RECLAMATION
Managing Water in the West

Final Environmental Assessment Rock Point Canal Rehabilitation Project

PRO-EA-16-013

Upper Colorado Region
Provo Area Office
Provo, Utah

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

November 2017

Mission Statements

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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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Upper Colorado Region
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FINDING OF NO SIGNIFICANT IMPACT

Environmental Assessment Rock Point Canal Rehabilitation Project
Uintah County, Utah

EA-16-013

Recommended by:

Jared Baxter
Fish and Wildlife Biologist

13 Nov 2017
Date

Concur:

Rick Baxter
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13 Nov 2017
Date

Approved by:

Wayne G. Pullan
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16 Nov 2017
Date

Introduction

In compliance with the National Environmental Policy Act of 1969, as amended (NEPA), the Bureau of Reclamation - Provo Area Office has conducted an Environmental Assessment (EA) for a Proposed Action to provide funding to the Rock Point Canal Company (Company) for diverting irrigation water from the existing 8.7-mile-long Rock Point Canal (Canal) into a newly constructed 8.2-mile-long pipeline. Reclamation is responsible for implementing salinity control projects for the Colorado River Basin and is the lead agency for the purposes of compliance with the NEPA for this Proposed Action.

The EA was prepared by Reclamation to address the impacts associated with replacing a section of the Canal with a buried pipeline. The purpose of the Proposed Action is to eliminate seepage losses and to allow for a higher percentage of diverted water to reach points of use. This will allow for improved irrigation success on fields and pastures and increased growth of grass and crops. The project is needed to reduce salt loading to the Colorado River System.

Alternatives

The EA analyzed the No Action Alternative and the Proposed Action of replacing 8.7 miles of the open Canal with 8.2 miles of a buried pipeline.

Minimization Measures Incorporated into the Proposed Action

The minimization measures, along with other measures listed under each resource in Chapter 3 and Chapter 4 of the EA, have been incorporated into the Proposed Action to lessen the potential adverse effects.

- The project construction area would be located in previously disturbed sites whenever possible and would have as small a footprint as possible.
- All staging areas are located on previously disturbed sites.
- Ground disturbance would be minimized to the greatest extent possible.
- Only certified weed-free hay, straw or mulch if needed, would be used to minimize the potential spread of nonnative invasive plants.
- Construction vehicles and equipment would be inspected and cleaned prior to entry into the project area to ensure that they are free of weed seed.
- Newly disturbed sites would be monitored for impacts to native vegetation.
- Stockpiling of materials would be limited to those areas approved and cleared in this EA.

- Eleven discharge points would be built into the pipeline to allow water to flow into the existing Rock Point Canal to maintain existing, native vegetation.

Environmental commitments that are integral to the Proposed Action are as follows:

1. **Standard Reclamation Best Management Practices -** Standard Reclamation best management practices will be applied during construction activities to minimize environmental impacts and will be implemented by construction forces, or included in construction specifications. Such practices or specifications include sections in the present EA on public safety, dust abatement, air pollution, noise abatement, water pollution abatement, waste material disposal, erosion control, archaeological and historical resources, vegetation, wildlife, and threatened and endangered species. The Project will comply with all requirements set forth in the informal Section 7 consultation with U.S. Fish and Wildlife Service (USFWS). Excavated material and construction debris may not be wasted in any stream or river channel in flowing waters. This includes material such as grease, oil, joint coating, or any other possible pollutant. Excess materials must be wasted at a Reclamation approved upland site well away from any channel. Construction materials, bedding material, excavation material, etc. may not be stockpiled in riparian or water channel areas. Silt fencing will be appropriately installed and left in place until after revegetation becomes established, at which time the silt fence can then be carefully removed. Machinery must be fueled and properly cleaned of dirt, weeds, organisms, or any other possibly contaminating substances offsite prior to construction.

2. **Additional Analyses -** If the Proposed Action were to change significantly from that described in this EA because of additional or new information, or if other spoil, or work areas beyond those outlined in this analysis are required outside the defined Project construction area, additional environmental analyses may be necessary.

3. **UPDES Permit -** A UPDES Permit will be required from the State of Utah before any discharges of water, if such water is to be discharged as a point source into a regulated water body. Appropriate measures will be taken to ensure that construction related sediments will not enter the stream either during or after construction. Settlement ponds and intercepting ditches for capturing sediments will be constructed, and the sediment and other contents collected will be hauled off the site for appropriate disposal upon completion of the Project.

4. **Stream Alteration Permit -** The Company will obtain and comply with the terms and conditions set forth in the required stream alteration permits from the Division of Water Rights.

5. **Fugitive Dust Control Permit -** The Division of Air Quality regulates fugitive dust from construction sites, requiring compliance with rules for sites disturbing greater than one-quarter of an acre. Utah Administrative Code R307-205-5, requires steps be taken to minimize fugitive dust from construction activities. Sensitive receptors

include those individuals working at the site or motorists that could be affected by changes in air quality due to emissions from the construction activity.

6. **Cultural Resources -** In the case that any cultural resources, either on the surface or subsurface, are discovered during construction, Reclamation's Provo Area Office archeologist shall be notified and construction in the area of the inadvertent discovery will cease until an assessment of the resource and recommendations for further work can be made by a professional archeologist.

   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 will stop until the proper authorities are able to assess the situation onsite. This action will promptly be followed by written confirmation to the responsible Federal agency official, with respect to Federal lands. The Utah State Historic Preservation Office and interested Native American Tribal representatives will be promptly notified. Consultation will 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).

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. **Habitat Replacement.** A plan to replace the wildlife habitat eliminated by this project was created and approved by Reclamation, in coordination with the USFWS. Eleven discharge points will be built into the pipeline to allow water to flow into the existing Rock Point Canal to maintain existing, native vegetation. The Habitat Replacement Plan will be approved and initiated prior to project completion and final payment of construction funds, in accordance with salinity control program procedures.

9. **Wildlife Resources**

   a. Migratory Bird Protection

   i. Perform any ground-disturbing activities or vegetation treatments before migratory birds begin nesting or after all young have fledged.
   ii. If activities must be scheduled to start during the migratory bird breeding season, take appropriate steps to prevent migratory birds from establishing nests in the potential impact area. These steps could include covering equipment and structures and use of various excluders (e.g., noise). Prior to nesting, birds can be harassed to prevent them from nesting on the site.

iii. If activities must be scheduled during the migratory bird breeding season, a site-specific survey for nesting prior to groundbreaking activities or vegetation treatments. Established nests with eggs or young cannot be moved, and the birds cannot be harassed (see ii., above), until all young have fledged and are capable of leaving the nest site.

iv. If nesting birds are found during the survey, appropriate spatial buffers should be established around nests. Vegetation treatments or ground-disturbing activities within the buffer areas should be postponed until the birds have left the nest. Confirmation that all young have fledged should be made by a qualified biologist.

b. **Raptor Protection** - Raptor protection measures will be implemented to provide full compliance with environmental laws. If raptor nests are identified prior to construction, raptor surveys will be developed using the Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (Romin and Muck 2002), to ensure that the proposed project will avoid adverse impacts to raptors, including bald and golden eagles. Locations of existing raptor nests and eagle roosting areas will be identified prior to the initiation of project activities. Appropriate spatial buffer zones of inactivity will be established during breeding, nesting, and roosting periods. Arrival at nesting sites can occur as early as December for certain raptor species. Nesting and fledging can continue through August. Wintering bald eagles may roost from November through March.

10. **Previously Disturbed Areas** - Construction activities will be confined to previously disturbed areas for such activities as work, staging, and storage, waste areas and vehicle and equipment parking areas. Vegetation disturbance will be minimized as much as possible.

11. **Public Access** - Construction sites will be closed to public access. Temporary fencing, along with signs, will be installed to prevent public access. Reclamation will coordinate with landowners or those holding special permits and other authorized parties regarding access to or through the Project area.

12. **Disturbed Areas** - All disturbed areas resulting from the Project will be smoothed, shaped, contoured, and rehabilitated to as near the pre-Project construction condition as practicable. After completion of the construction and restoration activities, disturbed areas will be seeded at appropriate times with weed-free, native seed mixes having a variety of appropriate species (especially woody species where feasible) to help hold the soil around structures, prevent excessive erosion, and to help maintain other riverine and riparian functions. The composition of seed mixes will be coordinated with wildlife habitat specialists and Reclamation biologists. Weed control on all disturbed areas will be required. Successful revegetation efforts must be monitored and reported to Reclamation, along with photos of the completed Project.

13. **Threatened and Endangered Species –**

    a. Construction activities would avoid, to the extent feasible, Ute ladies'-tresses (*Spiranthes diluvialis*; ULTs) habitat outside of the Rock Point Canal corridor and staging areas.

    b. Mitigation measures for ULTs would include:

        1. Transplanting individual plants if found during one more future survey of the existing Rock Point Canal to a USFWS approved location;

        2. Monitoring transplantation site for three years following transplantation in the event transplantation occurs.

14. **License Agreement and Easement Encroachment Agreement -** A License Agreement and Easement Encroachment Agreement will be obtained from Reclamation in order for permission to be granted for the Company to modify Federal facilities.

Related NEPA Documents

Environmental Impact Statements or Environmental Assessments that are related to, but not part of the scope of this EA, include the Steinaker Dam Right Abutment Slide Repair Final EA, Steinaker Service Canal Modification Project Final EA, and Steinaker Reservoir Carriage of Non-Project Water Final EA.

Decision and Finding of No Significant Impact

Based upon a review of the EA and supporting documents, I have determined that implementing the Proposed Action will not significantly affect the quality of the human environment, individually or cumulatively with other actions in the area. No environmental effects meet the definition of significance in context or intensity as defined at 40 CFR 1508.27. Therefore, an environmental impact statement is not required for this Proposed Action. This finding is based on consideration of the context and intensity as summarized here from the EA.

Context

The affected locality is Uintah County, Utah. Affected interests include the Company and Uintah County.

Intensity

The following discussion is organized around the 10 significance criteria described in 40 CFR 1508.27. These criteria were incorporated into the resource analysis and issues considered in the EA.

1. **Impacts may be both beneficial and adverse.** The Proposed Action will impact resources as described in the EA. Environmental commitments to reduce impacts to cultural and biological resources were incorporated into the design of the Proposed Action. The following short-term effects of the Proposed Action are predicted: road closures, noise, and ground disturbance along the Canal alignment. Long-term predicted effects are wildlife habitat loss (mitigated for in the Habitat Replacement Plan). Adverse and beneficial effects include salt loading reduction to the Colorado River, eliminate seepage losses and to allow for a higher percentage of diverted water to reach points of use.

None of the environmental effects discussed in detail in the EA are considered significant.

2. **The degree to which the selected alternative will affect public health or safety or a minority or low-income population.** The Proposed Action will have no significant impacts on public health or safety. No minority or low income community will be disproportionately affected by the Proposed Action.

3. **Unique characteristics of the geographic area.** Any wetlands or other wildlife habitat that will be impacted by the Proposed Action will be mitigated for under the Habitat Replacement Plan. There are no park lands, prime farmlands, wild and scenic rivers, or other ecologically critical areas that will be affected by the proposal.

4. **The degree to which the effects on the quality of the human environment are likely to be highly controversial.** Reclamation contacted representatives of other Federal agencies, state and local governments, Indian tribes, public and private organization, and individuals regarding the Proposed Action and its effects on resources. Based on the responses received, the effects from the Proposed Action on the quality of the human environment are not highly controversial.

5. **The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.** When uncertainty about impacts to the human environment was identified in the EA, mitigation and monitoring measures were identified and included in the formulation of the alternatives. There are no effects on the human environment that are considered highly uncertain or that involve unique or unknown risks.

6. **The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.** The Proposed Action will not establish a precedent for future actions with significant effects.

7. **Whether the action is related to other actions which are individually insignificant but cumulatively significant.** Cumulative impacts are possible when the effects of the Proposed Action are added to other past, present, and reasonably foreseeable future actions as described

under Related NEPA Documents above; however, significant cumulative effects are not predicted, as described in the EA.

8. **The degree to which the action may adversely affect sites, districts, buildings, structures, and objects listed in or eligible for listing in the National Register of Historic Places.** The State Historic Preservation Officer has concurred with a determination of no historic properties affected by the Proposed Action.

9. **The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.** No listed species were present within the project boundary during surveys for Ute ladies'-tresses (ULTs). The Service concurred with Reclamation's determination of "may affect, not likely to adversely affect" ULTs.

10. **Whether the action threatens a violation of Federal, state, local, or tribal law, regulation or policy imposed for the protection of the environment.** The project does not violate any Federal, state, local, or tribal law, regulation, or policy imposed for the protection of the environment. In addition, this project is consistent with applicable land management plans, policies, and programs.

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Chapter 1 Purpose of and Need for Proposed Action

1.1 Introduction

This Environmental Assessment (EA) was prepared to examine the potential environmental impacts of converting the Rock Point Canal into a pressurized, underground pipeline (herein referred to as the Rock Point Canal Project, or Project) proposed by the Rock Point Canal and Irrigation Company (Company) in Uintah County, Utah. If approved, irrigation water in the 8.7 mile long Rock Point Canal in Vernal, Utah, would be diverted to a newly constructed pipeline. The new pipeline would be buried, and the existing Rock Point Canal would be left in place to provide storm water and runoff control as well as sustain existing habitat. Pipe for the new canal would be constructed with a combination of polyvinyl chloride (PVC) and high-density polyethylene pipe (HDPE) pipe ranging from 2 to 34-inches-in-diameter.

This EA evaluates the potential effects of the Proposed Action in order to determine whether it would cause significant impacts to the human or natural environment, as defined by the National Environmental Policy Act (NEPA) of 1969. If the EA shows no significant impacts associated with implementation of the proposed Project, then a Finding of No Significant Impact (FONSI) will be issued by the Bureau of Reclamation (Reclamation). Otherwise, an Environmental Impact Statement will be necessary prior to implementation of the Proposed Action.

1.2 Background

The study area for this EA follows the Rock Point Canal and is located near the city of Vernal, Utah in Ashley Valley (see Appendix A, Figure 1-1). The study area extends from Ashley Creek on the west, to the rock formations on the east and is located in secs 1, 2, 3, 4, 5, 8, 9, 10, 11, and 12, T. 4 S., R. 1 E. Elevations in this location range from approximately 5,200 to 5,600 feet (1,584 to 1,707 meters) above mean sea level. The study area slopes gradually upward toward the north and downward toward the south. Most soils within the study area have been disturbed through agricultural and residential expansion. The study area contains a combination of upland and wetland vegetation; several irrigated crops are located within the central and eastern portion of the study area. A majority of the western portion of the study area contains riparian woodland vegetation.

The Rock Point Canal is approximately 8.7 miles in length with the upper 5.9 miles unlined and the lower 2.8 miles piped (see Appendix A, Figure 1-1). The Rock Point Canal was constructed in 1880 and was one of the first canals constructed in the Uinta Basin. Much of the canal runs along the north end of the valley through Mancos Shale formations. The canal capacity is about 40 cubic feet per second (cfs). The Company has 570 shares of stock in Steinaker Reservoir which yields 1 acre-foot per share per year, or about 570 acre-feet of water per year. Total water carried by the canal averages about 5,900 acre-feet per year, including direct flow diversions from Ashley Creek. Water carried by the canal is used to irrigate approximately 1,950 acres of farmland that is used to produce mostly pasture grass, alfalfa, small grains, and corn.

The Rock Point Canal diverts water from Ashley Creek to serve lands both east and west of the Steinaker Service Canal along the northern edge of Ashley Valley. As flows subside in Ashley Creek during the late summer months, water from Steinaker Reservoir is diverted into Rock Point Canal to supplement Ashley Creek flows. It is estimated that approximately 35 percent of the water within Rock Point Canal is lost through seepage, canal spills, and evaporation. Water shortages within the past several years have prompted the Company to make improvements to the water supply to increase efficiency.

In cooperation with Reclamation, the Company applied for financial assistance from the Utah Department of Agriculture and Food, Plant Industry and Conservation Division, by way of the Colorado River Basin Salinity Control Act, for funds to reduce the salinity in the Colorado River by improving irrigation delivery systems that cause deep percolation. In December 2015, the Company was granted $976,549.

1.3 Purpose of and Need for Proposed Action

The purpose of the Project is to develop a more secure and reliable irrigation water supply for Ashley Valley that is capable of efficiently delivering water to consumers and that will reduce mineral accumulation in the Colorado River.

Rock Point Canal loses a significant amount of water via seepage due to its age and condition. As a result, water from the canal seeps into the underlying Mancos Shale formation and leaches selenium into surrounding creeks and wetlands. High concentrations of selenium have been shown to be harmful to fish and waterfowl in the area. The project is needed to:

- Improve canal efficiency (reduce water seepage, evaporation, and spills) and reduce canal operation and maintenance costs;
- Enhance opportunities for on-farm irrigation efficiency improvements;
- Reduce canal salt loads; and
- Reduce selenium loads carried to the Stewart Lake Waterfowl Management Area.

1.3.1 Canal Efficiency

Canal Water Loss

Between 2002 and 2011 from the months of April to October, Rock Point Canal direct flow was estimated to be a total average of 5,844 acre-feet (see Table 1-1). The Company determined that approximately 35 percent of the 5,844 acre-feet of water entering Rock Point Canal was lost to seepage, evaporation, and spills when the canal is overtopped during storm flows. Because of this water loss, water users are required to make water delivery requests in advance as opposed to diverting only the amount of water needed for irrigation. Losses from seepage and evaporation were estimated at 25 percent of the total flow, or about 1,461 acre-feet (0.25 x 5,844 acre-feet) (see Table 1-1). Spills at the end of the canal were estimated at 10 percent of the flow or about 584 acre-feet per year (see Table 1-1). Total losses averaged approximately 2,045 acre-feet per year (see Table 1-1).

Table 1-1
Total Rock Point Canal Water Loss Due to Seepage, Evaporation, and Spills

Rock Point Canal Direct Flow	Losses from Seepage and Evaporation	Canal Spills	Total Losses
5,844 acre-feet	1,461 acre-feet	584 acre-feet	2,045 acre-feet

Operation and Maintenance

The Company currently maintains the Rock Point Canal and is required to remove sediment loads and storm water discharge from the canal. Additionally, the canal is frequently maintained with activities such as grading, weed control, rodent control, trash and debris removal, and leak monitoring. According to the Company, operation and maintenance costs average an estimated $10,000 per year on the open canal. If the canal were enclosed it is estimated that maintenance costs would be reduced to $2,000 per year.

1.3.2 On-Farm Irrigation Efficiency

In its current state, the Rock Point Canal is unable to efficiently irrigate all serviced land. Irrigation methods utilized by landowners include sprinkler systems, flood irrigation, and gated pipe irrigation. Of the total 1,848.95 acres serviced by the Rock Point Canal, approximately 719.68 acres of land are now either idle or flood irrigated (see Table 1-2). Currently, water users irrigating using a sprinkler system install and maintain their own pumps. Those not using sprinkler systems face prohibitively expensive installation costs and maintenance and repair costs increase as the pump gets older. Facing these costs, some water users are unable to irrigate fields using sprinklers (a preferred method of irrigation). A high-pressured pipeline would remove the need for a pump and would eliminate these prohibitive costs for all water users.

Table 1-2
Current Irrigation Methods of Land Serviced by the Rock Point Canal

Irrigation Method	Total Acres
Sprinkler	1,070.51
Flood	611.46
Idle	108.22
Dry land	4.08
Total	**1,794.27**
Potential Conversion (Idle and Sub-irrigated land)	719.68
Percent of Total	*40.1 percent*

1.3.3 Salt and Selenium Loads

Salinity Reduction

One of the goals of this Project is to reduce the salinity of the Colorado River, and a funding source would be the Colorado River Basin Salinity Control Program. In a letter from Reclamation to the Company, Reclamation estimated that converting the canal to a pressurized pipeline would result in a salt load reduction of 740 tons per year in the Colorado River (Jacobson, 2015, see Appendix B: Salt Load Reduction Basis and Estimate).

Selenium Reduction

Another goal of the project is to reduce the selenium concentration in the water that reaches Stewart Lake Waterfowl Management Area and the Ouray National Wildlife Refuge, both of which are downstream of the proposed Project. The results of a study by Stephens et al. (1992) showed that selenium concentrations in Ashley Creek upstream of the city of Vernal generally were less than 1 microgram per liter but 12 miles downstream averaged 73 micrograms per liter.

1.4 Public Scoping and Involvement

1.4.1 Public Scoping

The public involvement process for this EA presented members of the public, including other agencies, interest groups, and key stakeholders with opportunities to obtain information about the proposed Project and opportunities to participate in the project through written comments. Reclamation's objectives during the public involvement process are to inform the public and receive input on the Project.

1.4.2 Public Involvement

The Company board, consisting of several members including Mr. Leon Kidd, Mr. Kenny Long, Mr. Brad Horrocks, and Mr. Brad Haslem, met regularly with one another between September 2016 and May 2017 to discuss the Project. Approximately, 52 individual property owners were contacted by the Company

board regarding the Project throughout the EA process (see Appendix C: Public Scoping and Involvement).

A public meeting was held on October 12, 2017, in Vernal, Utah. A total of nine individuals attended the meeting. No comments on the EA were received at this meeting.

A 30-day comment period ended on October 27, 2017. A total of 92 letters were sent to individuals and government agencies notifying them of the comment period and the public meeting. No comments on the EA were received.

1.5 Permits, Licenses, and Authorizations

Implementation of the Proposed Action may require a number of authorizations or permits from state and Federal agencies. The Company would be responsible for obtaining all necessary permits, licenses, and authorizations for the Project. Potential authorizations or permits may include those listed in Table 1-2 and others not listed.

Table 1-3
Permits and Authorization

Agency/Department	Purpose
Utah Division of Water Quality	A Utah Pollutant Discharge Elimination System (UPDES) Permit for construction and dewatering activities may be required.
Utah State Historic Preservation Office	Consultation pursuant to Section 106 of the National Historic Preservation Act (NHPA), 16 USC 470 USC 470 would be required.
United States Fish and Wildlife Service	Consultation pursuant to Section 7 of the Endangered Species Act would be required.

Agency/Department	Purpose
United States Army Corps of Engineers (USACE)	A U.S. Army Corps of Engineers (USACE) permit, in compliance with Section 404 of the Clean Water Act (CWA), would be required prior to the discharge of dredged or fill material into "waters of the United States".
State of Utah Department of Natural Resources, Division of Water Rights	A Stream Alteration Permit under Utah statutory criteria of stream alteration described in the Utah Code 73-3-29 would be required. This would apply for impacts to all tributaries and natural channels during project construction.
Bureau of Reclamation	A License Agreement and Easement Encroachment Agreement would be necessary in order for permission to be granted for the Company to modify Federal facilities.

1.6 Related Projects and Documents

1.6.1 Steinaker Dam Right Abutment Slide Repair EA

Reclamation completed an EA in 2017 to evaluate impacts associated with repairing a slope failure on the upstream face of the right abutment of Steinaker Dam and issued a FONSI. The repair includes extending the outlet works conduit approximately 80 feet upstream, constructing a new intake structure, flattening the upstream slope of the right abutment to improve stability, and constructing a stability berm along the upstream face of the dam.

1.6.2 Final EA Steinaker Service Canal Modification Project

An EA was prepared in 2014 to modify the existing Steinaker Service Canal, a feature of the Vernal Unit of the Central Utah Project, into a pressurized pipeline. The Uintah Water Conservancy District (District) proposed converting the entire length of the Steinaker Service Canal into a pressurized pipeline to minimize or eliminate loss of water to seepage and evaporation and maximize the amount of Vernal Unit water available for irrigation purposes in Ashley Valley. A FONSI was issued September 2014.

1.6.3 Final EA Steinaker Reservoir Carriage of Non-Project Water

An EA was prepared in 2015 to allow the District the carriage of 35,000 acre-feet of non-project water through the Vernal Unit facilities. The carriage of non-project water through Steinaker facilities and the Canal enclosure are separate projects independent of each other. A FONSI was issued September 2015.

1.7 Scope of Analysis

The purpose of this EA is to determine if Reclamation should authorize, provide funding, and enter into an agreement with the Company for the enclosure of the Rock Point Canal to develop a more secure and reliable irrigation water supply for Ashley Valley. That determination includes consideration of whether there would be significant impacts to the human environment. In order to implement the Proposed Action, this EA must be completed and a FONSI issued. Analysis in the EA includes temporary impacts from construction activities and permanent impacts as a result of the proposed Project.

Chapter 2 Alternatives

2.1 Introduction

This chapter describes the features of the No Action and Proposed Action Alternatives. It includes a description of each alternative considered and presents the alternatives in comparative form, defining the differences between each alternative.

2.2 No Action

Under the No Action Alternative, a pressurized pipeline for irrigation water would not be constructed. The Rock Point Canal would continue to deliver irrigation water through an open channel and overall operation activities would continue. Salt loads and selenium loads would remain unchanged. Additionally, canal efficiency (including water evaporation, spills, and seepage) would likely continue to worsen over time.

2.3 Proposed Action

The Proposed Action Alternative is the preferred alternative and would divert irrigation water from the Rock Point Canal through a newly constructed pipeline. The new pipeline would be approximately 43,390 linear feet (8.22 miles) long and would be buried (see Appendix A, Figure 2-1). The existing Rock Point Canal would be left in place to provide storm water and runoff control as well as sustain existing habitat. Pipe for the new canal alignment would be constructed with a combination of PVC and HDPE ranging from 2 to 34-inches-in-diameter. Construction work associated with the pipeline would require construction easements through Federal and private property.

Irrigation Turnouts
Approximately 46 existing turnouts deliver water to various users along the length of the Rock Point Canal. Existing turnout structures would be replaced with an outlet from the pipe, an isolation valve, and a combination air-vacuum valve. The size of the valve structure and piping would vary according to the required capacity for each turnout.

Road Crossings
There are several major road crossings where highways and surface streets cross the canal. These crossings consist of box culverts, siphons, or bridges paved with asphalt. The proposed pipeline crosses U.S. Highway 191, 2500 West, 1500

West, 3300 North, and 500 East. These road crossings would remain following construction of the Proposed Action. Where possible, the pipeline would be installed without disturbing the overlying roadway. At Highway 191 and 2500 West, pipeline construction would bore under the road to avoid road disturbance. For the other road crossings, the roadway would be shut down temporarily so that the pipeline could be cut and installed. Detours would be provided while the road crossing is out of service, and the roadway would be repaired following pipeline construction.

Stream Crossings
The Proposed Action would cross two tributaries and the Steinaker Service Canal. At the Steinaker Service Canal, the pipeline would be trenched across the canal and the canal bottom reconstructed with clay lining material. A casing pipe would be installed along with the pipeline to allow future service of the pipeline without disturbing the canal. These crossings would require the Company to obtain and comply with a stream alteration permit from the State of Utah Department of Natural Resources.

Staging Areas
Staging areas for construction equipment, pipe, vehicle parking, and other materials have been identified at 11 locations (see Appendix A, Figure 2-1). Two of the locations (the Thornburg Diversion, 2 acres, and the District Offices, 4 acres) will be used for pipe storage. They have been analyzed under a previous EA, have been previously utilized, and would be used for pipe storage for the proposed project. The remaining nine locations are approximately 1 acre each. Total acreage of surface disturbance for all staging areas will be 15 acres.

2.3.1 Construction
The entire 8.22 miles of proposed pipeline would be constructed as a single project. The pipeline is anticipated to begin in November 2017. Construction of the Proposed Action would begin near the downstream end of Rock Point Canal and progress upstream. The majority of the pipeline is outside of the existing canal alignment and construction could begin immediately in areas that are not being utilized or are only being used for pasture. Once crops are harvested from fields in the fall, and irrigation in the canal has ceased, then the remainder of the Project could be constructed.

