

# RECLAMATION

*Managing Water in the West*

## **Peoples Canal Salinity Control Project Environmental Assessment PRO-EA-10-004**

**Daggett County, Utah and Sweetwater County, Wyoming**



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

**December 2009**

## **Mission Statements**

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

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

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**Daggett County, Utah and Sweetwater County, Wyoming**

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Bureau of Reclamation  
Provo Area Office  
Provo, Utah**

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**Appendix: Memorandum of Agreement**

# Summary

The Bureau of Reclamation (Reclamation) must determine whether to authorize use of Federal funds pursuant to the American Recovery and Reinvestment Act of 2009. The purpose of this Environmental Assessment (EA) is to analyze the potential environmental consequences of the proposed construction of an irrigation pipeline by the Peoples Canal Irrigation Company to replace the existing Peoples Canal in Daggett County, Utah and Sweetwater County, Wyoming. The construction of the pipeline would originate at the head of the Canal near Washam, Wyoming. The first 4.8 miles of pipeline would traverse through public and private land located west of the Henrys Fork River in Wyoming. The remaining 3.2 miles of pipeline would continue into Utah on private land with its terminus east of the Town of Manila, Utah. About 8.0 miles of pipeline would replace about 9.1 miles of existing open Canal.

This EA identifies potential environmental consequences including changes to riparian vegetation, wildlife and biological productivity within seep-created riparian habitat along the Canal as well as consequences to cultural resources. The EA identifies management practices and mitigation measures that would be implemented to reduce or eliminate undesirable effects during project construction.





# **Chapter 1 – Need for the Proposed Action and Background**

## **1.1 Introduction and Background**

The Peoples Canal is located on the east side of Manila, Utah, and is owned and operated by the Peoples Canal Company (Company). The Canal location is shown in Figure 1. The Canal originates out of the Henrys Fork River in Wyoming and ends on the east side of Manila, where it empties into Flaming Gorge Reservoir. The Peoples Canal provides irrigation water for 2300 acres planted in alfalfa and grass hay. The Peoples Canal Salinity Control Project would be funded under the American Recovery and Reinvestment Act of 2009 (ARRA) through the Bureau of Reclamation, Provo Area Office (Reclamation).

The portion of the open unlined earthen Canal to be replaced by pipe is 9.1 miles long. At its head, the Canal has a diversion capacity of 56 cubic feet per second (cfs). Under the proposed action, a buried high-density polyethylene (HDPE) pipeline would be installed to replace the existing Canal. The pipeline would generally follow the existing Canal right-of-way except in four short reaches where a shorter, more direct route would be used and at a fifth location where the Peoples Canal serves as an open drain for the Sheep Creek Canal. At the Sheep Creek Canal location, the last 0.9 mile of the proposed pipeline would parallel the existing open Canal. A reinforced concrete screening structure would be constructed near the head of the Canal to minimize the amount of sediment entering the pipeline. The existing diversion structure on the Henrys Fork River would not be replaced. A measurement flume would also be constructed immediately downstream from the screening structure. Valved turnouts would be placed at the existing weir locations. The turnouts and main pipeline would have flow meters to monitor flows and facilitate system management.

Recognizing that the current irrigation system is experiencing high losses to seepage, which is causing high amounts of salt to enter the Green River and eventually the Colorado River, the Company proposed this salinity control project which would be approved for implementation by Reclamation if appropriate following review of this EA and other relevant information.

## **1.2 Purpose and Need for the Proposed Action**

The purpose of the Peoples Canal Salinity Control Project (Project) is to reduce the amount of salinity reaching the Green River and ultimately the Colorado River, due to seepage of Peoples Canal water. This purpose must be met in a cost effective and feasible manner without affecting the purpose of the Peoples Canal which is to convey water for agricultural use within the Manila, Utah area.

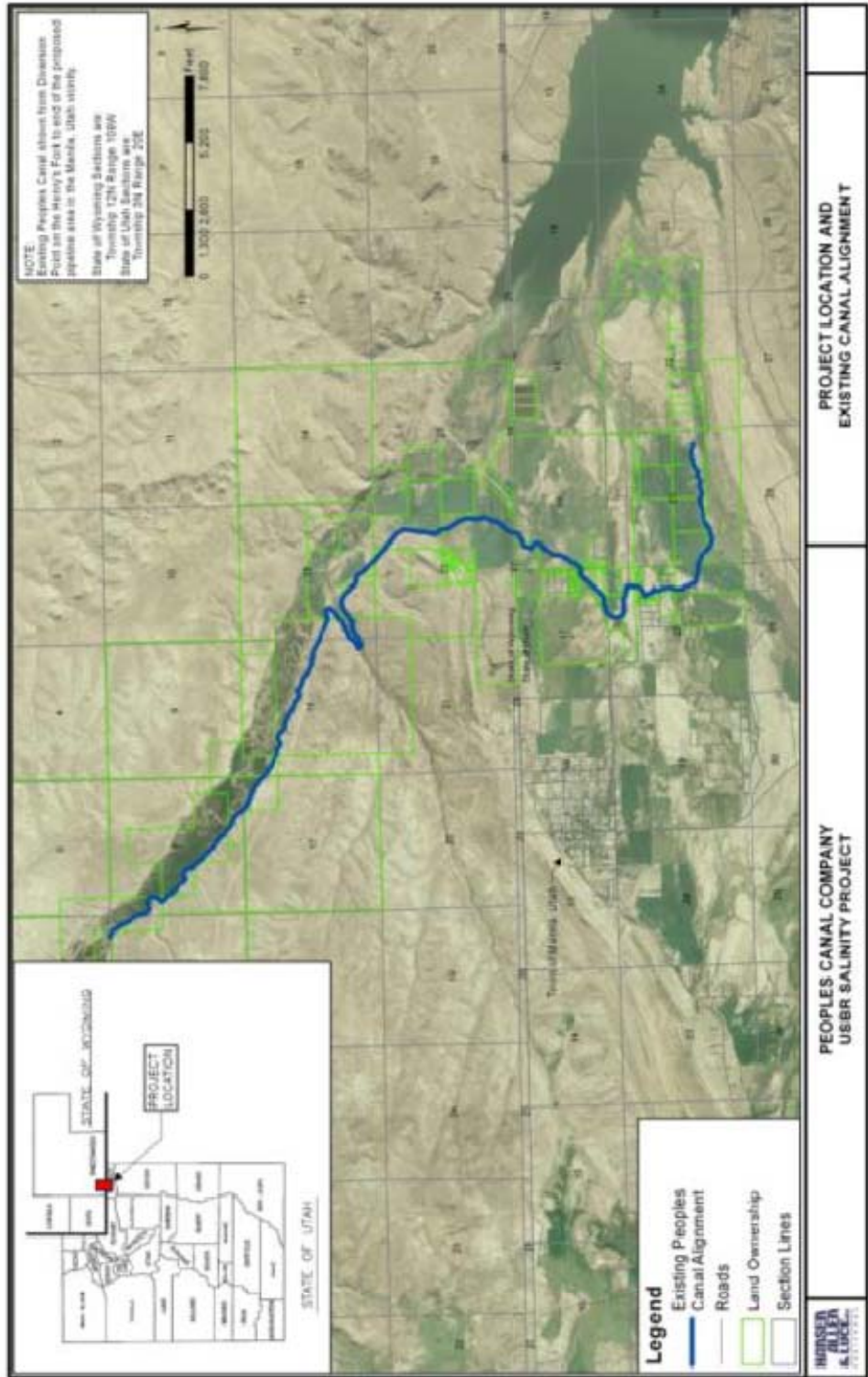


Figure 1 – Project Area

The purpose of the Colorado River Basin Salinity Control Program is to “protect the quality of water available in the Colorado River” ([www.usbr.gov/uc/progact/salinity/](http://www.usbr.gov/uc/progact/salinity/)). The Colorado River provides water for more than 27 million people and irrigation for more than 4 million acres of land in the United States, as well as water for about 2.3 million people and 500,000 irrigated acres in the Republic of Mexico. Controlling the salinity of the Colorado River remains one of the most important challenges facing Reclamation. High salinity levels make it difficult to grow winter vegetables and popular fruits. In water systems, salinity plugs and destroys municipal and household pipes and fixtures.

Recent salinity concentrations in the lower portion of the Colorado River are about 700 mg/L, but in the future they may range between 600 and 1,200 mg/L, depending upon the amount of water in the river system. Salinity damages in the United States portion of the Colorado River Basin range between \$500 million to \$750 million per year and could exceed \$1.5 billion per year if future increases in salinity are not controlled.

Although salinity impacts cannot be eliminated, the Basin States and the Federal Government agreed to limit future increases through the adoption of salinity standards. In June 1974, Congress enacted the original Colorado River Basin Salinity Control Act. To provide better program management, Reclamation proposed major changes to the Colorado River Basin Salinity Control Program. In 1995, P.L. 104-20, directed Reclamation to conduct a \$75 million test of a pilot program to award grants, on a competitive-bid basis, for salinity control projects. ([www.usbr.gov/dataweb/html/basinwidescp.html](http://www.usbr.gov/dataweb/html/basinwidescp.html))

The Company currently diverts water from the Henrys Fork River into the Peoples Canal for use by its shareholders to serve their agricultural needs. Water lost due to seepage from the Peoples Canal ends up in the Green River. As this Canal seepage percolates through ground formations it dissolves salts. According to Reclamation estimates, 5,553 tons of salt per year enters the Green River from Peoples Canal Seepage. Along with needing to reduce this salt loading, the water lost through seepage needs to be retained. This lost water could be used by the company and its shareholders to meet existing shortages. By reducing the losses within the Canal, the company would be able to better serve the needs of the shareholders.

### **1.3 Lead and Cooperating Agencies**

Reclamation is the lead agency in the preparation of this EA and the Bureau of Land Management (BLM) is a cooperating agency.

## 1.4 Decisions to be Made

Reclamation will use this EA to determine whether to provide ARRA funding for the proposed salinity control project. BLM will determine whether to issue the right-of-way permit required for construction and use of the proposed pipeline alignment within BLM-administered lands.

## 1.5 Permits and Authorizations

If this EA is approved, the following permits would be required prior to project implementation:

- Right-of-Way Permit within BLM-Administered Lands - In order to implement the proposed action, the Peoples Canal Company would be required to obtain a BLM permit, through the issuance of a Right-of-Way (ROW) Permit to maintain the irrigation Canal or pipeline through BLM lands.
- 404 Permit - This permit (if required) would be issued to the applicant by the U.S. Army Corps of Engineers (Corps) and complies with Section 404 of the Clean Water Act (CWA) for actions on waters of the United States and jurisdictional wetlands.
- Stream Alteration Permit - This permit (if required) would be issued to the applicant by the Wyoming Department of Environmental Quality and or the Utah Department of Natural Resources.
- Construction and Operation & Maintenance easements with landowners.
- Utah Pollution Discharge Elimination Permit – This permit (if required) would be issued to the applicant by the Utah Division of Environmental Quality (UDEQ) and complies with Section 402 of the Clean Water Act (CWA) for actions disturbing more than one acre of ground or any discharge as a point source into Birch Spring Draw or Flaming Gorge Reservoir.
- Wyoming Pollution Discharge Elimination Permit - This permit (if required) would be issued to the applicant by the Wyoming Department of Environmental Quality (WDEQ) and complies with Section 402 of the CWA for actions disturbing more than 1 acre of ground or any discharge as a point source into the Henrys Fork River.

