FINAL ENVIRONMENTAL ASSESSMENT

HUNTLEY MAIN CANAL PRYOR CREEK CROSSING REPAIRS

PROPOSED FEDERAL ACTION

The Bureau of Reclamation, Montana Area Office is proposing to approve the Huntley Project Irrigation District (HPID) to construct an inverted siphon on the Huntley Main Canal Pryor Creek Crossing. The proposed action consists of removing the existing concrete box culvert structure in the Huntley Main Canal and replacing it with an inverted siphon. The proposed action would also include funding provided by the Federal Emergency Management Agency (FEMA) and the potential for the HPID to receive funding through P.L. 111-11, Subtitle G, Section 9603. This Environmental Assessment (EA) analyzes the potential impacts associated with funding, staging, removal of the damaged structure, and construction of a new structure. Best Management Practices (as described in the Commitments section) would be incorporated to minimize impacts to the environment.

PURPOSE AND NEED

The purpose of this Federal action is to repair the damaged water conveyance structure and provide reliable water delivery in the Huntley Project Main Canal.

The Federal action is needed to continue effective operation of the Huntley Project Irrigation District pursuant to the contract between the United States and the Huntley Project Irrigation District dated January 2, 1927.

BACKGROUND

Authorized in 1905, the Huntley Project is located in south-central Montana, built to divert water from the Yellowstone River to irrigate lands on the south side of the river between Huntley and Pompeys Pillar. The project consists of a 10.5 foot high concrete diversion dam, 32 miles of main canal, 22 miles of carriage canal, 202 miles of laterals, 186.5 miles of drains, a hydraulic

turbine-driven pumping plant, an auxiliary electric pumping plant, and Anita Dam and Reservoir. The Huntley Project furnishes irrigation water for 27,333 acres of farm land.

Heavy precipitation between May 15 and May 26, 2011 caused widespread flooding across the State of Montana. Pryor Creek typically flows over the top of Huntley Main Canal (Pryor Creek Crossing). Due to the heavy precipitation, high flows in Pryor Creek caused the main canal to be washed out damaging the Pryor Creek Crossing. (Figure 1 and 2). Pryor Creek Crossing allows stream flows to reach the Yellowstone River, while irrigation water flows through a box culvert beneath Pryor Creek Crossing to serve the irrigation district.

