

Record of Decision  
for the  
Provo River Delta Restoration Project  
U.S. Department of the Interior

I. Introduction

The U.S. Department of the Interior (Interior), Utah Reclamation Mitigation and Conservation Commission (Mitigation Commission), and the Central Utah Water Conservancy District (District) are Joint Lead Agencies responsible for compliance and implementation of the Provo River Delta Restoration Project (PRDRP). This Record of Decision (ROD) documents Interior's selection of Alternative B (The Preferred Alternative) and Option 2 as described in the Final Environmental Impact Statement (Final EIS) and as modified herein as the Selected Action for implementation.

The Executive Director for the Mitigation Commission will issue a separate ROD for the PRDRP. This separate decision is necessitated by the responsibility and authority of the Mitigation Commission to mitigate for the Central Utah Project.

The Final EIS was filed with the Environmental Protection Agency and a Notice of Availability was published in the Federal Register on April 17, 2015. The PRDRP Final EIS and this ROD fulfill the requirements of the National Environmental Policy Act of 1969 (NEPA) (42 USC 4321 et seq.) and the Council on Environmental Quality Regulations for Implementation of Procedural Provisions of NEPA (40 CFR 1505.2). The Final EIS also serves as the NEPA compliance document for the Clean Water Act, Endangered Species Act, National Historic Preservation Act, and Fish and Wildlife Coordination Act, and provides authority for the Joint Lead Agencies to enter into contracts and agreements and to obtain permits that will be required for the construction and operation of the PRDRP.

The PRDRP will restore a naturally functioning river-lake interface (delta) essential for recruitment of June sucker (*Chasmistes liorus*), a species listed as endangered under the Endangered Species Act (7 USC § 136, 16 USC § 1531 et seq.). June sucker exists naturally only in Utah Lake and its tributaries. The PRDRP will provide habitat for spawning, hatching, larval transport, survival, rearing, and recruitment of June sucker. In addition to fulfilling environmental commitments associated with water development projects in Utah and contributing to recovery of June sucker, the project is intended to help improve water quality on the lower Provo River and to provide enhancements for public recreation in Utah County. The Selected Action will reduce the amount of private lands that will need to be acquired for the project while still providing adequate space for a naturally functioning river delta and sufficient habitat enhancement for achieving the needs of the project.

This ROD approves the completion of the PRDRP through the combined efforts of Interior, the District, and the Mitigation Commission and other potential participants. This ROD explains the basis for this decision and establishes certain parameters under which the PRDRP will be constructed and operated. This ROD concludes that the Selected Action provides the best balance of meeting the project purposes and need of

providing adequate spawning and rearing habitat necessary for the recovery of the June sucker population in Utah Lake while considering environmental, economic, and social issues identified during the NEPA process.

## II. Background

The June sucker is an endangered fish species that exists naturally only in Utah Lake and spawns in the lower Provo River, a Utah Lake tributary. The fish is named for the timing of its annual spawning migration, which typically occurs sometime around June. The June sucker was listed as an endangered species on April 30, 1986 (51 FR 10857). The lower 4.9 miles of the Provo River, from Utah Lake upstream to the Tanner Race Diversion Dam, is designated as critical habitat for the June sucker. Under the Endangered Species Act, critical habitat is an area essential to the species' conservation that requires special management and protection.

Section 6(b) of the Endangered Species Act authorizes the Secretary of the Interior to enter into agreements with any State for the administration and management of any area established for the conservation of endangered or threatened species. Section 2(c)(2) of the Endangered Species Act requires federal agencies to cooperate with State and local agencies to resolve water resources issues in concert with conservation of endangered species. During April of 2002, Interior signed an agreement to support and Implement the June Sucker Recovery Implementation Program (JSRIP).

The Central Utah Project Completion Act (Public Law 102-575 of 1992, as amended) (CUPCA) authorized the completion of the Diamond Fork System under Section 202 (a)(6). Subsequently, the 1999 Diamond Fork System ROD and the 2005 Utah Lake System ROD committed Interior to participate in the JSRIP. The JSRIP identified the restoration of the Provo River delta as a priority for recovery of the June sucker.

## III. Purpose and Need

Each spring in the lower Provo River, adult June sucker are observed spawning, and significant numbers of recently hatched larvae are subsequently monitored drifting downstream. However, post-larval survival rates of June sucker have been found to be low to zero since the species was listed as endangered in 1986 (and before). Monitoring efforts have not documented the successful recruitment of wild June sucker from Provo River, and research has shown that larval fish generally do not survive longer than about 20 days after hatching. It is believed that the larval fish die because of a lack of suitable "nursery" or rearing habitat and are therefore unable to recruit into the adult population. The PRDRP is needed to facilitate recovery of June sucker by implementing requirements of the June Sucker Recovery Plan to restore naturally functioning habitat conditions in the Provo River/Utah Lake interface that are essential for spawning, hatching, larval transport, survival, rearing, and recruitment of June sucker. ●

The purposes of the PRDRP are to:

- implement the specific criteria of the June Sucker Recovery Plan (USFWS 1999) to restore a naturally functioning Provo River Delta ecosystem essential for recruitment of June sucker;
- provide recreational improvements and opportunities compatible with the habitat restoration project; and

- adopt flow regime targets for the lower Provo River and provide delivery of supplemental water to the lower Provo River, including additional conserved water.

#### IV. The Decision and Description of Other Alternatives

The PRDRP involves restoring a more natural river/lake interface in the lower Provo River at Utah Lake and reestablishing essential spawning and rearing habitat for June sucker. This habitat will support juvenile June sucker until they are capable of surviving in the larger Utah Lake environment. All of the alternatives evaluated in the Final EIS address the current lack of natural recruitment of June sucker in Utah Lake.

Historically, a broad delta and floodplain existed at the lower Provo River/Utah Lake interface. This delta was eliminated by the straightening and diking of the main channel. In a naturally functioning delta ecosystem, the river zone is characterized by a meandering channel across a broad floodplain. As the river approaches a still body of water, it slows down and suspended sediments drop out of the flow. When these sediments accumulate over time, the river begins to braid into a series of distributary channels. Sediment accumulation causes the threaded channels to shift position over time, creating a diversity of aquatic habitat features in the delta plain zone such as abandoned channels and oxbow wetlands. These shallow and warmer areas off the main river channel support growth of submerged and emergent vegetation that provide food resources for larval fish as well as cover from predators. In the case of historic Utah Lake tributaries, these off-channel habitat zones would have been critical to June sucker survival and recruitment to more developed life stages.

To fulfill the purpose and need of the PRDRP, three action alternatives were advanced for detailed analysis. These are referred to as Alternatives A, B, and C in the Final EIS. Under any of the action alternatives, the majority of the water in the Provo River would be routed north of the existing channel corridor into a newly created riparian river corridor and river delta area. In addition, two options were developed to improve conditions within the existing channel. A No-Action Alternative was also evaluated.

- a. **The Selected Action - Alternative B (The Preferred Alternative) & Existing Channel Option 2.** It is the decision of Interior to select Alternative B and Option 2 for the existing Provo River channel as described in the PRDRP Final EIS, and as modified herein, as the Selected Action for implementation. Interior may increase the size of Alternative B by acquiring additional land described under Alternative A. However, such additional land acquisition will only be accomplished if the additional land can be acquired on a willing-seller basis. Eminent domain would not be used to acquire lands beyond the minimum required to implement Alternative B and Option 2. Therefore, a potentially enlarged Alternative B (the Preferred Alternative) and Option 2 are adopted as the Selected Action. The Selected Action responds directly to recovery criteria of the 1999 June Sucker Recovery Plan and aids in accomplishing goals of the JSRIP to achieve sufficient progress toward the recovery of the June sucker.
  - i. *Provo River Delta Alternative B.* Under the Selected Action a new river channel will be constructed, diverting a majority of the flow of the Provo River into braided channels and restored river delta area, promoting the development of a diverse, vegetated aquatic environment capable of supporting young-of-year and juvenile June sucker and other aquatic life. The Selected Action reduces (unless additional lands can be acquired on a willing-seller basis) the amount of higher-valued private agricultural crop lands to be acquired while still providing adequate space for a naturally functioning river delta and sufficient habitat

enhancement for achieving the project need and purposes. Under this alternative, approximately 310.3 acres of property will be acquired and/or included in the project.

- ii. *Existing Channel Option 2.* Under Existing Channel Option 2 (part of the Selected Action), the majority of the Provo River water will be diverted north into a new river channel and into the restored delta area. The existing river channel will remain in place and be provided with a guaranteed flow of 10 to 50 cubic feet per second depending upon the volume of flow in the river. Under Option 2 a small dam will be constructed at the downstream end of the channel near Utah Lake State Park. This dam will maintain the water level in the existing channel at a relatively constant elevation year round.

The Selected Action also includes the design, construction, and operation of an aeration system for the existing channel. The purpose of the aeration system will be to increase dissolved oxygen concentrations and improve water quality during the hot summer months compared with existing baseline conditions. The aeration system will also reduce or eliminate blue-green algae and reduce the release of manganese, iron, nitrogen, and phosphorous from the bottom sediments.

Additional details for improving the condition of the existing channel as a recreation resource, such as safer access for anglers and other recreational water users, will be incorporated during final design and will involve additional coordination and cooperation with Utah County, Provo City, landowners, and interest groups.

- iii. *Recreation Features and Public Access.* Under the Selected Action, the newly developed natural area will provide a variety of public recreation opportunities, including trails that will connect with the existing Utah County/Provo River Trail system. A berm will be constructed along a portion of the property acquisition boundary to prevent lake inundation and river channel migration onto the adjacent private lands. A trail will be integrated into the construction of the berm and, will connect with the Provo River Parkway Trail on the east end and the remaining portion of the Skipper Bay Dike Trail on the west end. A parallel, unpaved trail intended for equestrian use would be constructed at the base of the berm if it is determined to be reasonably practicable in final design.