Compliance with the following Laws and Executive Orders (E.O.) is also required prior to and during project implementation:

### Natural Resource Laws

- Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884).
- Clean Water Act (CWA) of 1972.

### **Cultural Resource Laws**

- National Historic Preservation Act (NHPA) of 1966 (16 U.S.C. 470 et seq.)
- Archaeological Resources Protection Act (ARPA) of 1979 (16 U.S.C. 470aa-470mm et seq.)
- Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines (48 FR 44716)

### **Native American Laws**

- American Indian Religious Freedom Act (AIRFA) of 1978 (42 U.S.C. 1996 and 1996a)
- Enhancing the Intergovernmental Partnership; E.O. 12875, October 26, 1993 [ 58 Federal Register 58093]
- Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 (25 U.S.C. 3001et seq.)
- Consultation and Coordination with Indian Tribal Governments (E.O. 13084, May 14, 1998 [63Federal Register 27655]).
- Indian Sacred Sites, E.O. 13007, May 24, 1996 [61 Federal Register 26771]).

### **Paleontological Resource Laws**

- Paleontological Resources Preservation Act (PRPA) of 2009 (Sections 6301-6312 of the Omnibus Land Management Act of 2009 [Public Law 111-11 123 Stat. 991-1456]).



# **Chapter 2 – Alternatives**

## **2.1 Introduction**

The proposed action analyzed in this EA is Reclamation’s authorization for the use of ARRA funds to replace the Peoples Canal (Canal) with a pipeline. If Reclamation approves the use of ARRA funds, the proposed project would be implemented as described in Section 2.3 below. The Action Alternative is presented along with a No Action Alternative (Section 2.2) to facilitate comparison of the potential effects of the proposed action.

## **2.2 No Action Alternative**

The no action alternative would be the continued use and maintenance of the Canal. There would be no changes to the Canal alignment or structures. If no action is taken to improve the Peoples Canal conveyance system, the calculated 5553 tons of salt per year would continue to reach the Colorado River. The Canal would continue to lose water due to seepage at approximately 1,100 acre-feet/year. Maintenance costs of the Canal would continue to rise as sedimentation and vegetation growth increases in the Canal. Agricultural productivity in the area would continue to be hindered by the reduced water supply.

## **2.3 Action Alternative**

This section describes the proposed pipeline alignment. (See Figure 2 Proposed Peoples Canal Pipeline Facilities). The project includes a concrete settling pond and pipeline inlet structure immediately downstream of the existing head gate of the Canal in Washam, Wyoming. Water would be diverted into the pipeline at the head gate and then would follow the existing Canal until it crosses Cottonwood Creek. At the Cottonwood Creek location, the pipeline would extend directly across the wash rather than follow the contour up the wash. The proposed alignment would cross highway 43 and run east of the Town of Manila. In the last half- mile of the alignment, the pipeline would run parallel to the Canal leaving the final section in service. This last section of the Canal would remain in service to drain waste water flows from Sheep Creek Irrigation Company.

The principal construction features of the Peoples Canal Piping Project include a new settlement basin and screening structure and measurement flume at the head of the Canal, two pipelines, and turnout structures. The screening structure would include self-cleaning screens to remove sediment and other particles from the water. This process is shown in Figure 3. A sluice gate would also be installed to

prevent sediment and debris from accumulating within the structure. The measurement flume would facilitate measurement of flows and would serve as the



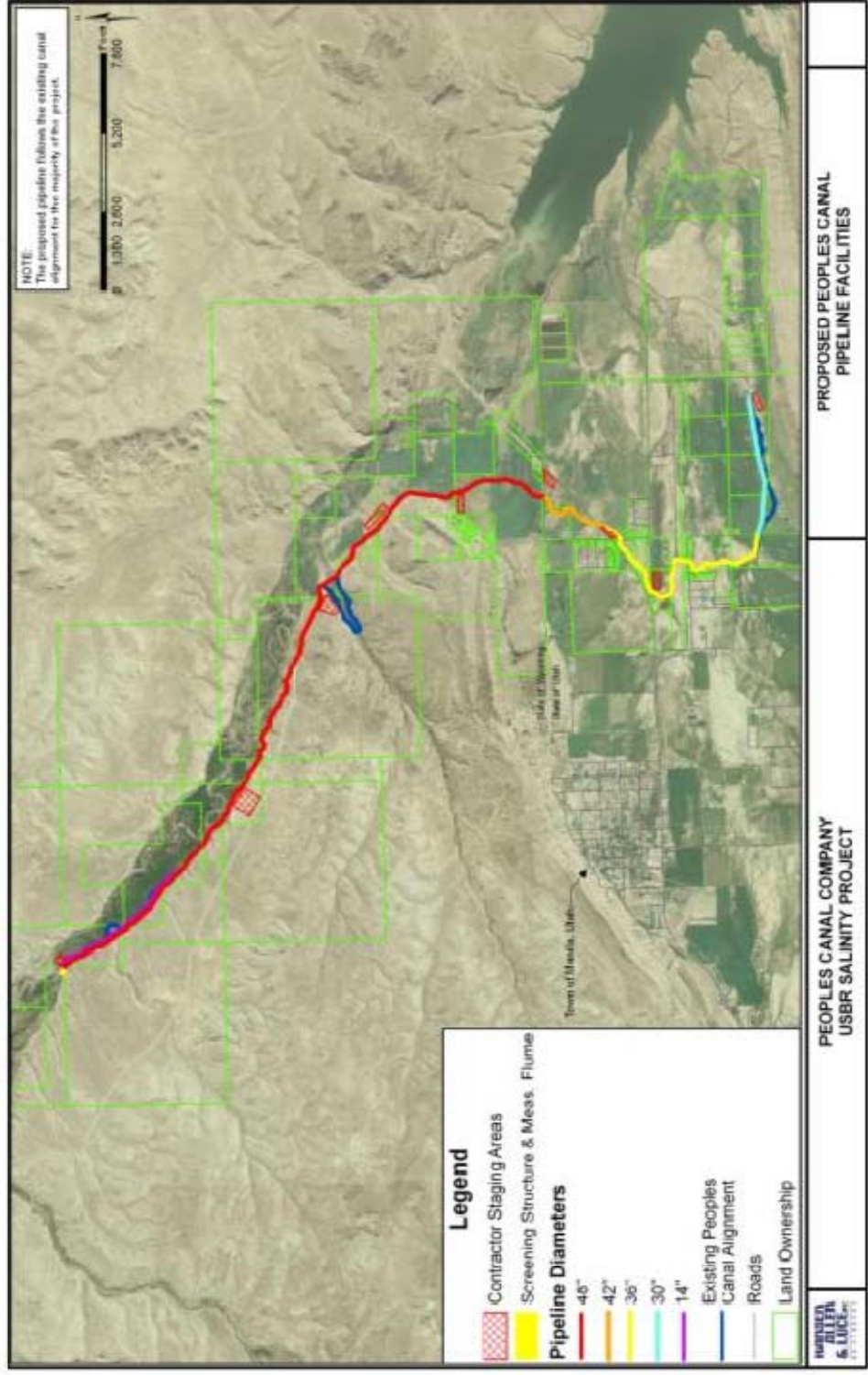


Figure 2 – Proposed Pipeline Facilities

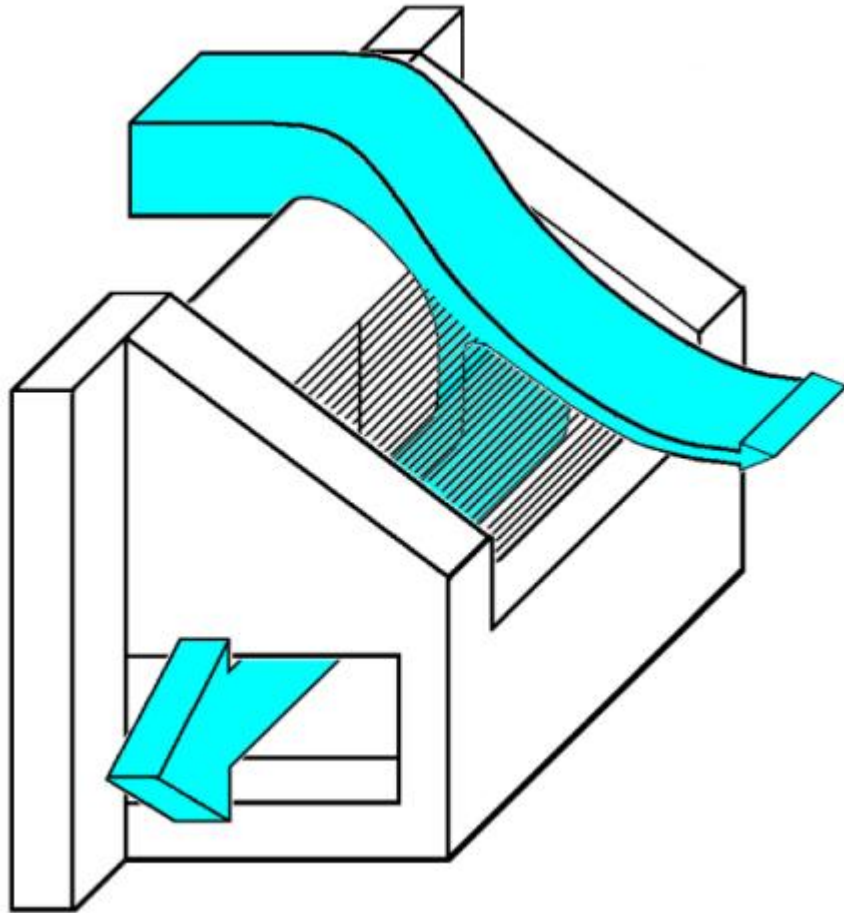


Figure 3 – Self-Cleaning Screen Process

inlet to the pipelines. Downstream from the measurement flume, two parallel pipelines would be constructed in the Canal alignment to convey water to its end place of use. The main pipeline would be 48 inches in diameter at the upstream end, and would taper down to 30 inches in diameter near the downstream end. The main pipeline would have 18 turnout structures to deliver water to individual farms. A separate 14-inch-diameter pipeline would deliver water to the Tinker Farm located a short distance from the diversion structure. This smaller pipeline would be 5,100 feet long and would have 4 turnouts.