While the Proposed Action is under construction, the canal would operate under normal flow conditions. Once the pipeline is complete and the Proposed Action is connected to the Island Ditch diversion structure, the pipeline would function as a fully pressurized irrigation system.

2.3.2 Construction Procedures
The Project construction area would be approximately 50-feet-wide by 8.22 miles long. The location of crew personnel, invert preparation, enclosure laying, and finish grading and restoration would vary from day to day. Most of the pipe would be stockpiled in the main staging area located adjacent to the District

office. Some of the pipe would be stockpiled at approved local staging areas. The right-of-way would be considered a continuous staging area for crews. Staging would occur along the pipeline study area but would remain within the 50 foot temporary construction easement. These staging areas would be used for equipment staging, construction, personnel vehicular parking, and occasional materials stockpiling. Construction would likely occur in the following sequence:

1. Construct or improve needed access roads
2. Clear and grade bottom for pipeline
3. Install pipeline bedding materials
4. Haul pipeline to construction sites
5. Place pipeline and connect
6. Backfill around pipeline and grade surface
7. Quality control and visual inspection
8. Clean up, revegetate, and restore areas disturbed by construction

2.3.2.1 Access Road Construction and/or Improvement

New road crossings would be completed to allow installation of the Proposed Action (i.e., pipeline). Controlled low-strength material (flowable fill) would be used as backfill to provide adequate strength below the pipeline. Where this option is not possible, the road crossings would be excavated and asphalt and concrete material would be removed offsite to an approved disposal site. Backfill would be compacted all the way to the ground surface at road crossings to prevent the road surface from subsiding under repeated traffic loads during and after construction. Temporary gravel surfaces at the road crossings would be installed and the final asphalt and curb and gutter restoration completed before spring. Road crossings would be restored to a condition better than or equal to existing conditions. Where the pipeline crosses the highway, the pipe would be bored underneath the existing road preventing any damage to the surface of the roadway.

Road construction and/or improvement would occur at the following locations:

- Across 1500 West at approximately 2374 North and along the shoulder of 1500 West from approximately 2374 North to 2548 North.
- Across 3300 North near 500 West.
- Across 500 East adjacent to the existing canal culvert.

Existing drainage canal crossings would be maintained or improved during construction.

2.3.2.2 Clearing and Grading for Pipeline

Soil and vegetation would be excavated and graded to provide a level base for installation of the Proposed Action. Excess material would be disposed within the right-of-way of the Proposed Action. A majority of the excavated material would be saved for backfill.

2.3.2.3 Installation of Bedding Materials

Base material for the bedding of the project area would be hauled to the site and compacted at the bottom of the trench prior to pipeline installation.

2.3.2.4 Transportation of Construction Materials and Pipeline

Pipe for the Proposed Action would be transported from the manufacturer or local supplier to the work site by flatbed truck and/or specially outfitted loaders. Additional materials to be transported include bedding and backfill. Construction transportation routes for the project include access roads and cross streets. Transportation to the project site would vary day-to-day as project construction proceeded.

2.3.2.5 Pipeline Installation and Connection

Each pipeline section would be placed in the prepared trench by the necessary construction equipment and connected to the previously laid section by field welding depending on the pipeline type. Additionally, the pipeline would be connected to existing head gate structures.

2.3.2.6 Backfill and Surface Grading

After the pipe is installed, backfill from material available along the canal or imported from local offsite commercial gravel pits would be carefully placed around the pipeline by lifts. Typically, backfill would be mechanically compacted with a vibratory compactor.

Following construction, the contractor would remove all debris. Excess backfill would be dispersed along the project area and blended with adjacent terrain. Soil in work areas would be spread evenly to blend with contours and maintain local drainage patterns.

The pipe would be covered with a minimum of 4 feet of soil. Wherever possible, the cover soil would be graded to blend smoothly into the surrounding ground surface.

2.3.2.7 Quality Control and Visual Inspection

After backfilling and all construction work are completed, the contractor would ensure quality control of construction through visual inspection and hydrostatic testing. Each segment of pipe would be filled with water and pressurized for hydro-testing through contractor-supplied pumps to ensure that the system operates to design specifications. If the pipe leaks or breaks, it would be repaired and re-tested until it met specifications. Test segment lengths would be determined by construction season and availability of water through agreements consistent with Federal, state, and local regulations and codes. After testing a segment, the water may be pumped into the next segment for testing and would ultimately be disposed of in accordance with water quality regulations.

Standard operating procedures would be followed during construction, operation, and maintenance of the Project to avoid or minimize adverse impacts to people or

environmental resources. Procedures and features of the Proposed Action have been formulated to avoid or minimize adverse impacts. Chapter 3: Affected Environment and Environmental Consequences presents the impact analysis for resources after standard operating procedures have been successfully implemented.

2.3.2.8 Restoration of Disturbed Areas

Areas disturbed by grading or construction would be contoured and re-vegetated within one growing season after construction using native species indicative of the study area. Topsoil would also be stockpiled and placed on disturbed areas as needed.

2.4.1 Membrane Lining

An alternative to the Proposed Action would be to line the canal with an impermeable membrane designed to minimize or eliminate loss due to seepage. This would preserve the canal in its current configuration (an open water channel).

This alternative was rejected and excluded from this analysis because of the risk of damage to the membrane from livestock or equipment. This damage would likely lead to seepage which would increase salt loading of the Upper Colorado River Basin. This alternative would still allow farmers to use flood irrigation in their fields which would contribute to the selenium load. Finally, losses due to evaporation would still exist and an open water canal could prove to be a danger to the public.

This alternative does not meet the purpose of and need for the Project because it would not allow farmers to easily switch to more efficient irrigation methods, losses due to evaporation would still exist, salt and selenium loads would not be reduced, and an open water canal could still be a hazard to the public.

2.5 Comparison of Alternatives

The suitability of the No Action and Proposed Action Alternatives were compared based on five objectives identified for the project. The objectives are:

- improve canal efficiency;
- enhance on-farm irrigation;
- reduce salt loads;
- reduce selenium loads; and
- improve public safety.

The No Action Alternative did not meet any of the Project's objectives while the Proposed Action met all five objectives.

2.6 Minimization Measures Incorporated into the Proposed Action

The minimization measures, along with other measures listed under each resource in Chapter 3 and Chapter 4 have been incorporated into the Proposed Action to lessen the potential adverse effects.

- The proposed Project construction area would be located in previously disturbed sites wherever possible and would have as small a footprint as possible.
- All staging areas are located on previously disturbed sites.
- Ground disturbance would be minimized to the maximum extent possible.
- Only certified weed-free hay, straw or mulch if needed, would be used to minimize the potential spread of nonnative invasive plants.
- Construction vehicles and equipment would be inspected and cleaned prior to entry into the project area to ensure that they are free of weed seed.
- Newly disturbed sites would be monitored for impacts to native vegetation.
- Stockpiling of materials would be limited to those areas approved and cleared in advance.
- Eleven discharge points would be built into the pipeline to allow water to flow into the existing Rock Point Canal to maintain existing, native vegetation.

Chapter 3 Affected Environment and Environmental Consequences

3.1 Introduction

This chapter describes the environment that could be affected by the Proposed Action. These impacts are discussed under the following resource issues:

- Geology and Soil Resources
- Visual Resources
- Cultural Resources
- Paleontological Resources
- Wilderness and Wild and Scenic Rivers
- Hydrology
- Water Quality
- System Operations
- Health, Safety, Air Quality, and Noise
- Prime and Unique Farmlands
- Flood Plains
- Wetlands, Riparian, Noxious Weeds and Existing Vegetation
- Fish and Wildlife Resources
- Threatened, Endangered, and Sensitive Species
- Recreation
- Socioeconomics
- Access and Transportation
- Water Rights
- Indian Trust Assets
- Environmental Justice
- Cumulative Effects

The present condition or characteristics of each resource are discussed first, followed by a discussion of the predicted impacts caused by the Proposed Action. The environmental effects are summarized in Section 3-7.

Implementing minimization measures would ensure impacts are minimal and short-term. Chapter 3 presents the impact analysis for resources after minimization measures and best management practices have been successfully implemented.

3.2 Resources Considered and Eliminated from Further Analysis

The following resources were considered but eliminated from further analysis because they did not occur in the Project area or because their effect is so minor (negligible) that it was discounted.

Table 3-1
Resources Eliminated from Analysis

Resource	Rationale for Elimination from Further Analysis
Wilderness and Wild and Scenic Rivers	There are no wilderness areas or wild and scenic rivers within the Project area; therefore, there would be no impact to these resources from the Proposed Action.
Recreation	There are no recreation areas within the Project area; therefore, there would be no impact to these resources from the Proposed Action.

3.3 Affected Environment and Environmental Consequences

This chapter describes the affected environment (baseline conditions) and environmental consequences (impacts as a result of the Proposed Action) on the quality of the human environment that could be impacted by construction and operation of the Proposed Action, as described in Chapter 2. The human environment is defined in this study as all of the environmental resources, including social and economic conditions, occurring in the impact area of influence.

3.3.1 Geology and Soils Resources

The study area is located in the Ashley Valley within the Uinta Basin of northeastern Utah. The elevation ranges from 5,200 to 5,600 feet (1,584 to 1,707 meters) above mean sea level. The region, including the Wasatch and Uinta mountain ranges, is contained in the Middle Rocky Mountain Physiographic Province.

The majority of the Ashley Valley consists of alluvial and eolian deposits (alluvial plain) with some sedimentary rock surfacing in the southern half of the valley and along the margins of the valley (Sprinkel, 2007). Geologic formations exposed in the project area include:

- Quaternary Alluvium, Terrace Deposits, Eolian Deposits, and Flood Plain and Channel Alluvium (boulders, gravels, sands, silts and clays) some believed to be of glacial origin
- Brennan Basin Member of Duchesne Formation (sandstone, siltstone, mudstone and conglomerate)
- Mesaverde Group (Upper and Lower) (cross-bedded sandstone, shale and minor coal)
- Frontier Sandstone (sandstone with shale and limestone)
- Mancos Shale (calcareous shale with siltstone)

The Ashley Valley was formed by Ashley Creek flowing across and through the outwash of glacial deposits (Hood, 1977). Sedimentary rock formations located in the southern portion of the valley generally strike to the northwest and dip to the southwest and range from 5 to 25 degrees. Sedimentary rock formations to the north and east of Ashley Valley show evidence of numerous folding actions (anticlines and synclines) with minor faulting occurring on the western edge of the valley. The U.S. Geologic Service has not found these faults and folds to be in an active state.

Table 3-2 shows the list of soils provided by the Natural Resources Conservation Service (NRCS) Web Soil Survey and the number of acres of each soil type present within the study area.

Table 3-2
Soils in the Study Area

Uintah Area, Utah – Parts of Daggett Grand and Uintah Counties (UT047)			
Map Unit Symbol	**Map Unit name**	**Acres in AOI**	**Percent of AOI**
6	Ashley loam, 0 to 2 percent slopes	65.3	10.4
9	Badland-Montwel complex, 50 to 90 percent slopes	5.5	0.9
63	Dams	1.5	0.2
77	Gerst-Rock outcrop complex, 4 to 40 percent slopes	37.6	6.0
94	Greybull-Utaline-Badland complex, 8 to 50 percent slopes	12.5	2.0
95	Hanksville silty clay loam, 2 to 25 percent slopes	17.9	2.9
96	Hanksville silty clay loam, 25 to 50 percent slopes	1.8	0.3
166	Ohtog-Parohtog complex, 0 to 2 percent slopes	104.3	16.6
167	Ohtog-Parohtog complex, 2 to 4 percent slopes	2.3	0.4
181	Pits, gravel	21.2	3.4

Uintah Area, Utah – Parts of Daggett Grand and Uintah Counties (UT047)			
Map Unit Symbol	**Map Unit name**	**Acres in AOI**	**Percent of AOI**
192	Robido-Uver complex, 1 to 4 percent slopes	171.9	27.4
206	Shotnick sandy loam, 2 to 4 percent slopes	13.7	2.2
207	Shotnick sandy loam, 4 to 8 percent slopes	31.4	5.0
209	Shotnick-Walkup complex, 0 to 2 percent slopes	59.7	9.5
240	Turzo clay loam, 4 to 8 percent slopes	8.6	1.4
242	Turzo loam, 0 to 4 percent slopes	3.2	0.5
243	Turzo-Umbo complex, 0 to 2 percent slopes	1.5	0.2
244	Turzo-Umbo complex, 2 to 4 percent slopes	67.0	10.7
277	Wyasket peat, 0 to 2 percent slopes, ponded	0.0	0.0
Totals for Area of Interest		**626.9**	**100.0**

3.3.1.1 No Action
The No Action Alternative would not involve construction of any kind and existing conditions would remain intact. Therefore, the No Action Alternative would have no effect on geology and soils resources.

3.3.1.2 Proposed Action
The Proposed Action Alternative would temporarily impact the soil surface during construction. Construction best management practices for erosion and sediment control would serve to minimize these impacts.

3.3.2 Visual Resources
The study area is mostly a rural setting with irrigated agricultural fields, pastures, and rural residential development. There is a small amount of urban residential and commercial development in proximity to the study area as well. Large trees along the existing canal, particularly along the western portion, provide a visual barrier to development on the opposite side of the canal.

3.3.2.1 No Action
The No Action Alternative would not involve construction of any kind and existing conditions would remain intact. Therefore, the No Action Alternative would have no effect on visual resources.

3.3.2.2 Proposed Action
Heavy equipment and ground disturbance during construction activities are expected to temporarily impact visual resources during the construction phase of the Proposed Action. In addition, clearing of vegetation along the proposed pipeline alignment is expected to temporarily impact visual resources beyond the construction phase, however, the pipeline alignment would be re-seeded after construction is complete. Invasive species, such as Russian olive, that occur within 50 feet of the proposed pipeline would be removed. The pipeline alignment would be shifted in some locations to avoid impacting large native

trees, such as cottonwoods. The existing canal is expected to remain in place and be irrigated sufficiently to retain the existing vegetation along the canal.

3.3.3 Cultural Resources

For the purpose of this analysis, cultural resources are defined as physical or other expressions of human activity or occupation that are over 50 years in age. 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 of 1966 (amended 1976, 1980, and 1992), 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, traditional cultural property, 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 Area of Potential Effects (APE), 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 area that could be physically affected by any of the proposed project alternatives (the maximum limit of disturbance). The APE encompasses all areas of potential ground disturbance associated with the proposed pipeline and staging areas.

A Class I records search and a Class III cultural resource inventory were completed for the APE by CRS Engineers (CRS) in August 2016 and February 2017. A total of approximately 75 acres were inventoried during the Class III cultural resource inventory to identify any cultural resources within the APE. CRS revisited three previously recorded cultural resource sites. No new sites or isolated occurrences were observed during the survey.

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

- that are associated with events that have made a significant contribution to the broad patterns of our history; or
- that are associated with the lives of persons significant in our past; or
- 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

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

An intensive-level pedestrian archaeological survey of the APE was conducted on August 26, 2016 and February 10, 2017. Three previously documented sites were revisited within the APE: Site 42UN5195, the Ashley Central Canal; Site 42UN5471, the Steinaker Service Canal; and Site 42UN8667, the Rock Point Canal.

No isolated occurrences and no historical architectural resources were identified during the survey.

Site 42UN5195, Ashley Central Canal
Site 42UN5195 is an irrigation canal originally built by Mr. Nelson Merkley and Mr. James Hacking of the Ashley Central Canal and Company and was the first canal constructed by Euroamericans in the Uinta Basin. This canal was later expanded to encompass a dam in northwest Maeser, through Vernal City, and emptying back into the Ashley Creek in Naples, Utah. Within the APE, canal waters are contained in a concrete channel with vertical walls that measure 10-feet-across the top and 6-feet-deep. Within the project area no historic in-canal features remain. Site forms previously filed with the Utah Division of State History (UDSH) state that no historic features remain across the length of the canal, and modern improvements have been made to the channel and area surrounding the canal that have not had an impact on the physical integrity, function, or alignment of the canal. Site 42UN5195 was previously determined eligible for inclusion on the NRHP under Criterion A.

Site 42UN5471, Steinaker Service Canal
Site 42UN5471 is the Steinaker Service Canal. The canal was constructed in 1962, and is owned by Reclamation, but operated and maintained by the District. The canal is diverted from the Steinaker Reservoir north of Vernal and flows approximately 12 miles south where it empties into the Ashley Upper Canal. It provides irrigation water to approximately 12,100 acres of land. It was constructed to deliver approximately 17,900 acre-feet of water per year. The canal measures 12-feet-wide and approximately 6-feet-deep with the majority of the canal being U-shaped. North of the Project area adjacent to the Steinaker Dam, the canal is constructed of reinforced concrete. Site 42UN5471 was previously determined eligible for inclusion on the NRHP. However, this site is the subject of an ongoing Programmatic Agreement (PA) between Reclamation and State Historic Preservation Office (SHPO) for lining the canal. Once the PA is complete and the site mitigated, it would be determined ineligible for inclusion due to the loss of integrity.

Site 42UN8667, Rock Point Canal
Site 42UN8667 is the historic Rock Point Canal located approximately 0.5 miles south of the Steinaker Reservoir and north of the city of Vernal in Uintah County.

The canal was constructed in 1880. The canal diverts water from Ashley Creek at the confluence of the Steinaker Feeder Canal and Ashley Creek near the mouth of Dry Fork Canyon to irrigate agricultural fields and pasture land to the east. The canal crosses through or is parallel to the APE in a number of locations. The site was surveyed along the majority of its length through and adjacent to the APE. Where the APE and site diverged, the site was surveyed according to Utah Professional Archaeological Council linear sites guidance (0.25 miles in either direction from the APE) where access to the canal was permitted.

Site 42UN8667 is U-shaped and earthen throughout the project area. While its width and depth varies throughout the corridor, in most locations, it measures approximately 4 to 6-feet-wide and approximately 30-inches-deep and water flows from west to east. At the time of the survey, water flows were fairly high. Features along the site include out-of-period irrigation outlets, concrete spillways, and corrugated metal and concrete culverts.

The canal was one of three canals (Upper Ashley Canal and Central Ashley Canal) built in the area during the 1880s (Babb 1900, Nelson 2016). Based on the low stock value, low volume of water allotted, and realignments away from its original location, Site 42UN8667 did not contribute in a notable way to the settlement or development of Uintah County. The Rock Point Canal was previously determined not eligible for inclusion on the NRHP under any criteria.

3.3.3.1 No Action

The No Action Alternative would not involve construction of any kind and existing conditions would remain intact. Therefore, the No Action Alternative would have no effect on cultural resources.

3.3.3.2 Proposed Action

The Proposed Action would completely avoid Site 42UN5195, the Ashley Creek Canal. The pipeline would be constructed approximately 60 feet south of the current headwaters of the existing Rock Point Canal. Due to the Project's total avoidance of this site and its previous NRHP determination, the Proposed Action would have no effect to this site.

The Proposed Action pipeline would bore beneath Site 42UN5471, the Steinaker Service Canal, and would not realign or reconstruct the existing Steinaker Service Canal bank. The Proposed Action would have no effect to this site.

The Proposed Action pipeline would bore beneath Site 42UN8667, the Rock Point Canal, at all crossing locations. The Project proposes to leave the site in place, with no realignment or alteration to its existing banks. The Project also proposes to divert water into the existing canal to feed wildlife habitat areas. Given that the Project does not propose to realign, or alter its banks, the Proposed Action would have no effect to this site.

The overall Project effect to historical properties would be a no historical properties affected (see letter from Utah Division of State History in Appendix D: Cultural and Paleontological Resources).

3.3.4 Paleontological Resources

Paleontological resources are defined as any fossilized remains, traces, or imprints of organisms, preserved in or on the earth's crust, that are of paleontological interest and that provide information about the history of life on earth. Any materials associated with an archaeological resource as defined in Section 3(1) of the Archaeological Resources Protection Act of 1979 (16 U.S.C. 470bb(1)), and any cultural item as defined in Section 2 of the Native American Graves Protection and Repatriation Act (25 U.S.C. 3001), are not considered paleontological resources.

Section 6302 of the Paleontological Resources Preservation Act (PRPA) of 2009 (Sections 6301-6312 of the Omnibus Land Management Act of 2009, [Public Law 111-11 123 Statute 991-1456]) requires the Secretary of the Department of Interior to manage and protect paleontological resources on Federal land using scientific principles and expertise.

The APE for paleontological resources is consistent with the APE for cultural resources, as described in Section 3.3.6.

3.3.4.1 No Action

The No Action Alternative would not involve construction of any kind and existing conditions would remain intact. Therefore, the No Action Alternative would have no effect on paleontological resources.

3.3.4.2 Proposed Action

Under the Proposed Action Alternative, there would be ground disturbing activities which have the potential to impact subsurface fossil material. There are, however, no known paleontological localities within the APE that are recorded in the Utah Geological Survey (UGS) files (see letter from Department of Natural Resources in Appendix D: Cultural and Paleontological Resources). Therefore, the Proposed Action Alternative is not anticipated to have an impact on paleontological resources.

3.3.5 Hydrology

The hydrology of the study area is shown in Appendix A, Figure 3-1. The source of water for the Rock Point Canal is Ashley Creek, which is located at the western extent of the study area (Appendix A; Point 2, Figure 3-1). Ashley Creek originates in the Uinta Mountains which form the northern boundary of the Ashley Valley. Winter snowfall in the mountains typically provides year-round flow into Ashley Creek as it melts throughout the year. The existing Rock Point Canal (Appendix A; Point 5, Figure 3-1) diverts water from Ashley Creek to supply irrigation to the east side of the Ashley Valley.

In addition to Ashley Creek, there are three natural drainages in the study area. An unnamed intermittent stream originates to the west of the study area and flows east through the study area until it dissipates to the east of 1500 West (Appendix A; Point 6, Figure 3-1). Because of its proximity, it is likely that some of the water this drainage receives is sub-surface seepage from the existing Rock Point Canal. Water collected in this drainage forms the only wetlands in the study area located southwest of the Rock Point bend in 2500 North.

The second of the three natural drainages is Spring Creek (Appendix A; Point 8, Figure 3-1). Spring Creek originates on the east side of Highway 191 and flows southeast until it exits the study area to the south and eventually drains to Ashley Creek. Spring Creek historically originated to the north of Steinaker Reservoir (Appendix A, Figure 3-1). When the Steinaker Dam was built, overflow from the reservoir was diverted to the Steinaker Service Canal (Appendix A; Point 7, Figure 3-1). Currently the majority of water that collects in Spring Creek is irrigation runoff from surrounding fields.

The third drainage is an unnamed ephemeral tributary that originates in the foothills north of Ashley Valley (Appendix A; Point 9, Figure 3-1). It flows under the existing Rock Point Canal through a culvert and flows between agricultural fields to the south and eventually flows into Spring Creek to the south of the study area. During extreme storm events, the culvert has backed up resulting in flow into the Rock Point canal, however, it typically does not flow into the canal. This drainage often collects irrigation runoff from surrounding agricultural fields within and to the south of the study area.

3.3.5.1 No Action

The No Action Alternative would not involve construction of any kind and existing conditions would remain intact. Therefore, the No Action Alternative would have no effect on hydrology.

3.3.5.2 Proposed Action

The Proposed Action Alternative would divert water from Ashley Creek into a pipeline and the head gate for the existing Rock Point Canal would remain closed. As a result, the existing Rock Point Canal would no longer regularly carry water directly from Ashley Creek. The existing canal would remain in place and not be altered. The existing canal would then become a secondary conveyance, and could be used if the pipeline needed to be shut down for maintenance or repair. In order to preserve riparian vegetation along the existing canal, the pipeline would have 11 outlets to release water into the canal. Between 4 and 5 cfs of water would be released into the canal monthly, from June to September, to irrigate vegetation along the canal.

The Proposed Action would result in substantially less flow through the existing Rock Point Canal and subsequently less soil moisture and subsurface flow in the study area. In addition, the drainage labeled as 5 in Figure 3-1 (see Appendix A: Figures) would likely receive less flow because there would likely be less

subsurface flow originating from the canal. The drainages labeled as 8 and 9 in Figure 3-1 (see Appendix A: Figures) would also likely receive less flow, particularly to the south of the study area, due to receiving less irrigation runoff.

3.3.6 Water Quality

Improvement of water quality in the Upper Colorado River Basin is a primary objective of the Project. About 33 percent of the agricultural land in the Project area is irrigated through flood irrigation from the Rock Point Canal. Flood irrigation causes excess soil moisture, infiltration of water vertically downward through the soil to a shale layer, and horizontal movement of water downstream. Irrigation seepage into shallow aquifers is the source of many saline seeps. As the water migrates through the soil, it dissolves salts thus increasing the salinity of the water. This water eventually makes its way either back into the canal or into Ashley Creek and other local drainages. This salt loading degrades the water quality of the Upper Colorado River Basin. Additionally, development and land use along the existing canal has likely resulted in impacts to water quality in the Rock Point Canal because of storm water inflow and irrigation return flow.

3.3.6.1 No Action

The No Action Alternative would have no effect on water quality. Existing levels of pollutants discharged into the Rock Point Canal and subsequently into Ashley Creek would continue under the No Action Alternative.

3.3.6.2 Proposed Action

The Proposed Action Alternative would improve water quality. Piping the canal would eliminate inflow from the surrounding areas and therefore eliminate water quality impacts from storm water and land uses in the vicinity of the study area. In addition, piping the canal would encourage many farmers to switch from flood irrigation to a sprinkler system, because they would have access to a pressurized system rather than having to pressurize the water themselves. Pressurized systems that allow farmers to improve irrigation efficiency and reduce deep percolation are among the best ways to reduce water salinity (NRCS 2015). Irrigation that uses sprinkler systems rather than flood irrigation would drastically minimize excess soil moisture and therefore reduce the salinity of the water downstream from the study area.

Ground disturbing construction activities have the potential to temporarily affect water quality during a storm event. Construction best management practices for sediment and erosion control would minimize these temporary impacts.

3.3.7 System Operations

The Rock Point Canal system consists of about 8.7 miles of canal and runs from Ashley Creek at the northwestern extent of the Ashley Valley to the east roughly along the northern rim of the Ashley Valley and wraps around the valley to about its easternmost extent. The upper 5.9 miles is unlined, and the lower 2.8 miles is piped. Its water source is Ashley Creek. It is also recharged by a diversion from the Steinaker Service Canal, originating at Steinaker Reservoir. Rock Point Canal

capacity is about 40 cfs and has 570 shares of stock in Steinaker Reservoir which yields 1 acre-foot per share per year, or about 570 acre-feet of water per year. Including direct flow diversions from Ashley Creek, total water carried by the canal averages about 5,900 acre-feet per year. Water carried by the canal is used to irrigate approximately 1,950 acres of farmland. Primary crops that are irrigated include pasture grass, alfalfa, small grains, and corn.

Between 2002 and 2011 from the months of April to October, Rock Point Canal direct flow was estimated to be a total average of 5,844 acre-feet (see Table 1-1). The Company determined that approximately 35 percent of the 5,844 acre-feet of water entering Rock Point Canal was lost to seepage, evaporation, and spills. Because so much water is lost, water users are required to make water delivery requests in advance as opposed to diverting only the amount of water needed for irrigation. Losses from seepage and evaporation were estimated at 25 percent of the total flow, or about 1,461 acre-feet (0.25 x 5,844 acre-feet) (see Table 1-1). Spills at the end of the canal were estimated at 10 percent of the flow or about 584 acre-feet per year (see Table 1-1). Total losses averaged approximately 2,045 acre-feet per year (see Table 1-1).