Under existing conditions, trail users can access the existing Skipper Bay Dike Trail from the Provo River Parkway Trail via a short segment of 4200 West Street. The Joint Lead Agencies will cooperate with Utah County to improve this trail connection. With this improvement, a complete trail loop will be completed. A viewing tower will be constructed where the new berm trail meets with the Skipper Bay Dike Trail near the Utah Lake shoreline.

The diversion of a majority of the Provo River water into the new river channel will require the realignment of a portion of Boat Harbor Drive and a new bridge over the existing river channel. The planned design includes routing the Provo River Parkway trail underneath the new bridge, and constructing a pedestrian bridge over the new river channel.

Public access to the new river delta area will be provided from several river access parking areas. Access into the river delta area will be provided for non-motorized activities, such as canoeing and fishing, and potentially for waterfowl hunting, as will be determined in cooperation with the Utah Division of State Parks and Recreation and the Utah Division of

Wildlife Resources. While the proposed delta is designed to provide prime habitats for the early stages of development for June sucker, these habitats will also benefit some sport fishes found in Utah Lake, including various bass species (*Centrarchidae* sp.) and catfish species (*Ictaluridae* sp.).

- iv. *Delivery and Management of Supplemental Flows for the Provo River.* The CUPCA and prior environmental commitments associated with CUPCA included mitigation commitments with provisions to supplement flows within the lower Provo River and Hobble Creek to support June sucker spawning and rearing. In addition to already-committed baseline supplemental flows, the Selected Action includes:
    1. adopting seasonal flow regime targets identified in the Lower Provo River Ecosystem Flow Recommendations Report (Stamp et al. 2008);
    2. delivering up to an additional 4,500 acre-feet of conserved water, on a space-available basis, under the Utah Lake Drainage Basin Water Delivery System (ULS) Project to help meet the target flow regime recommendations; and
    3. dividing the flow so that the first 10 cubic feet per second (cfs) and up to 50 cfs is delivered to the existing lower Provo River channel to help maintain aesthetics, water quality, and recreational values.
  - v. *Long-term Management.* The United States would enter into a management contract with a local entity, most likely the State of Utah, to manage the PRDRP. Specific terms and conditions of the contract would be developed at the completion of the construction phase of the proposed project, consistent with the project's purposes, need, goals, and objectives described in the Final EIS.
- b. **Not-Selected: Action Alternatives A and C and Existing Channel Option 1.**  
Alternatives A and C include similar features to Alternative B but would utilize different portions of the overall study area. Alternative A would require the largest acreage of the three action alternatives (507.3 acres) and would maximize the potentially available rearing and spawning habitat for June sucker north of Boat Harbor Drive. Like the Selected Action, Alternative C would reduce the amount of land that would be required for the project compared to Alternative A. The key difference, however, is Alternative C was designed to exclude an area of wetlands supported by peat soils while still providing June sucker spawning and rearing habitat improvements. This would be accomplished by acquiring 298.3 acres of higher-valued productive agricultural lands to the south and east of these peat soil areas. However, accomplishing this would require construction of a berm through other types of existing wetlands. The proposed northern berm under Alternative C would require an estimated 1.6 acres of fill placed through the middle of jurisdictional wetlands. In contrast, Alternative A would not require any fill in wetlands and Alternative B would require 0.87 acres of fill in wetlands to construct the berm. Wetland impacts associated with Alternative B are associated with placing a berm near and moving a man-made drainage ditch. Alternatives A and B also propose to partially fill and plug existing drainage ditches to restore site hydrology to the peat wetlands.

The proposed location for the diversion of the Provo River into its new channel would be the same for either Alternative A or C, about 250 feet further downstream of the diversion location of Alternative B. Either Alternative A or C, and Existing Channel Option 1 would also include the delivery and management of supplemental flows for the Provo River as described for the Selected Action.

Option 1 for the existing river channel differs from Option 2 by not including the dam at the downstream end of the channel near Utah Lake. This would leave the channel open to Utah Lake and allow for fluctuating water levels at various times of the year.

- c. **No-Action Alternative.** Consideration of a No-Action Alternative is required in regulations for implementing NEPA (40 CFR 1502.14). This alternative considers the consequences of taking “no action” with respect to the purpose and need of the proposed action. Under the No-Action Alternative, the planned project would not be implemented, but remaining actions in the June Sucker Recovery Plan and JSRIP would proceed as planned, subject to NEPA compliance as appropriate. The underlying need for the project would not be achieved under the No-Action Alternative and the commitment to restore the Provo River Delta as a necessary step toward delisting the June sucker as an endangered species would remain.
- d. **Environmentally Preferable Alternative.** Council on Environmental Quality regulations require an agency that has prepared an EIS to identify in the ROD the alternative or alternatives considered to be environmentally preferable (40 CFR 1505.2(b)). The environmentally preferable alternative is the alternative that would promote the national environmental policy as expressed in §101 of NEPA. Typically this means the alternative that causes the least damage to the biological and physical environment, and best protects, preserves, and enhances historic, cultural, and natural resources. Alternative A is the environmentally preferable alternative because it would create more aquatic habitat and natural area for dynamic deltaic processes to occur. However, Alternative B is expected to provide a sufficient area for meeting June sucker recovery goals while reducing effects to private landowners. As previously stated, Interior may increase the size of Alternative B by acquiring additional land described under Alternative A. However, such additional land acquisition would only be accomplished if the additional land could be acquired on a willing-seller basis.

Option 2 for the existing river channel is environmentally preferable because it provides a better opportunity to manage the channel as a sport fishery. Maintaining a relatively constant water elevation in the channel will provide more reliable and safer recreation access and will be more aesthetically pleasing during all seasons of the year. Also, separating the channel area from Utah Lake will provide the opportunity to exclude carp, to actively manage the channel as a sport fishery, and to prevent June sucker from potentially attempting to reach spawning areas through the old channel, which will no longer provide access to spawning areas.

e. **Alternatives Considered but Not Advanced**

- i. *Restoration Area Options Considered.* Numerous potential alternatives for meeting the project need were carefully considered and evaluated but not advanced including alternative geographic locations for restoring the lower Provo River and consideration of all Utah Lake tributaries. A separate report, the *Alternatives Development Technical Memorandum* (URMCC 2011), provides more information about the alternatives development process. Within the

study area, seven preliminary designs for alternatives were initially developed and evaluated through a collaborative process. Four of these preliminary designs were selected as reasonable and feasible alternatives and presented to the public at an open house meeting in December 2011. Based on public input, the largest-acreage alternative, which included acquisition of lands between the existing river channel and Boat Harbor Drive for recreational enhancements, was eliminated from consideration. Elimination of that alternative resulted in the three previously described alternatives, which were carried forward for analysis in the Draft EIS.

- ii. *Existing Channel Options Considered.* Various options for the existing Provo River channel were also considered, ranging from the idea of filling in the channel to having a series of connected ponds supporting a community fishery. Following public workshops in January 2012, only two existing river channel options were carried forward for analysis in the Draft EIS. Additional information was obtained regarding the existing Provo River channel vegetation community and groundwater elevations. Expanded water quality data were also collected. The Joint Lead Agencies also evaluated available surface water supplies to determine amounts that would potentially be available to maintain flow in the existing river channel. These efforts resulted in improved and more detailed designs for the two existing river channel options carried forward in the Draft EIS. Numerous and detailed comments and suggestions for the future of the existing channel were received through scoping and subsequent public involvement activities. A common sentiment expressed by the public was to “keep the existing channel as it is,” because the existing river corridor and trails provide recreation amenities for the local community. Options 1 and 2 were, in part, selected for detailed consideration because these options maintain the existing channel corridor as a community recreation resource that would be connected with and integral to recreation opportunities created in the new river delta area.

## V. Basis for Decision

Interior’s decision to implement the Selected Action is based on the analysis presented in the PRDRP Draft EIS and Final EIS. Interior has reviewed all of the alternatives that were considered, their predicted environmental, economic, and social consequences, and the risks and safeguards inherent in them. Interior has considered the comments received on the PRDRP Draft EIS and Final EIS; the technical documents; the authorizing legislation; the policy recommendations from the Mitigation Commission’s and Interior’s staff; and other relevant materials.

The Selected Action meets the Purpose and Need for the project identified in Section III of this ROD. The Selected Action fulfills previous environmental commitments and mitigates significant impacts.

Acquiring additional land on a willing-seller basis could afford opportunities to expand the boundaries of Alternative B, during final design. Impacts of expanding Alternative B would not result in impacts beyond those disclosed in the Final EIS for Alternative B or Alternatives A or C. Effects of expansion would be expected to range between those disclosed for Alternatives B and A.

The following summary discusses salient issues that influenced the selection of Alternative B as modified herein and Option 2 as the Selected Action.

- a. **Potential Bird-Aircraft Strike Risk.** During scoping and through subsequent interagency consultations, concern was expressed about the potential for increased risk of bird-aircraft strikes in association with air traffic at Provo Airport. Interior regards this potential as a serious matter and devoted substantial effort to analyzing the potential effects of the PRDRP alternatives in this regard, and in developing monitoring and mitigation procedures if adverse effects are determined. Several approaches were taken to evaluate bird-aircraft strike risk and assessment methods were developed in consultation with wildlife specialists from the Federal Aviation Administration (FAA) and U.S. Department of Agriculture (USDA) Wildlife Services.