### **2.3.1 Design Criteria and Standards**

**Screening Structure and Measurement Flume** – The screening structure would be designed to screen up to 56 cfs of water diverted from the Henrys Fork River. The existing slide gate and culvert pipe at the head of the Canal would be removed and replaced with a new reinforced concrete structure approximately 20-feet wide by 50-feet long. The stainless steel, wedge-wire screens would be designed based on the “Coanda Effect” and would remove sand, organic matter, and other debris from the water including all particles greater than 0.25 mm in diameter. The “Coanda Effect” involves the tendency of fluids to follow a surface. It is utilized in the Coanda screen by means of a row of horizontal ‘wedge wire’ bars, arranged with a spacing of 1mm or less, perpendicularly to the flow. As the flow passes over the surface, the shearing action of the bars combined with the “Coanda Effect” separates the flow. Clean water passes down through the screen at the rate of 140 liters/second per linear meter of screen width. Water containing fish, sediment and debris passes over the screen to rejoin the water course below the weir (Dulas Ltd 1999). The screen would also prevent fish eggs and larval fish from entering the pipeline. The design of the screens would allow them to be self cleaning. A 36-inch by 36-inch sluice gate would be installed as part of the screening structure. This gate would sluice sediment and other debris collected by the screen back to the river channel. The gate would also help regulate flows through the screens during high flows.

A reinforced concrete flume would convey water from the screening structure to the main pipeline and the Tinker Farm pipeline. The flume would be approximately 8 feet wide and 30 feet long and would be designed to serve as a long-throated flume to measure flows. A recording device would be installed to provide a record of flows diverted into the pipeline.

**Main Pipeline** – The main pipeline would be constructed with fused-joint high-density polyethylene (HDPE) pipe. The pipe would be 48-inches in diameter at the upstream end and would taper down to 30-inches in diameter near the downstream end. At the upstream end the pipeline would have a flow capacity of 56 cfs. The pipe would have a minimum pressure rating of 50 pounds per square inch (psi) which would provide ample strength given the pipeline’s maximum static operating pressure of 30 psi. The main pipeline would have a total length of 8.0 miles. The main pipeline would be installed primarily within the existing Canal alignment. It would be buried with a minimum cover of 3 feet.

Tinker Farm Pipeline – The Tinker Farm pipeline would be installed in the same trench as the main pipeline. This 14-inch-diameter pipeline would also be constructed with fused HDPE pipe.

The Tinker Farm pipeline would have a flow capacity of 2.25 cfs, a minimum pressure rating of 50 psi and would be 5,100 feet long.

### **2.3.2 Pipeline Construction Procedures**

#### **2.3.2.1 Construction Sequence**

Construction of the pipeline would likely occur in the following sequence:

- Staking the pipeline alignment
- Mobilization of the construction equipment
- Delivering pipe to contractor staging areas
- Fusing pipe segments
- Excavation of the trench
- Pipe bedding preparation
- Haul pipe to construction site
- Place pipe within the trench
- Backfill around pipe and compact backfill
- Clean up and restore areas disturbed by construction
- Plant and reseed disturbed areas to provide for revegetation

All construction equipment and vehicles would be power-washed prior to starting construction to mitigate spread of noxious weed and non-native plant species. Any construction or operational vehicles traveling between the project location and outside areas would be power-washed as is feasible during the winter working conditions.

#### **2.3.2.2 Trench Excavation**

The trench size would vary according to pipe diameter and the number of pipes in the trench. At the head of the pipeline a trench approximately 7-feet deep and approximately 9-feet wide would be excavated to provide for the installation of the main pipeline and the Tinkers Farm pipeline. Typical trench details are shown in Figure 4. Excavation would be performed with a trackhoe. All excavated material would be stockpiled to the side of the trench to be used as backfill once the pipe has been installed. Top soil would be separated from other material in order to preserve it to be placed as the last layer to facilitate revegetation.

During excavation of the trench, every effort would be taken to minimize impacts to native vegetation. Trees and shrubbery would be avoided when possible. It is expected that despite the best efforts of the contractor, some native trees and shrubbery may be removed. Impacts would be contained as much as possible within a temporary 100-foot construction easement and designated staging areas.

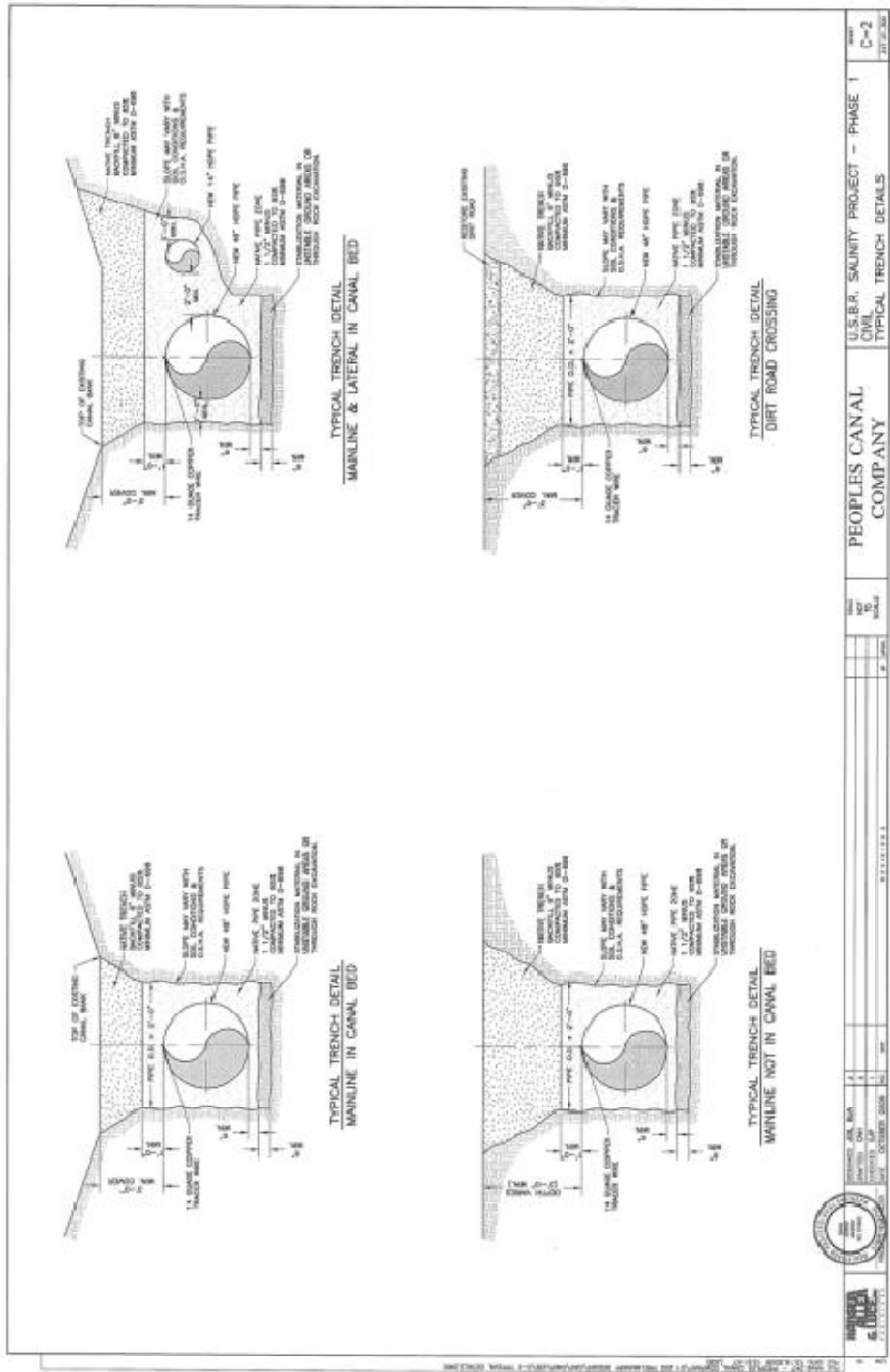


Figure 4 – Typical Trench Details

### **2.3.2.3 Pipe and Appurtenance Installation**

The pipe would be transported by flatbed truck from the manufacturer to the staging areas. From the staging areas it would either be transported by a loader to the work site or fused into longer sections and dragged with a dozer to the work site. The pipe would be fused in designated staging areas or in the pipe trench to minimize disturbance. Maintained roads and the proposed pipeline alignment would be used to transport the pipe to the work site. Each 50 foot section of pipe would be fused together with a pipe fuser and then placed in the prepared trench by trackhoe.

The crew, trench excavation, pipe installation, and finish grading, would all progress along the pipeline alignment from day to day. The crew's equipment would move along the alignment with them. Transportation vehicles would be used to transport the crew to and from the construction site to reduce the disturbance caused by the construction equipment. Each transportation vehicle would carry multiple crew members to minimize the number of vehicles. Pipe would be stockpiled at the staging areas and delivered to the alignment as it is needed.

At approximately one-half-mile intervals, construction would be required to install air-vacuum valves. The air-vacuum valves are typically installed at the top of the pipe to vent air during pipe filling or allow air into the pipe while it drains. Additionally, a drain valve would be installed at the Cottonwood Creek Crossing and at the end of the main pipeline to drain water from the pipeline at the end of the irrigation season.

After installing the pipe, backfill would be carefully placed around the pipe in layers of native material excavated from the trench. The preserved top soil would be placed last to minimize impacts. Backfill would be mechanically compacted with a vibratory compactor, wheel compactor, or trackhoe attachment. Spoil in work areas would be spread evenly to blend with the natural topography, and maintain local drainage patterns. Stockpiled topsoil then would be spread evenly over previously vegetated areas and reseeded with native species. Any excess spoil material that cannot be used as cover over the trench would be hauled from the site and disposed of on private land. This includes all excess vegetation or trees removed during the construction clearing process.

Following construction, and for a period of two years, manpower would be provided by the Peoples Canal Company to inspect the pipeline alignment within BLM-administered lands. In coordination with the BLM, these individuals would monitor the growth of the reseeded areas and ensure that exotic weeds do not invade the area. Weed control would be performed by the Canal Company during the inspection times and would include either mechanical or herbicide treatments.

**2.3.2.4 Right-of-Way Requirements for Project Features**

About 132 acres of land would be needed for project construction and operation. This includes 58 acres of existing prescriptive easement for the Canal, 1 acre of long-term BLM right-of-way permit, and 73 acres of temporary construction easement. Table 3.1 summarizes right-of-way requirements by type and land ownership. The pipeline alignment and land ownership information are shown in Figure 5.

**Table 2.1  
Right-of-Way Requirements for Project Features (acres)**

Project Feature and Right-of-Way Type	Ownership or Administration			
	Private	BLM	State of Wyoming	Total
Screening Structure and Measurement Flume Right-of-Way Permit		1.00		1.00
Pipelines Prescriptive Easement	47.22	2.86	8.13	58.21
Pipelines Temporary Construction Easement	31.48	1.91	5.42	38.81
Contractor Staging Areas Temporary Construction Easement	28.38		5.29	33.67
<b>Total</b>	<b>107.08</b>	<b>5.77</b>	<b>18.84</b>	<b>131.69</b>

**2.3.2.5 Project Operation and Maintenance**

Operation of the Peoples Canal, once piped, would remain essentially unchanged, but the need for maintenance would be reduced significantly. Operation would occur primarily from April 15 to October 15. The pipeline would be drained at the end of each irrigation season and re-filled the following spring. The screening structure is designed to be self-cleaning although some periodic maintenance and cleaning would likely be required. One advantage of the piped Canal system is that the annual cleaning of sediment from the Canal would be virtually eliminated. The screening structure would trap all but very fine suspended sediment and flush it back to the river. Most sediment that enters the pipeline would remain suspended in the water and would exit the pipe at the irrigation turnouts. Minor amounts of sediment would be flushed from the pipe when it is drained at the end of each irrigation season. Since HDPE is a relatively new pipe material, there is no empirical data on the life of the pipe. However, because it is corrosion-resistant and highly durable it is expected that the pipe would have a useful life of 100 years or longer. As the pipe reaches the end of its useful life, it is expected that pipe segments would be replaced as they begin to fail, thus extending the life of the project indefinitely.