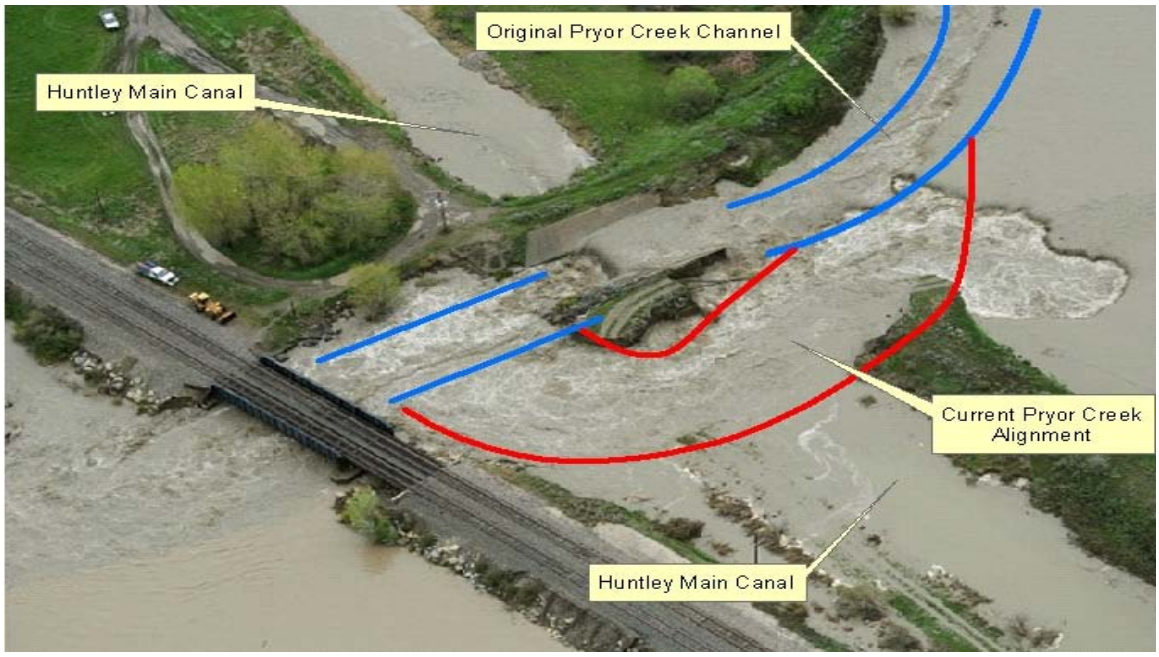

Figure 1: Aerial photo showing the erosion to the Huntley Main Canal. High flows due to heavy precipitation in the area resulted in Pryor Creek eroding around the west side of the Pryor Creek Crossing, taking out part of the main canal, and establishing a new channel.

Figure 2: Photo looking southwest at the Pryor Creek Crossing. May 2011, flood waters washed out approximately 200-feet of the canal upstream of the crossing and heavily damaged the existing concrete box culvert.

On May 23, Montana Governor Brian Schweitzer declared a statewide emergency as broad areas of southeastern Montana remained underwater. As the water receded an emergency EA was completed by the Bureau of Reclamation to comply with the National Environmental Policy Act. The temporary fix was completed to allow the continued irrigation of croplands through the 2011 irrigation season (Figure 3). To ensure long term deliveries of water, HPID has proposed a permanent corrective action as detailed in this EA.

Figure 3: Photo of the emergency fix completed in June 2011 to the Pryor Creek Crossing that allowed for irrigation water to be delivered for the 2011 irrigation season.

NO ACTION ALTERNATIVE

Reclamation would not authorize any permanent reconstruction activities to the Huntley Main Canal Pryor Creek Crossing and FEMA would not provide funding. The No Action is included to allow a comparative analysis of impacts caused by the Proposed Action Alternative.

PROPOSED ACTION ALTERNATIVE

The new permanent structure will be an 8 ft X14 ft inverted box siphon that will go under the streambed of Pryor Creek (Figure 4). The embankment slopes at the siphon will be sloped and armored with rip-rap (12-36 inch diameter) material that will be salvaged from the existing temporary repairs to protect the structure from future high water events in Pryor Creek. Embankment stabilization would be completed in the immediate area of the siphon crossing. The stream banks upstream and downstream would also need to be stabilized to prevent further erosion of the stream channel. The work area is outlined in the preliminary plans and will be confined to BOR property as shown.