The concern is whether the PRDRP Selected Action will cause changes in bird species composition, abundance, and/or movement patterns that would result in an increased risk of aircraft-bird strike, given proximity of the PRDRP area to Provo Municipal Airport. The Provo Airport is positioned less than 0.5 mile south of Provo River on the eastern shore of Utah Lake. The Provo Airport is currently surrounded to the northwest, west, southwest, south, and southeast by a combination of emergent marsh and open water. To the north, northeast, and east it is surrounded by intermittently flooded agricultural land and the Provo River. The mouth of the Provo River is approximately 2,000 feet northwest of the runway that was expanded in the 1990s. The airport was built in the center of the historic Provo River delta. Utah Lake is immediately west of the Provo Airport and Provo Bay is immediately to the south. The airport is surrounded by a levee and drain system to keep it from being flooded by Utah Lake. A variety of deep water, emergent marsh, wet meadow, and upland habitats currently occur within the airport property.

Under existing conditions, the PRDRP study area supports a majority of bird species that are known to present a risk to aviation. The Selected Action will create new areas of open water and improve wetland habitats. While many lake-wide factors will continue to influence the abundance and diversity of avian species and movement patterns of birds in relation to the airport, the Selected Action is expected to have an overall net decrease in bird abundance for the list of species identified by the FAA of most concern for air traffic bird strikes. Although many species would decrease in overall abundance, certain individual species are projected to have increased abundance at certain times of the year. Alternative B was assessed to provide the greatest decrease in hazardous bird abundance and least potential increase in aircraft-bird strike risk of the three action alternatives.

Numerous factors influence the risk of a bird-aircraft strike. Abundance alone is not necessarily the sole, or sometimes even the major, factor in risk assessment. Birds only become a potential hazard to aircraft if/when they fly through the aircraft operating air space, typically near the approach and departure space of an airport.

The PRDRP analysis (Final EIS and supporting technical memorandum [URMCC 2015]) predicts changes in abundance for various species of birds known to be hazardous to aircraft. Because a change in abundance may not be directly correlated with strike risk, the analysis also includes observations of bird movement in the project area and airport vicinity under existing conditions. While the analysis predicts changes in bird abundance, it remains uncertain how bird movement patterns might change as a result of the Selected Action (or any alternative) and other changes that may also happen in the airport vicinity over time. Consequently, Interior commits to continue to coordinate with Provo City, USDA Wildlife Services, and FAA to determine and then to carry out appropriate pre- and post-project wildlife monitoring and mitigation. The Mitigation Commission has negotiated a Memorandum of Agreement (MOA) among Provo Airport/Provo City, the FAA, the

U.S. Department of Agriculture's Wildlife Services division, and the Joint Lead Agencies. The MOA establishes a working group to address and coordinate the following:

- i. The Mitigation Commission, Interior, and the District will invite USDA Wildlife Services, Provo Airport, and FAA to participate in design of the Selected Action to help identify any wildlife hazard reduction measures (e.g. plant species, design features) that might be compatible with the delta restoration project.
  - ii. The Mitigation Commission commits to a monitoring and movement study that will be reviewed by USDA Wildlife Services, Provo Airport, and FAA. The study will be carried out under the guidance of a qualified airport wildlife biologist. The Mitigation Commission will execute an agreement or contract to fund the baseline monitoring/movement study with the appropriate entity.
  - iii. The Mitigation Commission commits to a mitigation program for any increased bird-aircraft strike risk caused by the PRDRP. The Mitigation Commission and Interior will endeavor to establish cooperation and coordination among Provo City/Provo Airport, USDA Wildlife Services, and FAA for implementing the monitoring and mitigation efforts.
  - iv. The Joint Lead Agencies will coordinate with FAA and Provo Airport prior to, during and after project construction activities to alert them of pending land use changes that may require recalibration of existing radar systems.
- b. **Private Land Acquisition.** The acquisition of private lands sufficient in size to restore a portion of the historic Provo River Delta and facilitate recovery of June sucker was a major issue of concern. Alternative B was formulated to reduce the necessary land acquisition while still being sufficient in size to meet the underlying need for the project. Alternative B was revised through an extensive and iterative process with study area landowners and business operators. While Alternative C would require slightly less land acquisition than Alternative B (298 acres compared to 310 acres), Alternative C would require the acquisition of significantly more property actively being used for agricultural crop production.

Private (fee) lands (and interests in lands including water rights) will be acquired to implement the Selected Action. Because of the extensive coordination with landowners during the past several years, Interior anticipates acquiring all lands and waters needed for the project on a willing-seller basis. Lands and water that can be acquired on a willing seller basis will be acquired by the Mitigation Commission under their authorities. However, the Draft and Final EIS recognize the potential use of eminent domain authorities as one method available for land acquisition.

The Central Utah Project was originally conceived by the Bureau of Reclamation (Reclamation) and many of the features of this project were completed by Reclamation. CUPCA provided for completing the construction of the Central Utah Project and established oversight of the project with the Secretary of the Interior. As mitigation for aspects of the Central Utah Project, the PRDRP is intended to aid in the recovery of the endangered June sucker. Reclamation is party to the June Sucker Recovery Implementation Program and has continuing responsibility concerning June sucker recovery through the Provo River Project. In the future, Reclamation may be given oversight

responsibility for the Central Utah Project. Therefore, Reclamation Authorities will be used to acquire land and water for the PRDRP when these lands and water cannot be acquired on a willing seller basis.

The Assistant Secretary for Water and Science of the Department of the Interior (Assistant Secretary) concurs that the use of eminent domain authorities to acquire land and water is appropriate, and approves Reclamation's use of its authorities of eminent domain, and all other Reclamation authorities, to complete the PRDRP, with the following restrictions:

- i. Eminent domain will be used only to acquire lands essential to accomplish the PRDRP Alternative B and Option 2 as described in the Final EIS.
- ii. Eminent domain will be used only if/when all reasonable attempts to negotiate purchase on a willing-seller basis are unsuccessful.
- iii. Eminent domain will be used only when such lands are needed to further the purposes of the Colorado River Storage Project Act and CUPCA and accomplish the Assistant Secretary's and the Mitigation Commission's authorized plan for the PRDRP.
- iv. Eminent domain will be used only after prior coordination and consultation with local, county, and state governments about the potential condemnation is conducted by the Mitigation Commission, Interior, and/or Reclamation.
- v. Lands acquired by eminent domain shall be retained (ownership) by the Federal government.

Under any circumstances, Reclamation will make an independent judgment, based on factors it considers pertinent, as to whether it should exercise its eminent domain authorities. The Regional Director of the Upper Colorado Region, Bureau of Reclamation will make the final decision with respect to the application of eminent domain authorities.

As previously described in this ROD, lands in addition to the minimum required under Alternative B could be acquired on a willing-seller basis, either in conjunction with Alternative B or at a later time. Implementing Alternative B as described in the Final EIS would result in splitting of three or more contiguous land ownerships/agricultural operations. It is possible that landowners may request as condition of sale of their property on a willing-seller basis the acquisition of some or all of the remaining properties outside the delineated Alternative B boundary. Other landowners may also have interest in selling their land to the government for the project. Only if these agreements can be achieved on a willing-seller basis would they be consummated. Such lands could be acquired to enhance the habitat values for June sucker, to preserve habitat values for other wildlife or wetlands, or to provide additional recreational opportunities.

- c. **Recreation.** Creating or enhancing recreation opportunities is one of the purposes of the proposed project. The existing Provo River channel and associated trail facilities are valuable recreational resources for activities such as running, walking, cycling, boating, and fishing. Existing recreational facilities and activities will be retained under the Selected Action, and new facilities and opportunities will be created, as described in Section II(a) of this ROD.

d. **Water Quality.** Recent water quality monitoring in the lower Provo River indicates that existing summertime water-quality conditions on the lower Provo River can be poor for aquatic life due to low concentrations of dissolved oxygen. In 2013 dissolved oxygen concentrations were found to be below the lethal limits published in the scientific literature for most fish species and State water quality standards during extended periods of the hot summer months. Current conditions indicate an impairment of designated beneficial uses such as recreation, aesthetics, cold water fisheries, and warm water fisheries. Aeration is included as an element of the Selected Action and is expected to:

- i. Stabilize dissolved oxygen concentrations throughout the water column and the sediment-water interface for all aquatic life. The water column would have a minimum of 5-6 ppm of dissolved oxygen during system operation and would eliminate constantly rising and falling dissolved oxygen levels. This reduces stress in fish and improves growth rates, vitality and overall health. Stable dissolved oxygen levels also increase aquatic invertebrate populations (natural fish food) and natural populations of beneficial aerobic microbes, which can all be killed when the lower part of the water column is anoxic.
- ii. Provide a reduction in nutrients and suspended solids in the water column that can contribute to algae growth.
- iii. Provide a reduction in organic sediments and Sediment-Oxygen Demand (SOD), thus reducing muck on the bottom of the river and improve river sediments.
- iv. Eliminate stagnant areas of water and reduce odors that in the past resulted from stagnant conditions.

Other potential measures for improving water quality in the existing channel are as described in the Final EIS.

e. **Threatened and Endangered Species.** Three federally listed species are known or have the potential to occur in or near the PRDRP study area. The first, June sucker, is an endangered fish species endemic to Utah Lake and is the focus of the project. The second, Ute ladies'-tresses (*Spiranthes diluvialis*), is a threatened orchid flower species that is found in the study area and in other sparse populations throughout the west-central United States. The third species, the yellow-billed cuckoo (*Coccyzus americanus*), is a bird species that may use the existing riparian vegetation habitat during migration. Sightings of migratory individuals were made in 2001, 2002, 2003, and 2005; however, no individuals were detected in surveys conducted in 2012, 2013, and 2014.