**2.3.2.6 Land Disturbance**

The proposed pipeline alignment, described above, is approximately 8 miles long and would require a maximum construction width of 100 feet.

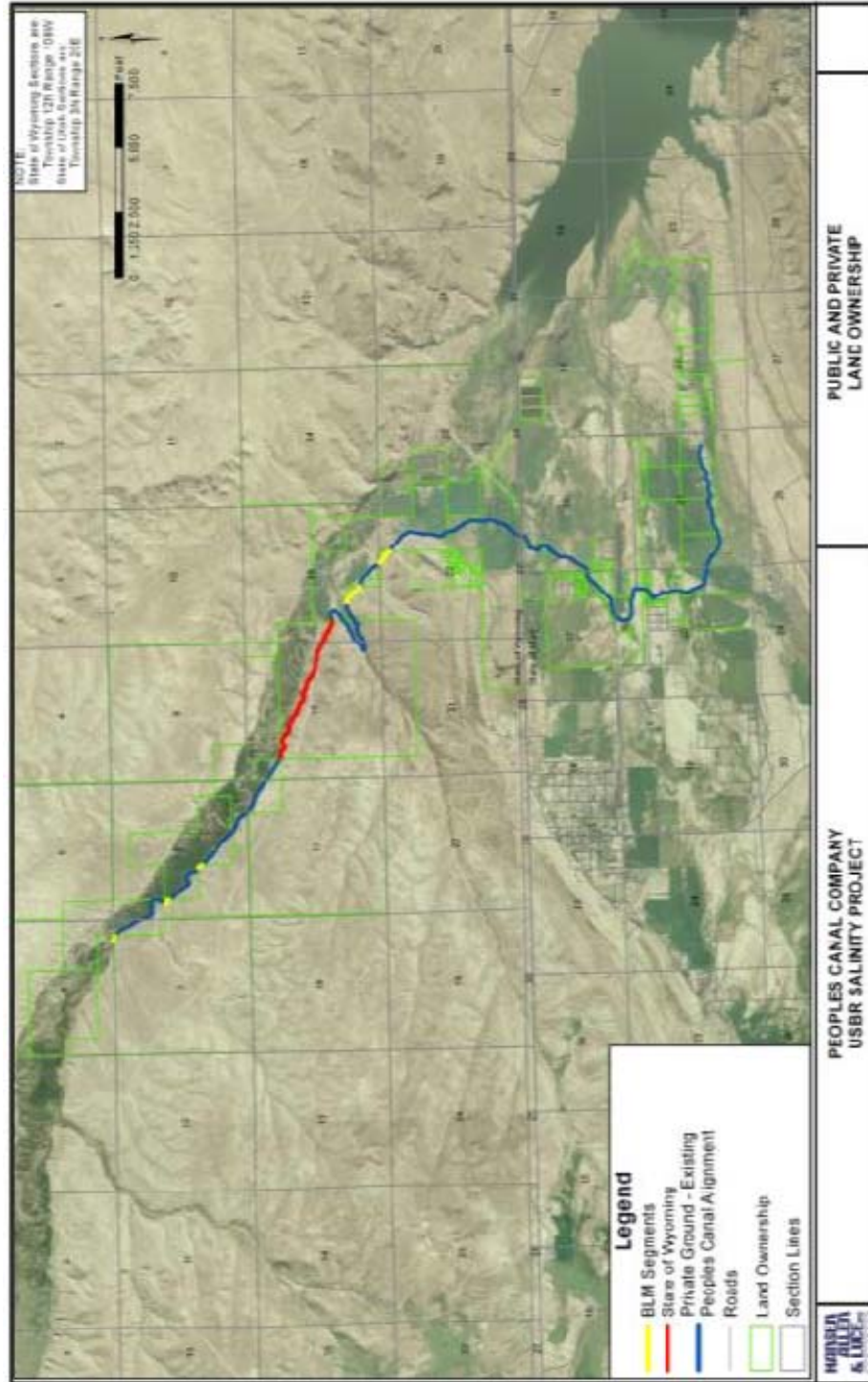


Figure 5 – Pipeline Alignment and Land Ownership



Construction activities would be confined to the one hundred foot width, except within designated contractor staging areas and existing maintained roads. Disturbed areas would be reseeded with a native seed mix conforming to BLM requirements.

#### ***2.3.2.7 Transportation Requirements***

Construction transportation requirements of the project include a maximum of 20 round trips per day to the construction site. Construction transportation routes for the project include: Utah SR 43, Wyoming SR 530, Washam Road, the Canal maintenance road and alignment, and other maintained roads. Transportation to the project would follow the same routes to minimize disturbance to the biologic soil crust and vegetation and trips would be kept to a minimum. No vehicles other than the heavy equipment and those necessary for construction activities, would be allowed within the off-road construction zone.

#### ***2.3.2.8 Construction Schedule***

Due to the requirements of ARRA funded projects, this project, including all construction and the required habitat replacement plan, must be completed in the current fiscal year which ends on September 30, 2010. All construction activities must be completed by May 1, 2010, in order to make water deliveries to the existing farms and canal shareholders. The construction of the project is proposed to occur in two phases due to winter conditions and timing. Phase I of the project is anticipated to begin in January 2010. This would include the installation of the first 3-miles of 48-inch diameter pipeline. Phase II would begin in February 2010. Phase II would include the remaining 6 miles of pipeline and the sediment and screening structure at the beginning of the pipeline. The existing canal diversion structure will not be replaced as part of this project. The screening and sediment removal structure will be placed in the existing canal alignment near the canal diversion point. Phase I is anticipated to take 60 days for completion with Phase II taking 90 Days to complete.



# Chapter 3 – Affected Environment and Environmental Consequences

## 3.1 Introduction

This chapter describes the environment potentially affected by the proposed action. The following resource issues are described and evaluated under both the No Action alternative and the Action Alternative: air quality; water quality; wetlands and vegetation; wildlife resources; threatened and endangered species; cultural resources; paleontological resources; and soil erosion and sedimentation.

## 3.2 Resources Eliminated from Analysis

During the course of the alternatives analysis, several environmental resources were identified as not being affected by the proposed action, either because of the nature of the project or because they do not exist in the project area. These resources, listed in Table 3.1 below, are not discussed further in this EA.

**Table 3.1  
Resources Eliminated from Further Study**

Element	Rationale
Public Health and Safety	The project would not create any new public health and safety issues within the project area. It would remove the hazard of conveying water in an open Canal; eliminating the potential for drowning.
Soundscape	The soundscapes during the construction period may be temporarily impacted but may have no long term impact within the project area. The amount of sound created by the construction equipment is not anticipated to be significantly greater than the traffic that travels on Highway 12 next to the project site.
Transportation	Additional traffic may occur from construction activities for a period of

	several months. There are no foreseen reasons for traffic detours within the project area.
Visual Resources	The proposed pipeline would be buried and the site restored to its original condition. The visual intrusion upon the landscape during construction would be temporary; and though the impacts of this action would be visible for years after construction and mitigation efforts are completed, it would be no more noticeable than the open-Canal it is replacing; and since it is not visible from any 'key observation point' (kop) it would only be viewed by the occasional rancher, hunter or wildlife wandering by.
Recreation Resources	There would be no direct effects on recreation resources found within the project area.
Solid or Hazardous Waste	There would be no direct effects from Solid or Hazardous Waste within the project area. A method to deal with hazardous waste spills from equipment would be addressed in the Standard Operating Procedures for the contractor during construction.
Prime and Unique Farmland	There would be no impacts to Prime and Unique Farmland found within the project area.
Wilderness and Wild and Scenic Rivers	There would be no impacts to Wilderness and Wild and Scenic Rivers found within the project area.
Urban Quality and Design of the Built Environment	There would be no impacts to Urban Quality and Design of the Built Environment found within the project area.
Energy Requirements and Conservation Potential	There would be no impacts to Energy Requirements and Conservation Potential within the project area.
Hydrology	There would be no impacts to hydrology within the Peoples Canal or the Henrys Fork River.
Socioeconomics	There would be no impacts to socioeconomics within the vicinity of the Peoples Canal.

## **3.3 Affected Environment**

### **3.3.1 Air Quality**

Air quality is regulated by the U.S. Environmental Protection Agency (EPA) and the Utah Division of Air Quality. The EPA has established the National Ambient Air Quality Standards (NAAQS) under the Clean Air Act (CAA) which specify amounts of air pollutants for carbon monoxide, particulate matter (less than 2.5 micrometers), ozone, sulfur dioxide, lead, and nitrogen. Air quality in Wyoming is regulated by the EPA and the Wyoming Department of Environmental Quality (WDEQ).

Currently, Daggett County in Utah it is not classified as an attainment area. However Daggett County is subject to R307-205-5: Fugitive Dust of the Utah Air Quality Rules due to the excavating phases of the project. An approval order permit is not required, but steps need to be taken to minimize fugitive dust. Sweetwater County in Wyoming is classified as an attainment area. A construction permit would be required for this portion of the project.

### **3.3.2 Water Rights**

Water is diverted into the Peoples Canal from the Henrys Fork River primarily under Wyoming Water Right Permit Nos. P1874D and P2266D which have priority dates of July 2, 1898 and September 11, 1899 respectively. These permits describe the point of diversion, alignment, and lands irrigated by the Peoples Canal.

There are various water rights both above and below the Peoples Canal's point of diversion on the Henrys Fork River. The allocation of water between these water rights is regulated by the Wyoming State Engineers office and is based on the water available in the river and the priority dates of the individual water rights.

### **3.3.3 Water Quality**

The Henrys Fork River feeds the Peoples Canal. The Henrys Fork watershed includes sections of Wyoming and Utah and has perennial surface flows year round. The river channel flows to the east of the Peoples into Linwood Bay, an arm of Flaming Gorge Reservoir in Wyoming. Currently, an annual average of 24,000 tons of salt reaches the Green River due to deep percolation of water conveyed by the Peoples Canal. The salt is being transported to the river through seepage from the Peoples Canal of 1,100 acre-feet per year and 4,800 acre-feet of deep percolation from on- irrigation. The sulfate and sodium salts are being leached from the gypsum rich saline marine shale (NRCS Salinity Loading Analysis, 2006).