3.3.7.1 No Action

Under the No Action Alternative, the Rock Point Canal would continue to operate under current conditions. Existing water losses in the system would continue and potentially increase as the canal continues to deteriorate over time. To compensate for water loss, additional water may need to be diverted and/or the irrigation season would need to be shortened which would likely result in economic losses to agricultural users in the project area. Maintenance requirements associated with the open laterals would continue to increase.

3.3.7.2 Proposed Action

The Proposed Action would increase the efficiency of the system operations by reducing the amount of water lost through canal deterioration. System operations would also improve under the Proposed Action as maintenance would be greatly reduced. The Proposed Action would therefore result in a long-term benefit to the operations of the Rock Point Canal irrigation system.

3.3.8 Health, Safety, Air Quality, and Noise

This section identifies potential public health, safety, air quality, and noise effects from the construction and operation of the Proposed Action and No Action Alternatives. The main factor affecting public health, safety, air quality, and noise in the study area is traffic. Traffic is an important issue for each of these categories. There are several roads that cross through the study area, most of which are rural roads with low traffic flow. The majority of the study area is located in agricultural and rural residential areas which would be expected to have relatively low traffic and ambient noise levels. Although traffic noise may be heard throughout most of the urbanized areas, most is associated with small volumes of residential traffic. The section of the study area that would expect to

experience the highest ambient noise levels is the area adjacent to Highway 191, where there is the most frequent and fastest traffic flow.

3.3.8.1 No Action

The No Action Alternative would have no effect on health, safety, air quality, and noise.

3.3.8.2 Proposed Action

The Proposed Action Alternative is not expected to affect long-term traffic flow or volume. Therefore, noise levels, air pollution from vehicles, and risk of accidents are not expected to change as a result of the Proposed Action Alternative. Ground disturbing construction activities have the potential to produce dust and noise from operating heavy equipment and therefore temporarily impacting air quality and noise. Construction best management practices to minimize dust would reduce temporary impacts to air quality.

3.3.9 Prime and Unique Farmlands

The NRCS Web Soil Survey rates soils based on their potential for farming. All of the soil classifications within the study are rated as either "Not Prime Farmland" or, "Prime Farmland if Irrigated." There are no areas designated as "Unique Farmlands" in the study area. The vast majority of land within the study area has access to irrigation either through the Rock Point Canal or another nearby canal. A substantial portion of the study area is used for farming. Alfalfa is the most common crop in the area, but corn, small grains, and pasture grasses are frequently grown as well.

3.3.9.1 No Action

The No Action Alternative would have no effect on prime and unique farmlands. Existing farming conditions would persist under the No Action Alternative.

3.3.9.2 Proposed Action

The Proposed Action Alternative would benefit prime farmland. No loss of farmland due to residential, commercial, or industrial use as a result of the Proposed Action Alternative would occur. The pressurized pipeline would make sprinkler irrigation more feasible, which would result in farmers using less water to obtain the same crop yield. The proposed pipeline would conserve irrigation water compared to the existing system. The Proposed Action Alternative would have no effect on unique farmland, because there is none present in the study area.

3.3.10 Flood Plains

Executive order 11988: Floodplain Management (E.O. 11988) (May 24, 1977) established Federal policy for each agency to take action to reduce the risk of flood loss. The E.O. 11988 defines a floodplain as lowland and relatively flat areas adjoining inland and coastal waters including flood prone areas of offshore islands, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year. Encroachment onto floodplains can reduce

the flood-carrying capacity of the floodplain and extend the flooding hazard beyond the encroachment area.

3.3.10.1 No Action

The No Action Alternative would not involve construction of any kind and existing conditions would remain intact. Therefore, the No Action Alternative would have no effect to the floodplain or the potential for flooding.

3.3.10.2 Proposed Action

The Proposed Action would not create any new structures or flooding hazards in the Project area. The existing canal would remain in place providing precipitation collection and runoff control.

3.3.11 Wetlands, Riparian, Noxious Weeds, and Existing Vegetation

Wetlands

A Delineation of Waters of the U.S. was conducted by CRS Engineers in August of 2016 for the study area (see Appendix E: Waters of the United States Report). The U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps for the area were used as a screening tool to identify potential wetlands in the study area. These areas of potential wetland habitat were then evaluated in the field. This study revealed approximately 4.20 acres of Wet Meadow Palustrine Emergent Wetland habitat, 0.17 acres of Emergent Marsh Palustrine Wetland habitat and 0.24 acres of open water (see Appendix A, Figure 3-2). Wetlands must exhibit three parameters to meet the USACE definition of a jurisdictional water of the U.S.: hydrophytic vegetation, hydric soils, and hydrology. The above-mentioned habitat types exhibited a positive indication of wetland habitat for all three parameters. The Proposed Action may be exempted (if deemed jurisdictional) under the irrigation ditch construction or maintenance exemptions under Section 404 of the CWA.

The Proposed Action Alternative would require piping for stream crossings to be installed across two tributaries and the Steinaker Service Canal. Crossings could not be avoided due to the location of the canal being replaced. During the design phase, several routes were studied. The route chosen minimizes the need to cross tributaries and canals.

Riparian

In the study area, riparian vegetation such as cottonwood, (*Populus deltoides*), Russian olive (*Elaeagnus angustifolia*), willow (*Salix* spp.), and Siberian elm (*Ulmus pumila*) with a ground cover of grasses and rushes (*Juncus* spp.) is present along most of the existing canal, but is denser in the western-most portion. In several places, particularly the eastern portion, the canal is deeply incised, and therefore does not provide an adequate bank for large riparian vegetation to become established. In most cases, the riparian vegetation appears to be supported by leakage from the existing Rock Point Canal and other canals that occur in the study area.

Noxious Weeds
Russian olive (*Elaeagnus angustifolia*), a Class 4 noxious weed in Uintah County, is found extensively in the study area. It is particularly common in the riparian woodland area at the western extent of the study area. This species is a common invasive found in many fields and along streams and ponds throughout the Uinta Basin. One occurrence of the Class 3 noxious weed, saltcedar (*Tamarix ramosissima*), was observed to the northwest of the intersection of 250 West and 3300 North.

Existing Vegetation
A majority of the study area has been disturbed through agricultural and residential expansion. The western extent of the study area, in proximity to Ashley Creek, is the least disturbed and is mostly riparian woodland habitat dominated by a canopy of cottonwood, (*Populus deltoides*), Russian olive, and Siberian elm with a ground cover of grasses and rushes. Dominant vegetation in the wetland habitat mentioned in the wetlands section above includes kochia (*Bassia scoparia*), tall fescue (*Festuca arundinacea*), Canada goldenrod (*Solidago canadensis*), curly dock (*Rumex crispus*), tall globethistle (*Echinops exaltatus*), smooth scouringrush (*Equisetum laevigatum*), rush (*Juncus* spp.), milkweed (*Asclepias labriformis*), cattails (*Typha* spp.), willows, and reed canary grass (*Phalaris arundinacea*).

The eastern extent of the study area is mostly alfalfa fields and the occasional corn or small grain field. Vegetation surrounding cultivated fields is mostly weedy species with a few isolated patches of riparian habitat along the existing Rock Point Canal.

3.3.11.1 No Action
The No Action Alternative would not involve construction of any kind and existing conditions would remain intact. Therefore, the No Action Alternative would have no effect on wetlands, riparian, noxious weeds, and existing vegetation.

3.3.11.2 Proposed Action
The Proposed Action Alternative would create temporary impacts to streams, wetlands, and riparian woodland and sagebrush scrub vegetation communities. Approximately 0.47 acres of wetlands that were delineated in the study area would be temporarily impacted by construction (see Appendix A, Figure 3-2). Approximately 3.70 acres of riparian vegetation would also be temporarily impacted by construction. Construction would involve excavating a 6-foot-wide trench for installation of the pipeline. The trench would be backfilled and reclaimed after installing the pipe. Per the easement agreement with landowners: "Topsoil shall be saved and replaced along the pipeline … and … All land disturbed by the easement shall be returned to as good or better condition as existed prior to initial construction." Wetland and riparian habitat present along the existing canal is expected to persist because the existing canal would continue

to receive storm water and run-off as well as irrigation water from turn outs in the proposed pipeline at 11 locations spread out along the canal.

Construction best management practices would be followed to reduce impacts to native vegetation, including staging materials outside of sensitive areas, such as streams and wetlands. Construction materials and equipment would be washed prior to entering the project area to remove dirt and seeds from weeds to reduce the spread of noxious weeds and other non-native species. After surface disturbance, proper restoration procedures would be followed to prevent the infestation of noxious and invasive weeds. This would include seeding mixtures of desirable native species and agricultural grasses where appropriate, and post-construction treatment to control noxious and invasive species.

Tributary and canal crossings would require a stream alteration permit. The pipeline would be placed underneath the tributaries and the Steinaker Service Canal. This would result in a temporary impact to the natural flow of these features. Upon completion of the piping, these features would be restored to their current condition and the installation of a casing pipe to allow for future maintenance without impacting the streams and canal.

3.3.12 Fish and Wildlife Resources

The study area is located at the northern extent of the Ashley Valley where most of the area is rural development. Rural development, such as agricultural areas, typically provides good habitat for wildlife that are tolerant to a moderate amount of disturbance and human influence.

3.3.12.1 Fish

According to the Ashley National Forest website, the Ashley Creek Drainage has brook (*Salvelinus fontinalis*), rainbow (*Oncorhynchus mykiss*), and cutthroat (*Oncorhynchus clarkii*) trout. These fish have been known to occupy the Rock Point Canal.

3.3.12.2 Small Mammals

Small mammals common to the study area include coyote (*Canis latrans*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), desert cottontail (*Sylvilagus audubonii*), white-tailed prairie dog (*Cynomys leucurus*), and deer mouse (*Peromyscus maniculatus*).

3.3.12.3 Raptors

Several species of raptors or birds of prey, have been observed near the study area including red-tailed hawk (*Buteo jamaicensis*), great horned owl (*Bubo virginianus*), American kestrel (*Falco sparverius*), sharp-shinned hawk (*Accipiter striatus*), northern harrier (*Circus cyaneus*), turkey vulture (*Cathartes aura*), and wintering bald eagles (*Haliaeetus leucocephalus*). In the study area, cottonwood trees provide nesting and roosting habitat for raptors. A man-made nest stand exists within a couple hundred feet of the Rock Point Canal south of Steinaker Dam and has historically been occupied by osprey (*Pandion haliaetus*). Several

osprey have been observed using this nest in 2017, according to Reclamation and District employees (Personal Communication, Mr. David Snyder).

3.3.12.4 Waterbirds and Shorebirds

Suitable foraging and nesting habitat for killdeer (*Charadrius vociferous*) and other less common shore birds is available in the study area. In addition, waterfowl such as Canada goose (*Branta canadensis*), cinnamon teal (*Anas cyanoptera*) and mallard (*Anas platyrhynchos*) use the one pond in the study area as well as Steinaker Reservoir, Ashley Creek and other water bodies in close proximity to the study area.

3.3.12.5 Game Birds

Game birds known to occur in the study area include the ring-necked pheasant (*Phasianus colchicus*), wild turkey (*Meleagris gallopavo*), mourning dove (*Zenaida macroura*), and California quail (*Lophortyx californicus*). Chukar (*Alectoris chukar*) and Greater Sage Grouse (*Centrocercus urophasianus*) are less likely to occur in the study area, however are observed frequently in the Uinta Mountains to the north of the study area and could venture into the study area on rare occasion. Most of these species rely on brushy habitat that provides adequate protection from predators. Small areas of suitable shrubland habitat is present in the western portion of the study area.

3.3.12.6 Other Birds

The study area is home to many bird species including broad-tailed hummingbird (*Selasphorus platycerus*), northern flicker (*Colaptes auratus*), Eurasian collared dove (*Streptopelia decaocto*), common nighthawk (*Chordeiles minor*) as well as a wide variety of passerines (song birds) such as black-capped chickadee (*Poecile atricapilla*), house finch (*Haemorhous mexicanus*), barn swallow (*Hirundo rustica*), American robin (*Turdus migratorius*), western kingbird (*Tyrannus verticalis*), and black-billed magpie (*Pica hudsonia*). Many of these species are present year-round, while many others are migratory and are only present in the spring/summer breeding season. The study area provides nesting habitat on cliffs, in trees, snags, shrubs, in and on man-made structures, and even on the ground.

3.3.12.7 Reptiles and Amphibians

Reptiles and amphibians expected to occur in the study area include wandering garter snake (*Thamnophis elegans vagrans*), Great Basin gopher snake (*Pituophis catenifer deserticola*), sagebrush lizard (*Sceloporus graciosus*), tiger salamander (*Ambystoma tigrinum*), western chorus frog (*Pseudacris triseriata*), and northern leopard frog (*Rana pipiens*). Rocky areas, sagebrush shrubland, riparian, and wetland habitats present in the study area provide suitable habitat for these and other reptile and amphibian species.

3.3.12.8 Big Game

According to Utah Division of Wildlife Resources data available online, the study area overlaps with Winter/Substantial, Winter/Crucial, and Year Long/Crucial (fawning habitat) for mule deer (*Odocoileus hemionus*). This species is observed

frequently in the study area. Rocky mountain elk (*Cervus elaphus nelsoni*) also have Winter/Crucial habitat in the study area but are less tolerant to human interaction and are therefore observed much less frequently in the study area.

3.3.12.9 No Action

The No Action Alternative would have no effect on fish and wildlife resources. The No Action Alternative would not involve construction of any kind and existing conditions would remain intact.

3.3.12.10 Proposed Action

Construction activities are expected to have a temporary impact on wildlife in the study area. Initial construction activity could cause stress to some wildlife species from noise, dust, displacement, and temporary loss of habitat, until construction is completed. Construction areas would be returned to their pre-existing condition after construction. Wetland and riparian habitat in the study area surrounding the existing Rock Point Canal would be preserved, because the canal would continue to receive flow from storm water, run-off, and 11 outlets in the proposed pipeline (see Appendix F: Habitat Replacement Plan).

The Proposed Action Alternative would not impact fish habitat. Water flow in the existing canal would be reduced during the irrigation season. The canal is not stocked with fish, nor is it considered a fishery. While very low numbers of fish are known to enter the canal inadvertently, water flows are seasonal and do not support fish habitat.

The Proposed Action Alternative has the potential to negatively impact nesting birds. Raptors are particularly sensitive to movement of large equipment and noise created by construction and may abandon nests as a result of construction activities. Impacts to nesting birds, including raptors, during construction would be minimized by avoiding construction during the nesting season or conducting surveys by a qualified biologist to identify and establish disturbance buffers for nests during construction. The USFWS typically recommends disturbance buffers of various sizes for nesting birds depending on the species. Cottonwood and other large trees and dead snags would be avoided during construction where feasible; however, loss of several trees is expected to occur. These impacts would be minor, because birds would be able to use abundant similar nest and roost sites in the immediate vicinity.

The study area overlaps with Winter/Substantial, Winter/Crucial, and Year Long/Crucial for mule deer and Winter/Crucial habitat for Rocky Mountain elk. Construction activities may displace these big game species, however these impacts would be temporary. While maintenance and operation of the proposed pipeline may result in some persistent disturbance, the majority of the study area is dominated by rural development that is subject to regular disturbance due to residential, farming, and ranching activities. The Proposed Action Alternative is therefore not expected to have a significant impact on big game species.

The Proposed Action Alternative would have minimal effect on other wildlife resources. It is likely that terrestrial animals in the vicinity of the study area rely to some extent on the Rock Point Canal for water. However, with Ashley Creek, agricultural ponds, Steinaker Reservoir, and other irrigation canals all in the immediate vicinity of the study area, reducing flow in the Rock Point Canal should have little-to-no effect on the availability of adequate water to wildlife.

3.3.13 Threatened, Endangered, and Sensitive Species

Federal agencies are required, under the Endangered Species Act (ESA) of 1973, to ensure that any action authorized, funded, or carried out, will not adversely affect a Federally-listed threatened or endangered species or its critical habitat, if designated.

Threatened (T) and Endangered (E) species that may occur in the study area identified by the USFWS are shown in Table 3-3:

Table 3-3
Threatened, Endangered, and Sensitive Species

Species	Status
Birds	
Mexican spotted owl (*Strix occidentalis lucida*)	T
Yellow-billed cuckoo (*Coccyzus americanus*)	T
Fishes	
Bonytail chub (*Gila elegans*)	E
Colorado pikeminnow (*Ptychocheilus lucius*)	E
Humpback chub (*Gila cypha*)	E
Razorback sucker (*Xyrauchen texanus*)	E
Flowering Plants	
Ute ladies'-tresses (*Spiranthes diluvialis*)	T
Mammals	
Black-footed ferret (*Mustela nigripes*)	E[1]
Canada lynx (*Lynx canadensis*)	T

[1] Experimental, nonessential population

Four endangered fish exist within Uintah County, but none are known to occur in Rock Point Canal, Steinaker Reservoir, Ashley Creek or any of the drainages in the immediate vicinity of the study area. Black-footed ferret, Canada lynx, Mexican spotted owl, and yellow-billed cuckoo also have been observed within Uintah County but are not known to occur in the study area. Ute ladies'-tresses (ULTs) are known to occur in a variety of moist soil habitats in proximity to the study area. There is a known population located near the southern boundary of the study area, approximately 900 feet south of the proposed pipeline location. No plants were observed during surveys of the existing Rock Point Canal in 2015, 2016 and 2017, nor along the proposed pipeline alignment in 2017. A Biological Assessment (BA) analyzing the Proposed Action, which includes ULTs, was

prepared for Section 7 consultation under the ESA (see Appendix G: Biological Resources).

3.3.13.1 No Action

The No Action Alternative would have no effect on threatened and endangered species. The No Action Alternative would not involve construction of any kind and existing conditions would remain intact.

3.3.13.2 Proposed Action

The Proposed Action Alternative would involve pipeline construction and installation in habitat that may be suitable for ULTs which could result in temporary impacts. After implementation of the Proposed Action, water flowing in the canal would be reduced to 4 to 5 cfs beginning in June, through the month of September. Reduced flows in the canal may decrease the likelihood of ULTs establishing in the study area. No ULTs were observed during three consecutive years of surveying on the canal. In 2017, no ULTs were observed along the proposed pipeline alignment. Reclamation determined the Proposed Action may affect, but would not be likely to adversely affect ULTs. The USFWS concurred with this determination (see concurrence letter from the USFWS in Appendix G: Biological Resources).

3.3.14 Socioeconomics

Rock Point Canal has the capacity for 40 cfs and has 570 shares of stock in Steinaker Reservoir which yields 1 acre-foot per share per year, or about 570 acre-feet of water per year. Direct flow diversions from Ashely Creek increase water supply to roughly 5,900 acre-feet annually. Rock Point Canal currently provides irrigation water to 19 customers and supports alfalfa and grain crops as well as pasture land and landscape watering over 1,950 acres. In 2016 the canal delivered approximately 5,850 acre-feet to Company customers.

3.3.14.1 No Action

The No Action Alternative would have a negative impact on socioeconomics. Existing water losses would continue and potentially increase over time as the canal deteriorated. Maintenance costs would increase as efforts were made to keep the canal functioning at its current levels. Increases in water diversions, or a shortening of the irrigation season would likely decrease the profitability and economic stability of local farms.

3.3.14.2 Proposed Action

The Proposed Action Alternative is expected to benefit local socioeconomics. The proposed pipeline would continue to provide a needed water supply to customers of the Company. Directing the majority of irrigation water through the proposed pipeline rather than into the existing canal is estimated to save approximately 2,045 acre-feet of water per year due to the elimination of loss due to canal leakage, evaporation, and plant transpiration. In addition, piping and pressurizing the water would make switching from flood irrigation to sprinkler irrigation optimal. It is estimated that 33.5 percent of currently irrigated acreage

could be converted to sprinkler irrigation. The water saved would result in increased water shares for the Company to make available to new or existing customers.

3.3.15 Access and Transportation

The area of influence for transportation includes roads that would be used during construction, operation, and maintenance of the Proposed Action and the No Action Alternative. The area of influence for utilities includes any utilities that would be moved, replaced, or experience service interruptions under the Proposed Action or No Action Alternative. One major transportation corridor, Highway 191, is located within the study area. In addition, several Uintah County roads are located in the study area.

During construction, it is estimated that up to five construction vehicles per day would travel to the site. The majority of the vehicle trips would be for transporting construction materials including excavation, pipe bedding and backfill materials. The contractor would be transporting heavy construction equipment at the beginning and end of the Project. Upon completion of construction, vehicle trips are expected to be reduced to no more than three per day for operation and maintenance purposes during the irrigation season.

3.3.15.1 No Action

The No Action Alternative would have no effect on access and transportation. Under the No Action Alternative current conditions would remain the same.

3.3.15.2 Proposed Action

The Proposed Action may cause limited traffic delays along Highway 191 due to construction vehicles entering and exiting the highway. The proposed pipeline would be bored underneath the highway. Although no temporary closures of Highway 191 are planned, any temporary road or access closure would be coordinated with local law enforcement and emergency services. The proposed pipeline crosses 2500 West, 1500 West, 3300 North, and 500 East. These road crossings would remain following construction. Aside from the highway, during pipeline installation across a roadway, the roadway would be shut down temporarily so that the pipeline could be cut and installed. Detours would be provided while the road crossing is out of service. The roadway would be repaired following pipeline construction. In addition, the proposed pipeline runs along the shoulder of 1500 West for approximately 580 feet which could also cause limited traffic delays. While construction of the proposed pipeline would cause temporary traffic delays, there are no anticipated long-term impacts to access or transportation resources from the Proposed Action.

3.3.16 Water Rights

The existing Rock Point Canal currently supplies 19 customers with irrigation water. An estimated average of 5,850 acre-feet of water per year has been delivered through the canal between April and October (irrigation season).

3.3.16.1 No Action

The No Action Alternative would have no effect on water rights.

3.3.16.2 Proposed Action

The Proposed Action Alternative would conserve an estimated 2,045 acre-feet of water per year by preventing loss due to canal leakage, evaporation, plant transpiration and reduced instances of flood irrigation. This would result in the Company allowing each customer more shares, and/or being able to accommodate more customers.

3.4 Indian Trust Assets

Indian Trust Assets are legal interests in property held in trust by the United States for Federally recognized Indian Tribes or Indian individuals. Assets can be real property, physical assets, or intangible property rights, such as lands, minerals, hunting and fishing rights, and water rights. The United States has an Indian trust responsibility to protect and maintain rights reserved by or granted to such tribes or individuals by treaties, statutes, and executive orders. These rights are sometimes further interpreted through court decisions and regulations. This trust responsibility requires that all Federal agencies take all actions reasonably necessary to protect trust assets. Reclamation carries out its activities in a manner which protects these assets and avoids adverse impacts when possible. When impacts cannot be avoided, Reclamation would provide appropriate mitigation or compensation. Implementation of the Proposed Action would have no foreseeable negative impacts on Indian Trust Assets.

3.5 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. Implementation of the Proposed Action would not disproportionately (unequally) affect any low-income or minority communities within the Project area. The proposed project would not involve major facility construction, population relocation, health hazards, hazardous waste, property takings, or substantial economic impacts. This action would therefore have no adverse human health or environmental effects on minority and low-income populations.

3.6 Cumulative Effects

In addition to project-specific impacts, Reclamation analyzed the potential for significant cumulative impacts to resources affected by the project and by other past, present, and reasonably foreseeable activities within the watershed. According to the Council on Environmental Quality's regulations for

implementing NEPA (50 CFR §1508.7), a "cumulative impact" is an impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. It focuses on whether the Proposed Action, considered together with any known or reasonably foreseeable actions by Reclamation, other Federal or state agencies, or some other entity combined to cause an effect. There is no defined area for potential cumulative effects.

Based on Reclamation resource specialists' review of the Proposed Action, Reclamation has determined that this action would not have a significant adverse cumulative effect on any resources.

3.7 Summary of Environmental Effects

Table 3-4 summarizes environmental effects under the No Action and the Proposed Action Alternatives.

Table 3-4
Summary of Environmental Effects

Project Resource	No Action	Proposed Action
Geology and Soils	No Effect	Temporary Impact to Soil Surface During Construction
Visual Resources	No Effect	Temporary Impact
Cultural Resources	No Effect	No Effect
Paleontological Resources	No Effect	No Effect
Hydrology	No Effect	Decrease in Soil Moisture and Subsurface Flow
Water Quality	No Effect	Beneficial Effect
System Operations	No Effect	Beneficial Effect
Health, Safety, Air Quality, and Noise	No Effect	Temporary Impact to Air Quality and Noise
Prime and Unique Farmland	No Effect	Beneficial Effect
Flood Plains	No Effect	No Effect

Project Resource	No Action	Proposed Action
Wetland, Riparian, Noxious Weeds, and Existing Vegetation	No Effect	Temporary Effect to Wetlands and No Effect to Existing Vegetation
Fish and Wildlife Resources	No Effect	Temporary Effect to Nesting Birds, Raptors, Mule Deer, and Elk During Construction
Threatened and Endangered Species, Sensitive Species	No Effect	Potential Temporary Impact to ULT
Socioeconomics	No Effect	Beneficial Effect
Access and Transportation	No Effect	Temporary Impact
Water Rights	Adverse Effect on Water Rights	Beneficial Effect
Indian Trust Assets	No Effect	No Effect
Environmental Justice	No Effect	No Effect
Cumulative Effects	No Effect	No Effect

Chapter 4 Environmental Commitments

Environmental Commitments, along with Minimization Measures in Section 2.6 have been developed to lessen the potential adverse Effect of the Proposed Action.

4.1 Environmental Commitments

The following environmental commitments will be implemented as an integral part of the Proposed Action

1. **Standard Reclamation Best Management Practices -** Standard Reclamation best management practices will be applied during construction activities to minimize environmental impacts and will be implemented by construction forces, or included in construction specifications. Such practices or specifications include sections in the present EA on public safety, dust abatement, air pollution, noise abatement, water pollution abatement, waste material disposal, erosion control, archaeological and historical resources, vegetation, wildlife, and threatened and endangered species. The Project will comply with all requirements set forth in the informal Section 7 consultation with USFWS. Excavated material and construction debris may not be wasted in any stream or river channel in flowing waters. This includes material such as grease, oil, joint coating, or any other possible pollutant. Excess materials must be wasted at a Reclamation approved upland site well away from any channel. Construction materials, bedding material, excavation material, etc. may not be stockpiled in riparian or water channel areas. Silt fencing will be appropriately installed and left in place until after revegetation becomes established, at which time the silt fence can then be carefully removed. Machinery must be fueled and properly cleaned of dirt, weeds, organisms, or any other possibly contaminating substances offsite prior to construction.

2. **Additional Analyses -** If the Proposed Action were to change significantly from that described in this EA because of additional or new information, or if other spoil, or work areas beyond those outlined in this analysis are required outside the defined Project construction area, additional environmental analyses may be necessary.

3. **UPDES Permit -** A UPDES Permit will be required from the State of Utah before any discharges of water, if such water is to be discharged as a

point source into a regulated water body. Appropriate measures will be taken to ensure that construction related sediments will not enter the stream either during or after construction. Settlement ponds and intercepting ditches for capturing sediments will be constructed, and the sediment and other contents collected will be hauled off the site for appropriate disposal upon completion of the Project.

4. **Stream Alteration Permit -** The Company will obtain and comply with the terms and conditions set forth in the required stream alteration permits from the Division of Water Rights.

5. **Fugitive Dust Control Permit -** The Division of Air Quality regulates fugitive dust from construction sites, requiring compliance with rules for sites disturbing greater than one-quarter of an acre. Utah Administrative Code R307-205-5, requires steps be taken to minimize fugitive dust from construction activities. Sensitive receptors include those individuals working at the site or motorists that could be affected by changes in air quality due to emissions from the construction activity.