The action alternatives would all have similar effects for these species. Possible negative effects could occur through construction impacts and/or hydrologic modification and habitat modification; however, each of the species may also experience long-term benefits from habitat expansions and habitat quality improvements that would be implemented with the Selected Action. The Joint Lead Agencies began informal consultation with the U.S. Fish and Wildlife Service (USFWS) in February 2011. A Biological Assessment, submitted to the USFWS in August 2014, indicated potential to adversely affect some Ute ladies'-tresses individual plants as a result of hydrologic modification.

Through coordination with USFWS, it was concluded that the project could adversely affect some June sucker individuals because some larval or juvenile fish drifting downstream in the Provo River after hatching could be diverted into the existing channel, which would be semi-isolated from Utah Lake and the river delta. These fish would thus be trapped and would likely be consumed by game fish. The potential for this to occur can be minimized in the design of the diversion feature. Another concern was that spawning June sucker may attempt to enter the old river channel, which would no longer provide access to spawning areas of the Provo River. However, research has indicated that June sucker are highly mobile throughout the Utah Lake environment (Buelow 2006), and tend to aggregate near mouths of all major tributary streams during both pre-spawning and post-spawning periods. The same individual fish have been observed in multiple tributaries during the same year, suggesting that they are adaptable with respect to tributaries where they will spawn, seeking out available and functional habitat. Option 2, the selected option, will also exclude fish from entering the old channel. It is also expected that routing higher flows through the river delta area will result in the necessary environmental cues for spawning to occur in the restored delta area and accessible areas higher up in Provo River.

Through subsequent formal consultation with USFWS, appropriate conservation measures were identified to reduce potential effects to all three of the listed species. The USFWS plans on issuing a Biological Opinion during May, 2015. The agreed-upon conservation measures are included in the environmental commitments for the project (Attachment A).

- f. **Existing Channel Riparian Vegetation.** The majority of existing riparian forests along the existing channel are disconnected from surface water in the channel. The vegetation composition is a mixture of native, invasive, and introduced species. Many of the existing trees have presumably been planted. Alteration of the natural river processes resulting from flood control measures has curtailed natural recruitment of native riparian species within the corridor. The result is large, predominately single-aged stands of riparian vegetation. Lack of recruitment over time can lead to extensive loss of trees due to age and allows invasive species to expand. Implementation of the Selected Action will not resolve issues with the existing riparian forest but will preserve the existing conditions for the riparian forest. The existing riparian corridor does provide considerable recreational benefit to the public in its existing condition.

Implementation of existing channel Option 2 will result in a minimal loss (approximately 0.40 acre) of riparian vegetation for construction of the delta diversion dam in the existing channel and the dam at the bottom of the existing channel. However, the riparian section of the newly constructed river channel is expected to result in a net gain of 19 to 37 acres of high functioning native riparian forest. Restoration of natural river processes within the riparian zone of the restored river channel will be capable of supporting riparian forest communities as well as encouraging natural recruitment of native riparian species. Such communities help to reduce the encroachment of nonnative and invasive vegetation and help support a healthy floodplain.

- g. **Wetlands.** A net gain of 25.2 acres of wetlands is expected as a result of restoring the surface water hydrologic connection between the Provo River and Utah Lake, and existing wetlands within the property acquisition area will be restored to a more natural condition and would have a significant functional unit gain. Long-term management of the developing vegetation community will be necessary to prevent further spread of invasive common reed and other weeds. A vegetation management plan has been developed for this purpose and is included as an appendix to the Final EIS.

- h. **Fishery Resources.** Any of the action alternatives would have overall positive effects on fishery resources by restoring a naturally functioning river-lake interface and increasing acreage of open water (deep water, riverine, lacustrine vegetated aquatic bed), delta and wetland habitats. The Selected Action is expected to result in more than a ten-fold increase in aquatic habitat compared to existing conditions in the study area. The Selected Action has been specifically designed to benefit June sucker, but will benefit other species as well, with some benefitting more than others. As a generalist species, common carp would likely take advantage of the restored delta area; thus, an ongoing effort to reduce this species to a manageable level in Utah Lake is important to success of the Selected Action. Positive effects of the project would combine with other efforts being pursued by multiple entities to improve the ecological condition of Utah Lake and this would benefit the Utah Lake fishery. Overall, angling opportunities would be expanded and improved over existing conditions.
- i. **Cultural Resources.** The area of potential effects was surveyed for cultural resources in November 2013, to the extent that access was granted by private property owners (LSD 2013). No cultural resource sites were found that were considered eligible for listing on the National Register of Historic Places. It was determined, however, that there was a high probability that buried sites would be uncovered during construction. Since those sites are now covered by soil and the effects to historic properties cannot be fully determined prior to selection of an action alternative, it was decided, in consultation with the State Historic Preservation Office, Consulting Parties (i.e. Utah Public Lands Policy Coordination Office, Utah Statewide Archaeological Society, Utah Professional Archaeological Council), and pursuant to 36 CFR 800.14(B)(1)(ii), that a Programmatic Agreement would be the best method for addressing potential impacts to eligible resources.

The Programmatic Agreement, which was signed by the parties to the agreement in April 2015, represents a commitment on the part of the Joint Lead Agencies to implement a plan to mitigate the effects of the undertaking. The Programmatic Agreement includes the development of a testing plan, which would be implemented prior to construction. The purpose of the testing plan is to identify potential subsurface historic properties through the use of hand testing, heavy machinery, or other appropriate methods. Testing would focus on areas of high archaeological probability and/or low ground visibility. If the testing results in the identification of eligible resources, then the Joint Lead Agencies would evaluate design changes that would eliminate or minimize impacts. If the impact cannot be fully eliminated through design changes, then a treatment plan would be developed and implemented. The treatment plan would identify non-design measures that would be implemented to mitigate for residual impacts. The Programmatic Agreement also provides for an archaeological construction inspector to be onsite during construction. If buried resources are uncovered during construction, construction activity would be stopped in the vicinity of the uncovered site and the eligible site would be mitigated in accordance with the treatment plan. Impacts to eligible cultural resources, if any, would be fully mitigated under the Selected Action.

- j. **Mosquito Abatement.** During scoping and through subsequent public involvement activities and agency consultations, concerns were expressed that the project would increase mosquito production, becoming a nuisance and health risk for area residents and recreation users. Under existing conditions, the study area supports significant production of mosquitoes. Some of the PRDRP area would support mosquito production, resulting in the need for the project to provide for abatement consistent with abatement efforts implemented by Utah County in surrounding areas. A mosquito management plan (Appendix C of the Final EIS) is included as a component of the Selected Action.

- k. **Noxious Weeds.** Species on the Utah Noxious Species List within the project area require management consideration. In particular, stands of common reed (*Phragmites australis*) will out-compete native wetland vegetation and are considered to have low habitat value for wildlife. The Vegetation Management Plan (Appendix B of the Final EIS) would be implemented as a component of the Selected Action.
- l. **Accommodation of Provo City Transportation Planning.** The designs for all of the action alternatives accommodated Provo City's preferred alignment for the proposed Provo Lakeview Parkway and Trail. This preferred alignment was provided by Provo City. The Joint Lead Agencies met with Provo City staff periodically throughout the EIS process to discuss designs for project alternatives to accommodate the future transportation facility. Design requirements for modifications to Boat Harbor Drive were also discussed and accommodated. A final road design for Boat Harbor Drive will be developed in consultation with Provo City and Utah County.
- m. **Other Commitments.** Measures to avoid and minimize impacts will be implemented during final design of the Selected Action, during the construction phase, and as long-term commitments for management of the project area. In addition to commitments that have been described in this ROD, other commitments have been made in the Final EIS. The complete list of commitments that were identified in the Final EIS is included in Attachment A of this ROD.

## VI. Public Involvement

Public involvement in the development of the PRDRP is thoroughly detailed in Chapter 4 of the Final EIS. The Final EIS contains copies of all written and oral public comments received on the Draft EIS, and responses thereto. In addition to the comments on the Draft EIS which were included in the Final EIS, several comments were received on the Final EIS. The U.S. Environmental Protection Agency submitted a letter dated May 18, 2015 supporting the project purpose to improve habitat for aquatic life, including June sucker, and efforts taken by the Joint Lead Agencies to incorporate their recommendations made on the Draft EIS. Three other public comments submitted via email were all supportive of the project, and two of those comments expressed a preference for Alternative A. No comments were received in opposition to the PRDRP.

Public involvement activities were conducted by the Joint Lead Agencies starting in 2010. Interior published a Notice of Intent to prepare an EIS, including an announcement of public scoping, in the Federal Register on March 16, 2010 (75 FR 12562).

A Scoping meeting was held March 25, 2010, to obtain initial input from agency representatives, water users, local governments, irrigation companies, environmental organizations, landowners, businesses, and the general public. Conceptual alternatives were presented to the public at these meetings. Issues raised by the public in attendance, and oral/written comments were recorded as summarized in Section 4.3 of the Final EIS.

The Draft EIS was filed with the Environmental Protection Agency (EPA) and on February 28, 2014, and the Notice of Availability was published in the Federal Register (79 FR 11511). A sixty-plus day public comment period was provided, concluding on May 7, 2014. The Draft EIS was made available in electronic form on the project website, [www.provoriverdelta.us](http://www.provoriverdelta.us), and on CD-ROM. Notice of availability was provided in the *Federal Register*, local newspapers (*The Daily Herald*, *The Salt Lake Tribune*, and

*The Deseret News*), and by direct notice to all persons on the project mailing list. Print copies were made available for on-site public review, and were provided to the public upon request.

During the public comment period, the Joint Lead Agencies held a public meeting for the purpose of receiving public comment on the Draft EIS. The meeting was held in Provo, Utah. Comments received assisted the Joint Lead Agencies in making revisions, clarifications, and updates to the project alternatives, impact assessments, and mitigation measures presented in the Draft EIS. All comments received on the Draft EIS were carefully considered and responded to in the Final EIS.