### 3.3.4 Wetlands and Vegetation

#### Riparian Habitat

Riparian vegetation exists on both sides of the Peoples Canal. This strip varies from approximately 10 to 30 feet in width and consists mostly of young willow (*Salix spp*), some Nebraska sedge (*Carex nebrascensis*), Wire rush (*Juncus balticus*), Common scouring-rush (*Equisetum hyemale*) and in places, an overstory of narrowleaf cottonwood (*Populus angustifolia*) along the Canal prism. Smooth brome (*Bromus inermis*), timothy (*Phleum pratense*), Smooth wildrye (*Elymus glaucus*) as well as several other introduced and native grass species (mostly wheat grasses) exist along the Canal prism. Canada thistle (*Cirsium arvense*) is found in the project area. Reed canarygrass (*Phalaris arundinacea*) is found in small patches along the Canal. Patches of alfalfa (*Medicago sativa*) can be found along the Canal. Narrowleaf cottonwood (*Populus angustifolia*) is found along the Canal on the Wyoming side. The proposed pipeline construction would occur along the Canal prism which has been previously disturbed by road, and maintenance activities. Irrigated fields adjacent to the Canal in both Wyoming and Utah. These irrigated fields are mostly planted with alfalfa (*Medicago sativa*).

#### Upland Habitat

Both nonnative and native species of vegetation are found within the project area. Upland habitat consist mainly of big sagebrush (*Artemisia tridentata*), rabbit brush (*Chrysothamnus spp.*), and an overstory of juniper (*Juniperus spp.*). Other species present include yellow sweet clover (*Melilotus officinalis*), wheatgrass, broom snakeweed (*Gutierrezia sarothrae*), basin wildrye (*Elymus cinereus*), aster (*Aster sp.*), Indian paintbrush (*Castilleja angustifolia*), and wheatgrass (*Agropyron sp.*).

#### Wetland and Riparian Habitat

Natural occurring wetlands exist along the Henrys Fork flood plain. Jurisdictional waters include all the waters from the Henrys Fork River system.

Most of the Canal prism consists of open water habitat. Riparian vegetation along the Canal prism has resulted from Canal seepage. Vegetation along the Canal includes a mix of willow, grasses, cottonwood trees and upland species.

### 3.3.5 Wildlife Resources

Wildlife resources within the general area of the project include fish, big game, smaller mammals, raptors, water birds, and upland game birds, with a variety of other birds, reptiles, and amphibians.

#### Fish

The Henrys Fork River originates from streams that flow north from the Uinta Mountains and supports a significant fishery resource. It has traditionally

provided game fish of desirable quantity and size for anglers and fly fishermen. The Henrys Fork River drains into Linwood Bay, an arm of Flaming Gorge Reservoir.

Game fish found in the river are rainbow trout (*Oncorhynchus mykiss*), and Colorado River cutthroat trout (*Oncorhynchus clarki pleuriticus*).

Non-game fish include: Bluehead sucker (*Catostomus discobolus*), flannelmouth sucker (*Catostomus latipinnis*), mottled sculpin (*Cottus bairdii*), mountain sucker (*Catostomus platyrhynchus*), redbelt shiner (*Richardsonius balteatus*), speckled dace (*Rhinichthys osculus*), and white sucker (*Catostomus commersonii*).

### **Big Game**

The foothills and mountains surrounding the Peoples Canal are covered mostly with sagebrush, grassland, and juniper communities. This area provides big game habitat for both summer and winter use for deer (*Odocoileus hemionus*) and elk (*Cervus elaphus nelsoni*). Moose (*Alces alces*) are occasionally observed along the Henrys Fork River. Mountain lion (*Felis concolor*), black bear (*Ursus americanus*), and coyote (*Canis latrans*) are present in the area.

### **Other Mammals**

Other mammals common within the area include: badger (*Taxidea taxus*), least chipmunk (*Eutamias minimus*), meadow vole (*Microtus montanus*), northern pocket gopher (*Thomomys talpoides*), deer mouse (*Peromyscus maniculatus*), porcupine (*Erethizon dorsatum*), and striped skunk (*Mephitis mephitis*). Furbearers such as beaver (*Castor canadensis*), mink (*Mustela vison*), and muskrat (*Ondatra zibethicus*), use the riparian habitat in sections of the Canal prism and along the Henrys Fork River. Bobcat (*Lynx rufus*), red fox (*Vulpes vulpes*), raccoon (*Procyon lotor*), Uinta ground squirrel (*Spermophilus armatus*), mountain cottontail (*Sylvilagus nuttallii*), and various species of shrews (*Sorex spp.*), voles (*Microtus spp.*), and bats (*e.g. Myotis spp., Eptesicus fuscus*) can be found in the area.

### **Raptors**

Birds of prey (raptors) have been observed within or adjacent to the project area. Cottonwood trees along the river and the margin of the reservoir provide nesting habitat for raptors such as the golden eagle (*Aquila chrysaetos*), red-tailed hawk (*Buteo jamaicensis*), osprey (*Pandion haliaetus*), and roosting sites for the great horned owl (*Bubo virginianus*) and bald eagle (*Haliaeetus leucocephalus*). Winter months are the best time to view bald eagles near the Henrys Fork River. Other raptors observed in the area are the American kestrel (*Falco sparverius*), peregrine falcon (*Falco peregrinus*), barn owl (*Tyto alba*), western screech owl (*Otus kennicottii*), great horned owl (*Bubo virginianus*), and turkey vulture (*Cathartes aura*).

### **Water Birds**

Water birds occur in the project area such as waterfowl, shore birds, and other wading birds typically associated with wetlands and open water. The Peoples Canal provides habitat for water birds. The area provides forage, cover and nest sites for several species of waterfowl and wading birds.

Riparian areas along the Henrys Fork River, wetlands found along Highway 530 and mud flats in areas of the Flaming Gorge Reservoir serve as important migratory stopover habitat for birds in the fall and spring. Emergent vegetation around these areas provides nesting habitat for a variety of waterfowl from mid-March to mid-July. Brood rearing begins mid-July to mid-August. Mud flats exposed in late summer and fall provide foraging areas for shore and wading birds.

Water birds commonly observed include the pied-billed (*Podilymbus podiceps*), eared (*Podiceps caspicus*), and western grebes (*Aechmophorus occidentalis*), gadwall (*Anas strepera*), mallard (*Anas platyrhynchos*), cinnamon teal (*Anas cyanoptera*), northern shoveler (*Spatula clypeata*), lesser scaup (*Aythya affinis*), green-winged teal (*Anas carolinensis*), northern pintail (*Anas acuta*), common loon (*Gavia immer*), American white pelican (*Pelecanus erythrorhynchos*), double crested cormorant (*Phalacrocorax auritus*), American coot (*Fulica Americana*), ring billed gull (*Larus delawarensis*), California gull (*Larus californicus*) great blue heron (*Ardea herodias*), killdeer (*Charadrius vociferous*), and Canada goose (*Branta canadensis*).

### **Upland Game Birds**

Upland game birds occurring in the area include the ring-necked pheasant (*Phasianus colchicus*), mourning dove (*Zenaida macroura*), and quail species (*Lophortyx ssp.*).

### **Other Birds**

Probably the most common birds along the Canal are songbirds. Western kingbirds (*Tyrannus verticalis*), yellow warbler (*Dendroica petechia*) and mountain bluebird (*Sialia currucoides*) are among the various species of songbirds that use the riparian areas along the Canal.

Corvids, including jays (*Cyanocitta spp.*), the black-billed magpie (*Pica pica*), and the common raven (*Corvus corax*), are common. Tree swallow (*Tachycineta bicolor*), violet-green swallow (*Tachycineta thalassia*), northern rough-winged swallow (*Stelgidopteryx serripennis*), and cliff swallows (*Hirundo pyrrhonota*) all occur within the area. In open, shrub-dominated habitats goldfinch (*Carduelis tristis*), western meadowlark (*Sturnella neglecta*), common nighthawk (*Chordeiles minor*) sage thrasher (*Oreoscoptes montanus*), green-tailed towhee (*Pipilo chlorurus*), and rufous-sided towhee (*P. erythrophthalmus*) occur.



## Reptiles and Amphibians

Reptiles and amphibians with potential to occur in the project area include the tiger salamander (*Ambystoma tigrinum*), boreal chorus frog (*Pseudacris triseriata*), great plains toad (*Bufo cognatus*), northern leopard frog (*Rana pipiens*), Great Basin gopher snake (*Pituophis melanoleucus deserticola*), and the Great Basin rattlesnake (*Crotalus viridis*), Great Basin spadefoot (*Spea intermontana*), northern leopard frog (*Rana pipiens*), plateau fence lizard (*Sceloporus tristichus*), northern sagebrush lizard (*Sceloporus graciosus*), midget faded rattlesnake (*Crotalus viridis concolor*), prairie rattlesnake (*Crotalus viridis*) and wandering gartersnake (*Tramnophis elegans vagrans*). Historically, boreal toad (*Bufo boreas*) occurred in the area but it has not been documented within the project area recently.

### 3.3.6 Threatened and Endangered Species

Federal agencies are required to ensure that any action federally authorized or funded would not adversely affect a federally listed threatened or endangered species. Several species listed as threatened or endangered occur within Sweetwater and Daggett Counties in Wyoming and Utah. These species are discussed below and summarized in table 3.2.

Canada Lynx (*Lynx canadensis*) (Threatened), although they have not been seen, they could possibly use forested areas and wetlands within or near the project area. Black-footed ferret (*Mustela nigripes*) (Endangered) occurred historically in the area but are not known to occur there presently. There is no habitat for Ute Ladies-tresses (*Spiranthes diluvialis*) (Threatened) or Blowout Penstemon (*Penstemon haydenii*) (Endangered) within the project area. The western yellow-billed cuckoo (*Coccyzus americanus*) (Candidate) may use the area during their breeding season. The bald eagle has been removed from the Federal Threatened and Endangered Species list but is protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. It is a winter resident of the area. This species roosts primarily in forested canyons or tall cottonwoods along streams and reservoirs. There are no known nesting pairs within the project area.

The States of Utah and Wyoming maintain a list of sensitive species (species of special concern). Sensitive species that may occur within the project area and that are managed under conservation agreements include: Colorado River cutthroat trout (*Oncorhynchus clarkii pleuriticus*), bluehead sucker (*Catostomus discobolus*), flannelmouth sucker (*Catostomus latipinnis*) and northern goshawk (*Accipiter gentilis*). Other species that may occur within the project area include: Bobolink (*Dolichonyx oryzivorus*), short eared owl (*Asio flammeus*), white tailed prairie dog (*Cynomys leucurus*), tufted cryptanth (*Cryptantha caespitosa*), juniper whitlow grass (*Draba oligospermavar.juniperina*), maybell locoweed (*Oxytropis besseyi var.obnapiformis*) and opal phlox (*Phlox opalensis*), spike gilia (*Ipomopsis spicata*). Precocious milkvetch (*Astragalus promianthus*), nelson's milkvetch (*Astragalus nelsonianus*), and stemless beardtongue (*Penstemon acaulis var. acaulis*) are found near the project area but none of them have been found within the area of surface disturbance.