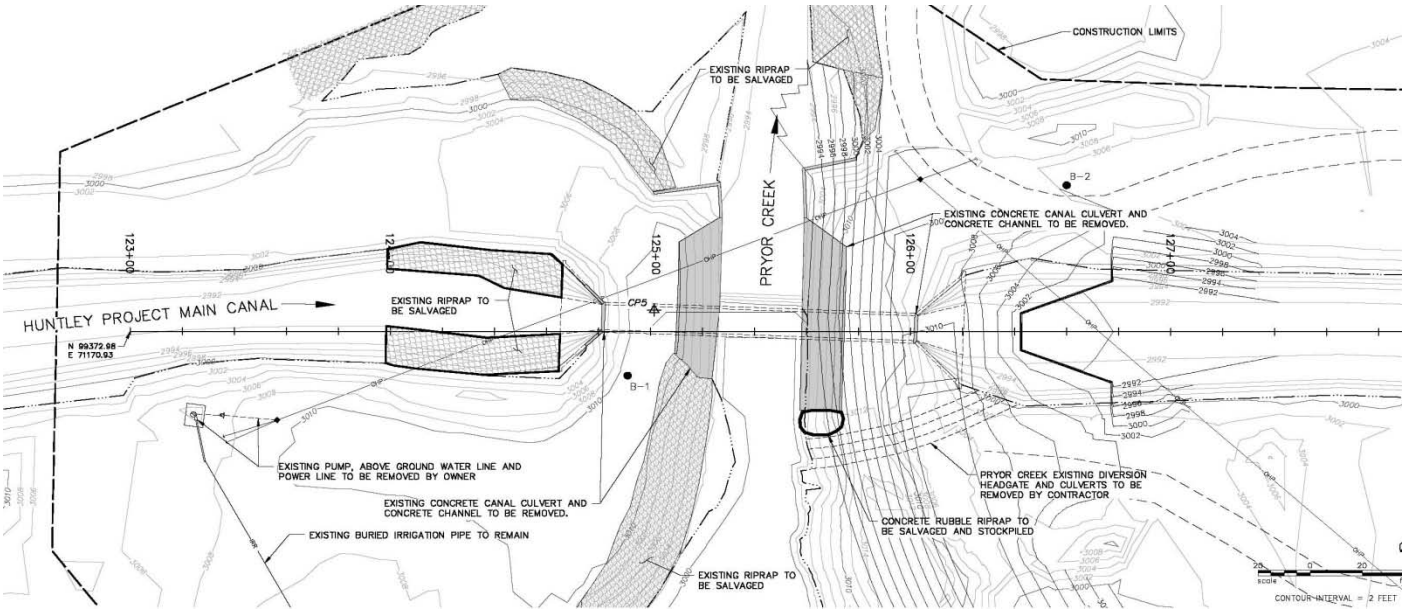

Figure 4: Proposed design of Pryor Creek Crossing. The design shows how the banks of Pryor creek will be recontoured and the exact placement of the inverted siphon.

Construction staging would occur in the area adjacent to Pryor Creek that has been heavily disturbed in the past due to both railroad and HPID operations and maintenance (Figure 5). To complete the work, a cofferdam will be installed in Pryor Creek and a bypass channel would be constructed across Reclamation land, to convey water from Pryor Creek into the Huntley Main Canal.