On March 26, 2015, the Department of the Interior filed the Final EIS with the EPA and on April 17, 2015, the EPA published the Notice of Availability in the Federal Register (80 FR 21242). The Final EIS was made available in electronic form on the project website, [www.provoriverdelta.us](http://www.provoriverdelta.us), and on CD-ROM. Notice of availability was provided in the *Federal Register*, local newspapers (*The Daily Herald*, *The Salt Lake Tribune*, and *The Deseret News*), and by direct notice to all persons on the project mailing list. Print copies were made available for on-site public review, and were provided to the public upon request.

## VII. Implementation

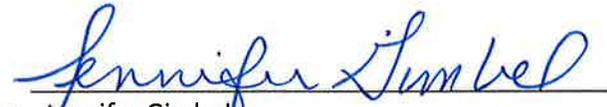
Interior also approves cooperation with the District and Mitigation Commission, to execute the necessary contracts and agreements, and to construct and operate the PRDRP in accordance with statutory and environmental commitments. The PRDRP will be operated to provide the needed habitat for the June sucker population within the Utah Lake Drainage. Interior will continue to be an active partner with the other Joint-Lead Agencies, USFWS, Utah Department of Natural Resources, and other JSRIP partners.

Construction and operation of the PRDRP will be pursuant to and in accordance with this ROD which includes the commitments listed herein, the PRDRP Final EIS, the additional contracts, agreements, permits, and approvals enumerated in the Final EIS, and such written approvals as required by Interior and/or the Mitigation Commission. Implementation will not occur before a Biological Opinion is provided by the USFWS.

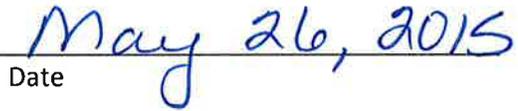
## VIII. Signature

By signing this Record of Decision, I select Alternative B (The Preferred Alternative) as the minimum delta restoration component for the restoration of the Provo River Delta and Option 2 for the existing channel as presented in the PRDRP Final EIS. As part of this Decision I approve Interior to increase the size of Alternative B by acquiring some additional land that is shown in the Final EIS as part of Alternative A; however, such land acquisition and expansion of the river and delta restoration area, if it occurs, will only be accomplished if the extra land can be acquired on a willing-seller basis. Eminent domain would not be used to acquire lands beyond the minimum required to implement Alternative B and Option 2.

I approve Interior's cooperation with the Utah Reclamation Mitigation and Conservation Commission and the Central Utah Water Conservancy District and approve proceeding with the final design, construction, and operation of the PRDRP, in accordance with commitments made herein and statutory and contractual obligations.

  
\_\_\_\_\_  
Jennifer Gimbel

Principal Deputy Assistant Secretary – Water and Science  
U.S. Department of the Interior

  
\_\_\_\_\_  
Date

## IX. References

- Buelow, K.A. 2006. Movement behavior and habitat selection for the endangered June sucker (*Chasmistes liorus*) in Utah Lake, Utah [MS Thesis]. Logan (UT): Utah State University.
- [LSD] Logan Simpson Design, Inc.. 2013. A class III cultural resources inventory for the Provo River Delta Restoration Project, Utah County, Utah. Technical report no. 135480. Salt Lake City: LSD. 24 p.
- Stamp, M., D. Olsen, and T. Allred. 2008. Lower Provo River ecosystem flow recommendations. Final report by BIO-WEST, Inc., and Allred Restoration, Inc. Salt Lake City (UT): Utah Reclamation Mitigation and Conservation Commission. 69 p. plus appendices.
- [URMCC] Utah Reclamation Mitigation and Conservation Commission. 2015. Provo River Delta Restoration Project existing bird communities and bird-aircraft strike risk assessment technical memorandum. Report prepared by BIO-WEST, Inc., Logan, Utah. 175 p.
- [URMCC] Utah Reclamation Mitigation and Conservation Commission. 2011. Provo River Delta Restoration Project alternatives development technical memorandum. Report prepared by BIO-WEST, Inc., Logan, Utah. 183 p.
- [USFWS] U.S. Fish and Wildlife Service. 1999. June sucker (*Chasmistes liorus*) recovery plan. Denver (CO): Region 6, U.S. Fish and Wildlife Service. 61 p.

## Attachment A

### Environmental Commitments Associated with the Provo River Delta Restoration Project Record of Decision

The Record of Decision (ROD) documents the considerations which led the U.S. Department of the Interior (Interior) to choose to proceed with the Selected Action for the Provo River Delta Restoration Project (PRDRP). When implementing the Selected Action, certain specific requirements must be set out which govern implementing activities. However, in choosing to proceed, it is impossible to know in detail, every aspect of the contracting, construction, or other activities necessary to implement the selected action. Therefore, certain overarching commitments must be made which guide the agency in carrying out these aspects of the Selected Action.

Measures to avoid, minimize, and compensate for impacts will be implemented during final design, during the construction phase, and as long-term commitments for management of the project implementation area.

Interior's adoption of the Selected Action is contingent upon the fulfillment of all commitments described in the Final EIS as well as new commitments contained in or referenced in this ROD. Many of the commitments refer to shared responsibilities of the Joint Lead Agencies (JLAs). The JLAs in preparing the EIS are the Mitigation Commission, the Central Utah Project Completion Act Office of the U.S. Department of the Interior (CUPCAO), and the Central Utah Water Conservancy District (District). Interior may carry out some or all of these commitments through arrangements with other parties, including the Mitigation Commission, the District, State of Utah, and others.

#### Requirements for Final Design (Prior to Construction)

##### Property Acquisition

In order to implement the Selected Action, lands needed for the project will be acquired by the federal government if not already in public ownership and available for project purposes. Ownership of lands in the study area is a mix of private, municipal, county, state, and federal. Various easements, title disputes, and so on will each be addressed in turn, in accordance with relevant statutes. Acquisition will follow a standard process required by the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 USC 61). The purpose of this act is to provide uniformity and fairness in the treatment of property owners. Before any property could be acquired, a Phase I Real Estate Environmental Site Assessment will be required. Interior and the Mitigation Commission must comply with the federal regulations to acquire private property and water rights. The full range of available land acquisition flexibility allowed under law will be explored with landowners to ensure, to the extent reasonable, that project goals can be achieved by means of land acquisitions that are mutually agreeable. Every reasonable effort will be made to complete land acquisitions on a willing-seller basis. If properties needed for the delta restoration component of the project could not be acquired on a willing-seller basis, then property will be acquired through exercise of eminent domain.

In addition to lands necessary for project implementation, additional lands could be acquired on a willing-seller basis, either in conjunction with the Selected Action or at a later time. Such lands could be acquired to enhance the habitat values for June sucker, to preserve habitat values for other wildlife, or to provide additional recreational opportunities. In accordance with 43 CFR Part 10005, the Mitigation Commission is authorized to construct recreation projects that increase the quality of or access to outdoor recreational opportunities that rely on the natural environment or provide opportunities that have been reduced through federal Bureau of Reclamation (Reclamation) projects.

### Water Rights

The Utah Water Rights Database will be queried during the final design and property acquisition process to determine current ownership of water rights. The final design will need to accommodate access to wells, ditches, pipes, and other water right conveyance structures for any water rights not acquired as part of the alternative. Water will be maintained in the existing channel. Currently, there are no guaranteed minimum flows in the lower Provo River. The proposed project includes providing a minimum flow of 10 cfs in the existing channel, which will improve streamflow during the summer irrigation season when flows otherwise can drop to near zero.

### Consumptive Use and Evaporation of Water

Increased consumptive uses and evaporation of water caused by implementation of the project will be covered by water rights owned by or to be acquired by the JLAs for this purpose.

### Boat Harbor Drive

A final road design will be developed in consultation with Provo City and Utah County.

### Natural Gas Pipeline

Additional coordination with Questar Gas will occur during final design to determine necessary avoidance and mitigation measures for the pipeline.

### Vegetation Management

Vegetation mapping will be completed during the design phase and periodically during the monitoring and management phase (post re-vegetation) to determine level of effort needed to control weeds during and after construction. An invasion of weeds is likely immediately following project implementation, especially prior to establishment of native vegetation. Aggressive measures contained within the Vegetation Management Plan (Appendix B of the FEIS) will be followed to control spread of invasive species.

### Wetlands

The JLAs anticipate that a wetland permit, either a Nationwide 27 (wetland restoration permit) or possibly an individual permit, may be required for the project. A detailed survey of the property acquisition area will be completed as part of the final design and Clean Water Act Section 404 compliance process. An effort will be made to identify any degraded peat mounds that may exist. These will be avoided with any project fill or excavation and construction staging areas associated with the project. The overall impact will be an increase in the quantity and quality of aquatic habitat, and restoration of wetlands in the study area to a more natural condition with a significant increase in wetland functions.

There are two existing wetland mitigation sites in the study area. With implementation of the project, the Provo City wetland mitigation site will be maintained as a high-quality wetland within the overall restoration area, with an added function of June sucker rearing habitat. A second mitigation site, the BLB

Drywall mitigation site, will also be maintained as a wetland within the overall restoration area, but it is higher in elevation and, therefore, would not be anticipated to function as June sucker rearing habitat during most years. The intent of the JLAs is that both the Provo City and BLB Drywall mitigation sites will be "kept whole" with respect to their wetland mitigation credits. If the U.S. Army Corps of Engineers determines there is an adverse effect on the credits achieved at either site, the JLAs will work cooperatively with the parties involved to reach an acceptable solution.

### Threatened and Endangered Species

Through consultation, conservation measures were agreed upon to minimize and mitigate the anticipated effects to listed species.