**Table 3.2**  
**U.S. Fish and Wildlife Service Endangered Species List for Daggett County,**  
**Utah and Sweetwater County, Wyoming.**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Category</b>	<b>Status</b>
Black footed Ferret	<i>Mustela nigripes</i>	Mammal	Endangered
Blowout penstemon	<i>Penstemon haydenii</i>	Plant	Endangered
Bonytail	<i>Gila elegans</i>	Fish	Endangered
Colorado pikeminnow	<i>Ptychocheilus lucius</i>	Fish	Endangered
Humpback chub	<i>Gila cypha</i>	Fish	Endangered
Razorback sucker	<i>Xyrauchen texanus</i>	Fish	Endangered
Ute Ladies' tresses	<i>Spiranthes diluvialis</i>	Plant	Threatened
Yellow billed Cuckoo (Western)	<i>Coccyzus americanus</i>	Bird	Candidate
Canada Lynx	<i>Lynx canadensis</i>	Mammal	Threatened

### **3.3.7 Cultural Resources**

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

Section 106 of the National Historic Preservation Act (NHPA) of 1966 mandates that Reclamation take into account the potential effects of a proposed Federal undertaking on historic properties. Historic properties are defined as any prehistoric or historic district, site, building, structure or object included in, or eligible for, inclusion in the National Register of Historic Places (NRHP). Potential effects of the described alternatives on historic properties are the primary focus of this analysis.

The affected environment for cultural resources is identified as the APE (area of potential effects), in compliance with the regulations to Section 106 of the NHPA (36 CFR 800.16). The APE is defined as the geographic area within which Federal actions may directly or indirectly cause alterations in the character or use of historic properties. The APE for this proposed action includes the areas of potential ground disturbance associated with the proposed pipeline corridor, access roads, and staging areas.

### **3.3.7.1 Cultural History**

The project area is located within the Green River Basin of southwest Wyoming and northeastern Utah, along the Henrys Fork River and within a portion of the Lucerne Valley (Baxter 2009). The archaeological record of this area spans thousands of years, across both prehistoric and historic periods in human history. The Paleoindian period is the oldest prehistoric period for which there is solid archaeological evidence in the area, beginning no later than 12,000 years ago and ending around 8,200 years ago. The Late Prehistoric period, beginning around A.D. 1-200 and ending around A.D. 1700, marked the end of the prehistoric period in the general project area (Pastor et al. 2000).

The earliest Euro-American presence in the project area was associated with fur trapping and exploratory expeditions in the early 1800s. In the late 1800s, ranchers used the area for the summer grazing of sheep and cattle brought in from parts of northern Utah and southwestern Wyoming. Permanent settlement wasn't established in the area until irrigation was established in the form of the Sheep Creek Canal. The Canal irrigated thousands of acres in the Lucerne Valley of the greater Breen River Basin and attracted farmers to the area, creating a new settlement. After a few years, growth in the community led to the development of a townsite. The new town, Manila, was named for Admiral Dewey's victory at Manila Bay during the Spanish-American War (Baxter 2009).

Controversy over the price of water rights from the Sheep Creek Canal led to the building of a new water system in the area. The Peoples Canal Company was developed in 1899 in an attempt by local residents to get cheaper water. Construction of the Peoples Canal was completed in 1902 and water was initially delivered in the spring of 1903. The water in the Peoples Canal served the eastern end of the Lucerne Valley and eventually led to the creation of the town of Linwood. Linwood became the center of trade and business in the area until it was inundated by the construction of Flaming Gorge Reservoir in 1963 (Natural Resources Conservation Service 2006).

### **3.3.7.2 Cultural Resources Status**

A. Class I literature review and a Class III cultural resource inventory were completed for the APE, defined in the action alternative and analyzed for the proposed action, by Bighorn Archaeological Consultants, LLC in October and November, 2009. A total of 650 acres were inventoried during the Class III inventory to determine if the proposed action would affect cultural resources. Three new sites, one previously recorded site, and three isolates were identified during the inventory.

In accordance with 36 CFR 800.4, the sites were evaluated for significance in terms of NRHP eligibility. The significance criteria applied to evaluate cultural resources are defined in 36 CFR 60.4 as follows:

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and

objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and A. that are associated with events that have made a significant contribution to the broad patterns of our history; or

B. that are associated with the lives of persons significant in our past; or

C. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. that have yielded, or may be likely to yield, information important in prehistory or history.

One site identified during the Class III cultural resource inventory, the Peoples Canal, is recommended eligible for the NRHP under criterion A. The Peoples Canal made a significant contribution to the settlement and economic development of the Lucerne Valley. The proposed action would cause an alteration to the characteristics of the Peoples Canal which make the Canal eligible for the NRHP and would, therefore, have an effect on the property according to 36 CFR 800.16(i).

Pursuant to 36 CFR 800.5, the criteria of adverse effect were applied to the Peoples Canal. An adverse effect is defined as an effect that could diminish the integrity of a historic property's location, design, setting, materials, workmanship, feeling, or association. The proposed action would diminish the integrity of the Peoples Canal and would have an adverse effect to the historic property.

In compliance with 36 CFR 800.4(d)(2) and 36 CFR 800.11(e), a copy of the cultural resource inventory report and a determination of historic properties affected have been submitted to the Wyoming State Historic Preservation Office (WYSHPO), Utah State Historic Preservation Office (UTSHPO), the Bureau of Land Management-Rock Springs Field Office (BLM), the Advisory Council on Historic Preservation (ACHP), and tribes which may attach religious or cultural significance to historic properties possibly affected by the proposed action for consultation.

Pursuant to 36 CFR 800.6(c), a Memorandum of Agreement (MOA) would be developed to resolve the adverse effects to the Peoples Canal. Signatories to the MOA would include Reclamation, BLM, UTSHPO, WYSHPO, the Peoples Canal Company, and if they choose to participate, the ACHP.

### **3.3.8 Paleontology**

A paleontological survey was conducted on November 6 and 7, 2009 for the project area by Brooks B. Britt, Ph.D. of Paleo Mentors, Orem, Utah. According to Mr. Britt, the proposed action would impact unconsolidated Quaternary alluvium, Eocene aged lake/river deposits, and Late Cretaceous marine and

marginal marine deposits. No significant fossils were found during the survey and the possibility of the proposed action uncovering important fossils was determined to be low.

### **3.3.9 Soil Erosion and Sedimentation**

Soils exist within the current proposed project area. Some of the soil is protected from erosion and sedimentation by native vegetation, except for areas within the wash and also in cliff areas at sections of the Canal. The soils in the project area are mostly composed of Goslin fine sandy loam with 3 to 10 percent slopes, Luhon Loam with 0 to 8 percent slopes, Luhon Channery with 2 to 8 percent slope, Mcfadden Sandy Loam with 2 to 6 percent slope, Poposhia Loam with 3 to 6 percent slope, Redcreek-Blackhall-Rock Outcrop Complex with 6 to 35 percent slope, Dollard-Moyerson complex 6 to 25 percent slopes, Poposhia loam with 0 to 6 percent slope, Rhoamett silty clay with 0 to 5 percent slope and salt flats. The present vegetation is mostly pinyon, juniper, shrubs, grasses and riparian along the Canal. Runoff on these soils is often rapid and erosion is likely.

## **3.4 Environmental Consequences**

### **3.4.1 Air Quality**

#### **3.4.1.1 No Action Alternative**

Under the No Action Alternative, there would be no adverse effects to air quality.

#### **3.4.1.2 Action Alternative**

Under the Action Alternative, there would be no long term impact to local air quality since no new sources of air pollution would be created. Impacts due to construction activities would not be long lasting and any generation of new pollution would be eliminated after the project was completed. There is a potential for direct, short term fugitive dust generation from construction activities that could have an adverse affect on the air quality in the vicinity of the project area. The fugitive dust could be generated by excavation activities along with the movement of construction equipment on unpaved roads. Best management practices (i.e. watering for dust control) to minimize fugitive dust may be implemented.

## **3.4.2 Water Rights**

### **3.4.2.1 No Action Alternative**

Under the No Action Alternative, the Peoples Canal would remain an open channel and there would be no changes to the Canal system or its associated water rights. Likewise there would be no impacts to adjacent water rights along the Henrys Fork River.

### **3.4.2.2 Action Alternative**

Under the Action Alternative, the Peoples Canal would be piped but the point of diversion and the alignment of the Canal would remain unchanged. Additionally, the water use from the Canal is not anticipated to change significantly as a result of the proposed action. The Wyoming State Engineer's Office would not require any changes be made to the water rights carried in the Canals, however they would like to be notified by letter once the Canal is piped.

Because the Proposed Action Alternative would result in any significant changes to where the water is diverted or used, there should be no impacts to water rights on the Henrys Fork River System.

## **3.4.3 Water Quality**

### **3.4.3.1 No Action Alternative**

Under the No Action Alternative, the Green River would continue to receive concentrated salt loads from deep percolation return flows and seepage from the historic Peoples Canal project. There would be long term minor to moderate adverse impacts under the no action alternative.

### **3.4.3.2 Action Alternative**

The Action Alternative would reduce seepage from the historic Peoples Canal. By eliminating this seepage, 5,553 tons of salt per year would be prevented from reaching the Green River year and eventually, the Colorado River. This would result in minor long-term reduced salinity in the Colorado River, which would be a positive impact and part of the defined purpose of the Colorado River Salinity Control Program.

## **3.4.4 Wetlands and Vegetation**

### **3.4.4.1 No Action Alternative**

Under the No Action Alternative, no impacts to wetland and or riparian vegetation would occur. Riparian areas along both sides of the Canal prism created by seepage from the Canal would remain and be of benefit to some wildlife around the area.

### **3.4.4.2 Action Alternative**

Under the Action Alternative, the majority of long-term project impacts would occur in Canal-induced riparian habitat. The majority of project impacts would result from actual construction activities related to filling and covering the Canal

after placement of the pipeline. Riparian habitat in the project area is Canal-induced and supported by seepage. This habitat would be impacted by implementation of project practices resulting in elimination of seepage, and the distribution, size, and quality would decrease. Both the extent and density of vegetation associated within the area may be reduced. Additionally, the area may see increases in dominance of non-native species including tamarisk (*Tamarix ramosissima*), Russian olive (*Elaeagnus angustifolia*), and cheatgrass (*Downy brome*); these species may be able to out-compete native species. Most portions of the Canal would be filled in. Portions that would be abandoned include two small areas in the first mile and a half and the section of the Canal bordering Cottonwood creek. Also, the last 0.9 mile of the Canal would remain in service to collect waste water from Sheep Creek Irrigation Company. Based on the review of existing data and examination of results of similar salinity control projects, it is likely that not all riparian habitat would be lost. The areas that would be abandoned could receive spring runoff water. This could allow riparian vegetation to establish within these areas. The amount of riparian habitat that would be lost in the proposed project area is approximately 30 acres; these losses would be considered permanent. It is possible that not all 30 acres of riparian habitat would be lost, as explained in the preceding paragraph. This Canal-induced riparian habitat, while still valuable to wildlife, does not provide the same value to wildlife that naturally occurring wetlands would. However, Reclamation requires by law that any wildlife values lost as a result of project implementation be replaced. Reclamation is currently working with Peoples Canal Company to develop a habitat replacement plan. Replacement habitat would be of an equal or greater value to the habitat lost by the proposed project.