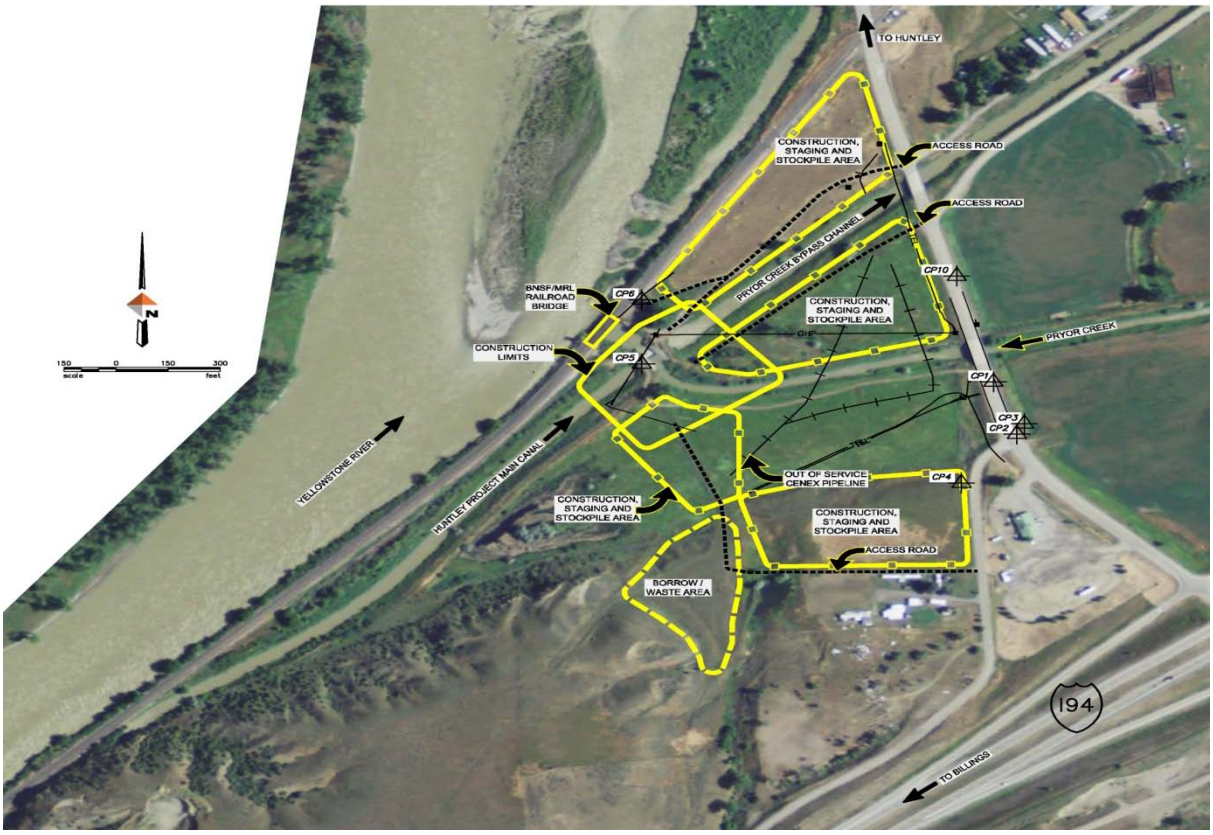

Figure 5: Aerial photo of location of proposed work. Some of the areas delineated in yellow are restricted to construction. The design plans identifies this restricted area for the contractor.

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section includes both the affected environment and the environmental consequences. The affected environment is considered to be the existing condition and the environmental consequences analyze the environmental impacts of implementing the proposed action alternative. Only the affected environmental factors which may be influenced or significantly affected are discussed in this EA. Because recreation in this area is generally precluded by railroad and irrigation district operations and maintenance, recreation will not be further considered.

Water Quantity

Most streams and rivers fluctuate depending on time of the year, snow melt, rain fall events and amount of water needed for irrigation. The Yellowstone River in the spring on average will run at 70,000 cfs when runoff is high, in the summer the river on average will run around 5,000 to 6,000 cfs. Pryor creek has not always had a steady flow of water, but on average will run 100 cfs in the spring and drop to 20 cfs in the summer when large amounts of water are taken for irrigation. During irrigation season Huntley Main Canal will flow at 700 cfs and when there is no need for irrigation water the canal is completely dry.

Under the No Action Alternative water from Pryor Creek would continue to flow over the box culvert into the Yellowstone River at normal flows. However, due to the temporary nature of the emergency fix, it is anticipated this structure would fail if subjected to a runoff event.

Under the Proposed Action alternative, a cofferdam will be constructed to keep the construction site dry. The Pryor Creek bypass channel would be constructed to convey water around the construction area, temporarily into the Huntley Project Main Canal and finally to the Yellowstone River.

Water quantity entering the canal would slightly increase during construction as Pryor Creek is temporarily diverted. HPID has historically diverted some water from Pryor Creek into the Huntley Project Main Canal. However, due to the downcutting of Pryor Creek, this diversion is no longer an option and all Pryor Creek waters would flow into the Yellowstone River following construction. Implementing the Proposed Action would restore the basin to historic conditions.

Water Quality

Section 303(d) of the Federal Clean Water Act, and Title 40 part 130 of the Code of Federal Regulations requires each state to develop a list of waters that do not meet water quality standards (i.e., which do not fully support their beneficial uses). The 303(d) list is a subset of all impaired waters listed in the comprehensive 305(b) water quality report. Both Pryor Creek and the Yellowstone River are on the 2010 303(d) list.

Pryor Creek from the Interstate 90 Bridge to the confluence with the Yellowstone River has been identified as partially supporting aquatic life, primary recreation contact and warm water fisheries. Probable sources of the water quality impairments are flow alteration from water diversions and irrigated crop production.

The Yellowstone River from the Huntley Diversion Dam to the mouth of the Bighorn River has been identified as partially supporting aquatic life. Probably sources of the water quality impairments are agriculture, irrigated crop production, and natural sources.

Under No Action, Pryor Creek would continue to down cut and erode resulting in much higher sediment deposition into the Yellowstone River.

Under the implementation of the Proposed Action alternative, there would be a short term increase in turbidity and sedimentation entering the Yellowstone during construction. This amount of sedimentation is minor and insignificant as compared to the continued down cutting and erosion associated with No Action and the May 2011 flood events. No new impairments would result from this action that would impact the 303d status of Pryor Creek or the Yellowstone River.

To further minimize sedimentation through erosion, typical construction BMPs (as described in the commitments section) would be implemented during and after construction.

The following permits have been applied for and received as part of the Federal action and the associated special conditions are incorporated in this EA.