#### June Sucker

- The delta diversion structure will be designed to minimize entrainment of drifting June sucker larvae into the old channel to no more than 2.5% of total larval drift. This will be monitored to determine effectiveness.

#### Ute ladies'-Tresses

- Perform at least one additional survey for Ute ladies'-tresses prior to construction to meet the USFWS guidance of 3 years of surveys. This survey will determine whether any changes have occurred to known populations since the last survey in 2013. The project area will be surveyed for additional occurrences. Additional surveys may be required, depending on the time between construction implementation and the last survey. The last survey should be performed no later than 3-years from construction initiation.
- Avoid direct impacts to all identified occurrences during the final design and during project implementation to the extent possible.
- Fence locations of known occurrences using environmental fencing and the assistance of a qualified biologist prior to construction activities in the project implementation area. A qualified biologist will establish ingress, egress, and staging areas to avoid known occurrences.
- Wildlife biologists that may be conducting bird-aircraft hazard mitigation actions in the project area prior to construction will be provided with a map of Ute ladies'-tresses occurrence areas to avoid trampling.

### Land Owners and Agriculture

Because land uses in the study area are predominately agricultural under baseline conditions, the JLAs identified a number of possible mitigation measures to reduce the impacts to landowners and agricultural operations caused by acquisition of their private property for the project.

1. Scheduling. A project of the magnitude of the proposed delta restoration project will take several years to plan, design, fund, construct and implement. The JLAs will coordinate closely with landowners to identify reliable target dates for ranchers/landowners to count on for planning purposes so they know when they might need to begin adjusting herd size or whether or not to invest in reseeding an alfalfa crop, for example.

2. Temporary Retained Use. The JLAs will exercise as much flexibility as allowed by law to enable landowners/ranchers to retain use of their property as long as possible, which in some cases may extend even after they have sold it to the government for the project.
3. Temporary Replacement Property. The JLAs have a limited amount of agricultural land in another region of Utah County that has been acquired contiguous to another project. The JLAs will consider the temporary or permanent use of those properties as replacement for properties sold to the government for the delta restoration project, to ease the transition out of agricultural production or from the study area to another location.

### Bird-Aircraft Strike Risk

- The Mitigation Commission, Interior, and the District will invite the U.S. Department of Agriculture (USDA) Wildlife Services, Provo Airport and the Federal Aviation Administration (FAA) to participate in design of the Selected Action to help identify any wildlife hazard reduction measures (e.g., plant species, design features) that might be compatible with the delta restoration project.
- The Mitigation Commission commits to a monitoring and movement study that will be reviewed by USDA Wildlife Services, Provo Airport and FAA. The study will be carried out under the guidance of a qualified airport wildlife biologist. The Mitigation Commission will execute an agreement or contract to fund the baseline monitoring/movement study with the appropriate entity.
- The Mitigation Commission commits to a mitigation program for any increased bird-aircraft strike risk caused by the PRDRP. The Mitigation Commission and Interior will endeavor to establish cooperation and coordination among Provo City/Provo Municipal Airport, USDA Wildlife Services, and FAA for implementing the monitoring and mitigation efforts.
- The JLAs will coordinate with FAA and Provo Municipal Airport prior to, during and after project construction activities to alert them of pending land use changes that may require recalibration of radar systems.

### Cultural Resources

A Programmatic Agreement, representing a commitment on the part of the JLAs to implement a plan to mitigate the effects of the undertaking, was signed by the JLA's, State Historic Preservation Officer, the U.S Army Corps of Engineers, and Consulting Parties (i.e., Utah Public Lands Policy Coordination Office, Utah Statewide Archaeological Society, Utah Professional Archaeological Council) in April 2015. Under the terms of the Programmatic Agreement, the JLAs shall develop a testing plan, which would be implemented prior to construction. The purpose of the testing plan is to identify potential subsurface historic properties through the use of hand testing, heavy machinery, or other appropriate methods. Testing would focus on areas of high archaeological probability and/or low ground visibility. If the testing plan results in the identification of eligible resources, then the JLAs would evaluate design changes that would eliminate or minimize impacts. If the impact cannot be fully eliminated through design changes, then a treatment plan would be developed and implemented. The treatment plan would identify non-design measures that would be implemented to mitigate for residual impacts. The programmatic agreement also requires the JLAs to provide for an archaeological construction inspector to be onsite during construction. If buried resources are uncovered during construction, construction activity would be stopped in the vicinity of the uncovered site and the eligible site would be mitigated in accordance with the treatment plan.

## South Levee Operation and Maintenance

During the planning process for the project, Provo City requested consideration of ways to temporarily provide higher water surface elevations in the existing channel to allow the City to examine the south levee under high water conditions. The JLAs will coordinate with Provo City during final design and construction of the existing channel to provide opportunities to periodically and temporarily raise water levels for the purpose of testing the structural integrity of the south levee for operation and maintenance purposes. Strategies will be sought to raise water levels in the existing channel where possible without flooding adjacent properties or impacting other uses/users of the existing Provo River corridor.

## Other Required Permits, Approvals, and Agreements

Table 1 provides a description of required permits, approvals, and agreements that will be necessary for implementing the proposed action.

**Table 1. Required permits, approvals, and agreements.**

| ENTITY  | PERMIT/APPROVAL/AGREEMENT   | REQUIRED FOR   |
|---|---|--|
| Central Utah Water Conservancy District       | Operation, Maintenance, and Replacement Agreement between JSRIP and the District      | Facility to divert water between existing Provo River channel and new Provo River delta                                |
| Occupational Safety and Health Administration | Construction permit   | Worker safety and health   |
| Private Landowners                            | Land purchase contracts   | Acquisition of property needed for project implementation  |
| Provo City                                    | Operation, Maintenance, and Replacement Agreement between JSRIP and Provo City        | Aeration facilities for existing Provo River channel   |
| Provo City                                    | Operation, Maintenance, and Replacement Agreement between JSRIP and Provo City        | Management of recreation sites along existing Provo River channel  |
| Provo City (Public Works)                     | Construction permit   | Utility construction within Provo City limits  |
|   | Agreement   | Wetlands mitigation area   |
|   | Agreement (including Joint Lead Agencies, FAA, USDA Wildlife Services, others)        | Monitoring and mitigation of wildlife (birds) safety hazards at Provo Airport  |
| U.S. Army Corps of Engineers                  | Section 404, Clean Water Act, 33 USC 1341 (individual permit or Nationwide Permit 27) | Discharge of dredge/fill materials into waters of the United States, including wetlands; impacts on aquatic ecosystems |

| ENTITY   | PERMIT/APPROVAL/AGREEMENT  | REQUIRED FOR   |
|--|--|--|
| U.S. Bureau of Reclamation                             | Construction access permit   | Construction of project on Reclamation lands   |
| U.S. Fish and Wildlife Service                         | Section 7 Consultation, Biological Opinion (Endangered Species Act, 16 USC 1531-1544)        | Compliance with Endangered Species Act of 1973   |
|  | Fish and Wildlife Coordination Act, 16 USC 661-667   | Documenting that fish and wildlife resources receive adequate consideration through Fish and Wildlife Coordination Act Planning Aid Report                                     |
| Utah County  | Grading permit   | Excavation and fill activities   |
|  | Road encroachment  | Activities within county rights-of-way   |
|  | Transportation permit  | Transport of overloads on county road rights-of-way  |
|  | Agreement  | Remove/replace trails and facilities for recreation; relocate portion of Boat Harbor Drive   |
|  | Implementation Agreement   | Mosquito Monitoring and Control  |
| Utah County [and/or Private Contractors]               | Implementation Agreement   | Vegetation Management/ Noxious Weed Control  |
| Utah County [Planning]                                 | Use permit   | Activities where use is conditional in a particular zone   |
| Utah County [Public Works]                             | Operation, Maintenance, and Replacement Agreement between USA, State of Utah and Utah County | Recreational facilities in delta restoration area  |
| Utah Department of Natural Resources                   | Agreement between USA and State of Utah  | Land management of restored Provo River delta area   |
| Utah Department of Public Safety – Utah Highway Patrol | Transportation permit (Utah Code Annotated Section 2712155)                                  | Transporting overloads   |
| Utah Division of Air Quality                           | Construction permit  | Permit to gauge emissions during construction and to approve fugitive dust control measures  |
| Utah Division of Forestry Fire and State Lands         | Construction access permit   | Access/construction on State-owned lands   |
| Utah Division of Water Quality                         | General construction activity stormwater permit, UPDES                                       | Stormwater discharges associated with construction activity  |
|  | 401 Certification (Clean Water Act, 33 USC 1341)   | Discharge into waters and wetlands   |
|  | Utah Pollutant Discharge Elimination System (UPDES) Permit (Section 402 Clean Water Act)     | Construction projects that disturb more than 1 acre of land must obtain a UPDES permit and prepare a Stormwater Pollution Prevention Plan to minimize impacts to water quality |
| Utah Division of Water Rights                          | Stream channel alteration permit (Utah Code Annotated Section 73-3-29)                       | Change in river or stream  |

| ENTITY                                  | PERMIT/APPROVAL/AGREEMENT  | REQUIRED FOR  |
|---|--|---|
| Utah Division of Wildlife Resources     | Concurrence  | Fish and Wildlife Coordination Act<br>Planning Aid Report   |
| Utah State Historic Preservation Office | Section 106 Consultation (National Historic Preservation Act, 16 USC 470), Programmatic Agreement between SHPO, Joint Lead Agencies, U.S. Army Corps of Engineers and with Utah Statewide Archaeological Society and Utah Public Lands Coordination Office as Consulting Parties | Historic, architectural, archaeological or cultural characteristics of properties that meet National Register of Historic Places criteria |
|   | National Historic Landmarks Program (36 CFR 65)  |   |
|   | Cultural resource use permit (Utah Code Annotated Section 631825)  | Surveys or disturbance to archaeological or paleontological sites on state lands  |

## Construction Phase Environmental Commitments

### Access for Private Property Owners and Construction

Construction activities will be designed to maintain access to all non-project parcels under agricultural production or that hold livestock. All non-project irrigation conveyances will be maintained so that crop and pasture irrigation is not interrupted for significant periods of time or during critical irrigation times. Construction workers and equipment will gain access to the Provo River corridor and the project area from public road access points. Negotiations will be conducted with landowners to obtain temporary construction access if needed. Procedures to avoid conflicts with adjacent property access and uses during construction will be established and followed to prevent conflicts. Unavoidable or unintentional damage to any facilities such as irrigation gates will be repaired or replaced as authorized by law.