To minimize impacts to native riparian vegetation, previously disturbed areas would be used during construction, where possible. Best management practices would be followed to reduce construction impacts, including placing staging and material sources outside of sensitive riparian areas. Construction materials and equipment would be washed to remove dirt and weed seeds and reduce the possibility of infestation. After any surface disturbance, proper rehabilitation procedures would be followed to prevent the infestation of invasive riparian species. This would include seeding mixtures of desirable native riparian species.

Construction activities within the Cottonwood Creek would follow standard guidelines for construction within stream channels to protect flood flow capacity, channel integrity, and pipeline integrity.

Upland vegetation would be disturbed in construction, borrow, and staging areas. Most of these areas within the construction zone have been disturbed previously and have a strong component of nonnative species and weeds. All disturbed areas would be re-contoured and re-vegetated with appropriate native species. No long term negative effects would occur from the proposed project.

### **3.4.5 Wildlife Resources**

#### **3.4.5.1 No Action Alternative**

Under the No Action Alternative, terrestrial wildlife and habitat would remain in their current condition, and there would be no gains or losses in wildlife habitat. Salinity loading of the Colorado River drainage would continue at current rates, which may affect water quality within the drainage, thereby impacting wildlife using the area.

#### **3.4.5.2 Action Alternative**

The upland wildlife habitat impacted by the proposed action would result in minor impacts to all wildlife species present in the project area. There would be some upland habitat that would be temporarily lost due to pipeline construction, but similar habitat is available in surrounding areas. Additionally, the area would be recontoured, replanted, and reseeded with native vegetation. Vegetation communities would be monitored until two successive years without human intervention results in a return of native vegetation. Best management practices would be followed to minimize impacts, including placing staging sites and access outside of sensitive or highly valuable habitats. After any surface disturbance, proper rehabilitation procedures would be followed to prevent the infestation of weedy species. This would include seeding mixtures of desirable native species, including grasses, shrubs, and forbs.

During the construction period or when maintenance of the pipeline is necessary, there could be an impact of short term displacement (approximately 3 to 6 months) of animals that would normally occupy the immediate project area. Construction would occur during early spring through early summer in order to meet the American Recovery and Reinvestment Act (ARRA) requirement that funds be utilized during the current fiscal year. It would occur within a 50-foot-wide area along the Proposed Pipeline Alignment. Generally, animals would move easily and find alternative areas for forage and cover, and would likely return after construction and maintenance operations have been completed. Some upland habitats would experience short term disturbance until native vegetation components within these areas are restored (two to three growing seasons) by recontouring and reseeding.

Conversion of the Canal to a pipeline within the Wyoming portion of the project would occur within mule deer crucial winter range during the crucial winter timeframe (Nov. 15 – April 30). It is expected that winter conditions would be mild during the initial portions of the project construction and therefore an exception could be granted by the BLM according to the Green River Resource Management Plan (GRRMP) (Appendix 7). The presence of an existing county road paralleling the project, and the amount of Private and State land ownership involved in relation to BLM ownership was taken into consideration. This Project is being funded through ARRA stimulus funds and would require winter construction, therefore winter conditions and animal presence/health would be monitored on a regular basis (e.g., weekly) or when deemed necessary by the



local biologist (e.g., change in weather patterns). If significant impacts to wintering mule deer are projected to occur based on criteria outlined in the GRRMP (Appendix 7), coordination would take place among Reclamation, BLM, and Wyoming Game and Fish Department (WGFD) to identify suitable mitigation measures for that portion of the project.

Impacts to small mammals, especially burrowing animals, could include direct mortality and displacement during construction activities. Most small mammal species would likely experience reduced populations in direct proportion to the amount of disturbed habitat. These species and habitats are relatively common in the area, so the loss would be minor.

Impacts to big game would include short term disturbance and displacement of early spring and early summer incidental use during the construction period. It is anticipated, due to the minor amount of habitat disturbance, that minor to no impact to wintering big game populations would occur.

Impacts to raptors and other avian species would include minor short term disturbance and displacement, with no long term impacts.

Avian and amphibian species which are dependent on open water and riparian habitat associated with the existing canal would experience a long term (greater than five years) loss of habitat along the canal prism. Individuals from these affected species would be expected to relocate to suitable nearby habitat.

The proposed action would result in a decrease in salinity which would increase water quality in the Colorado River and potentially indirectly benefit fish within the Colorado River System. The total habitat value that would be lost long term would be replaced through acquired mitigation habitat.

### **3.4.6 Threatened, Endangered, and Sensitive Species**

#### **3.4.6.1 No Action Alternative**

There would continue to be minor direct or indirect impacts to threatened, endangered, or candidate species. Salinity loading of the Colorado River drainage would continue at current rates due to seepage from the Peoples Canal, which may affect water quality within the drainage, thereby impacting wildlife using the area. Any impacts from salt loading would be the same as they have been historically.

#### **3.4.6.2 Proposed Action Alternative**

Bald eagles are winter residents of this area and may be displaced by construction activities (noise and habitat disturbance). Cottonwood trees and dead snags should be avoided during construction. However, loss of trees as result of pipeline placement and filling and covering the Canal may occur. This could displace eagles. These effects would be short term or very limited in extent and would have no significant negative effects, since these birds would be able to use

abundant similar roost sites or other habitat elements in the immediate vicinity of the project. All construction activities occurring within a half mile of any bald eagle roost site would be restricted to hours between 9:00 a.m. and 4:00 p.m., from January 1<sup>st</sup> to April 31<sup>st</sup>, if necessary, until all bald eagles have left the area.

Canada lynx have not been seen in the area for many years. Therefore, no effects are predicted to occur to them.

Western yellow-billed cuckoo have not been observed within the area affected by this alternative. However, a few individuals may migrate through the area. The extent of disturbance associated with this project would leave a large area of suitable habitat unaffected, allowing any possible use by these birds to occur in these adjacent areas.

Fish species managed under conservation agreements (i.e. bluehead sucker, Bonneville cutthroat trout) may temporarily be disturbed within areas where construction activities affect riparian or riverine habitats. These species would likely move to areas unaffected by the proposed project, either upstream or downstream. No sedimentation is expected to reach the Henrys Fork River, so there would be no effects to spawning and feeding beds. A coanda screen would be installed to serve in the removal of sand, organic matter, and other debris from the water including fish eggs and larvae greater than 0.25mm in diameter. The design of the screens would allow the structure to be self-cleaning.

Reptiles that are present would be displaced by construction activities in riparian and wetland habitats until these areas recover.

Northern goshawk may use habitats within the area of disturbance. The extent of disturbance associated by this project would leave large areas of suitable habitat unaffected, allowing any possible use by these birds to occur in these adjacent areas. Therefore, affects to them would be negligible.

The proposed action alternative would result in no significant effects to threatened, endangered, or special status species.

### **3.4.7 Cultural Resources**

#### **3.4.7.1 No Action Alternative**

Under the No Action Alternative, there would be no adverse effects to cultural resources. There would be no need for ground disturbance for any pipe installation, staging areas, or access roads. The existing conditions would remain intact and would not be affected.

#### **3.4.7.2 Action Alternative**

Under the Action Alternative, there would be an adverse effect to the Peoples Canal. The existing unlined earthen irrigation Canal would be replaced with a pipeline and buried. Mitigation measures for the adverse effect to the Peoples

Canal have been outlined in a Memorandum of Agreement (MOA) in accordance with 36 CFR 800.6(c). Please see Appendix A for a copy of the executed MOA.

### **3.4.8 Paleontology**

#### **3.4.8.1 No Action Alternative**

Under the No Action Alternative, there would be no adverse effects to paleontology. There would be no need for ground disturbance for any pipe installation, staging areas, or access roads. The existing conditions would remain intact and would not be affected.

#### **3.4.8.2 Action Alternative**

Under the Action Alternative, there would be ground-disturbing activities which have the potential to disturb subsurface fossil material. No significant fossils were found during the field survey, however, and the possibility of uncovering important fossils has been determined to be low.

### **3.4.9 Soil Erosion and Sedimentation**

#### **3.4.9.1 No Action Alternative**

Under the No Action Alternative, there would be no adverse effects to soil erosion and sedimentation.

#### **3.4.9.2 Action Alternative**

Under the Action Alternative, soil would be excavated and then replaced, compacted and regraded during construction. For a short period immediately following construction, erosion and sedimentation could increase. However, the proposed pipeline alignment would be reseeded and over the long term, the soil would return to a pre-project condition once vegetation is established.

## **3.5 Indian Trust Assets**

Indian Trust Assets (ITAs) are legal interests in property held in trust by the United States for Indian tribes or individuals. The Department of the Interior's policy is to recognize and fulfill its legal obligations to identify, protect and conserve the trust resources of federally recognized Indian tribes and tribal members, and to consult with tribes on a government-to-government basis whenever plans or actions affect tribal trust resources, trust assets, or tribal safety (please refer to Departmental manual, 512 DM 2). Under this policy, as well as Reclamation's ITA policy, Reclamation is committed to carrying out its activities in a manner which avoids adverse impacts to ITAs when possible, and to mitigate or compensate for such impacts when it cannot. All impacts to ITAs, even those considered non-significant, must be discussed in the trust analyses in NEPA compliance documents and appropriate compensation or mitigation must be implemented.

Trust assets may include lands, minerals, hunting and fishing rights, traditional gathering grounds, and water rights. Impacts to ITAs are evaluated by assessing how the action affects the use and quality of ITAs. Any action that adversely affects the use, value, quality or enjoyment of an ITA is considered to have an adverse impact to the resources. There are no known ITAs in the project area vicinity, and no ITA concerns were identified by potentially affected tribes during the tribal consultation process.

### **3.6 Environmental Justice**

Executive Order 12898 established environmental justice as a Federal agency priority to ensure that minority and low-income groups are not disproportionately affected by Federal actions. The project area lies on privately and publicly owned land within Sweetwater County in Wyoming and Daggett County in Utah. After a review of the United States 2000 census information and socioeconomic data available for Sweetwater and Daggett Counties, populations that could potentially be affected by the proposed project were evaluated. There were no minorities or low-income population centers on or in the vicinity of the project area. Implementation of the action alternative would not disproportionately (unequally) affect any low-income or minority communities near the project area. The proposed action would not involve population relocation, health hazards, hazardous waste, property takings, or substantial economic impacts. The proposed action would therefore have no adverse effects to human health or the environment that would disproportionately affect minority and low-income populations.

### 3.7 Summary of Environmental Consequences

Table 3.3 summarizes environmental effects under the No Action Alternative and the Action Alternative.

**Table 3.3**  
**Summary of Environmental Consequences**

<b>Resource</b>	<b>Alternatives</b>	
	<b>No Action</b>	<b>Action</b>
Air Quality	No Effect	Minor, short term effects due to equipment exhaust during construction and some minor dust from trenching and construction. Mitigate fugitive dust with Best Management Practices (i.e. watering work zones).
Water Rights	No Effect	No interference with Henrys Fork basin water rights.
Water Quality	Continued salt and sediment loading of the Green River and Colorado River. Long-term minor to moderate adverse impacts	Eliminating 5,553 tons of salt per year from the Green and Colorado Rivers, thereby reducing the salinity and increasing the water quality. Minor long term beneficial effects due to decreased salinity loads.
Wetlands and Vegetation	Remain in current condition.	Long term loss of riparian areas along the Canal once it is abandoned. Potential for old Canal to be used as a natural drainage collecting storm and spring runoff. No wetlands affected. Loss of riparian habitat would be mitigated through the implementation of a Habitat Replacement Plan, as required for the Colorado River Salinity Control Forum. Short term vegetation loss with re-establishment of native communities in two years. Potential of invasion of exotic weeds. Monitoring of re-establishment and control exotic weed invasion until there are two successive years without human intervention post construction would mitigate loss of native vegetation from construction.