6. **Cultural Resources -** In the case that any cultural resources, either on the surface or subsurface, are discovered during construction, Reclamation's Provo Area Office archeologist shall be notified and construction in the area of the inadvertent discovery will cease until an assessment of the resource and recommendations for further work can be made by a professional archeologist.

   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 will stop until the proper authorities are able to assess the situation onsite. This action will promptly be followed by written confirmation to the responsible Federal agency official, with respect to Federal lands. The Utah SHPO and interested Native American Tribal representatives will be promptly notified. Consultation will 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).

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. **Habitat Replacement.** A plan to replace the wildlife habitat eliminated by this project was created and approved by Reclamation, in coordination

with the USFWS. Eleven discharge points will be built into the pipeline to allow water to flow into the existing Rock Point Canal to maintain existing, native vegetation. The Habitat Replacement Plan will be approved and initiated prior to project completion and final payment of construction funds, in accordance with salinity control program procedures.

9. **Wildlife Resources –**

a. **Migratory Bird Protection**

i. Perform any ground-disturbing activities or vegetation treatments before migratory birds begin nesting or after all young have fledged.

ii. If activities must be scheduled to start during the migratory bird breeding season, take appropriate steps to prevent migratory birds from establishing nests in the potential impact area. These steps could include covering equipment and structures and use of various excluders (e.g., noise). Prior to nesting, birds can be harassed to prevent them from nesting on the site.

iii. If activities must be scheduled during the migratory bird breeding season, a site-specific survey for nesting prior to groundbreaking activities or vegetation treatments. Established nests with eggs or young cannot be moved, and the birds cannot be harassed (see ii., above), until all young have fledged and are capable of leaving the nest site.

iv. If nesting birds are found during the survey, appropriate spatial buffers should be established around nests. Vegetation treatments or ground-disturbing activities within the buffer areas should be postponed until the birds have left the nest. Confirmation that all young have fledged should be made by a qualified biologist.

b. **Raptor Protection -** Raptor protection measures will be implemented to provide full compliance with environmental laws. If raptor nests are identified prior to construction, raptor surveys will be developed using the Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (Romin and Muck 2002), to ensure that the proposed project will avoid adverse impacts to raptors, including bald and golden eagles. Locations of existing raptor nests and eagle roosting areas will be identified prior to the initiation of project activities. Appropriate spatial buffer zones of inactivity will be established during breeding, nesting, and roosting periods. Arrival at nesting sites can occur as early as December for certain raptor species.

Nesting and fledging can continue through August. Wintering bald eagles may roost from November through March.

10. **Previously Disturbed Areas -** Construction activities will be confined to previously disturbed areas for such activities as work, staging, and storage, waste areas and vehicle and equipment parking areas. Vegetation disturbance will be minimized as much as possible.

11. **Public Access -** Construction sites will be closed to public access. Temporary fencing, along with signs, will be installed to prevent public access. Reclamation will coordinate with landowners or those holding special permits and other authorized parties regarding access to or through the Project area.

12. **Disturbed Areas -** All disturbed areas resulting from the Project will be smoothed, shaped, contoured, and rehabilitated to as near the pre-Project construction condition as practicable. After completion of the construction and restoration activities, disturbed areas will be seeded at appropriate times with weed-free, native seed mixes having a variety of appropriate species (especially woody species where feasible) to help hold the soil around structures, prevent excessive erosion, and to help maintain other riverine and riparian functions. The composition of seed mixes will be coordinated with wildlife habitat specialists and Reclamation biologists. Weed control on all disturbed areas will be required. Successful revegetation efforts must be monitored and reported to Reclamation, along with photos of the completed Project.

13. **Threatened and Endangered Species –**

    a. Construction activities would avoid, to the extent feasible, Ute Ladies'-tresses habitat outside of the Rock Point Canal corridor and staging areas.

    b. Mitigation measures for ULTs would include:

        1. Transplanting individual plants if found during one more future survey of the existing Rock Point Canal to a USFWS approved location;
        2. monitoring transplantation site for three years following transplantation in the event transplantation occurs.

14. **License Agreement and Easement Encroachment Agreement -** A License Agreement and Easement Encroachment Agreement will be obtained from Reclamation in order for permission to be granted for the Company to modify Federal facilities.

Chapter 5 Consultation and Coordination

5.1 Introduction

This chapter details other consultation and coordination between Reclamation and other Federal, state, and local Government Agencies, Native American Tribes, and the public during the preparation of this EA. Compliance with NEPA, is a Federal responsibility that involves the participation of all of these entities in the planning process. The NEPA requires full disclosure about major actions taken by Federal agencies and accompanying alternatives, impacts, and potential mitigation of impacts.

5.2 Public Involvement

Reclamation mailed 92 letters to Company shareholders, property owners adjacent to the Project and the Canal right-of way, as well as to state and Federal agencies, notifying them of the Project and inviting them to an open house. The mailed letters also included an invitation to participate in a 30-day public comment period. No comments were received.

5.3 Native American Consultation

Reclamation conducted Native American consultation throughout the public involvement process. A consultation letter and copy of the Class III Cultural Resource Inventory Report were sent to the Ute Indian Tribe of the Uintah and Ouray Reservation, the Shoshone-Bannock Tribes of the Fort Hall Reservation of Idaho, and the Shoshone Tribe of the Wind River Reservation. This consultation was conducted in compliance with 36 CFR 800.2(c)(2) on a government-to-government basis. Through this effort, the 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; and to express their views on the effect of the Proposed Action on such properties. Reclamation received no response from the consulted tribes.

5.4 Utah Geological Survey

CRS Engineers requested a paleontological file search from the UGS to determine the nature and extent of paleontological resources within the APE. File search results and recommendations from the UGS were received in a letter dated March 16, 2017 (see letter from Department of Natural Resources in Appendix D: Cultural and Paleontological Resources).

5.5 Utah State Historic Preservation Office

A copy of the Class III Cultural Resource Inventory Report and a determination of historic properties affected for the Proposed Action were submitted to the SHPO. The SHPO concurred with Reclamation's determination of No Historic Properties Affected in a letter dated August 1, 2017 (see letter from SHPO in Appendix D: Cultural and Paleontological Resources).

5.6 U.S. Fish and Wildlife Service

Coordination with the USFWS took place throughout the development of the EA. The USFWS provided comments and guidance on the Biological Assessment, species occurrence, and the potential impacts on ULT. In a letter dated July 24, 2017, the USFWS concurred with Reclamations' determination that the Proposed Action "may affect, but is not likely to adversely affect" the threatened ULT. The mitigation measure required for the ULT were determined through informal consultation with the USFWS.

Chapter 6 Preparers

The following is a list of preparers who participated in the development of the EA. They include environmental summary preparers, Reclamation team members, and Federal, State, and District members.

Table 6-1
Environmental Summary Preparers

Name	Title	Company
Clint Allen, P.E.	Senior Engineer	CRS Engineers
Jared M. Bigler	Biologist	CRS Engineers
Heather Boekweg, MS	Environmental Specialist	CRS Engineers
Chuck Easton, MA, RPA	Environmental Planner/Archaeologist	CRS Engineers
Doug Jacobson, MS	Environmental Specialist	CRS Engineers
Daniel Reynolds	GIS Designer	CRS Engineers

Table 6-2
Reclamation Team Members

Name	Title	Company
Jared Baxter	Fish and Wildlife Biologist	Bureau of Reclamation
Rick Baxter	Water, Environmental, and Lands Division Manager	Bureau of Reclamation
Peter Crookston	Environmental Group Chief	Bureau of Reclamation
Dale Hamilton	Resource Management Division Manager	Bureau of Reclamation
Jeff Hearty	Economist	Bureau of Reclamation
Gary Henrie	Hydrologist	Bureau of Reclamation
Linda Morrey	Secretary	Bureau of Reclamation
Rachel Musil	Engineer	Bureau of Reclamation
Zachary Nelson	Archaeologist	Bureau of Reclamation
Dave Snyder	Fish and Wildlife Biologist	Bureau of Reclamation

Chapter 7 Acronyms and Abbreviations

Acronym/Abbreviations	Meaning
APE	Area of Potential Effects
BLM	Bureau of Land Management
BA	Biological Assessment
BIA	Bureau of Indian Affairs
BO	Biological Opinion
Canal	Rock Point Canal
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cfs	Cubic Feet Per Second
CWA	Clean Water Act
District	Uintah Water Conservancy District
DEQ	State of Utah Department of Environmental Quality
DWR	State of Utah Division of Wildlife Resources
DWRi	State of Utah Division of Water Rights
EA	Environmental Assessment
EPDM	Ethylene Propylene Diene Monomer
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
HDPE	High Density Polyethylene
ITA	Indian Trust Assets
LUST	Leaking Underground Storage Tank
MSL	Mean Sea Level
NEPA	National Environmental Policy Act
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
O&M	Operation and Maintenance
PVC	Polyvinyl Chloride
Reclamation	U.S. Bureau of Reclamation
SHPO	Utah State Historic Preservation Office
SOP	Standard Operating Procedures

Acronym/Abbreviations	Meaning
UDOT	State of Utah Department of Transportation
UGS	Utah Geological Survey
UPDES	Utah Pollutant Discharge Elimination System
USFWS	U.S. Fish and Wildlife Service
U.S.C	United States Code
UST	Underground Storage Tanks
ULT	Ute-ladies'-tresses
USACE	U.S. Army Corps of Engineers

Chapter 8 References

Babb, Cyrus Cates, 1900. Water supply of the Uinta Indian Reservation, Utah. U.S. Government Printing Office. Washington D.C.

Baxter, Jon R. and Syanna T. Madsen, 2013. A Cultural Resource Inventory for the Vernal Unit Efficiency Project near Vernal, Uintah County, Utah. Bighorn Archaeological Consultants, L.L.C. Orem, Utah.

Gerhart Cole Inc., 2013. Geotechnical Study, Steinaker Service Canal Enclosure, Uintah County, Utah.

Hood, J.W., 1977. Hydrologic Evaluation of Ashley Valley, Northern Uinta Basin Area, Utah; U.S Geological Survey and State of Utah Department of Natural Resources Technical Publication No. 54; Utah, 30p.

Jacobson, Kib, 2015. Re: Funding Opportunity Announcement (FOA) No. R15AS00037 – Colorado River Basinwide and Basin Sates Salinity Control Programs – Salt Load Reduction Estimate for the Rock Point Canal Rehabilitation Project. Received by Leon Kidd, in author's possession, Vernal, UT.

Nelson, Zachary, 2016. A Cultural Resource Report for the BOR Steinaker Dam Repair (U16BE0550w) and IMACS site form for 42UN8667, the Rock Point Canal. Bureau of Reclamation. Provo, Utah.

Sprinkel, D.A., 2007. Interim Geologic Map of the Vernal 30 feet x 60 feet Quadrangle, Uintah and Duchesne Counties, Utah, and Moffat and Rio Blanco Counties, Colorado. Utah Geological Survey Open-File-Report 506DM.

Utah DEQ Interactive Map http://enviro.deq.utah.gov/

U.S. EPA Website http://www.epa.gov/myenv/MYENVIEW.results2?minx=-111.567614&miny=40.599223&maxx=-111.431441&maxy=40.690854

U.S. Census Bureau Website
http://quickfacts.census.gov/qfd/states/49/49047.html

U.S. Bureau of Reclamation, 2007. Final Environmental Assessment Steinaker Reservoir Normal Water Surface Elevation Increase.

Chapter 9 Appendices

A

Rock Point Rehabilitation Project
Environmental Assessment

Figures

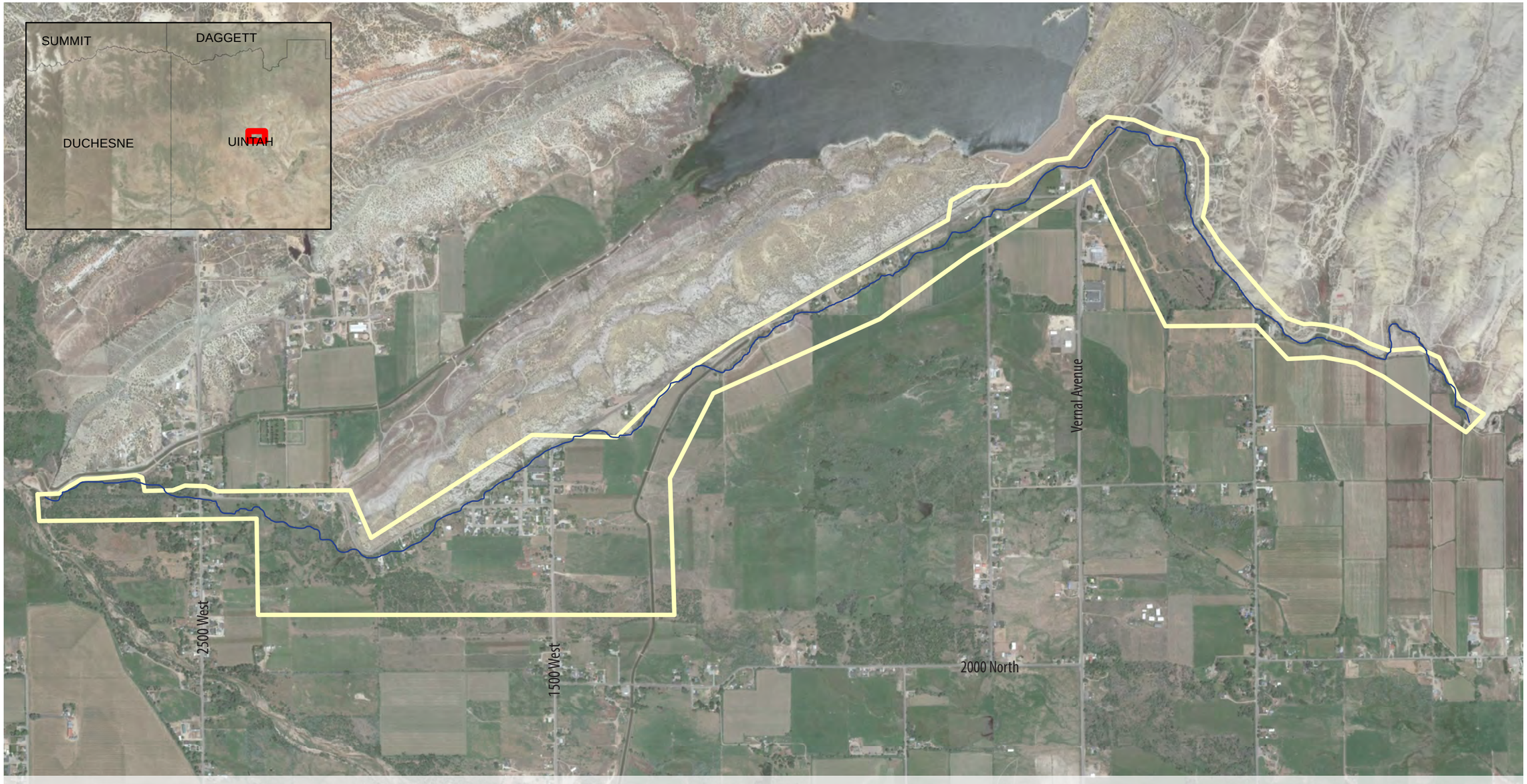


Figure 1-1: Study Area and Existing Canal Alignment

Source: 2016 Google Imagery

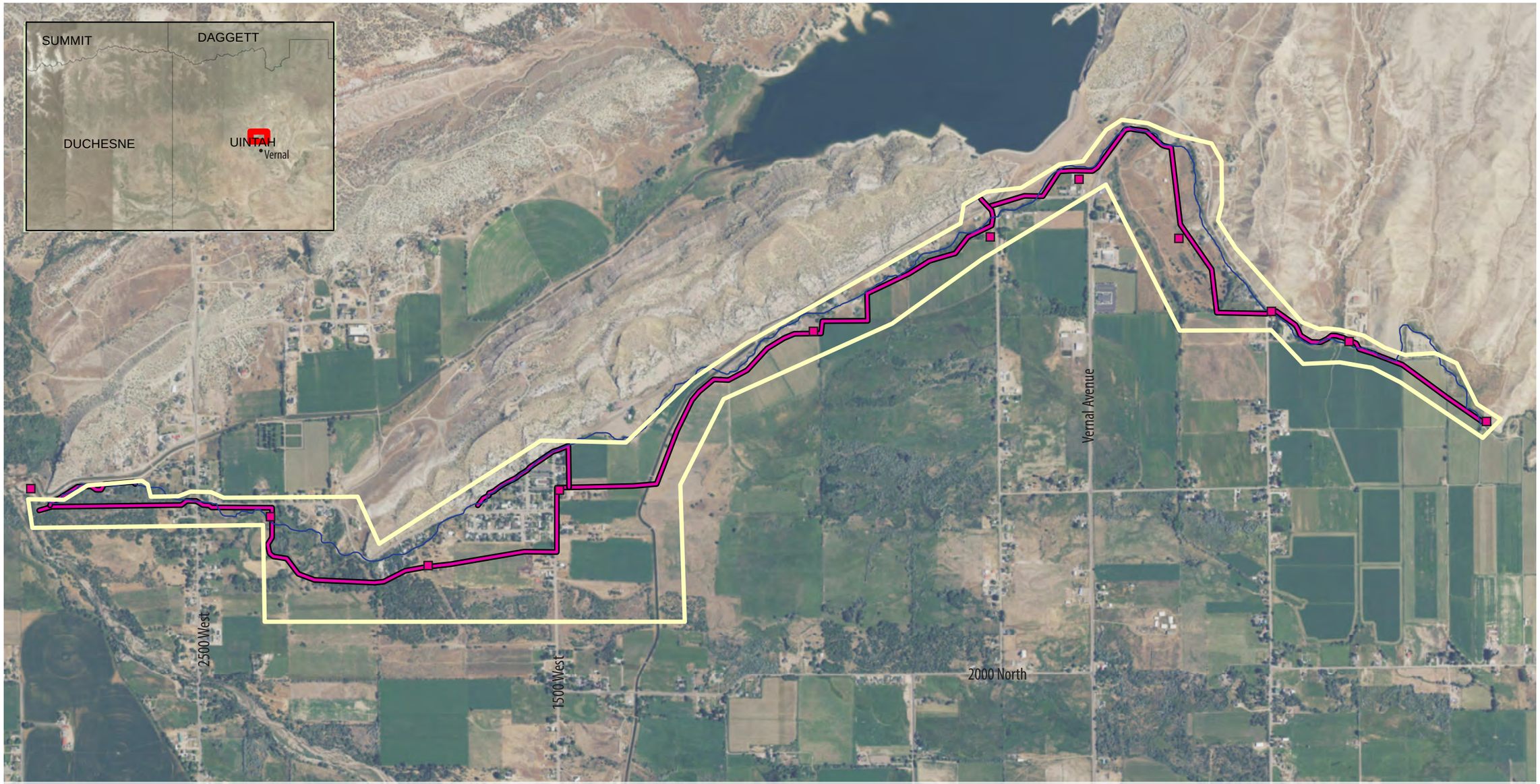


Figure 2-1: Preferred Action Pipeline Alignment

Source: 2016 Google Imagery

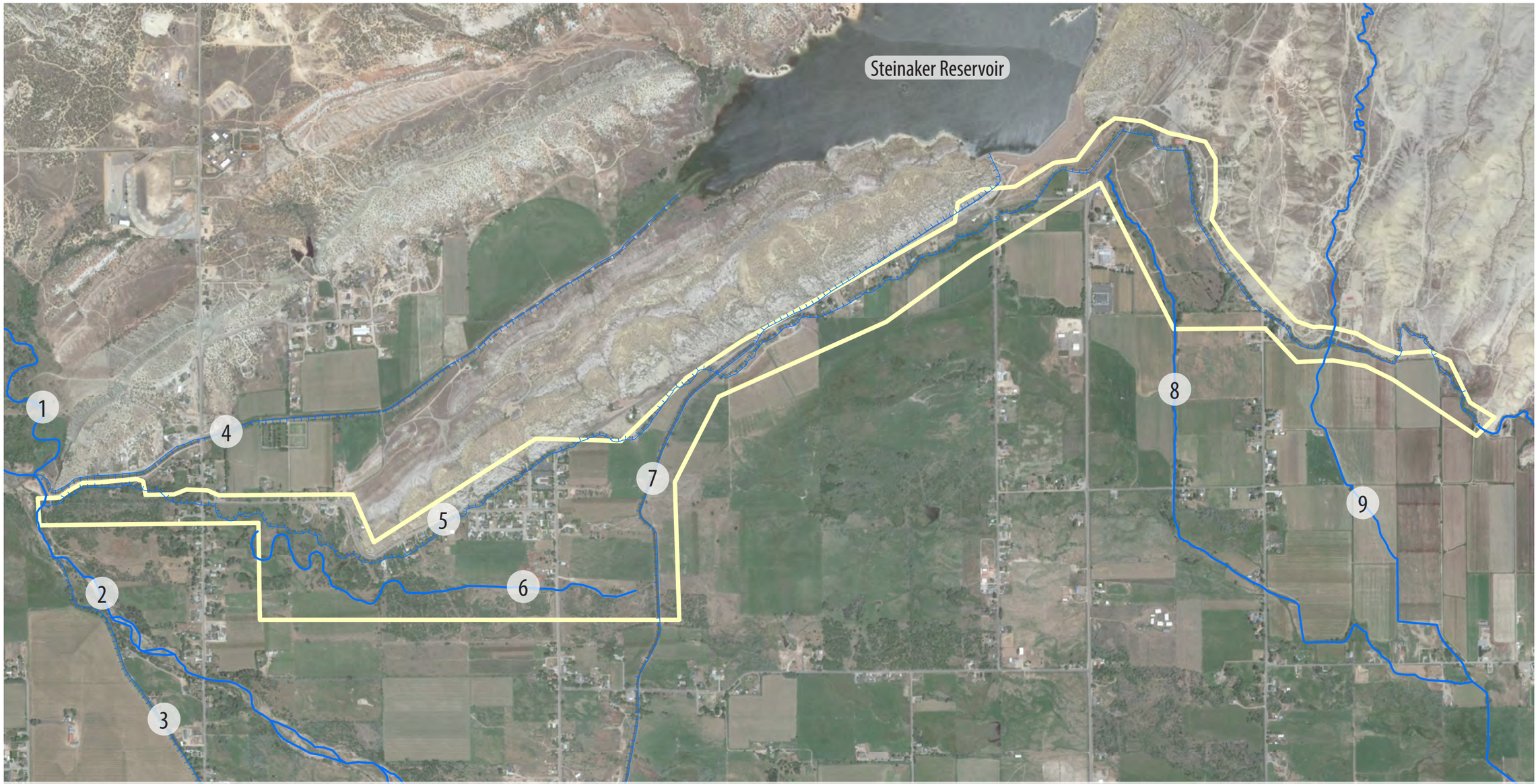


Figure 3-1: Hydrology within the Study Area

Source: 2016 Google Imagery

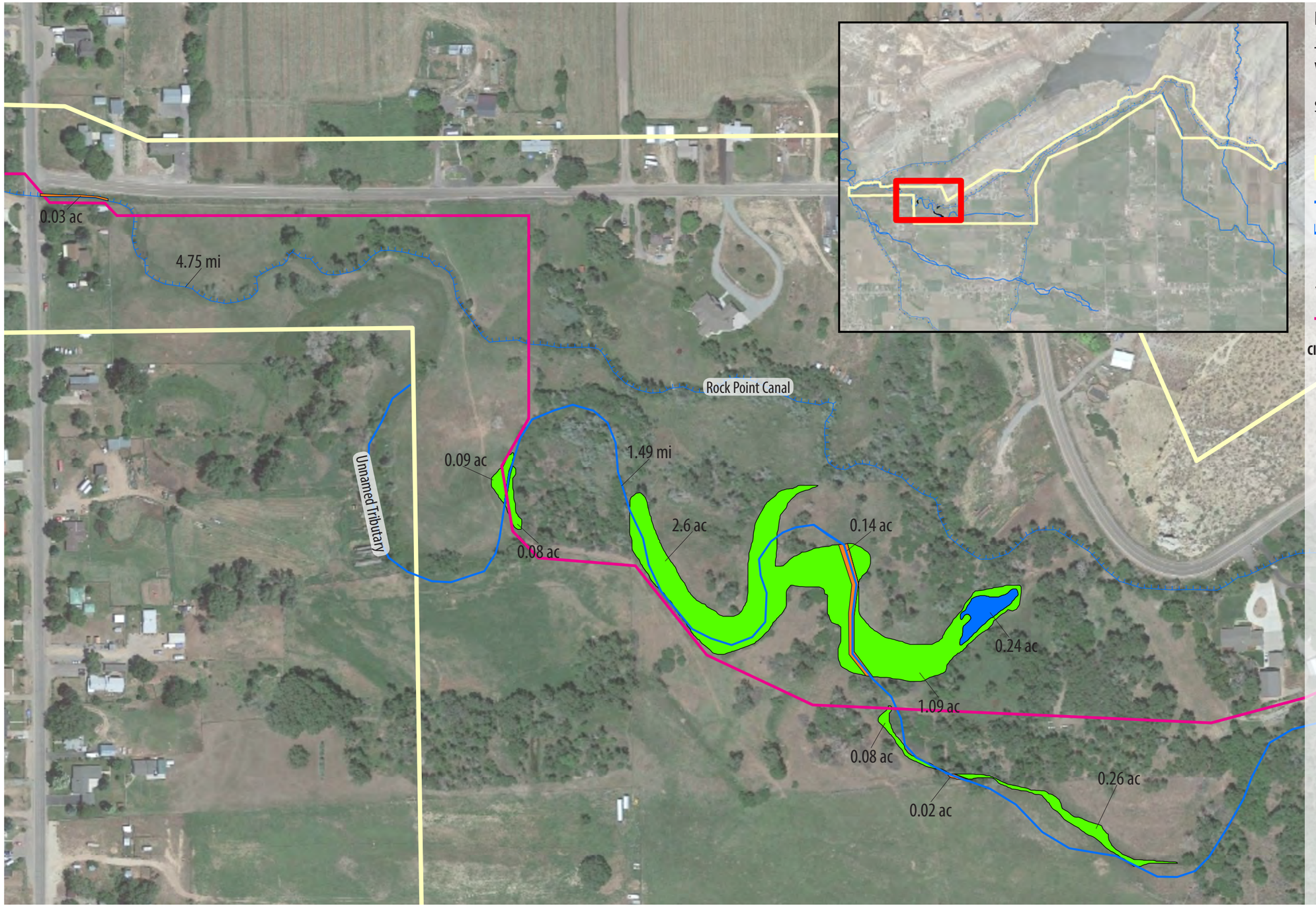


Figure 3-2:
Jurisdictional Wetlands within the Study Area

Source: 2016 Google Imagery

Study Area

Tributary/Stream

Canal

Open Water

Proposed Pipeline

Classification

Palustrine Emergent Wetland: Emergent Marsh (Proposed Jurisdictional)

Palustrine Emergent Wetland: Wet Meadow (Proposed Jurisdictional)

Wetland Areas within Study Area Boundary

Total Waters of the US
(4.64 acres; 42,811 linear feet or 8.11 linear miles)

EM: Emergent Marsh
(0.20 acres)

WM: Wet Meadow
(4.20 acres)

O: Open Water
(0.24 acres; 42,811 linear feet or 8.11 linear miles)

0 200 400
Feet

N

B

Rock Point Rehabilitation Project
Environmental Assessment

Salt Load Reduction Basis and Estimate

Salt Load Reduction Basis & Estimate

Item	Units	Identify individual canal, lateral, or ditch				
Canal/Lateral Name		**Rock Point Canal**				
Length of existing canal/lateral/ditch	miles	10.1				
Irrigated acreage served	acres	1,950				
Irrigation season						
Avg. daily diversion	cfs	16				
Average seasonal diversion	ac-ft	5850				
Average no. of days water carried	days	185				
Non-irrigation season (winter water)						
Average daily diversion	cfs	NA				
Average seasonal diversion	ac-ft					
Average no. of days water carried	days					
Length of ditch carrying winter water	miles					
Describe EXISTING lined or piped sections						
Lined length	miles	NA				
Liner type (concrete, earth, etc)	See Note 1					
Year installed	year					
Liner condition	See Note 2					
Piped length (see Note 3)	miles	NA				
Remaining unlined/unpiped length	miles	10.1				
Length to be replaced/improved	miles	10.1				
Proposed replacement material	pipe or liner	Pipe				
Estimated Salt Reduction	Tons/yr	740				

Notes: 1. Type of liner may be concrete, earth (clay), membrane or other (please specify).
2. Condition of liner should be rated as poor, satisfactory, good.
3. Disregard dispersed pipe segments with individual lengths of less than 100 feet

C

Rock Point Rehabilitation Project
Environmental Assessment

Public Scoping & Involvement

CRS ENGINEERS

Rock Point Canal - Individual Public and Stakeholder Meetings

Date of Contact	Name/Title	Notes	Action Items
4/7/2016	Leon Kidd	Discussed property ownership and potential alignment routes	Prepare preliminary alignment options
4/14/2016	Leon Kidd, Ken Long, Ned Davis	Reviewed property ownership and potential alignment routes	Evaluate challenges with alignment options
4/19/2016	Land Owners	Meeting with several property owners to discuss easement aquisition	Follow up with owners, look at impacts of alignment on future development
4/26/2016	Lee Schultz/ Property Owner	Discussed easement on property	Evaluate alternate routes
4/29/2016	Kyle Batty/ Property Owner	Discussed easement on property	Prepare easement documents
4/29/2016	Dusty McCormick/ Manager Maeser Water	Looked at sewer and waterline locations along 2500 North	Include lines on plans
7/5/2016	Jeff Ellis/ Uintah County Roads	Discussed encroachment on road crossings and along 1500 West	Require constractor to obtain permit durring construction
7/7/2016	Mike Murray/ Utah State Park	Discussed ownership of property at the base of Stienaker Dam	Contact BOR
7/2016-9/2016	Individual Rock Point Shareholders	Discussed pipeline alignment and desired service locations	Add service locations to map
8/15/2016	Leon Kidd, Ken Long, Lyle Taylor	Discussed easement on property	Prepare map showing proposed alignment
9/9/2017	Fred Jones/ Property Owner	Discussed easement on property	Prepare presure calculations
11/3/2017	Fred Jones/ Property Owner	Discussed easement on property	Survey revised ROW and prepare easement documents
11/22/2017	Beers/ Property Owner	Discussed easement on property	
2/2/2017	Jeff Calder/ Property Owner	Discussed easement along north side of parking lot	prepare easement exhibit
3/2/2017	Rock Point Board Meeting	Presented Proposed project design to shareholders	Finalize plans, adjust service tap locations
5/15/2017	Dyle Webster/ Property Owner	Discussed service tap locations	revised plan set to show altered service locations

D

Rock Point Rehabilitation Project
Environmental Assessment

Cultural & Paleontological Resources

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Jill Remington Love
Executive Director
Department of
Heritage & Arts

Utah Division of
State History

Brad Westwood
Director

August 1, 2017

Wayne G. Pullan
Area Manager
Bureau of Reclamation
Provo Area Office
302 East 1860 South
Provo, Utah 84606-7317

RE: Rock Point Canal Rehabilitation Project, Uintah County U-17-RY-0253
BOR Project No. PRO-EA-16-013 - Colorado Basin Salinity Control Program

For future correspondence, please reference Case No. 17-1301

Dear Mr. Pullan:

The Utah State Historic Preservation Office received your request for our comment on the above-referenced undertaking on July 21, 2017.