404 Permit – HPID submitted a Montana joint application to the Corps of Engineers and have received a preliminary Jurisdictional Determination and a Department of the Army Permit Permit to allow the work to proceed. The permit and associated documentation are attached to this EA as Exhibit A. This proposed Federal action is exempt from Clean Water Act Permitting due to the following Nationwide Permits:

Nationwide Permit 33 – Temporary Construction, Access and Dewatering.
Temporary structures, work and discharges, including cofferdams, necessary for construction activities or access fills or dewatering of construction sites; provided that the associated primary activity is authorized by the Corps of Engineers. Appropriate measures must be taken to maintain near normal downstream flows and to minimize flooding. Fill must be of materials and placed in a manner that will not be eroded by expected high flows. The use of dredged material may be allowed if it is determined by the District Engineer that it will not cause more than minimal adverse effects on aquatic resources. Temporary fill must be entirely removed to upland areas following completion of the construction activity and the affected areas restored to the pre-project conditions.

Nationwide Permit 13 – Bank Stabilization.
Bank stabilization activities necessary for erosion prevention provided the activity meets all of the following criteria:

a. No material is placed in excess of the minimum needed for erosion protection;
b. The bank stabilization activity is less than 500 feet in length;

c. The activity will not exceed an average of one cubic yard per running foot placed along the bank below the plane of the ordinary high water mark or the high tide line;
d. No material is placed in any special aquatic site, including wetlands;
e. No material is of the type or is placed in any location or in any manner so as to impair surface water flow into or out of any wetland area;
f. No material is placed in a manner that will be eroded by normal or expected high flows (properly anchored trees and treetops may be used in low energy areas); and,
g. The activity is part of a single and complete project.

310 Permit (Montana Streambed and Land Preservation Act – HPID submitted a Montana joint application to the Yellowstone County Conservation District and have received an approved 310 Authorization to allow the work to proceed. The Yellowstone County Conservation District authorizes projects that physically alters or modifies the bed or banks of a perennially flowing stream. The purpose of the approval is to minimize soil erosion and sedimentation and to protect and preserve streams and rivers in their natural or existing state. The Authorization is attached to this EA as Exhibit B.

Fisheries

The Pryor Creek Crossing has been an upstream barrier to fish passage since its construction. Currently Pryor Creek Crossing has a drop of approximately nine feet from the top of the crossing to the bottom (Figure 7). A number of native and non-native species can be found in both the Yellowstone River and Pryor Creek.

Figure 7: Picture of Pryor Creek Crossing looking towards the Yellowstone River. The drop in the picture does not allow for fish passage into Pryor Creek from the Yellowstone River.

Native species found in the two systems are: goldeneye (*Hiodon alosoides*), western silvery minnow (*Hybognathus argyritis*), brassy minnow (*Hybognathus hankinsonidea*), fathead minnow (*Pimephales promelas*), longnose dace (*Rhinichthys cataractae*), flathead chub (*Platygobio gracilis*), emerald shiner (*Notropis atherinoides*), mountain sucker (*Catostomus platyrhynchus*), longnose sucker (*Catostomus catostomus*), white sucker (*Catostomus commersoni*), shorthead redhorse (*Moxostoma macrolepidotum*), river carpsucker (*Carpiodes carpio*), Channel catfish (*Ictalurus punctatus*), stonecat (*Noturus flavus*), mountain whitefish (*Prosopium williamsoni*), burbot (*Lota lota*), and brook stickleback (*Culaea inconstans*).

Non-native fish species found in the system would include: common carp (*Cyprinus carpio*), yellow bullhead (*Ictalurus natalis*), bluegill (*Lepomis macrochirus*), pumpkinseed (*Lepomis gibbosus*), largemouth bass (*Micropterus salmoides*), smallmouth bass (*Micropterus dolomieui*), crappie (*Pomoxis spp.*), green sunfish (L*epomis cyanellus*), brown trout (*Salmo trutta*), rainbow trout (*Oncorhyncus mykiss*), and walleye (*Stizostedion vitreum*).

The No Action Alternative would continue to be a barrier to upstream fish passage. If the box culvert were to remain, there is potential that it would be damaged by future high flows in Pryor Creek. If that were to happen, it would likely be replaced with a similar structure continuing restricted upstream fish migration.