### Natural Gas Pipeline Avoidance

The natural gas pipeline located in the study area will be clearly marked and avoided during construction. Additional survey work may be needed prior to construction to more accurately determine the location and depth of the pipeline.

### Air Quality

Generation of fugitive dust could be expected in the vicinity of project construction areas as a result of earth excavation, vegetation removal, equipment operation, and traffic activity. Fugitive dust emissions will vary depending on the level of activity, specific construction techniques, soil characteristics, and weather conditions. Fugitive dust is composed of relatively large particles that settle out quickly, thus localizing the effect to air quality. Proper construction techniques, such as utilizing water, mulching, and/or applying surfactants on areas with high fugitive dust potential, will minimize dust emissions. The contractor will be required to contact the Utah Division of Air Quality and obtain any needed emissions permitting for construction and implement best management practices to minimize emissions as practicable.

## Noise

Temporary noise disturbances will occur as a result of project construction. Effects will be limited in scope and duration, causing limited and temporary inconvenience to local residents. A Provo City noise ordinance restricts work to between the hours of 7:00 a.m. and 10:00 p.m.

## Hazardous Materials and Hazardous Waste

During construction, if workers were to encounter any previously unknown soil contamination or other hazardous materials or waste, construction activity will cease until the hazard is evaluated and appropriate protection measures are implemented.

## Visual Quality

The visual quality of the area will be temporarily affected by excavation, fill, vegetation clearing, and presence of construction vehicles. Staging areas will be maintained in an orderly manner and, where practical, off-shift equipment will be parked in designated areas to reduce visual clutter.

## Noxious Weed Control

The introduction of noxious weeds will be minimized by requiring that all construction equipment be pressure washed before arriving and leaving the project area. Spraying of weeds will occur prior to ground disturbance. To minimize the potential for the establishment of state-listed and other noxious weeds, an aggressive re-vegetation plan will be implemented. Newly excavated channel banks, backwater pools, and marsh areas will be seeded with a wetland seed mix containing a variety of grass, sedge, and perennial emergent species. Species known to provide high-quality rearing habitat for larval and juvenile June sucker will be emphasized. Planting and seeding will occur during the appropriate season for plant germination and survival.

Clean fill material may need to be brought on site to avoid introduction of noxious species, particularly phragmites. Following re-vegetation, invasive weed species will be controlled using spot treatment with an herbicide approved for safe use in aquatic habitats. Long-term vegetation management is specified in the project-specific vegetation management plan (Appendix B of the Final EIS).

## Water Quality

Potential short-term water quality impacts associated with construction of stream channel and floodplain pond features will be mitigated through the use of appropriate temporary stormwater and erosion-control best management practices. Most construction activities in the project area will occur prior to diverting water into the delta and prior to removal of Skipper Bay dike.

## Existing Channel Riparian Forest

When constructing diversion structure(s)/dams in the existing Provo River channel, the PRDRP would minimize the footprint and impacts to riparian trees to the extent practicable. Disturbed areas would be revegetated with native riparian vegetation.

## Wildlife

To comply with the Migratory Bird Treaty Act, vegetation clearing will be completed outside of the typical nesting/brood rearing period, which is April 1 through August 30. Alternatively, a qualified wildlife biologist will perform a nest clearance survey prior to construction activities if any nesting trees/artificial structures have to be removed during the nesting/brood rearing season. Appropriate spatial buffers (generally 100

feet) should be established around any active nests and nests should not be touched until the young have fledged. Particular attention will be paid to surveying riparian disturbance areas for potential occurrence of yellow-billed cuckoo, a threatened species.

A survey for raptor nests within the range of disturbance of project activities will be accomplished (refer to the USFWS Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances [2002]). Nests will be identified prior to trees leafing out. These nests will be resurveyed after nesting has begun to determine which nests are active, and what species are utilizing them. If the construction will occur during the nesting season, then surveys should be conducted again prior to construction activity to determine nesting activity. If an active raptor nest is identified, appropriate buffer distances will be established over a sufficient time period to allow for fledging of the young.

## Construction Commitments

### Threatened and Endangered Species

Through consultation, the following conservation measures were agreed upon to minimize and mitigate the anticipated effects to listed species.

#### June Sucker

- To avoid adverse effects to June sucker, construction activities in the existing Provo River channel would not be conducted during the June sucker spawning period from April 1 to July 31.
- To avoid direct and indirect impacts to June sucker, fish clearances will be conducted by Utah Division of Wildlife Resources before any activities occur that would disturb Utah Lake waters, or Provo River waters if disturbed during construction. To implement this action the Utah Division of Wildlife Resources should be contacted (801-491-5678). The project proponent will provide the Utah Division of Wildlife Resources and USFWS offices with a report with the amount of area that was cleared, the methods used, the number of fish that were removed, any mortalities that occurred during this work, and the location of where cleared fish were transported. This report will be used to determine if additional conservation measures are needed to minimize project effects to June sucker populations.
- The contractor or responsible representative shall provide watertight tanks or barrels to dispose of chemical pollutants that are produced as by-products of the construction activities, such as drained lubricating or transmission fluids, grease, soaps, concrete mixer wash water, or asphalt. At the completion of the construction work, these containers shall be removed and the area restored to its original condition. Sanitary facilities, such as chemical toilets, shall not be located next to live streams, wells, or springs. They shall be located at a distance sufficient to prevent contamination of any water source. At the completion of construction activities, facilities shall be disposed of without causing pollution to the river, lake, or soils.
- Additional Best Management Practices –
  - If construction materials are displaced by high river or lake levels the applicant will contact the USFWS's Field Office Supervisor in the Utah Field Office (801-975-3330) as soon as possible to coordinate the least intrusive retrieval methods.

- Care shall be taken to minimize sedimentation resulting from bank, lake bed, or stream bed disturbance.
- Equipment shall be cleaned to remove noxious weeds/seeds and petroleum products prior to moving on site.
- Fueling machinery shall occur off site or in a confined, designated area to prevent spillage into waterways and wetlands. Oil booms shall be on site and placed downstream or in the surrounding lake area of the project site prior to beginning work if equipment will be operating in the low flow channel or lake waters.
- Materials shall not be stockpiled in the riparian area or other sensitive areas, i.e., wetlands.
- Fill materials shall be free of, waste, pollutants, and noxious weeds/seeds.
- The number of ingress and egress routes to/from all project sites shall be kept to a minimum.
- Excavated soils shall be sorted into mineral soils and top soils. When backfilling a disturbed site, top soils shall be placed on top to provide a seed bed for native plants.
- Excavated material and construction debris may not be wasted in any stream channel or lake, or placed in flowing waters or adjacent wetlands; this will include material such as grease, oil, joint coating, or any other possible pollutants. Excess soil material not intentionally placed into a channel must be wasted at an upland site away from any channel or habitat of a federally listed or sensitive species.
- The applicant shall complete the project in as short of a timeframe as possible (taking into account the terms and conditions above) to minimize the potential for damage to the lake bed and downstream river channel during high flows caused by storm events.

#### Ute ladies'-tresses

- Document the extent of the impacted area when avoidance of direct impacts to Ute ladies'-tresses occurrences is not possible. Direct impacts include excavation for river channels or other proposed project features and placing fill material on known occurrences. Direct impacts do not include inundation with water because the species has survived prolonged periods of past water inundations.
- Salvage soil when avoidance of direct impacts is not possible and relocate it to another portion of the project area where the hydrology is sufficient to support Ute ladies'-tresses. The potential transplant areas are mutually agreeable to the USFWS and identified in the Biological Assessment for this project. Relocation methods will attempt to keep the upper 2 feet of the soil profile intact if the salvage area(s) are small (less than 100 square feet); however, this method may not be feasible if larger areas are salvaged. For larger impact areas, the top 12 inches of soil will be relocated to the transplant site. Because salvage efforts have a high failure rate, this activity is considered an impact-minimization strategy, but the salvaged area would still be included in the impact calculation. If Ute ladies'-tresses are found in the transplanted areas during the post-construction surveys, then the salvaged area would be removed from the impact calculation.

- Minimize soil and vegetation disturbance by operating equipment on top of temporary earth fills above geotextile mats when avoidance of temporary impacts (soil compaction by vehicles and machinery) to an occurrence is not possible.
- Abstain from construction within 300 feet of known occurrences during the Ute ladies'-tresses flowering period of July 31–September 15. A qualified botanist may perform weekly surveys to document the beginning and ending of the flowering period to narrow this timing requirement based on the specific flowering period at the project area. Implement other best management practices for dust control during the Ute ladies'-tresses flowering period if any known occurrences are being impacted by dust. Follow best management practices for sediment control throughout construction to ensure that bare soil and sediment are not transported to Ute ladies'-tresses areas.
- Avoid, to the extent feasible, construction impacts to peat wetlands, including degraded springs.
- Wildlife biologists that may be conducting bird-aircraft hazard mitigation actions in the project area during active construction will be provided with a map of Ute ladies'-tresses occurrence areas to avoid trampling.