We concur with your determinations of eligibility and effect for this undertaking.

If you have any questions, please contact me at (801) 245-7241 or by email at ehora@utah.gov.

Sincerely,

Elizabeth Hora
Cultural Compliance Reviewer

GARY R. HERBERT
Governor
SPENCER J. COX
Lieutenant Governor

State of Utah
DEPARTMENT OF NATURAL RESOURCES
MICHAEL R. STYLER
Executive Director
Utah Geological Survey
RICHARD G. ALLIS
State Geologist/Division Director

March 16, 2017

Chuck Easton
CRS Engineers
PO Box 280
160 S Main, Suite 200
Farmington UT 84025

RE: Paleontological File Search and Recommendations for the Rock Point Canal Project, Uintah County, Utah
U.C.A. 79-3-508 (Paleontological) Compliance; Request for Confirmation of Literature Search

Dear Chuck:

I have conducted a paleontological file search for the Rock Point Canal Project in response to your email of March 16, 2017. There are no paleontological localities recorded in our files for this project area. Quaternary and Recent alluvial deposits that are exposed along this project right-of-way have a low potential for yielding significant fossil localities (PFYC 2). However, bedrock deposits that are exposed along the northern boundary of the project area, include the Morrison and Cedar Mountain Formation deposits that have a high potential for yielding significant fossils localities (PFYC 4 – 5). If these bedrock deposits will be disturbed please be aware of potential impacts to paleontological resources. Otherwise, unless fossils are discovered as a result of construction activities, this project should have no impact on paleontological resources.

If you have any questions, please call me at (801) 537-3311.

Sincerely,

Martha Hayden

Martha Hayden
Paleontological Assistant

E

Rock Point Rehabilitation Project
Environmental Assessment

Waters of the United States Report

A Waters of the United States Report for

Rock Point Canal Project, Vernal, Utah

Submitted to
Ashley Kraetsch
United States Army Corps of Engineers
533 West 2600 South
Bountiful, Utah 84010

Submitted by
Heather Boekweg and Chuck Easton
CRS Engineers
160 South Main, Suite 200
Farmington, Utah 84025

March 20, 2017

CRS ENGINEERS

Abstract

In August 2016, the Rock Point Irrigation Company in cooperation with the Bureau of Reclamation contracted with CRS Engineers (CRS) to assess the study area for its suitability to construct a new underground canal by completing a waters of the United States delineation investigation. CRS conducted a wetland delineation from a site visit performed on August 26, 2016. CRS analyzed the general site conditions of the study area, including soils, hydrology and vegetation. CRS recorded a total of 4.64 acres of wetlands (4.20 acres of wet meadow and 0.17 acres of emergent marsh), 0.24 acres of open water, and 42,822 linear feet of open water. Only 31,401 linear feet of open canal are proposed jurisdictional waters of the United States within the study area.

Contents

List of Tables

List of Figures

1.0 Introduction

The Rock Point Irrigation Company in cooperation with the Bureau of Reclamation (Reclamation) commissioned CRS Engineers (CRS) to assess the proposed Rock Point Canal Rehabilitation study area for its suitability to construct a new underground canal by completing a waters of the United States delineation investigation. CRS conducted a wetland delineation assessment from a site visit performed on August 25, 2016.

The study area encompasses approximately 600 acres (see Figures 1–3). Reclamation and the Rock Point Irrigation Company propose to remove irrigation water from 8.7 miles of open canal in Vernal, Utah and construct a new irrigation canal that would be buried. Pipe for the canal would be a combination of polyvinyl chloride (PVC) and high-density polyethylene pipe (HDPE) pipe ranging from 2 inches to 34 inches wide.

Figure 1: Rock Point Canal and surrounding vegetation within the study area.

1.1 Project Setting

The project is located in the city of Vernal, Utah in Sections 1–5, and 8–12 of Township 4 South Range 1 East. Elevations in this location range from approximately 5,200 feet and 5,600 feet (1,584 meters and 1,707 meters) above sea level. The study area slopes gradually upward toward the north and downward toward the south. A majority of soils within the study area have been disturbed through agricultural and community expansion. The study area contains a combination of upland and wetland vegetation such as kochia (*Bassia scoparia*), tall fescue (*Festuca arundinacea*), Canada goldenrod (*Solidago canadensis*), curly dock (*Rumex crispu*), Russian

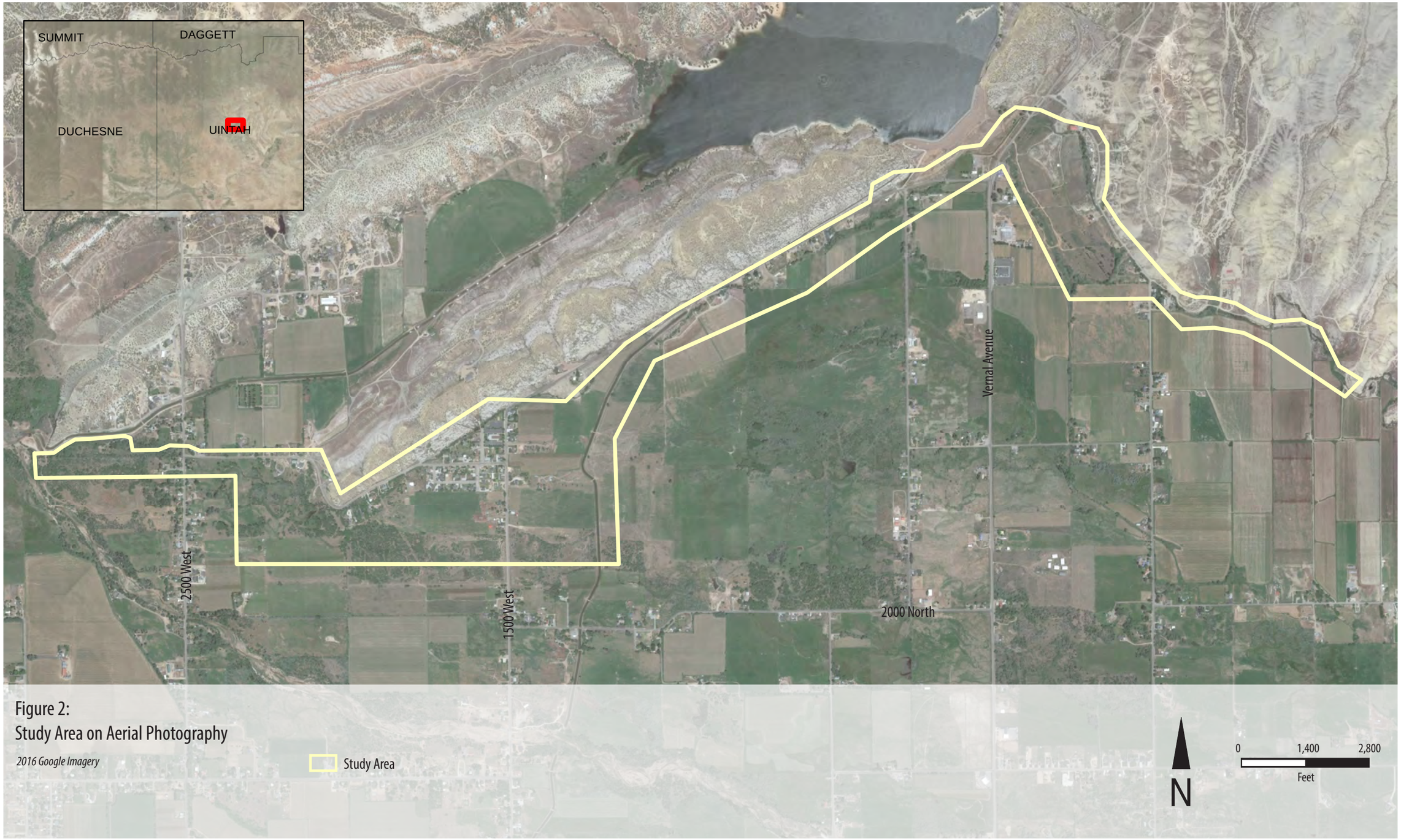


Figure 2:
Study Area on Aerial Photography

2016 Google Imagery

Project Name: Rock Point Canal Rehabilitation Project
Map Author: Heather Boekweg
Delineator: Chuck Easton
Date of Revisions: N/A

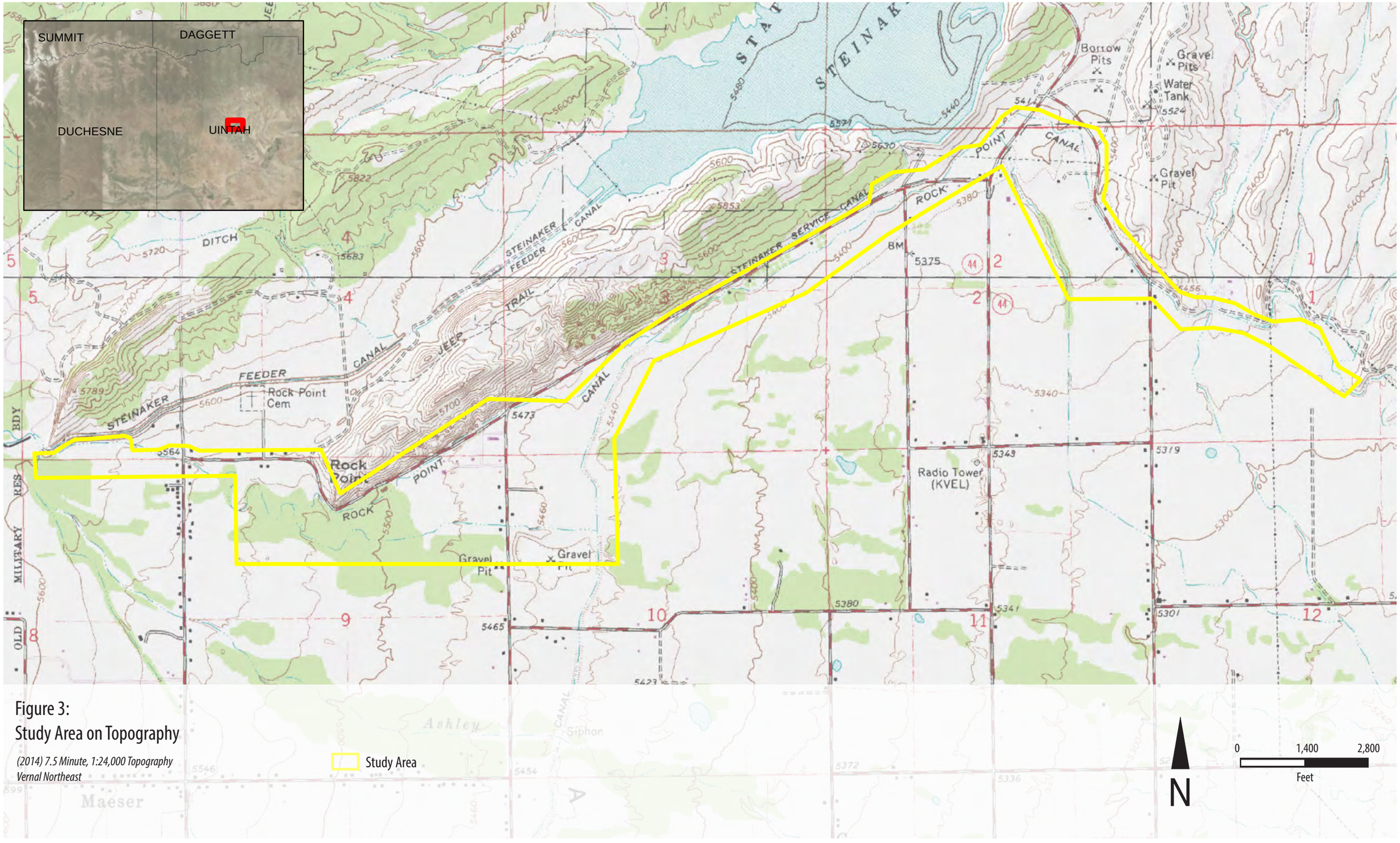


Figure 3:
Study Area on Topography

(2014) 7.5 Minute, 1:24,000 Topography
Vernal Northeast

Project Name: Rock Point Canal Rehabilitation Project
Map Author: Heather Boekweg
Delineator: Chuck Easton
Date of Revisions: N/A

thistle (*Echinops exaltatus*), smooth scouringrush (*Equisetum laevigatum*), rush (*Juncus* spp.), milkweed (*Asclepias labriformis*), cattail (*Typhus* spp.), willow (*Salix* spp.), and reed canary grass (*Phalaris arundinacea*) (see Appendix A: Site Photographs).

1.2 Directions to the Study area

From the United States Army Corps of Engineers (USACE) office (533 West 2600 South, Bountiful, Utah), get on Interstate 15 (I-15) southbound and continue southward for 8 miles. Keep right at the fork to continue on Interstate 80 (I-80) east, following signs for Cheyenne/ Interstate 80 for 5 miles. Keep left to stay on I-80 east and proceed for another 19 miles. Take exit 146 for US-40 East toward Heber/Vernal. Proceed for approximately 114 miles. Turn right onto US-191 North/US-40 East/East 200 North/Main Street. Proceed for approximately 30 miles. Turn left onto US-191 and proceed until you reach approximately 3300 North. The study area extends to the east and west.

1.3 Scope of the Waters of the United States Investigation

The objectives of this investigation were to (1) document existing site conditions, (2) delineate and map potential waters of the United States locations, and (3) provide the USACE with information to make preliminary jurisdictional determinations regarding potential waters of the United States. Ultimately, the USACE holds the responsibility for all jurisdictional determinations.

Tasks completed by CRS include the following:

- Review of existing topographic and aerial photography data;
- Review of published soil and National Wetland Inventory (NWI) data;
- Site inspections to sample and document soil, hydrological conditions, and plant community composition;
- Delineation/verification of waters of the United States;
- Photo documentation of general site conditions; and
- Review of Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM).

2.0 Methods

On August 25, 2016, CRS conducted a wetland delineation of the study area. Six sampling points were excavated and wetland boundaries were surveyed (see Appendix B, Figure B1). Each area was investigated to determine the presence of wetlands and was evaluated in accordance with the three-parameter approach (soil, hydrology, and vegetation) specified in the 1987 *Corps of Engineers Wetlands Delineation Manual* and the 2008 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0).* Soil samples were excavated on both sides of a potential wetland to determine the wetland boundary and to evaluate existing soil, hydrologic, and vegetative conditions of wetlands (see Appendix C: Soil Sampling Point Forms). An ordinary high water mark was also completed for the canal (see Appendix D: Ordinary High Water Mark Forms). Boundaries of wetlands and the canal were recorded with global positioning software (GPS).

2.1 Soils

Where possible, soil samples were excavated to a depth of 18 inches for a 1- to 2-foot profile that was taken from the side (see Appendix A, Figure A1). The profile was examined to determine soil texture, color, and hydric soil conditions (e.g., hydrogen sulfide, histic epipedon, sandy redox, redox dark surface). Texture for each soil horizon was determined following a hand analysis field technique. A moistened ball of soil was spread by gently pushing the soil out between the thumb and forefinger and squeezing it upward into a ribbon. Ribbon sizes less than 1 inch were determined as sandy soils. Ribbons between 1 and 2 inches were determined soils with medium textures, and ribbons greater than 2 inches were determined clayey soils. Soil color was determined by moistening the sample and comparing it to the Kollmorgen Instruments Munsell Soil Color Chart. Samples meeting the criteria for hydric soils as contained within the 1987 USACE manual and the 2008 regional supplement were considered hydric. Soil samples from these areas were evaluated based on each distinct horizon encountered.

Each soil sample was evaluated and compared with soil conditions described in the soil survey within the study area (see Appendix E: Custom Soils Report). These indicators were reviewed to better understand the general characteristics of soil types and were compared with samples evaluated in the field. Soil horizonation, texture, and color were noted at each sampling location (see Appendix C: Soil Sampling Point Forms).

2.2 Hydrology

The presence or absence of hydrological indicators (e.g., standing water, alluvial deposits, root zone oxidation, drainage patterns, etc.) was noted. The presence of any changes in the vicinity that may have altered local hydrology (e.g., irrigation canals, drainage ditches, excavation, earth-moving activities, etc.) was also investigated. A cross section of canals, tributaries, and creeks observed within the study area may be observed in Appendix D: Ordinary High Water Mark Forms.

2.3 Vegetation

The general plant community within the study area was observed. The relative occurrence and coverage of each species was estimated visually. Vegetation type and percentage of relative coverage were observed for four different vegetation strata: (1) tree (a woody plant greater than 3 inches in diameter at breast height [DBH], regardless of height), (2) sapling/shrub (woody plants less than 3 inches in diameter at breast height [DBH] but greater than 3.2 feet in height), (3) herb (seedlings of woody plants [including vines] that are less than 3.2 feet in height), and (4) woody vine (a layer of vegetation in forested plant communities that consists of woody vines).

Dominant plant species were determined by identifying "the most abundant species that individually or collectively account for more than 50 percent total coverage of vegetation in the stratum, plus any other species that, by itself, accounts for at least 20 percent of the total" (USACE, 2008). If more than 50 percent of the dominant plant species had an indicator status of obligate, facultative wetland, or facultative, the sampling area met the wetland vegetation parameter in accordance with the USACE's 50/20 Rule. Plant identification was determined

using the field manual *Weeds of the West* (Whitson, et al., 2004) and professional judgment. The wetland indicator status of plant species was determined using the *National List of Plant Species that Occur in Wetlands: Intermountain Region 8* (Reed, 1988) and the *National Wetland Plant List: 2016 Wetland Ratings* (Lichvar et al, 2016).

2.4 Site Infrastructure and Mapping

Photographs of sample sites and other areas representative of the conditions within the area were taken to provide a photographic record and to help characterize the waters of the United States found within the study area (see Appendix A: Site Photographs). Sample point locations, wetland boundaries, and other waters of the United States were mapped with GPS and are shown on the maps in Appendix B. GPS points were brought into a geographic information system (GIS) where waters of the United States boundaries were created and overlaid on the study area aerial photography to create a waters of the United States map (see Appendix B, Figure B1). Two inset maps of the overall study area were also created to better indicate where wetlands were located (see Appendix B, Figures B2–B3).

3.0 General Site Conditions

The study area is located in the Uintah Basin in northeastern Utah. The Uinta Basin lies to the south of the Uinta Mountains and is fed by creeks and rivers flowing south from those mountains. The principal rivers flow into the Duchesne River which feeds the Green River (a tributary of the Colorado River). The mountains receive about thirty inches of precipitation annually. The central portion of the basin has an elevation of 5,000 to 5,500 feet. The average annual precipitation is about 8.3 inches, with a smaller area around Ouray and Leota receiving less than 6 inches annually. Average low/high temperatures range from 50/90 degrees in July to 5/30 degrees in January.

The study area contains canals, tributaries, Ashley Creek, several agricultural fields, and open land. The study area is located on generally flat ground and gradually slopes upward toward the north. While upland vegetation is most commonly observed throughout the study area, wetland vegetation can be found within a few areas near the Rock Point Canal and its tributaries (see Appendix B: Figure B1). Wetland areas include 4.20 acres of wet meadow, 0.17 acres of emergent marsh, 0.24 acres of open water, and 42,822 linear feet of open water.

3.1 Soils

The soil survey taken from the Web Soil Survey interactive map indicates that there are 19 known soil types within the study area (Web Soil Survey, 2016; see Appendix D: Custom Soils Report). Wetlands found on site are located within the Robido-Uver complex, 1–4% slopes. This soil type was considered hydric, and was only one of three soils to be considered hydric within the entire study area (see Table 1 and Appendix D: Custom Soils Report). Additionally, this soil type was the most abundant within the study area.

Table 1: Soil types within the study area.

Soil Type	Hydric Status	% of Study Area	Acres in Study Area
Robido-Uver Complex (1–4% slopes)	Hydric	26.8%	166.3 acres
Turzo-Umbo Complex (2–4% slopes)	Hydric	0.2%	1.5 acres
Wyasket Peat (0–2% slopes)	Hydric	<0.01%	<0.01 acres
Other soils (see Appendix D: Custom Soils Report)	Non-Hydric	73%	453.5 acres

3.2 Hydrology

The study area contains a creek and several canals and tributaries (see Figures 4A and 4B). Several of the canals connect to Ashley Creek or to tributaries from Vernal sewage lagoons and Dry Fork confluence, and eventually Steinaker Reservoir. Because of the connection to Steinaker Reservoir, all canals within the study area may be considered jurisdictional waters of the United States. Several tributaries within the study area are supplied by storm runoff and underground water and may not be considered jurisdictional waters of the United States.

Rock Point Canal diverts water from Ashley Creek to serve lands both east and west of the Steinaker Service Canal along the northern edge of Ashley Valley. As flows subside in Ashley Creek during the late summer months, Vernal Unit Project water from Steinaker Reservoir is diverted into the canal to supplement Ashley Creek flows. The canal is about 8.7 miles in length with the upper approximately 5.9 miles unlined and the lower approximately 2.8 miles piped. Approximately 5.5 miles of the canal are located within the study area (see Figure 4A). The canal has 570 shares of stock in Steinaker Reservoir and carries 5,900 acre-feet of water per year, irrigating approximately 1,950 acres of farmland.

Three unnamed tributaries cross or are located within the study area (see Figure 4A). These unnamed tributaries are fed by storm water runoff from precipitation, groundwater, and/or unnamed streams from the Uintah Mountains. One additional tributary is located immediately adjacent to the study area and is fed by Ashley Creek. Tributaries within the study area account for approximately 11,418 linear feet, or 2.16 miles, of open water. Tributaries associated with wetlands were supplied by runoff from precipitation and groundwater.

The Steinaker Service Canal is a clay-lined channel that was initially constructed in 1961. It is approximately 60,100 feet long (11.38 miles) and runs from the spillway of Steinaker Reservoir some 12 miles south. The canal carries approximately 250 cubic feet per second (cfs) of irrigation water to users in the Ashley Valley area, providing irrigation to 14,781 acres of land. Approximately 6,111 linear feet (1.16 miles) of canal are located within the study area (see Figure 4A).