The Proposed Action Alternative of removing the box culvert and replacing it with an inverted siphon would return the stream to a more natural condition allowing for unimpeded fish passage. No short term impacts to the fisheries are expected from the Proposed Action Alternative. However, long term impacts would be positive and increase fish habitat in the region. Recently, State of Montana and Federal wildlife agencies have been seeking financial partners and opportunities to make this structure passable to Yellowstone River fish. Short term construction impacts to the fishery would be minor and discountable.

Threatened and Endangered Species

The Endangered Species Act seeks to recover and conserve listed species and the ecosystems on which they depend. The action area defined for this section includes Pryor Creek from the Interstate 90 bridge to the confluence with the Yellowstone River, as well as the uplands identified as a borrow source (Figure 5). All lands within this action area are within Yellowstone County. The species listed below are provided by the United States Department of the Interior Fish and Wildlife Service website at: www.fws.gov/montanafieldoffice/Endangered_Species/Listed_Species.html and include their status and which county they occur. The species list was updated September 2011.

YELLOWSTONE COUNTY		
Mustella nigripes	Black-footed Ferret	Endangered
Grus americana	Whooping Crane	Endangered
Centrocercus urophasianus	Greater Sage-Grouse	Candidate
Anthus spragueii	Sprague's Pipit	Candidate

None of the above species or their preferred habitats are known to exist in the project area. There will be No Effect to listed species as a result of this action.

Wildlife

A number of wildlife species could be expected in or near the project area and include white-tailed deer, pronghorn, antelope, mule deer, golden eagles, other raptors, sharp tail grouse, sage grouse, ground squirrels, badgers, skunk, porcupine, raccoon, weasel, beaver, muskrat, and a variety of small rodents.

Under the No Action alternative wildlife would not be affected in any way. With the Proposed Action Alternative would temporarily displace animals. After construction, wildlife patterns are expected to return to normal.

Noxious Weeds

The Soil and Moisture Conservation Act and the Federal Noxious Weed Act require Federal agencies develop a program to control undesirable plants on lands under its jurisdiction. Noxious weeds can be a serious environmental problem to natural resources and are capable of rapid spread and can potentially render lands unfit for beneficial uses.

Noxious weeds targeted for containment and suppression around the Pryor Creek Crossing are: whitetop (*Cardaria draba*), Canada thistle (*Cirsium arvense*), leafy spurge (*Euphorbia esula*), spotted knap weed (*Centaurea maculosa*), Russian knap weed (*Rhaponticum repens*), salt ceder (*Tamarix ramosissima*), and field bindweed (*Convolvulus arvensis*). All are defined by Montana's State Noxious Weed List as "currently established and generally widespread in many counties of the state."

Prime and Unique Farmlands

"Prime farmland" have the best combination of physical and chemical characteristics for producing food, fiber, forage, oilseed, and other crops with minimum need for fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion as determined by the U.S. Secretary of Agriculture. Prime farmlands also have an adequate and dependable water supply from precipitation or irrigation.

"Unique farmland" is land other than prime farmland that is used for production of specific high-value food and fiber crops such as citrus, tree nuts, olives, cranberries, fruits, and vegetables (Natural Resources Conservation Service, 2002). Generally, additional farmland of statewide importance includes soils that are nearly prime, producing high yields of crops when treated and managed according to acceptable farming practices.

Under the no action alternative farm land would not get the irrigation water needed to keep their status of "Prime farmland" or "Unique Farmland". With the Proposed Action Alternative farms would be able to keep their status with the NRCS.

Cultural Resources

In accordance with Section 106 of the National Historic Preservation Act, 16 U.S.C. § 470f, and its implementing regulations, 36 C.F.R. part 800, cultural resources were taken into consideration to determine if the Proposed Action Alternative would affect properties listed or eligible for listing in the National Register of Historic Places (NRHP). There were several areas identified that either contain cultural resources or have the potential to contain cultural

resources. The Proposed Action Alternative will avoid these areas. Further, it was determined that the Proposed Action Alternative of removing the box culvert, a NRHP eligible feature of the Huntley Main Canal, which is a contributing feature of the NRHP eligible Huntley Irrigation Project, and replacing it with an inverted siphon would be an adverse effect. The Advisory Council on Historic Preservation was notified of this adverse effect and a Memorandum of Agreement to mitigate the adverse effect was completed. The MOA is attached as Exhibit C.