Wildlife Resources	No direct or indirect impacts Continued salinity loading at current rates into the Colorado River.	Minor short term disturbance and displacement during construction. No long term impacts. May be improved as a result of long term increase water quality.
Threatened, Endangered, and Sensitive Species	Minor direct or indirect impacts from salt loading due to Canal seepage. Salt loading would continue at current rates.	No Effect to T&E species; potential minor, short term effects during construction to some special status species. Long term minor beneficial effect due to decrease in salt loads to the Colorado River; benefit is increased cumulatively by the number of salinity control projects implemented throughout the Colorado River basin.
Cultural Resources	No Effect	Adverse effect to historic property (Peoples Canal). Mitigation measures developed in an MOA. (Appendix A)
Paleontology	No Effect	Potential effects to subsurface fossils during construction.
Soil Erosion and Sedimentation	No Effect	Minor short term erosion in areas of construction disturbance until vegetation is re-established. Erosion control measures would be implemented. Monitoring of revegetation and control of noxious weeds will occur in the project area until there are two successive years without human intervention post-construction.

## Chapter 4 – Environmental Commitments

The following environmental commitments would be implemented as an integral part of the Proposed Action under the route alternatives in the project area.

1. **Standard Reclamation Management Practices** - Standard Reclamation management practices would be applied during construction activities to minimize environmental effects and would be implemented by construction personnel or included in contract specifications. Specifically, the amount of open trench allowed during construction and at the end of each workday to protect wildlife. Also, workers would be reminded to drive carefully to avoid collisions with wildlife.
2. **Additional Analyses** - If the Proposed Action were to change significantly from that described in the EA because of additional or new information, additional environmental analyses would be undertaken if necessary.
3. **State Stream Alteration Permit** - (If required) The Company would obtain from the Wyoming Department of Environmental Quality and Utah Department of Natural Resources Stream Alteration Permit. The conditions and requirements of the Stream Alteration Permit would be strictly adhered to by the Company.
4. **404 Permit** - (If required) The Company would obtain from the U.S. Army Corps of Engineers (Corps) a 404 permit. The Corps regulates all the jurisdictional waters of the United States including jurisdictional wetlands. The conditions and requirements of the 404 permit would be strictly adhered to by the Company.
5. **Cultural Resources** - Any person who knows or has reason to know that he/she has inadvertently discovered possible human remains on Federal land, he/she must provide immediate telephone notification of the discovery to Reclamation's Provo Area Office archaeologist. Work would stop until the proper authorities are able to assess the situation onsite. This action would promptly be followed by written confirmation to the responsible Federal agency official, with respect to Federal lands. The WYSHPO, UTSHPO, and interested Native American tribal representatives would be promptly notified. Consultation would begin immediately. This requirement is

prescribed under the Native American Graves Protection and Repatriation Act (43 CFR Part 10); and the Archaeological Resources Protection Act of 1979 (16 U.S.C. 470).

6. **Memorandum of Agreement** - A Memorandum of Agreement has been executed to mitigate for the adverse effect to an historic property. Please see Appendix A.
7. **Paleontological Resources** - Should vertebrate fossils be encountered by the proponent during ground disturbing actions, construction must be suspended until a qualified paleontologist can be contacted to assess the find.
8. **Construction Activities Confined to Surveyed Corridor** - All construction activities would be confined to the surveyed corridor that have been surveyed for cultural, paleontological, and biological resources.
9. **Roads** - Existing roads would be used for project activities. No new road construction would be necessary.
10. **Disturbed Areas** - During construction, topsoil would be saved. It would then be redistributed after completion of construction activities. Subsequently, disturbed areas resulting from the project would be smoothed, shaped, contoured, reseeded, and rehabilitated to as near their pre-project construction condition as practicable. Seeding and planting would occur at appropriate times with weed-free seed mixes of native plants. The composition of seed mixes would be coordinated with a wildlife habitat specialist. Following construction, manpower would be provided by the Peoples Canal Company to inspect the pipeline alignment to insure that restoration goals are met. Monitoring of revegetation and treatment of noxious weeds within the project area would continue until there are two successive years without human intervention.
11. **Visual Resources** - Rehabilitation measures would be implemented immediately upon completion of the pipeline. This would include re-contouring and reseeded disturbed areas in a natural appearing way, with native vegetation species. The spread of noxious weeds would be controlled, trash would be cleaned up and construction debris disposed of in designated areas.
12. **Air Quality** - Best management practices would be implemented to control fugitive dust during construction. The contractor would follow the EPA recommended control methods for aggregate storage pile emissions to minimize dust generation, including periodic



watering of equipment staging areas, along with dirt and gravel roads. All loads that have the potential of leaving the bed of the truck during transportation would be covered or watered to prevent the generation of fugitive dust. Chemical stabilization would not be allowed.

Construction machinery and operation and maintenance vehicles would be routinely maintained to ensure that engines remain tuned and emission-control equipment is properly functioning as required by law. The contractor would comply with Utah and Wyoming States air quality regulations.

- 13. Habitat Replacement** - A plan to replace wildlife values foregone must be prepared and finalized by the Peoples Canal Company and approved by Reclamation following coordination with the U.S. Fish and Wildlife Service (FWS), Utah Division of Wildlife Resources (UDWR) and Wyoming Department of Game and Fish (WDGF). Because ARRA funds which must be used during the current fiscal year are being used for this salinity control project, the habitat replacement plan must be completed and improved well before the end of the fiscal year.
- 14. Easement Acquisition or Modification** - In addition to obtaining all necessary federal, state or local permits for construction, it is expected that the applicant would have properly executed easements from applicable landowners for construction and operation of the pipeline.
- 15. Critical Winter Range for Mule Deer** - If during project construction there might arise the potential for impacts to wintering mule deer, Reclamation, BLM, and the Wyoming Game and Fish Department would coordinate to identify suitable mitigation measures, consistent with Appendix 7 of the GRRMP.



# **Chapter 5 - Consultation and Coordination**

## **5.1 Introduction**

Reclamation's public involvement program gives the public an opportunity to obtain information about a given project and allows all interested parties to participate in these projects through written comments. One of the most important objectives of the program is to obtain information from a well-informed public that would assist decision makers throughout the process and culminate in the implementation of an alternative. This chapter of the EA discusses public involvement activities and consultation and coordination activities undertaken for the proposed Peoples Canal pipeline replacement project.

## **5.2 Public Involvement**

Reclamation sent a scoping letter on September 14, 2009, to explain the project to interested individuals, groups and stakeholders and to solicit public input regarding the proposed project. Six responses to the scoping letter were received and were considered in preparing this EA.

Coordination between Reclamation and the BLM Rock Springs Office in Wyoming, cooperating agency for this EA, has been ongoing to discuss the pipeline alignment alternative, cultural resource impacts, and biological resource impacts. The State Historic Preservation Office for Utah and Wyoming and the FWS have been consulted pursuant to all applicable laws and are involved with all relevant processes. The city of Manila, Utah and Daggett County, Utah as well as Sweetwater County, Wyoming have also been made aware of the proposed project.

As stated in the September 14, 2009, Scoping Letter, if a Finding of No Significant Impact (FONSI) is made, this EA together with Reclamation's signed FONSI and decision document would be published and mailed to the interested public. As a cooperating agency, BLM will use this EA and other relevant information as a basis for its decision document regarding its permitting process for the proposed project.

## **5.3 Native American Consultation**

Reclamation conducted Native American consultation throughout the public involvement process. Consultation letters and copies of the Class III cultural resource inventory report were sent to the Ute Indian Tribe of the Uintah and

Ouray Reservation, the Northwestern Band of Shoshoni Nation of Utah, the Arapahoe Tribe of the Wind River Reservation, the Shoshone Tribe of the Wind River Reservation, and the Shoshone-Bannock Tribes of the Fort Hall Reservation of Idaho. This consultation was conducted in compliance with 36 CFR 800.2(c)(2) on a government-to-government basis. Through this effort, each tribe is given a reasonable opportunity to identify any concerns about historic properties; to advise on the identification and evaluation of historic properties, including those of traditional religious and cultural importance; to express their views on the effects of the proposed action on such properties; and to participate in the resolution of adverse effects. This consultation process is complete.

## **5.4 Paleontological Resources**

A paleontological survey was conducted on November 6 and 7, 2009, for the project area by Brooks B. Britt, Ph.D. of Paleo Mentors, Orem, Utah.

## **5.5 Wyoming State Historic Preservation Office**

A copy of the Class III cultural resource report and a determination of historic properties affected for the proposed project were submitted to the WYSHPO. WYSHPO agreed with Reclamation's determination of effect and would be a signatory to the MOA to mitigate for the adverse effect to an historic property.

## **5.6 Utah State Historic Preservation Office**

A copy of the Class III cultural resource report and a determination of historic properties affected for the proposed project were submitted to the UTSHPO. UTSHPO agreed with Reclamation's determination of effect and would be a signatory to the MOA to mitigate for the adverse effect to an historic property.

## Chapter 6 – Preparers

The following contributors to the Peoples Canal Salinity Control Project EA are employees of the U.S. Department of the Interior, Bureau of Reclamation, Provo Area Office.

**Table 6.1**  
**List of Preparers**

Name	Position Title	Contribution
Brian Joseph, MA	Archaeologist	Cultural Resources; Paleontology
Rafael Lopez, BA	General Biologist	EA Team Leader, NEPA Compliance; Wetlands; CWA Compliance; Air Quality; Soils; Wildlife Resources; Vegetation
W. Russ Findlay, MS	Fish and Wildlife Biologist	T&E Species
Beverley Heffernan, BA	Supervisory Environmental Protection Specialist	NEPA Compliance; Environmental Justice; Indian Trust Assets; Agency Review
Johnn Sterzer	Landscape Architect; Land Surveyor	Recreation; Visual Resources
Linda Andra	Administrative Assistant	Technical Writing and Editing
Ben Radcliffe, BS, PE <sup>a</sup>	Civil Engineer	Water Quality, Salinity Review
Scott Taylor, MS	Economist	Socioeconomics
Justin Record, MS, PE <sup>a</sup>	Civil Engineer	Water Rights
Lisa Verzella	Hydrologist	Hydrology, Water Resources
Malaina Gaddis	Biological Aide	Editing and Review

a = Registered Professional Engineer

b = Registered Landscape Architect



## Chapter 7 – References

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Utah Department of Environmental Quality. <http://www.deq.utah.gov/>

Wyoming Department of Environmental Quality. <http://deq.state.wy.us/>





**APPENDIX A**

**Memorandum of Agreement**