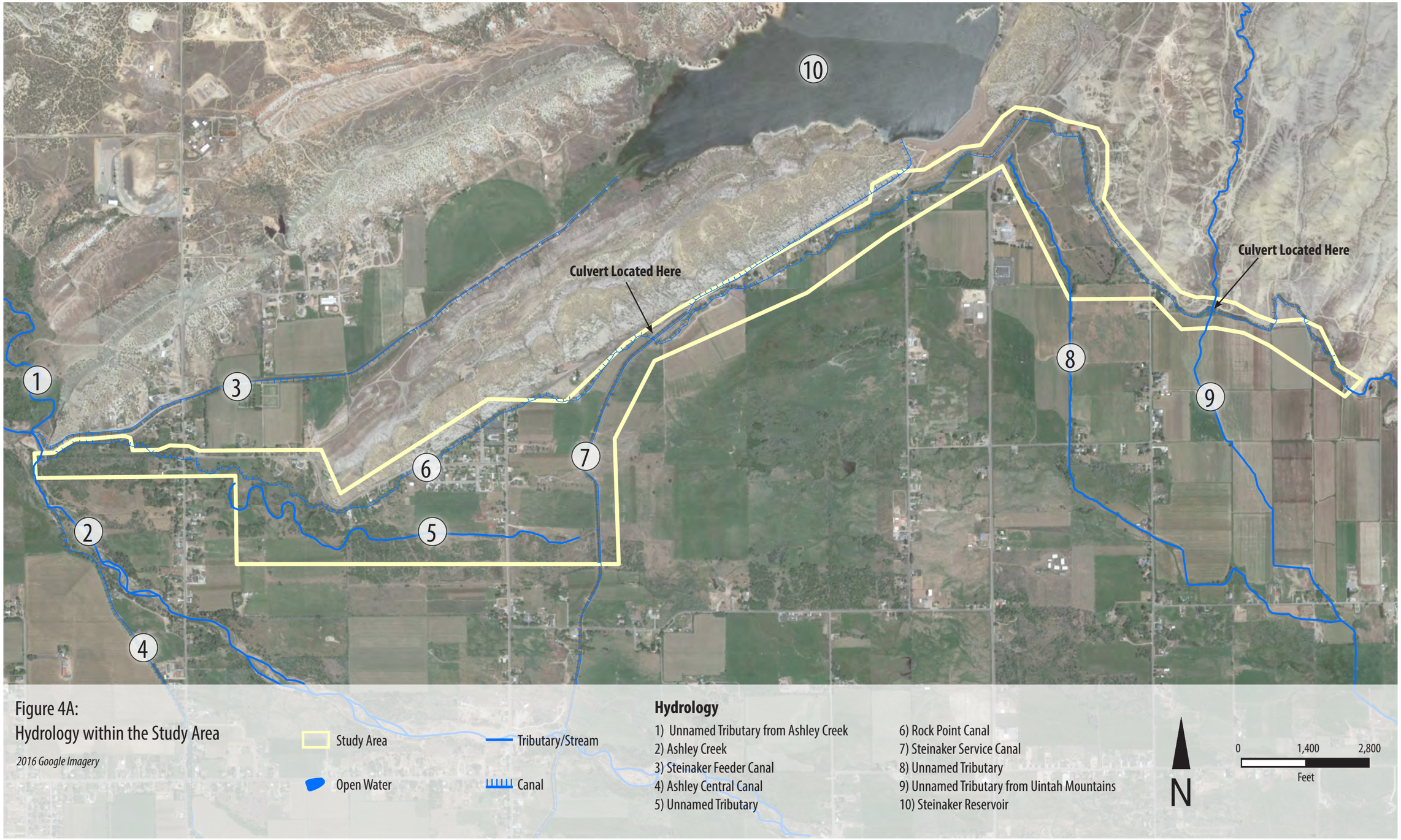


Figure 4A:
Hydrology within the Study Area

2016 Google Imagery

Project Name: Rock Point Canal Rehabilitation Project
Map Author: Heather Boekweg
Delineator: Chuck Easton
Date of Revisions: N/A

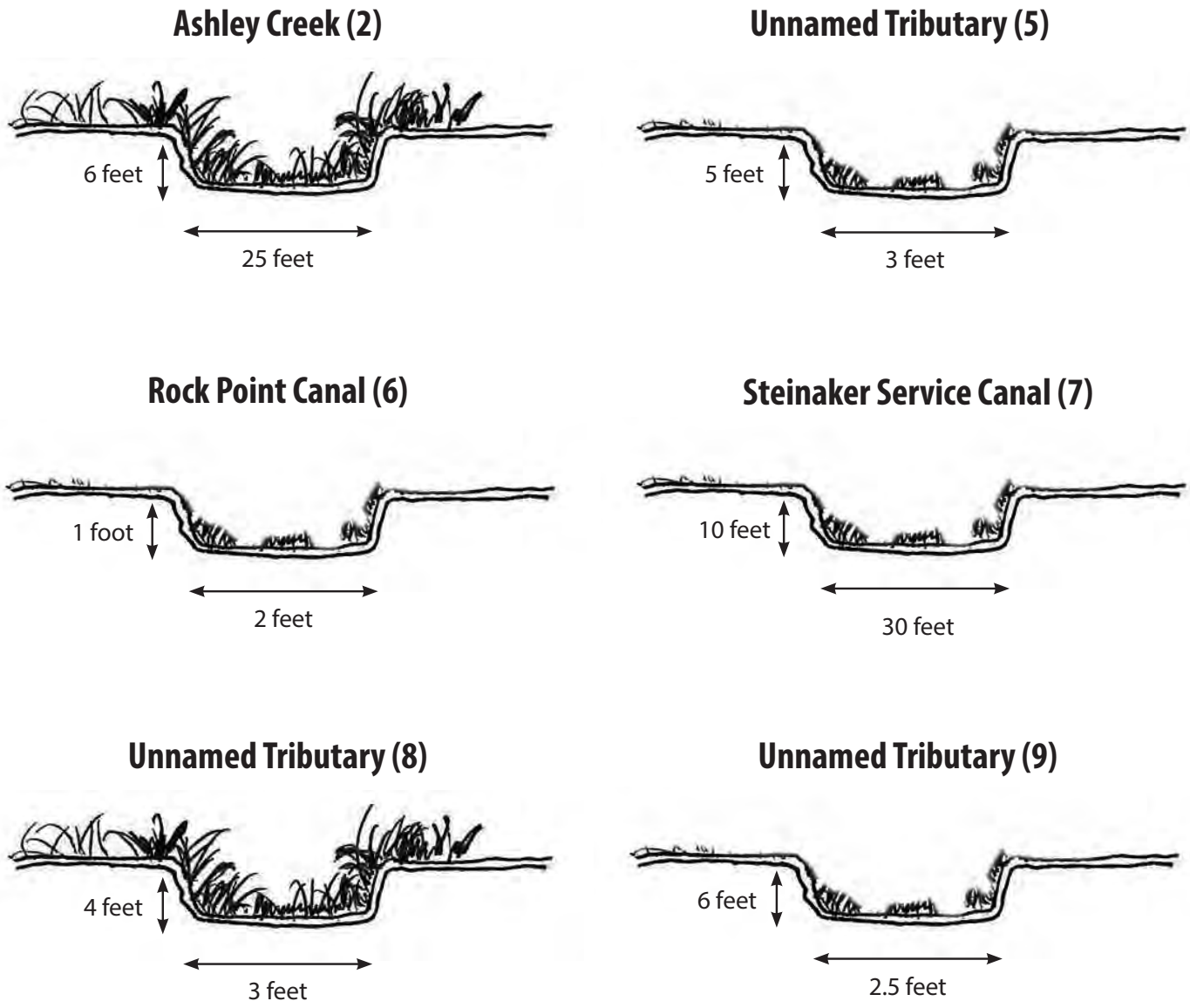


Figure 4B:
Cross Sections of Tributaries, Canals, and Streams within the Study Area

Ashley Creek originates from small glacial lakes at the base of March Peak and drains directly into the Green River. The creek travels in several directions and eventually through Ashley Valley where it becomes part of the Central Utah Project. Surplus waters from the creek are distributed through a feeder canal into the Steinaker Reservoir. The rest of the water is fed into municipal pipelines to the communities of Vernal, Naples, and Maeser, Utah. Approximately 216 linear feet of the creek are located within the study area (see Figure 4A).

3.3 Vegetation

Table 2 provides a list of wetland plant species occurring within wetland areas investigated, and their assigned wetland indicator status according to the *National Wetland Plant List: 2016 Wetland Ratings* (Lichvar et al, 2016).

Table 2: Wetland vegetation observed within the study area.

Scientific Name	Common Name	Hydric Status
Typhus utifolia	Cattail	OBL
Phalaris arundinacea	Reed canary grass	FACW
Salix spp.	Willow	FACW
Juncus balticus	Baltic rush	FACW
Equisetum laevigatum	Smooth scouring rush	FACW
Asclepias speciosa	Showy milk weed	FAC

4.0 National Wetland Inventory (NWI)

The NWI database indicated the presence of palustrine emergent wetlands within the study area (see Appendix B, Figure B5). While wetlands were observed near Rock Point Canal and nearby tributaries, the NWI map did not accurately represent the physical location of wetlands observed during the site observation on August 25, 2016.

5.0 FEMA Flood Insurance Map

FEMA has established flood zones used to determine the relative risk of flooding to life and property. These zones are used to generate a FIRM. Based on information obtained from the fema.gov website, the study area is located within flood map boundary numbers 49047C0475D, 49047C0655D, and 49047C0660D (FEMA, 2016). The study area is located in zone "X" in a majority of locations and has been determined to have minimal risk (0.2% annual chance) of flooding (see Figure 5). Two areas are located within zone "A" and have been determined to have some risk (1% annual chance) of flooding. These areas require mandatory flood insurance and floodplain management standards apply.

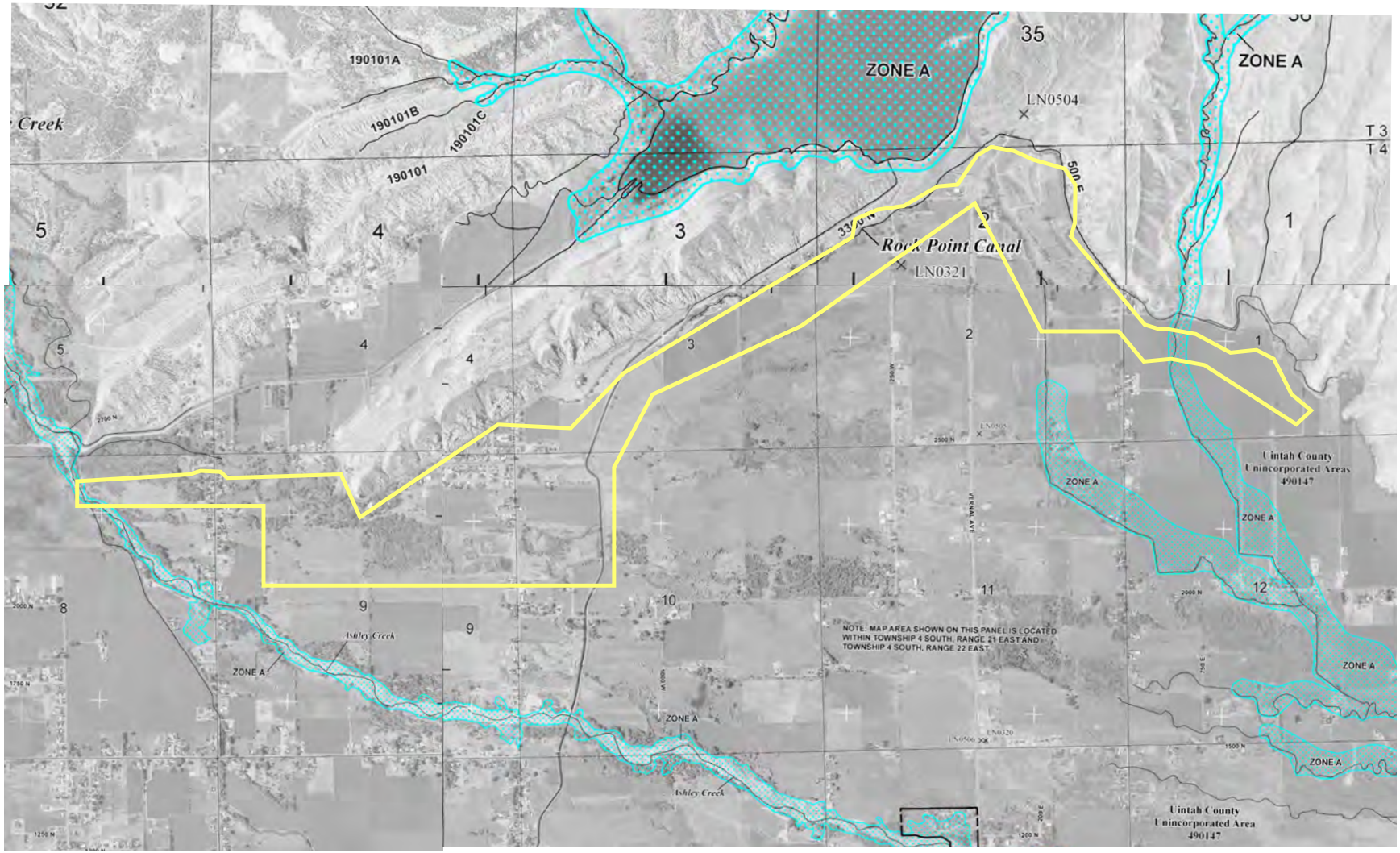


Figure 5: FEMA flood insurance maps 49047C0475D, 49047C0655D, and 49047C0660D.

6.0 Signed Letters

According to the "Minimum Standards for Acceptance of Aquatic Resources Delineation Reports" published by the USACE in January 2016, a signed statement from the property owner(s) allowing USACE personnel to enter the property and to collect samples during normal business hours is required. If the property is land-locked, the owner or proponent must obtain permission from the adjacent property owner(s) to provide access for Corps personnel (USACE 2016). Because the property is not land locked, no signed letters were obtained.

7.0 Conclusion: Presence of Waters of the United States

The wetland delineation recorded a total of 4.20 acres of wet meadow wetlands, 0.17 acres of emergent marsh wetlands, 0.24 acres of open water, and 42,822 linear feet of open water (including canals, tributaries, and a creek) (see Table 3). CRS proposes that 31,401 linear feet of open canal be considered jurisdictional waters of the United States within the study area due to their connection to Ashley Creek or Steinaker Reservoir (see Table 3).

Table 3: Total wetlands observed within the study area.

Waters of the United States Type	Waters of the United States Connection (if known)	Acreage or Linear Feet	Proposed Jurisdictional?
Wet Meadow Wetlands	Proposed Non-Jurisdictional Tributaries	4.20 acres	No
Emergent Marsh Wetlands	Proposed Non-Jurisdictional Tributaries	0.17 acres	No
Open Water	Tributaries and Wetlands	0.24 acres	No
Unnamed Tributaries	Storm Water, Precipitation	11,418 linear feet	No
Rock Point Canal	Ashley Creek	25,073 linear feet	Yes
Steinaker Service Canal	Steinaker Reservoir	6,111 linear feet	Yes
Ashley Creek	Steinaker Reservoir, Green River	217 linear feet	Yes
Total:	*Proposed Jurisdictional Waters:* 31,401 linear feet (Canal)		
	Proposed Non-Jurisdictional Waters: 4.61 acres (Wet Meadow, Emergent Marsh, Open Water); 11,418 linear feet (Tributary)		

8.0 Sources Cited

Federal Emergency Management Agency (FEMA). (2016). "FEMA Flood Map Service Center: Search by Address." *United States Department of Homeland Security*. Accessed September 22, 2016. Retrieved from https://msc.fema.gov/portal/search?AddressQuery=kaysville#searchresultsanchor.

Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings.

Phytoneuron 2016-30: 1–17. Published 28 April 2016. ISSN 2153 733X

Reed, Jr. Porter B. (1988). *National List of Plant Species that Occur in Wetlands: Intermountain (Region 8)*. Logan, Utah: All US Government Documents (Utah Regional Repository).

United States Army Corps of Engineers (USACE). (1987). *Corps of Engineers Wetlands Delineation Manual*. Wetlands Research Program, Technical Report Y-87-1. Vicksburg, Mississippi: Waterways Experiment Station.

___. (2008). *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual.* Hanover, NH: Cold Regions Research and engineering Laboratory.

——. (2008). *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)*. Vicksburg, Mississippi: US Army Engineer Research and Development Center Wetlands Research Program.

——. (2012). *Arid West Final Draft Ratings.* Hanover, NH: Cold Regions Research and Engineering Laboratory.

——. (2016). "Minimum Standards for Acceptance of Aquatic Resources Delineation Reports." *Sacramento District.* Sacramento, CA. Retrieved from http://www.spk.usace.army.mil/Portals/12/documents/regulatory/jd/minimum-standards/Minimum_Standards_for_Delineation_with_Template-final.pdf.

Web Soil Survey. (2016). *Custom Soil Resource Report for Vernal, Utah.* Washington, DC: US Government Printing Office.

Whitson, Tom D., Burrill, Larry C., Dewey, Steven A., Cudney, David W., Nelson, B. E., Lee, Richard D., Parker, Robert. (2004). *Weeds of the West.* Newark, CA: Western Society of Weeds Science.

A

Waters of the United States Report Appendix:

Site Photographs

Figure A1: Soil sample taken within the study area.

Figure A2: Open water within the study area surrounded by wetlands.

Figure A3: Unnamed tributary within the study area.

Figure A4: Rock Point Canal within the study area.

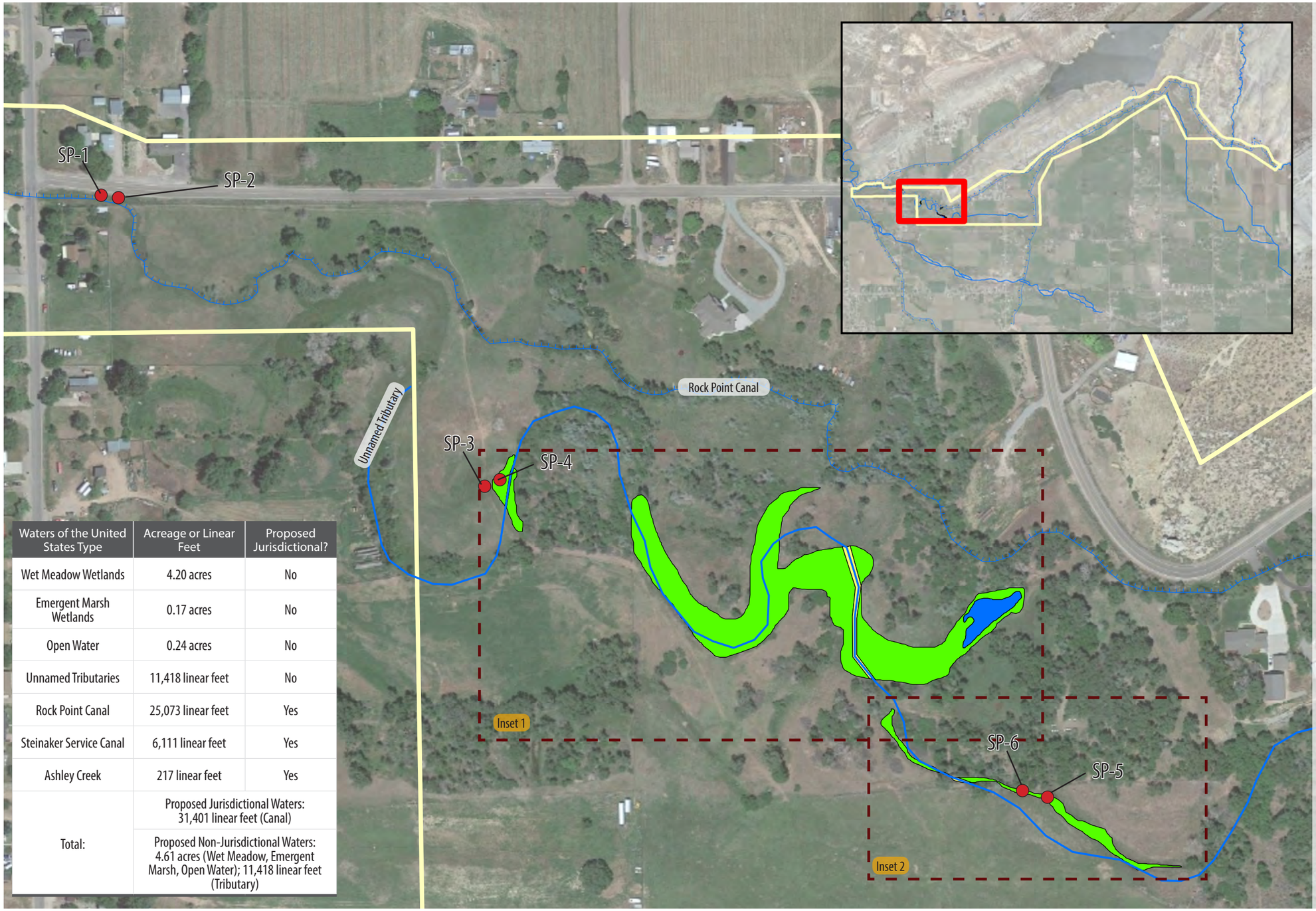
Figure A5: Wet meadow wetlands within the study area.

Figure A6: Wetlands surrounding open water within the study area.

B

Waters of the United States Report Appendix:

Maps



Waters of the United States Type	Acreage or Linear Feet	Proposed Jurisdictional?
Wet Meadow Wetlands	4.20 acres	No
Emergent Marsh Wetlands	0.17 acres	No
Open Water	0.24 acres	No
Unnamed Tributaries	11,418 linear feet	No
Rock Point Canal	25,073 linear feet	Yes
Steinaker Service Canal	6,111 linear feet	Yes
Ashley Creek	217 linear feet	Yes
Total:	Proposed Jurisdictional Waters: 31,401 linear feet (Canal)	
	Proposed Non-Jurisdictional Waters: 4.61 acres (Wet Meadow, Emergent Marsh, Open Water); 11,418 linear feet (Tributary)	

Figure B1:
Waters of the United States Overview

2016 Google Imagery

Sudy Area

Tributary/Stream

Canal

Open Water

Soil Sampling Point (SP)

Classification

Palustrine Emergent Wetland: Emergent Marsh (Proposed Non-Jurisdictional)

Palustrine Emergent Wetland: Wet Meadow (Proposed Non-Jurisdictional)

Wetland Areas within Project Boundary

Total Waters of the US (4.61 acres; 42,811 linear feet or 8.11 linear miles)

EM: Emergent Marsh (0.17 acres)

WM: Wet Meadow (4.20 acres)

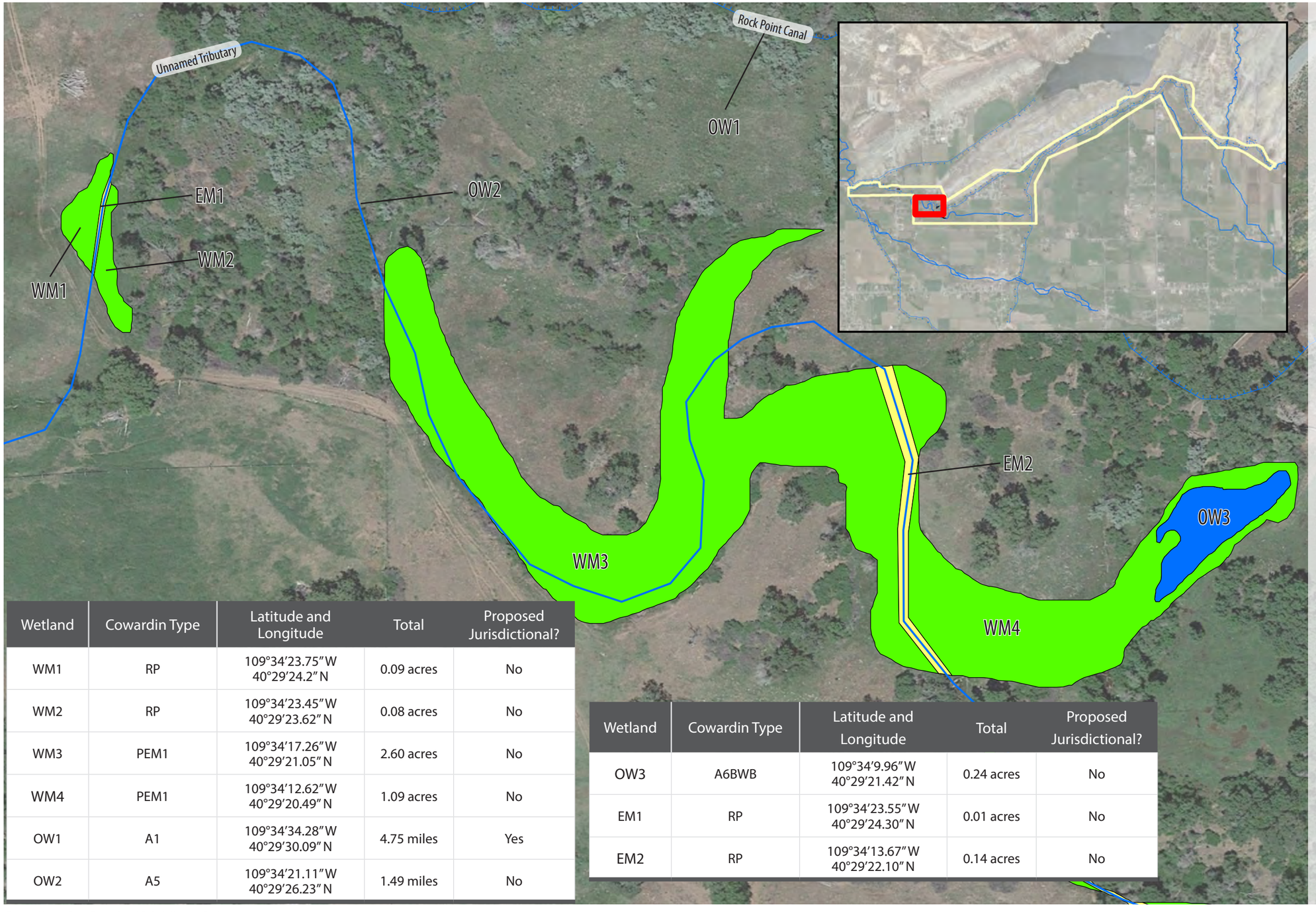
O: Open Water (0.24 acres; 42,811 linear feet or 8.11 linear miles)

0 200 400

Feet

N

Project Name: Rock Point Canal Rehabilitation Project
Map Author: Heather Boekweg
Delineator: Chuck Easton
Date of Revisions: N/A



Wetland	Cowardin Type	Latitude and Longitude	Total	Proposed Jurisdictional?
WM1	RP	109°34'23.75"W 40°29'24.2" N	0.09 acres	No
WM2	RP	109°34'23.45"W 40°29'23.62" N	0.08 acres	No
WM3	PEM1	109°34'17.26"W 40°29'21.05" N	2.60 acres	No
WM4	PEM1	109°34'12.62"W 40°29'20.49" N	1.09 acres	No
OW1	A1	109°34'34.28"W 40°29'30.09" N	4.75 miles	Yes
OW2	A5	109°34'21.11"W 40°29'26.23" N	1.49 miles	No

Wetland	Cowardin Type	Latitude and Longitude	Total	Proposed Jurisdictional?
OW3	A6BWB	109°34'9.96"W 40°29'21.42" N	0.24 acres	No
EM1	RP	109°34'23.55"W 40°29'24.30" N	0.01 acres	No
EM2	RP	109°34'13.67"W 40°29'22.10" N	0.14 acres	No

Figure B2:
Waters of the United States
Inset 1

2016 Google Imagery

Project Area

Tributary/Stream

Canal

Open Water

Classification

Palustrine Emergent Wetland: Emergent Marsh (Proposed Non-Jurisdictional)

Palustrine Emergent Wetland: Wet Meadow (Proposed Non-Jurisdictional)

Wetland Areas within Inset 2

Total Waters of the US (4.25 acres; 6.24 linear miles)

EM: Emergent Marsh (0.15 acres)

WM: Wet Meadow (3.86 acres)