Indian Trust Assets

Indian Trust Assets (ITA) are legal interests in property held in trust by the United States for Indian tribes or individuals, or property that the United States is otherwise charged by law to protect. That is consistent with the Indian Self-Determination and Education Assistance Act, 25 CFR Part 900.6 which defines a *trust resource* as "an interest in land, water, minerals, funds, or other assets or property which is held by the United States in trust for an Indian tribe or an individual Indian or which is held by an Indian tribe or Indian subject to a restriction on alienation imposed by the United States". It is the Policy of Reclamation to carry out its activities in a manner which protects ITAs and avoids adverse impacts when possible. Implementation of the proposed action would have no impact upon Indian Trust Assets.

Climate Change

There is a growing body of scientific evidence that global temperature is increasing and variability of the Earth's climate is changing. It is documented that the global average surface temperature has increased since the late 19th century. The use of construction equipment to implement the Proposed Action Alternative would release carbon dioxide emissions into the atmosphere. However, the duration of the construction period is short and the effects would be negligible.

Executive Orders

Executive Order 11990 – Protection of Wetlands

Federal agencies shall avoid to the extent possible the long and short term adverse impacts associated with the destruction or modification of wetlands and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities.

The No Action Alternative would result in zero water flowing through the Main Canal. This canal provides a water source to wetlands along its reach through seepage. Without these waters, the wetlands that have developed due to canal seepage would likely decline in function or cease

to exist. Under the Proposed Action Alternative, the water supply to these wetlands would be restored and wetland values would be preserved.

Executive Order 11988 – Floodplain Management

Federal agencies shall avoid to the extent possible the long and short term adverse impacts associated with the occupancy and modification of floodplains and to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out the agency's responsibilities.

The Proposed Action Alternative is in compliance with this Executive Order and was determined to have no effect on floodplains or floodplain management.

Executive Order 13186 – Protection of Migratory Birds

The United States has ratified international, bilateral conventions for the conservation of migratory birds. These international migratory bird conventions impose substantive obligations on the United States for the conservation of migratory birds and their habitats, and the Migratory Bird Treaty Act (16 U.S.C. 703-711) (Act) requires agencies to implement these conventions. This Executive Order directs Federal agencies to take certain actions to further implement the Act.

The project area provides minimal nesting habitat for migratory birds. Further, construction would occur outside the bird nesting season. There may be some short term displacement of migratory birds with the implementation of the proposed action, but there is suitable habitat in the immediate vicinity to meet the habitat needs of migratory birds. Implementation of the Proposed Action would have no negative effects on migratory bird populations.

Executive Order 13007 – Indian Sacred Sites

Federal agencies shall, to the extent practicable, and not clearly inconsistent with essential agency function; accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoid adversely affecting the physical integrity of such sacred sites.

The Proposed Action Alternative is in compliance with this Executive Order and was determined to have no effect on Indian Sacred Sites.

Executive Order 12898 – Environmental Justice

Federal agencies need to ensure their actions do not disproportionately impact minority and disadvantaged populations or communities.

The No Action Alternative would be detrimental to the farming communities located downstream of the project area. The Proposed Action Alternative would allow irrigated agriculture to proceed as it has in the past.

COMMITMENTS

All typical best management practices would be incorporated into the Proposed Action alternative to ensure the protection of the environment. This includes all stipulation of the 404 and 310 approvals, the MOA related to cultural resources and the following measures as appropriate:

- silt fencing on all slopes greater than 3:1 to minimize sedimentation and erosion,
- re-contouring of the banks and uplands to naturally occurring slopes, planting a mix of weed seed free vegetation native to the area,
- reclaimed areas would be surveyed for noxious weeds and appropriate weed management treatments would be applied,
- construction equipment would be inspected for weed seed and petroleum contamination prior to onsite staging,
- wetlands that were disturbed during the emergency construction need to be restored to their natural state,
- construction would occur while Pryor Creek is being diverted into the main canal, allowing construction to proceed while the streambed is dry,