction schedule as described in Table 2-2 of the 2003 EA is outdated; the construction period will still be up to three years but the first season of construction would be 2009 at the earliest, and construction may occur during the irrigation season as well as during winter months.

# **Analysis of Potential Environmental Effects**

The ULS EIS analyzed the effects of completing the Bonneville Unit of the Central Utah Project by delivering 101,900 acre feet on an average annual basis, from Strawberry Reservoir for M&I use on the Wasatch Front. The effects of the use of the water to be conveyed in a larger PRC have therefore already been analyzed and disclosed, as have the effects of constructing the pipeline from Spanish Fork to the point of connection with the PRC. Additionally, as previously stated, the potential effects of enclosing the PRC were analyzed in the 2003 EA. Thus, the potential effects of the proposed Federal actions analyzed in this EA are limited to any differences associated with construction of the enclosed PRC. As noted above, though the diameter of the enclosed PRC would be larger by approximately 2 feet, this would not change the construction footprint within the PRC right-of-way.

**Table 1**  
**Potential Effects Compared With Previously Approved**  
**PRC Enclosure Project**

RESOURCE	ANALYZED IN 2003 EA	ADDITIONAL EFFECTS	COMMENTS
Surface Water Resources and Water Quality	Yes	No	
Groundwater Resources	Yes	No	
Terrestrial Habitat, Wetlands, Wildlife Resources	Yes	No	
Visual Resources	Yes	No	
Health, Safety, Air Quality, Noise	Yes	No	
Transportation and Utilities	Yes	No	
Recreation	Yes	No	
Cultural Resources	Yes	No	Canal Enclosure Adverse Effect Already Mitigated
Land Use	Yes	No	
Environmental Justice	Yes	No	
Indian Trust Assets	Yes	No	
Threatened and Endangered Species	Yes	No	No change in Provo River diversions; No change in ULS effects (consultation completed by September 8, 2004 letter from FWS). Under no action, 8,000 acre-feet per year of saved water from enclosure of canal would not be available to benefit June sucker.
Socioeconomics	No	No	No concerns identified
Geologic Hazards	No	No	No concerns identified
Cumulative Effects	Yes	No	

## **Other Considerations**

No other environmental, cultural or social issues have been identified that would be affected by the proposed actions. The proposed actions would not affect the existing water delivery infrastructure in Utah and Salt Lake Counties. Under the no action alternative, delivery of ULS water could be compromised, but delivery of existing water supplies would continue as at present.

## **Conclusions**

In comparison with the previously authorized Provo Reservoir Canal enclosure project, and the previously authorized ULS now under construction, the proposed PRC capacity increase to convey ULS water is an environmentally benign action. For water supply needs along the Wasatch Front, the proposed action has benefits related to reliability of supply.