The following Best Management Practices or General Conservation Measures will be followed to protect Ute ladies'-tresses in the study area:

1. Use boulders, root-wads, and other natural materials from local sources to stabilize streambanks and in the active stream channel rather than using concrete, asphalt, steel, or other human-made materials.
2. Use erosion-control environmental commitments where project construction will disturb soil. These areas are expected to be along channel-construction and -modification areas, construction access roads, floodplain grading areas, setback berms, and stockpile areas. The procedures will be designed to stabilize soils, restore vegetation to a desired plant community, and to prevent infestation by noxious plants and to avoid erosion.
3. Remove and stockpile topsoil to a depth of 1 foot (or less if topsoil layer is less than 1 foot deep) for site restoration.
4. Secure additional topsoil of suitable quality for revegetating disturbed sites from areas that will have minimal impacts on important fish and wildlife habitats.
5. Implement the weed-control program in the vegetation management plan (Appendix B) to control noxious weeds resulting from project implementation.
6. Examine and wash equipment and vehicles, if necessary, to reduce the possibility of introducing toxic materials and undesirable plant species from previous work sites into the project area.
7. Fuel machinery off site or in a confined, designated area to prevent spillage into the soils, waterways, and wetlands.
8. Monitor disturbed areas for weeds and undesirable plant species during construction and implement necessary weed-control actions.

9. Control noxious weeds and undesirable plants by chemical, mechanical, and hand removal, as well as biological means, as may be appropriate, giving due consideration to compatibility with wildlife management plans, needs for protecting native plant communities, and avoidance of environmental contamination. Obtain approval for procedures and required permits for the controls that are used. See Appendix B of the Final EIS for more details.
10. Burn or properly dispose of weeds removed by mechanical- or hand-control methods to prevent their spread to other areas.
11. Control noxious and undesirable vegetation in the vicinity of Ute ladies'-tresses orchid occurrences by methods provided by the USFWS.
12. Manage stockpiles of top soil that would remain barren for extended periods to control erosion and avoid proliferation and spread of noxious weeds and undesirable plants.
13. Reclaim disturbed areas to desired riparian, agricultural, and upland plant communities as soon as possible after construction. Require the contractor to use specified plant materials and reclamation techniques.
14. Implement erosion-control measures to prevent or reduce wind and water erosion and help establish vegetation in areas subject to erosion.
15. Conduct a site analysis on areas where there is a potential erosion problem to determine appropriate procedures that are needed (i.e., soil stabilizing materials, seeding mixtures, and mulching and fertilizing treatments).
16. Select plant species for rehabilitating disturbed areas and erosion control based on soil type, root-stabilizing characteristics, consistency with composition of contiguous native plant communities, ability to compete with undesirable vegetation, and compatibility with restoration goals.
17. Develop a comprehensive revegetation plan for the project implementation area and monitor the area 3 years following implementation to determine success and make recommendations regarding follow-up seeding, planting, and weed-control efforts that may be necessary.
18. Implement USFWS-provided specific herbicide treatment recommendations within Ute ladies'-tresses occurrence areas as detailed in the updated vegetation management plan.

Herbicide treatment stipulations to be used within Ute ladies'-tresses occurrences are provided in the Vegetation Management Plan.

### **Bird-Aircraft Strike Risk Monitoring and Mitigation**

The JLAs will continue the bird monitoring and movement study during the construction phase of the selected alternative to maximize data collection opportunities for establishing baseline conditions. The JLAs will implement appropriate mitigation measures for any increased bird-aircraft strike risk caused by construction of the proposed project using measures appropriate to the species causing the risk. The JLAs will coordinate the measures with FAA, Provo City/Provo Airport, USDA Wildlife Services, and others.

## Long-Term Environmental Commitments

Long-term commitments for management of the project include Provo River flow management, a vegetation management plan, a mosquito management plan, bird strike risk mitigation, long-term water quality enhancement for the existing channel, and post construction commitments for Ute ladies'-tresses.

### Provo River Flow Management

The JLAs through the JSRIP will: adopt the Lower Provo River Ecosystem Flow Recommendations Report (Stamp et al. 2008) and associated flow regime targets; divide the flow into the restored lower Provo River delta so that the first 10 cfs and up to 50 cfs is delivered to the existing lower Provo River channel to help maintain aesthetics, water quality, and recreational values; and deliver up to an additional 4,500 acre-feet of conserved water annually to either Hobbles Creek and/or Provo River to help meet target flow regime recommendations for June sucker. Meeting flow regime targets will be an adaptive process, and the JLAs will commit to work with the June Sucker Flow Work Group of the JSRIP to discuss the flow outlook for the upcoming water year, to coordinate flow patterns and discuss the needs of the June sucker, taking into account the target flow recommendations, available water supplies, and respective commitments for delivery of water to the Provo River and Hobbles Creek. The Flow Work Group is a subcommittee of the JSRIP and advises the broader JSRIP group regarding the upcoming water year. Based on these factors the JSRIP will recommend a flow pattern to Interior.

### Vegetation Management Plan

The goal of the Vegetation Management Plan (Appendix B of the FEIS) is to maintain diverse plant communities that provide June sucker rearing and spawning habitat. Vegetation management includes the control of noxious weeds or other undesirable vegetation in the project area, predominantly common reed (*Phragmites australis*) and, to a lesser degree, reed canary grass (*Phalaris arundinacea*), and others.

### Mosquito Management Plan

The Mitigation Commission conducts mosquito control on mitigation properties under the auspices of the Utah Pollution Discharge Elimination System (UPDES) general permit number UTG170000, administered by the Utah Division of Water Quality, Department of Environmental Quality. A Mosquito Management Plan for the proposed action (Appendix C of the Final EIS) has been developed in coordination with the Mitigation Commission's 2012 Pesticide Management Plan (URMCC 2012a) as required under the UPDES permit.

A proposed cooperative approach to mosquito management associated with the proposed project will be implemented as follows:

1. Larval monitoring and control: Responsibility of the JLAs, in consultation with Utah County Health Department. This could be contracted to Utah County Health Department or other third-party entity.
2. Adult mosquito monitoring and control: Responsibility of Utah County Health Department with cooperation and assistance from the JLAs.
3. Communication and education: Cooperative effort among the JLAs, Utah County Health Department, and others.

## Bird-Aircraft Strike Risk Monitoring and Mitigation

1. The JLAs commit to conducting a monitoring and movement study and to mitigating for increased bird-aircraft strike risk caused by the proposed project. The Mitigation Commission will execute an agreement or contract to conduct the baseline monitoring/movement study and mitigation efforts.
2. The JLAs will endeavor to continue cooperation and coordination among the parties for implementing the monitoring and mitigation efforts.
3. The JLAs will coordinate with FAA and Provo Municipal Airport prior to, during and after project construction activities to alert them of pending land use changes that may require recalibration of existing radar systems.

The mitigation measures will be appropriate to the species causing the risk and coordinated with FAA, Provo City/Provo Airport, USDA Wildlife Services, and others. The measures could include temporarily closing the public access to the project area to safely and effectively haze or remove problem birds; installing and implementing bird-detection and warning systems; conducting research; or implementing other measures yet to be determined to ensure an effective mitigation program.

## Water Quality Enhancement for the Existing Channel

The JLAs will construct and install an aeration system in the lower Provo River channel that will be retained and managed for recreational, aesthetic and fishery uses. The aeration system will increase dissolved oxygen (DO) concentrations and improve water quality during the hot summer, low-flow months compared with existing baseline conditions.

The aeration system would be intended for year-round use, initially. It would be used to oxygenate the bottom sediments and improve conditions for beneficial microbes, which will reduce the muck layer that is currently on the channel bottom. The aeration system would then be operated as needed to maintain State water quality standards for DO. The JLAs will continue to pursue additional measures, if needed, to meet these objectives.

Dredging the organic-rich sediment layer at the bottom of the existing channel would not likely be necessary to maintain State water quality standards for DO. However, portions of the organic-rich sediments would likely be removed during construction as the aeration system is installed. Other aesthetic and recreational improvements to the existing channel could also be made at that time. The JLAs will coordinate with Provo City, Utah County, and stakeholders in this regard during the final design phase.

The JLAs recommend that State and local governments and organizations develop a task force/study group to investigate sources of fine organic matter, nutrients, and other pollutants in the watershed that may degrade water quality conditions in the lower Provo River. The JLAs would participate with and support the efforts of such a group if it is formed.

## Threatened and Endangered Species (Long-Term Commitments)

### Ute ladies'-tresses

- Report all documented direct impacts to known Ute ladies'-tresses occurrences to the USFWS within 6 months of completion of construction. The report will include map locations, areas of impact, and location(s) of salvaged soils from occurrences that could not be avoided during construction.

- Use Utah Lake water elevation data to determine inundation periods for known Ute ladies'-tresses occurrences.
- Perform three consecutive years of post-construction monitoring throughout the project implementation area, paying special attention to known occurrences and salvage and relocation areas. Post-construction begins once the hydrology has been restored to the project implementation area (i.e., removal of Skipper Bay dike and Provo River levee). Provide an annual monitoring report to the USFWS with information consistent with the 2010–2013 survey report for the study area (BIO-WEST 2013), and include an occurrence number, count, location, elevation, wetland type, associated vegetation, and representative photo.
- Wildlife biologists that may be conducting bird-aircraft hazard mitigation actions in the project area post-construction will be provided with a map of Ute ladies'-tresses occurrence areas to avoid trampling.
- Follow weed-control recommendations provided by the USFWS for areas with known Ute ladies'-tresses occurrences. These recommendations are provided in the Biological Assessment and have been incorporated into the project's Vegetation Management Plan.