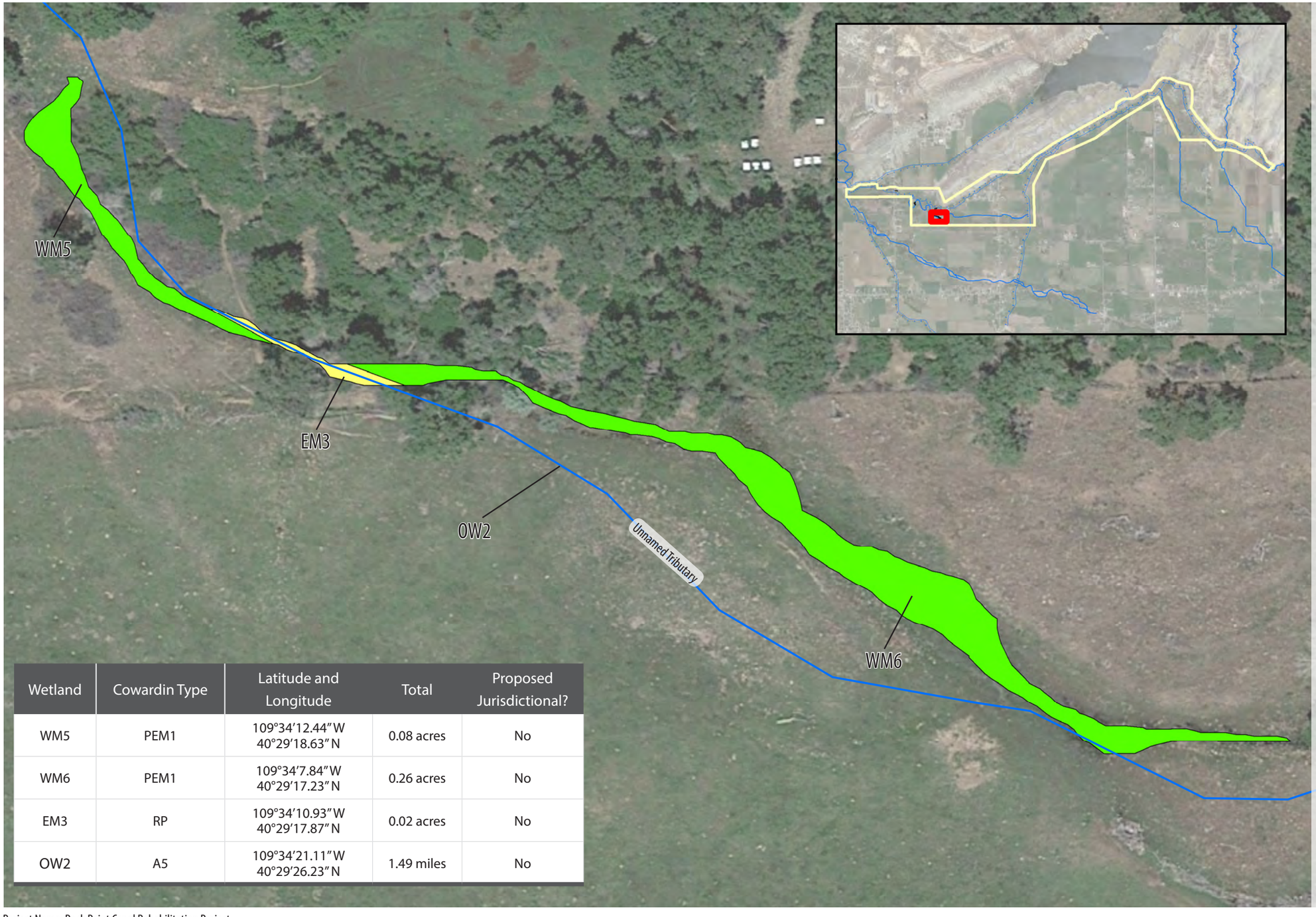
OW: Open Water (0.24 acres, 6.24 linear miles)

0 80 160

Feet

N

Project Name: Rock Point Canal Rehabilitation Project
Map Author: Heather Boekweg
Delineator: Chuck Easton
Date of Revisions: N/A



Wetland	Cowardin Type	Latitude and Longitude	Total	Proposed Jurisdictional?
WM5	PEM1	109°34'12.44"W 40°29'18.63"N	0.08 acres	No
WM6	PEM1	109°34'7.84"W 40°29'17.23"N	0.26 acres	No
EM3	RP	109°34'10.93"W 40°29'17.87"N	0.02 acres	No
OW2	A5	109°34'21.11"W 40°29'26.23"N	1.49 miles	No

Figure B3:
Waters of the United States
Inset 2

2016 Google Imagery

Project Area

Tributary/Stream

Canal

Open Water

Classification

Palustrine Emergent Wetland:
Emergent Marsh
(Proposed Non-Jurisdictional)

Palustrine Emergent Wetland:
Wet Meadow
(Proposed Non-Jurisdictional)

Wetland Areas within Inset 3

Total Waters of the US
(0.36 acres; 1.49 linear miles)

EM: Emergent Marsh
(0.02 acres)

WM: Wet Meadow
(0.34 acres)

OW: Open Water
(1.49 linear miles)

0 40 80
Feet

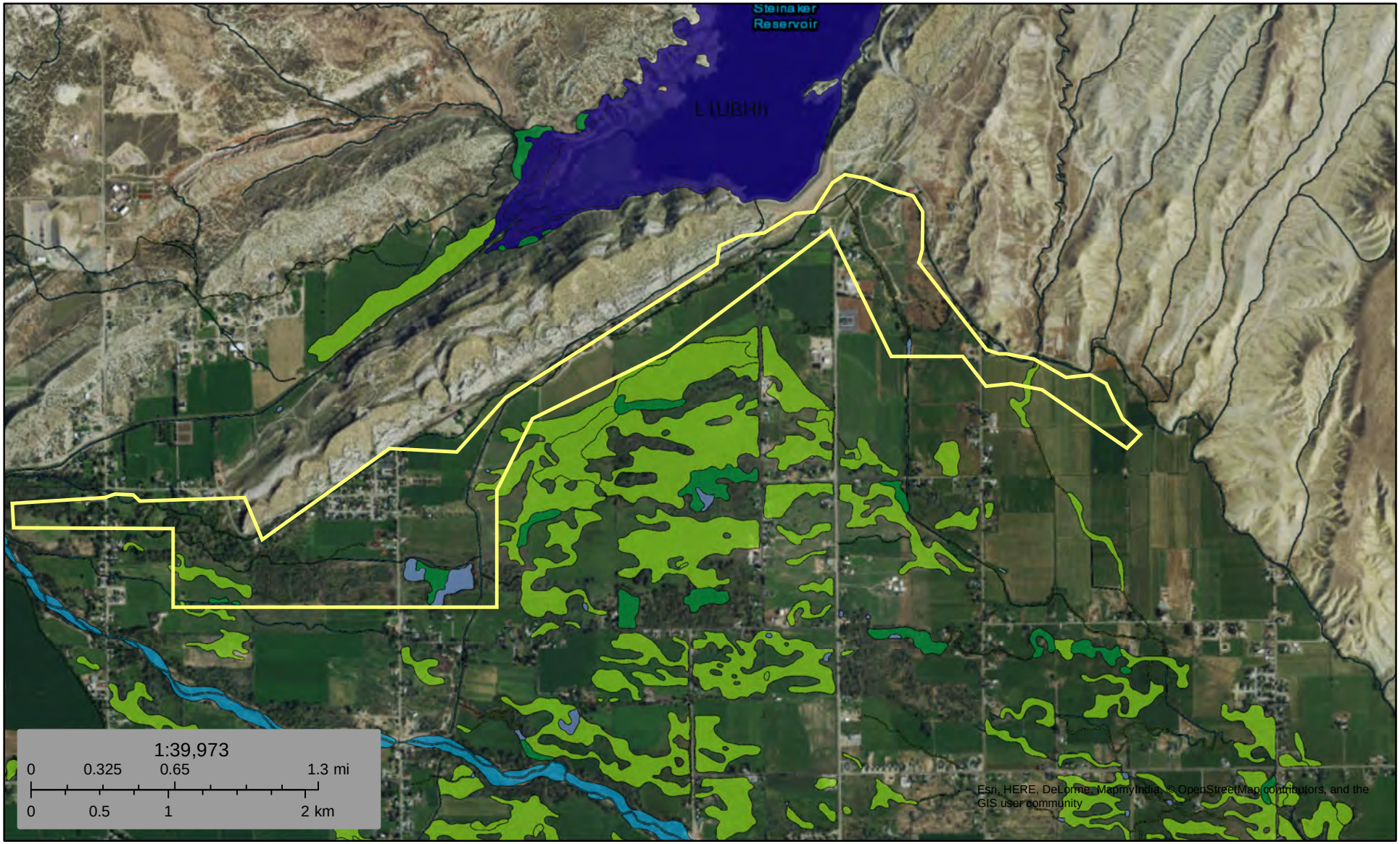
N

Project Name: Rock Point Canal Rehabilitation Project
Map Author: Heather Boekweg
Delineator: Chuck Easton
Date of Revisions: N/A

U.S. Fish and Wildlife Service

National Wetlands Inventory

Figure B4: NWI Wetland Map for the Study Area



October 19, 2016

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

C

Waters of the United States Report Appendix:

Soil Sampling Point Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Rock Point Canal Rehabilitation Project City/County: Vernal/Uintah county Sampling Date: 8/26/2016

Applicant/Owner: Rock Point Canal Compnay (Applicant) State: UT Sampling Point: 1

Investigator(s): Chuck Easton Section, Township, Range: Section 9, Township 4 South, Range 1 East

Landform (hillslope, terrace, etc.): Flat Land Local relief (concave, convex, none): None Slope (%): 0-5%

Subregion (LRR): - Lat: 40°29'30.53" N Long: 109°34'34.62" W Datum: 12T

Soil Map Unit Name: Uintah Area, Utah - Parts of Daggett, Grand and Uintah Counties NWI classification: PEM1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Baltic rush	50	Yes	FACW
2. Pascopyrum smithii	50	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 50	x 2 = 100
FAC species 50	x 3 = 150
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: 100 (A)	250 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-18	2.5 Y 3/2	100					Sandy	Possibly Roadway Fill

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

No hydric indicators, nor organic material present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Rock Point Canal Rehabilitation Project City/County: Vernal/Uintah County Sampling Date: 8/26/2016

Applicant/Owner: Rock Point Canal Compnay (Applicant) State: UT Sampling Point: 2

Investigator(s): Chuck Easton Section, Township, Range: Section 9, Township 4 South, Range 1 East

Landform (hillslope, terrace, etc.): Flat Land Local relief (concave, convex, none): None Slope (%): 0-5%

Subregion (LRR): - Lat: 40°29'30.45" N Long: 109°34'34.94" W Datum: 12T

Soil Map Unit Name: Uintah Area, Utah - Parts of Daggett, Grand and Uintah Counties NWI classification: PEM1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____ No ✓	
Wetland Hydrology Present?	Yes _____ No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Baltic rush	75	Yes	FACW
2. Pascopyrum smithii	25	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 75% (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 75	x 2 = 150
FAC species 25	x 3 = 75
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: 100 (A)	225 (B)

Prevalence Index = B/A = 2.25

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2.5	2.5 Y 3/1	100					Sandy	
2.5-18	2.5 Y 4/1	100					Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Top 2 inches were organic material.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Rock Point Canal Rehabilitation Project City/County: Vernal/Uintah County Sampling Date: 8/26/2016

Applicant/Owner: Rock Point Canal Compnay (Applicant) State: UT Sampling Point: 3

Investigator(s): Chuck Easton Section, Township, Range: Section 9, Township 4 South, Range 1 East

Landform (hillslope, terrace, etc.): Flat Land Local relief (concave, convex, none): None Slope (%): 0-5%

Subregion (LRR): - Lat: 40°29'24.16" N Long: 109°34'24.17" W Datum: 12T

Soil Map Unit Name: Uintah Area, Utah - Parts of Daggett, Grand and Uintah Counties NWI classification: PEM1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Digitaria ischaemum	50	Yes	FACU
2. Melilotus officinalis	50	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species 100	x 4 =	400
UPL species	x 5 =	
Column Totals: 100 (A)		400 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	10 YR 3/1	100					Sandy	
3-8	10 YR 3/2	100					Sandy	Gritty soil
9-18	10 YR 4/3	100					Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Top 3 inches were organic material.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Rock Point Canal Rehabilitation Project City/County: Vernal/Uintah County Sampling Date: 8/26/2016

Applicant/Owner: Rock Point Canal Compnay (Applicant) State: UT Sampling Point: 4

Investigator(s): Chuck Easton Section, Township, Range: Section 9, Township 4 South, Range 1 East

Landform (hillslope, terrace, etc.): Flat Land Local relief (concave, convex, none): None Slope (%): 1.5%

Subregion (LRR): - Lat: 40°29'24.21" N Long: 109°34'23.65" W Datum: 12T

Soil Map Unit Name: Uintah Area, Utah - Parts of Daggett, Grand and Uintah Counties NWI classification: PEM1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Digitaria ischaemum	25	No	FACU
2. Melilotus officinalis	25	No	FACU
3. Baltic rush	50	Yes	FACW
4.			
5.			
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 50% (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 50	x 2 = 100
FAC species _____	x 3 = _____
FACU species 50	x 4 = 200
UPL species _____	x 5 = _____
Column Totals: 100 (A)	300 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10 YR 3/2	100					Greasy	Organic soils present
5-13	10 YR 4/3	100					Greasy	
14-18	10 YR 3/3	100					Greasy	Water Table

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ✓ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ✓ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ✓ No ___ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Rock Point Canal Rehabilitation Project City/County: Vernal/Uintah County Sampling Date: 8/26/2016

Applicant/Owner: Rock Point Canal Compnay (Applicant) State: UT Sampling Point: 5

Investigator(s): Chuck Easton Section, Township, Range: Section 9, Township 4 South, Range 1 East

Landform (hillslope, terrace, etc.): Flat Land Local relief (concave, convex, none): None Slope (%): 0-5%

Subregion (LRR): - Lat: 40°29'17.36" N Long: 109°34'07.74" W Datum: 12T

Soil Map Unit Name: Uintah Area, Utah - Parts of Daggett, Grand and Uintah Counties NWI classification: PEM1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Unknown Grasses	40	-	-
2. Typha angustifolia	20	No	OBL
3. Baltic rush	30	Yes	FACW
4. Melilotus officinalis	10	No	FACU
5.			
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 30% (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 30% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	30	x 2 =	60
FAC species		x 3 =	
FACU species	10	x 4 =	40
UPL species		x 5 =	
Column Totals:	100 (A)		120 (B)

Prevalence Index = B/A = 1.2

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10 YR 3/2	100					Greasy	Organic soils present

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ✓ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Bed Rock

Depth (inches): 9-16 inches

Hydric Soil Present? Yes ✓ **No** ___

Remarks:

Very dark soils, rocky below 8 inches. Large rocks, can't dig below water on roots.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ___ **No** ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Water table would probably be present at 18 inches, but due to rocks, unable to verify.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Rock Point Canal Rehabilitation Project City/County: Vernal/Uintah County Sampling Date: 8/26/2016

Applicant/Owner: Rock Point Canal Compnay (Applicant) State: UT Sampling Point: 6

Investigator(s): Chuck Easton Section, Township, Range: Section 9, Township 4 South, Range 1 East

Landform (hillslope, terrace, etc.): Flat Land Local relief (concave, convex, none): None Slope (%): 0-5%

Subregion (LRR): - Lat: 40°29'17.32" N Long: 109°34'08.04" W Datum: 12T

Soil Map Unit Name: Uintah Area, Utah - Parts of Daggett, Grand and Uintah Counties NWI classification: PEM1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Typha angustifolia	25	No	OBL
2. Baltic rush	60	Yes	FACW
3. Melilotus officinalis	5	No	FACU
4.			
5.			
6.			
7.			
8.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 60% (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 25	x 1 = 25
FACW species 60	x 2 = 120
FAC species _____	x 3 = _____
FACU species 5	x 4 = 20
UPL species _____	x 5 = _____
Column Totals: 100 (A)	165 (B)

Prevalence Index = B/A = 1.65

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	2.5 YR 4/1	100					Greasy	Organic soils present
4-12	2.5 YR 4/2	100					Greasy	Water Table
12-18	2.5 YR 3/2	1--					Greasy	Water Table

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Bed Rock

Depth (inches): 9-16 inches

Hydric Soil Present? Yes ✓ **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): ___

Water Table Present? Yes ✓ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): ___

Wetland Hydrology Present? Yes ✓ **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

D

Waters of the United States Report Appendix:

Ordinary High Water Mark Forms

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Rock Point Canal Rehabilitation Project
Project Number: -
Stream: Ashley Creek
Investigator(s): Chuck Easton
Date: October 28, 201[illegible]
Town: Vernal
Photo begin file#:
Time:
State: Utah
Photo end file#:

Y ■ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ■ Is the site significantly disturbed?

Location Details:
Vernal, Utah

Projection: **Datum:**
Coordinates: 109°35'10" W 40°29'28" N

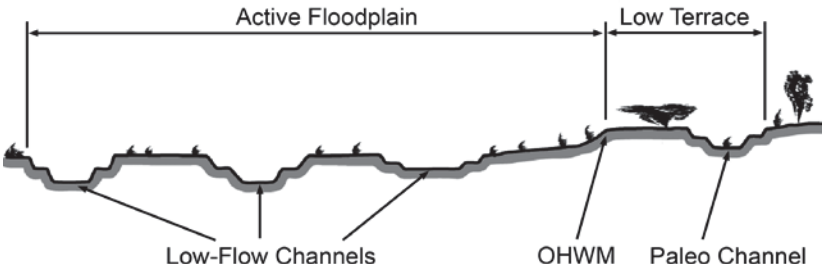
Potential anthropogenic influences on the channel system:
Erosion and agricultural use.

Brief site description:
Surplus waters from the creek are distributed through a feeder canal into the Steinaker Reservoir. The rest of the water is fed into municipal pipelines to the communities of Vernal, Naples, and Maeser, Utah.

Checklist of resources (if available):

- ■ Aerial photography
  Dates:
- ■ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ■ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ■ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ■ Mapping on aerial photograph
   - ■ Digitized on computer
   - ■ GPS
   - ☐ Other:

Project ID: **Cross section ID:** **Date:** **Time:**

Cross section drawing:

Refer to the attachment "Ashley Creek".

OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☒ Change in vegetation species
- ☐ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: 30 % Tree: _____% Shrub: _____% Herb: 100 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☒ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Rock Point Canal Rehabilitation Project
Project Number: -
Stream: Unnamed Tributary 5
Investigator(s): Chuck Easton
Date: October 28, 201[illegible] **Time:**
Town: Vernal **State:** Utah
Photo begin file#: **Photo end file#:**

Y ■ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ■ Is the site significantly disturbed?

Location Details:
Vernal, Utah

Projection: **Datum:**
Coordinates: 109°33'44" W 40°29'18" N

Potential anthropogenic influences on the channel system:
Erosion and agricultural use.

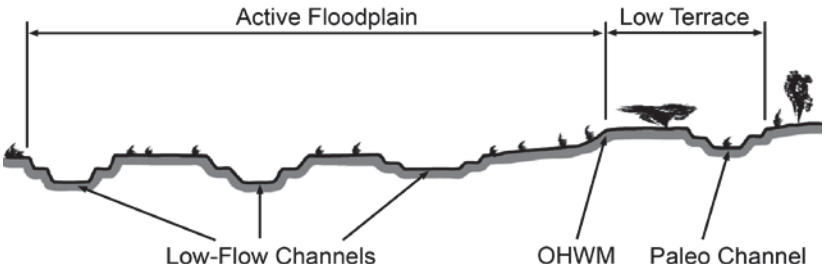
Brief site description:
Unnamed tributary from Rock Point Canal.

Checklist of resources (if available):

- ■ Aerial photography
  Dates:
- ■ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ■ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ■ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ■ Mapping on aerial photograph
   - ■ Digitized on computer
   - ■ GPS
   - ☐ Other:

Project ID: **Cross section ID:** **Date:** **Time:**

Cross section drawing:

Refer to the attachment "Unnamed Tributary (5)".

OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

No sign of water at time of survey.

Floodplain unit:

☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: 10 % Tree: _____% Shrub: _____% Herb: 100 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☒ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Rock Point Canal Rehabilitation Project
Project Number: -
Stream: Rock Point Canal
Investigator(s): Chuck Easton

Date: October 28, 201[illegible] **Time:**
Town: Vernal **State:** Utah
Photo begin file#: **Photo end file#:**

Y ■ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ■ Is the site significantly disturbed?

Location Details:
Vernal, Utah

Projection: **Datum:**
Coordinates: 109°33'44" W 40°29'18" N

Potential anthropogenic influences on the channel system:
Erosion and agricultural use.

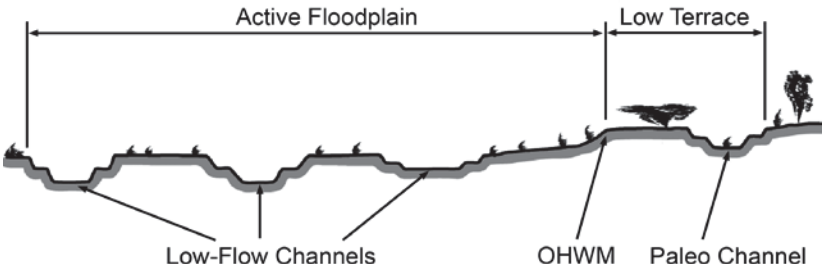
Brief site description:
Rock Point Canal diverts water from Ashley Creek to serve lands both east and west of the Steinaker Service Canal along the northern edge of Ashley Valley. The canal is about 8.7 miles in length with the upper approximately 5.9 miles unlined and the lower approximately 2.8 miles piped.

Checklist of resources (if available):

- ■ Aerial photography
  Dates:
- ■ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ■ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ■ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ■ Mapping on aerial photograph
   - ■ Digitized on computer
   - ■ GPS
   - ☐ Other:

Project ID: **Cross section ID:** **Date:** **Time:**

Cross section drawing:

Refer to the attachment "Rock Point Canal (6)".

OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ■ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: 10 % Tree: _____% Shrub: _____% Herb: 100 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ■ Mid (herbaceous, shrubs, saplings)
- ■ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ■ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Rock Point Canal Rehabilitation Project
Project Number: -
Stream: Steinaker Service Canal
Investigator(s): Chuck Easton
Date: October 28, 201[illegible] **Time:**
Town: Vernal **State:** Utah
Photo begin file#: **Photo end file#:**

Y ■ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ■ Is the site significantly disturbed?

Location Details:
Vernal, Utah

Projection: **Datum:**
Coordinates: 109°33'08" W 40°29'17" N

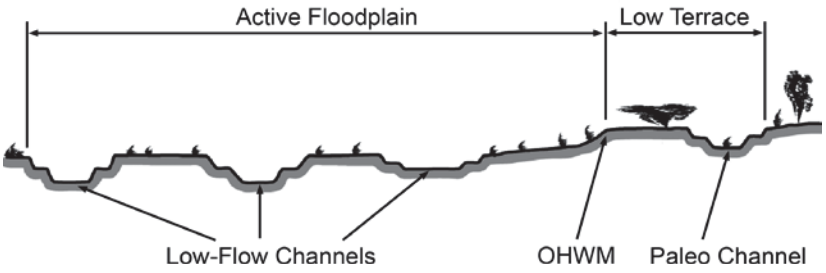
Potential anthropogenic influences on the channel system:
Erosion and agricultural use.

Brief site description:
The Steinaker Service Canal is a clay-lined channel that was initially constructed in 1961. It is approximately 60,100 feet long (11.38 miles) and runs from the spillway of Steinaker Reservoir some 12 miles south. The canal is shaped in a "U."

Checklist of resources (if available):

- ■ Aerial photography
  Dates:
- ■ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ■ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ■ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ■ Mapping on aerial photograph
   - ■ Digitized on computer
   - ■ GPS
   - ☐ Other:

Project ID: **Cross section ID:** **Date:** **Time:**

Cross section drawing:

Refer to the attachment "Steinaker Service Canal (7)".

OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

The canal is lined.

Floodplain unit: ■ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: 30 % Tree: _____% Shrub: _____% Herb: 100 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ■ Mid (herbaceous, shrubs, saplings)
- ■ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ■ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Rock Point Canal Rehabilitation Project
Project Number: -
Stream: Unnamed Tributary
Investigator(s): Chuck Easton
Date: October 28, 201[illegible] **Time:**
Town: Vernal **State:** Utah
Photo begin file#: **Photo end file#:**

Y ■ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ■ Is the site significantly disturbed?

Location Details:
Vernal, Utah

Projection: **Datum:**
Coordinates: 109°31'33" W 40°039'08" N

Potential anthropogenic influences on the channel system:
Erosion and agricultural use.

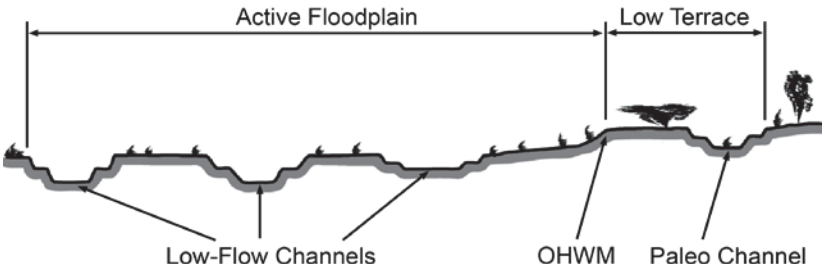
Brief site description:
This is an unnamed tributary from Rock Point Canal, and connects to a tributary that comes from the Uintah Mountains.

Checklist of resources (if available):

- ■ Aerial photography
  Dates:
- ■ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ■ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ■ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ■ Mapping on aerial photograph
   - ■ Digitized on computer
   - ■ GPS
   - ☐ Other:

Project ID: **Cross section ID:** **Date:** **Time:**

Cross section drawing:

Refer to the attachment "Unnamed Tributary (8)".

OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ■ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: 70 % Tree: 5 % Shrub: 15 % Herb: 80 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ■ Mid (herbaceous, shrubs, saplings)
- ■ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ■ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Rock Point Canal Rehabilitation Project
Project Number: -
Stream: Unnamed Tributary
Investigator(s): Chuck Easton
Date: October 28, 201[illegible] **Time:**
Town: Vernal **State:** Utah
Photo begin file#: **Photo end file#:**

Y ■ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ■ Is the site significantly disturbed?

Location Details:
Vernal, Utah

Projection: **Datum:**
Coordinates: 109°31'24"W, 40°30'17" N

Potential anthropogenic influences on the channel system:
Erosion and agricultural use.

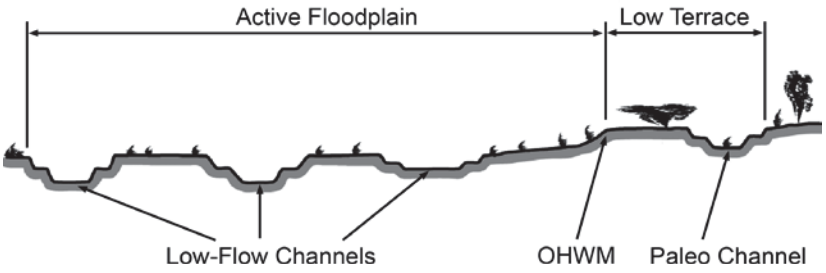
Brief site description:
This is an unnamed tributary from the Uintah Mountains. The tributary connects to Rock Point Canal and eventually another tributary from Rock Point Canal.

Checklist of resources (if available):

- ■ Aerial photography
  Dates:
- ■ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ■ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ■ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ■ Mapping on aerial photograph
   - ■ Digitized on computer
   - ■ GPS
   - ☐ Other:

Project ID: **Cross section ID:** **Date:** **Time:**

Cross section drawing:

Refer to the attachment "Unnamed Tributary (9)".

OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ■ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: 50 % Tree: 0 % Shrub: 20 % Herb: 80 %

Community successional stage:

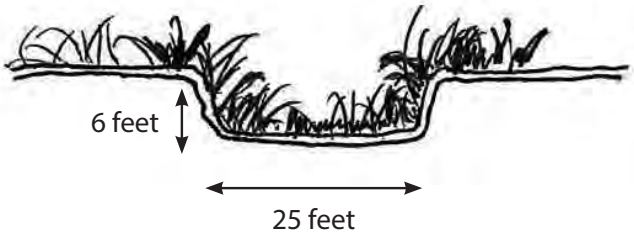
- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ■ Mid (herbaceous, shrubs, saplings)
- ■ Late (herbaceous, shrubs, mature trees)

Indicators:

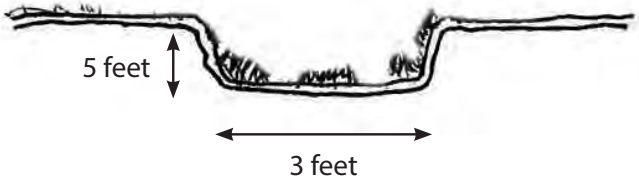
- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ■ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

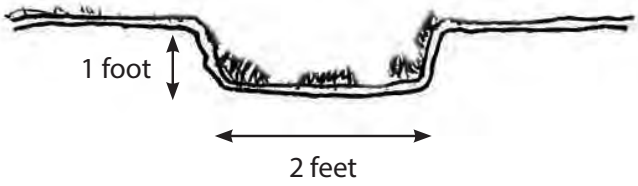
Ashley Creek



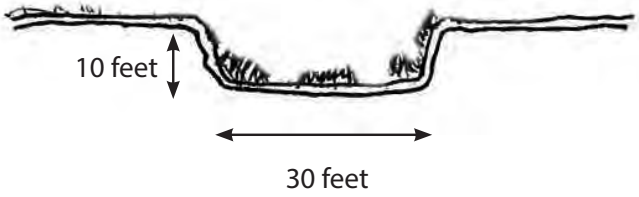
Unnamed Tributary (5)



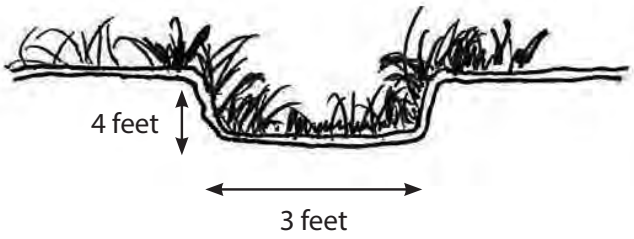
Rock Point Canal



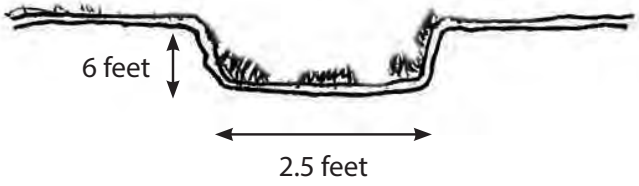
Steinaker Service Canal (7)



Unnamed Tributary (8)



Unnamed Tributary (9)

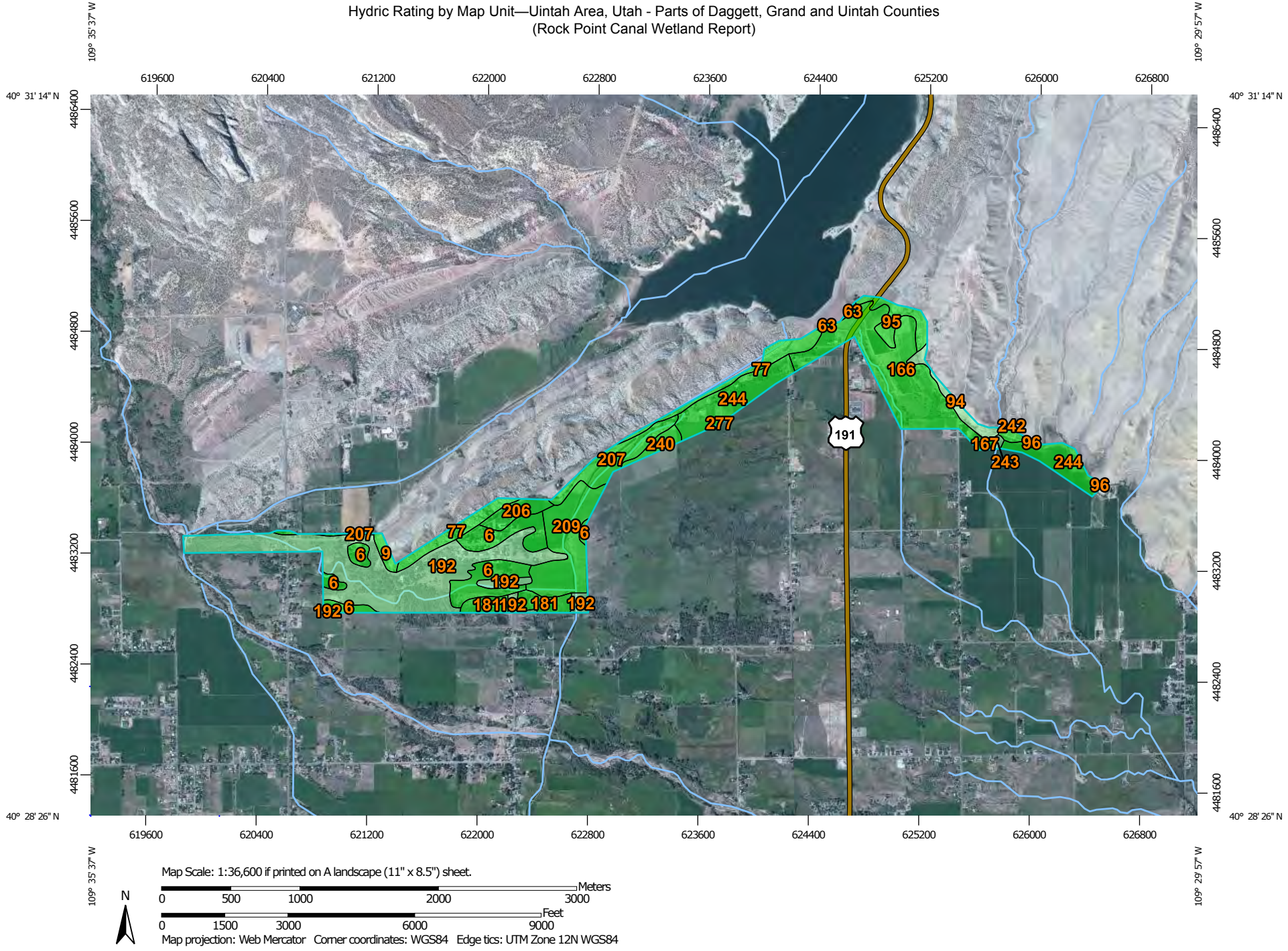


E

Waters of the United States Report Appendix:

Custom Soils Report

Hydric Rating by Map Unit—Uintah Area, Utah - Parts of Daggett, Grand and Uintah Counties
(Rock Point Canal Wetland Report)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Uintah Area, Utah - Parts of Daggett, Grand and Uintah Counties
Survey Area Data: Version 10, Sep 22, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 27, 2010—Sep 7, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydric Rating by Map Unit

Hydric Rating by Map Unit— Summary by Map Unit — Uintah Area, Utah - Parts of Daggett, Grand and Uintah Counties (UT047)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
6	Ashley loam, 0 to 2 percent slopes	0	65.3	10.5%
9	Badland-Montwel complex, 50 to 90 percent slopes	0	5.5	0.9%
63	Dams	0	1.5	0.2%
77	Gerst-Rock outcrop complex, 4 to 40 percent slopes	0	37.6	6.1%
94	Greybull-Utaline-Badland complex, 8 to 50 percent slopes	3	12.5	2.0%
95	Hanksville silty clay loam, 2 to 25 percent slopes	0	17.9	2.9%
96	Hanksville silty clay loam, 25 to 50 percent slopes	0	1.8	0.3%
166	Ohtog-Parohtog complex, 0 to 2 percent slopes	0	104.3	16.8%
167	Ohtog-Parohtog complex, 2 to 4 percent slopes	0	2.3	0.4%
181	Pits, gravel	0	21.2	3.4%
192	Robido-Uver complex, 1 to 4 percent slopes	6	166.3	26.8%
206	Shotnick sandy loam, 2 to 4 percent slopes	0	13.7	2.2%
207	Shotnick sandy loam, 4 to 8 percent slopes	0	31.4	5.1%
209	Shotnick-Walkup complex, 0 to 2 percent slopes	0	59.7	9.6%
240	Turzo clay loam, 4 to 8 percent slopes	0	8.6	1.4%
242	Turzo loam, 0 to 4 percent slopes	0	3.2	0.5%
243	Turzo-Umbo complex, 0 to 2 percent slopes	4	1.5	0.2%
244	Turzo-Umbo complex, 2 to 4 percent slopes	0	67.0	10.8%

Hydric Rating by Map Unit— Summary by Map Unit — Uintah Area, Utah - Parts of Daggett, Grand and Uintah Counties (UT047)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
277	Wyasket peat, 0 to 2 percent slopes, ponded	85	0.0	0.0%
Totals for Area of Interest			**621.3**	**100.0%**

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

F

Rock Point Rehabilitation Project
Environmental Assessment

Habitat Replacement Plan

Habitat Replacement Plan for

Rock Point Canal Rehabilitation Project

Vernal, Utah

Submitted to
David Snyder
United States Bureau of Reclamation
Provo Area Office
302 East 1860 South
Provo, Utah 84606

Submitted by
Jared Bigler
CRS Engineers
2028 W 500 N
Vernal, Utah 84078

July 6, 2017

CRS ENGINEERS

Contents

List of Figures

1.0 Introduction

The United States Bureau of Reclamation (Reclamation) has programmed the use of Federal funds, under the Colorado River Basin Salinity Control Program, to allow Rock Point Canal and Irrigation Company (RPCIC) to convert approximately 8.7 miles of open, unlined canal to approximately 6.3 miles of polyvinyl chloride (PVC) and high density polyethylene (HDPE) piping. The existing canal would remain in place. Reclamation estimates that this project will reduce the salinity load of the Colorado Basin by 740 tons annually. RPCIC estimates that it will save roughly 2,045 acre-feet of water per year by converting the canal to a pressurized, piped system, eliminating losses due to evaporation and seepage.

RPCIC commissioned this report, to detail the development of a Habitat Replacement Plan (HRP) for the Rock Point Canal Rehabilitation project located in Uintah County, Utah. Reclamation requires the development of a HRP under the Salinity Control Program, in accordance with Public Law 98-569.

Reclamation requires that riparian and wetland habitat areas that will be lost or impacted due to the project be assessed according to the methods outlined in the Basinwide Salinity Control Program: Procedures for Habitat Replacement (Reclamation 2013). The goal of the HRP is to meet, or exceed the initial Total Habitat Value (THV) by preserving, enhancing, and/or developing existing or proposed habitat areas. The purpose of this report is to detail the specific measures that will be taken to preserve and enhance habitat. This will give the applicable regulatory bodies the information they need to make an informed decision regarding the viability of the HRP.

2.0 Existing Habitat

During a site visit on June 2, 2017, five habitat types were observed in the project area. The western extent of both the proposed pipeline alignment and the existing canal is covered by a canopy of moderately dense riparian woodland (Figure B1). The riparian woodland habitat is dominated by Fremont cottonwood (*Populus deltoides* var. *fremontii*) with Russian olive (*Elaeagnus angustifolia*) occurring as a sub-dominant. Other common shrubs present in this habitat include skunkbush (*Rhus aromatica*), basin big sagebrush (*Artemisia tridentata* ssp. *tridentata*), rabbitbrush (*Chrisothamnus* sp.), and willows (*Salix* sp.). To the east of 2500 West wet meadow habitat is present along both the existing canal and along an unnamed tributary (Figures B2 and B3). Dominant plant species in the wet meadow habitat include: kochia weed (*Bassia scoparia*), tall fescue (*Festuca arundinacea*), Canada goldenrod (*Solidago canadensis*), curly dock (*Rumex crispus*), smooth scouringrush (*Equisetum laevigatum*), rush (*Juncus* spp.), and milkweed (*Asclepias labriformis*). There are sections of sparse shrub habitat dominated by basin big sagebrush and/or greasewood (*Sarcobatus vermiculatus*) in the vicinity of State Highway 191 and in the eastern portion of the study area (Figure B4). In addition to these habitats, there are sections of residential land dominated by ornamental and landscaped plants and agricultural/ pasture land dominated by cultivated crops or pasture grasses present throughout the project area (Figures B5 and B6).

3.0 Habitat Preservation

RPCIC will implement measures to ensure no net loss of wildlife habitat as a result of the project. The primary method that will be used to achieve this objective will be to preserve the existing habitat. The proposed project is not expected to have permanent impacts to wildlife habitat. The majority of the riparian woodland habitat at the western end of the project area receives water from a spring/seep near the existing Rock Point Canal (Figure 1). This spring/seep also delivers water into the existing Rock Point Canal. It appears that most of this water originates from the nearby Steinaker Feeder Canal (Figure 1). The spring/seep and Steinaker Feeder Canal are expected to remain in place and will be unaffected by the project.

The existing canal will remain in place after the pipeline is constructed and water is diverted from the canal. As a result, the canal would no longer carry water sufficient to sustain riparian and wetland vegetation along the canal. In order to preserve riparian and wetland vegetation along the canal, the proposed pipeline has been designed with 11 discharge points spaced along the pipeline that will supply water to the existing canal and provide the moisture needed to sustain the vegetation along the canal (Figure 1).

Construction of the proposed buried pipeline will cause temporary impacts to wildlife habitat. Impacts to wet meadow habitat east of 2500 West will be avoided to the maximum extent feasible. Disturbance to existing trees and woody vegetation will be avoided to the maximum extent feasible. Where feasible, the proposed pipeline right-of-way (ROW) will be contained within the existing canal access roads. Existing riparian and wetland habitat will either be maintained on-site or restored following construction.

3.1 Dedicated Water Supply

It has been determined that maintaining the existing Rock Point Canal is in the interest of Uintah County for the purpose of controlling and limiting damage to property from flooding. As a result, RPCIC has entered into an agreement with Uintah County to turn over management of the existing canal (Appendix A). Uintah County has agreed to maintain existing trees and woody shrubs along the canal by using the canal to water the vegetation after irrigation water is diverted to the pipeline. The 11 discharge points on the proposed pipeline along with the existing spring/seep will enable water to be released into the existing canal to maintain riparian woodland and wet meadow habitat along the canal.

Canal Flow Calculations for Habitat Maintenance

CRS Engineers performed an evaluation of the spacing of the proposed discharge locations on the canal. The goal of the analysis was to evaluate if the proposed discharge locations are spaced close enough together that, when water is released at the upstream location, there would be enough flow to saturate the soils to the next discharge point downstream without causing deep percolation which transports salinity through the soil. The following is a summary of the analysis performed and the results of that analysis.

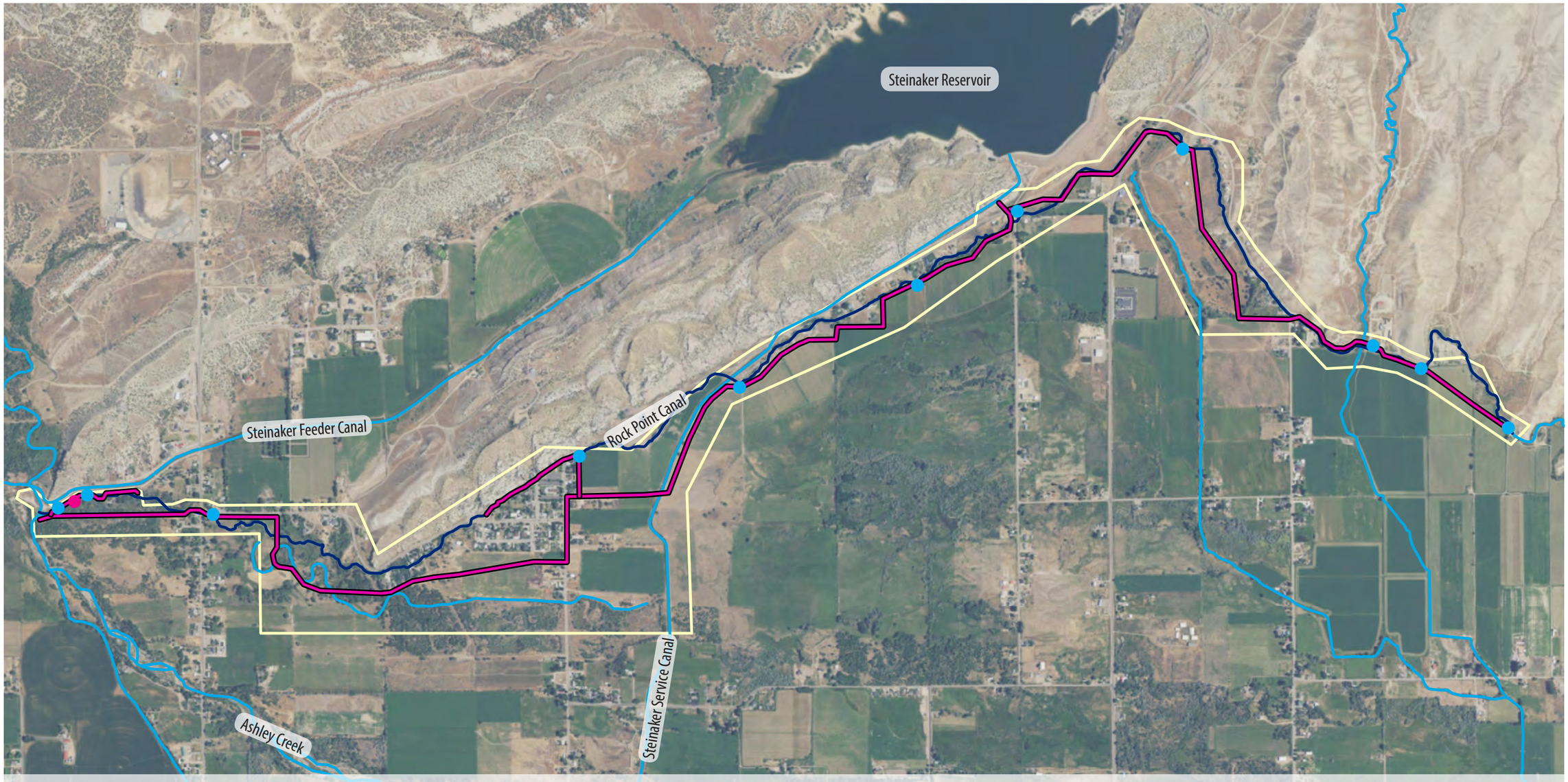


Figure 1.
Project Area and Project Details

2016 Google Imagery

First, the canal alignment was mapped and divided into sections based on the proposed location of the pipeline discharge points and the spring/seep that feeds into the canal. Then each section was evaluated based on section length and slope to determine which section would be the critical section, meaning the section that would require the most water to ensure water added at the upstream discharge would reach the end of the section. From this analysis, it was determined that the canal section between the discharge just east of Highway 191 and the discharge located just west of 500 East (approximately 3,658 feet) was the critical section.

Once the critical section was selected, calculations were performed to determine the time necessary for one cubic foot of water per second (cfs) to travel from the upstream to the downstream discharge point. The slope of this section was approximated at 1 percent, but 0.5 percent was used in the analysis since it would be more conservative. It was determined that velocity of the water in the section would be 0.98 feet per second and would take approximately one hour to traverse the length of the section.

A subsequent evaluation was performed to determine if one cfs of water would be enough to ensure that the water added at the upstream discharge would reach the end of the section. Based on the channel cross section and the flow, the wetted perimeter of the canal was determined to be 3.75 feet. Multiplying the wetted perimeter by the total length of 3,658 feet yields a total percolation area of 13,717 square feet. Assuming a very high percolation rate of 2 inches per hour (typical percolation rates for the area are between 0.75 and 1 inch per hour) and applying it to over the entire wetted area of 13,717 square feet, yields a percolation flow of 0.16 cfs.

These results indicate that with percolation losses accounted for, one cfs of water released into the canal would be capable of flowing from the upstream discharge point to the downstream point. It is important to note, that the likely flow from the pipeline discharge points will be between 4 and 5 cfs.

Canal Flow Frequency and Duration for Habitat Maintenance

To ensure maintenance of trees and shrubs along the canal, the canal will be irrigated monthly from June through September for a duration of one hour. As stated above, it is expected that it would take approximately one hour for the entire canal to become saturated when releasing at a rate of one cfs. Releasing water at between 4 and 5 cfs will ensure that there is sufficient water to percolate to deeply rooted trees adjacent to the canal. It is anticipated that snow melt and other precipitation during the rest of the year will provide sufficient moisture for plant persistence during the other months of the year. If tree and shrub mortality is observed, then the frequency of flow (not the duration) will be increased as needed.

3.2 Restoration of Native Vegetation

To enhance wildlife habitat, invasive plant species, such as Russian olive, that occur within 50 feet of the proposed pipeline ROW will be removed, while the pipeline alignment will be shifted slightly in some locations to avoid impacting large native trees, such as cottonwoods. Impacts to wildlife habitat resulting from the removal of some small native trees and shrubs on the western end of the ROW is expected to be minimal due to the high number of large cottonwoods and other native plants in the immediate vicinity. Removal of invasive plants within 50 feet of the ROW is expected to offset the temporary impact to native vegetation.

Construction best management practices (BMPs) will be followed to reduce impacts to native vegetation, including staging materials outside of sensitive areas, such as streams and wetlands. Construction materials and equipment will be washed prior to entering the project area to remove dirt and seeds from weeds to reduce the spread of noxious weeds and other non-native species.

4.0 Post Construction Habitat Restoration

The pipeline will be buried and therefore result in a temporary impact to existing habitat. After surface disturbance, proper restoration procedures will be followed to prevent the infestation of noxious and invasive weeds. This will include seeding mixtures of desirable native species and agricultural grasses where appropriate, and post-construction treatment to control noxious and invasive species. Per RPCIC's easement agreement with landowners: "Topsoil shall be saved and replaced along the pipeline"...and…All land disturbed by the easement shall be returned to as good or better condition as existed prior to initial construction…"

5.0 Conclusion

RPCIC will implement measures to ensure no net loss of wildlife habitat as a result of the project. Impacts to wet meadow habitat east of 2500 West will be avoided to the maximum extent feasible. Disturbance to existing trees and woody vegetation will be avoided to the maximum extent feasible. The proposed pipeline ROW will be contained within the existing canal access roads in many places. Existing riparian woodland and wet meadow habitats will either be maintained on-site or restored following construction. Therefore CRS Engineers recommends that no habitat replacement actions are required for this project to remain in compliance with the Colorado River Basin Salinity Control Program.

6.0 Sources Cited

U.S. Bureau of Reclamation (Reclamation). March 2013. Basin-wide Salinity Control Program: Procedures for Habitat Replacement. U.S. Department of the Interior.

A Habitat Replacement Plan: Rock Point Canal Management Agreement

UINTAH COUNTY

STATE OF UTAH

Our Past is The Nation's Future

June 29, 2017

Rock Point Canal Company
44 W 100 N
Vernal, Utah 84078
Attention: Mr. Butch Kidd

Dear Mr. Kidd:

On June 15, 2017, the Uintah County Commission/Municipal Building Authority held a meeting with representatives of the Rock point Canal Company, among others. The purpose of the meeting was to discuss the status of the flood control projects which involve several irrigation canals within the Ashley Valley.

One of the purposes of the flood control projects is the conversion of the Rock Point Canal (the Canal) from primarily an irrigation canal to a canal intended to intercept and move flood water to existing natural drainages (the Project). During the course of the meeting, you posed the question as to whether the County would write a letter acknowledging the disposition of the Canal and the subsequent maintenance of the Canal itself as well as vegetation associated with the presence of the Canal.

Although the Project has not yet been approved and finalized, based on the discussions between Uintah County and the Rock Point Canal Company, Uintah County understands the arrangement would be as follows:

1. Uintah County will assume responsibility for maintaining the Canal for the purpose of collecting, transporting and dispersing storm waters.

2. The maintenance of the Canal includes the preservation of trees and shrubs along the canal to the extent that those trees and shrubs do not interfere with the structural integrity or functionality of the Canal.

3. The Rock Point Canal Company, or its successors in interest, will provide irrigation water, at no charge to Uintah County, for the purpose of irrigating the desirable vegetation along the Canal. The amount of irrigation water to be provided may be variable on an annual basis but, must be sufficient to ensure the health of the desirable vegetation along the Canal.

4. While there is no charge for the irrigation water, Uintah County will reimburse the Rock Point Canal Company, or its successors in interest, for the cost associated with irrigating the vegetation, e.g. opening and closing valves, monitoring flows, etc.

If you have any questions please contact the Uintah County Commission at 435-781-5380.

Sincerely,

William C. Stringer

Brad G. Horrocks

Duane W. Shepherd

B

Habitat Replacement Plan: Site Photographs

Figure B1: Riparian woodland habitat in the western most portion of the project area that will be temporarily impacted by the pipeline construction.

Figure B2: Wet meadow habitat just east of 2500 West that will be temporarily impacted by the pipeline construction.

Figure B3: Wet meadow habitat that will be avoided during construction (left) by aligning the pipeline in adjacent upland habitat (right).

Figure B4: Sparse shrub habitat in the project area just south of Steinaker Dam that will be temporarily impacted during the pipeline construction.

Figure B5: Residential land in the project area that will be temporarily impacted by construction.

Figure B6: Agriculture fields located in the project area that will be temporarily impacted by the pipeline construction.

G

Rock Point Rehabilitation Project
Environmental Assessment

Biological Resources

Biological Assessment for

Rock Point Canal Rehabilitation Project, Vernal, Utah

Prepared for
U.S. Department of the Interior
Bureau of Reclamation
Upper Colorado Region, Provo Area Office
302 East 1860 South
Provo, Utah 84606

Prepared by
Jared Bigler and Chuck Easton
CRS Engineers
160 South Main, Suite 200
Farmington, Utah 84025

CRS ENGINEERS

July 5, 2017

Abstract

In June 2016, the Rock Point Canal Irrigation Company contracted with CRS Engineers (CRS) to conduct a biological assessment (BA), in cooperation with the Bureau of Reclamation (Reclamation) for the Rock Point Canal Rehabilitation Project of a 620-acre study area within Vernal, Utah. The study area is located south of Steinaker Reservoir and encompasses several types of habitat and water bodies (streams, open water, tributaries, and ditches). CRS evaluated 13 Federally protected species listed under the Endangered Species Act of 1973.

CRS determined that the project would not affect black-footed ferret, bonytail chub, Colorado pikeminnow, humpback chub, razorback sucker, clay reed-mustard, shrubby reed-mustard, Uinta Basin hookless cactus, Pariette cactus, yellow-billed cuckoo, and Mexican spotted owl. With mitigation measures in place, CRS determined that the project may affect, but is not likely to adversely affect Ute ladies'-tresses.

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List of Tables

List of Figures

1.0 Introduction

The Rock Point Canal Irrigation Company, in cooperation with Reclamation, commissioned CRS to assess the proposed Rock Point Canal Rehabilitation study area for its suitability to construct a new underground canal alignment. CRS has prepared the following BA, as required by Section 7(c) of the Endangered Species Act (ESA), for this project located within Uintah County, Utah. CRS conducted a desktop review and a reconnaissance-level survey of the study area encompassing 620 acres on August 25, 2016 (see Figures 1–3).

Figure 1: Rock Point Canal and surrounding vegetation within the study area.

1.1 Study Area and Habitat Description

The 620-acre study area boundaries were generally defined by an area that would surround the disturbance area for all potential project alternatives. The study area is located north of the city of Vernal, Utah in Sections 1–5, and 8–12 of Township 4 South Range 1 East (see Figure 2). Elevations in this location range from approximately 5,200 feet and 5,600 feet (1,584 meters and 1,707 meters) above sea level. The study area slopes gradually upward toward the north and west and downward toward the south and east. A majority of soils within the study area have been disturbed through residential and rural development.

The western extent of the study area, in proximity to Ashley Creek, is the least disturbed and is mostly riparian woodland habitat dominated by a canopy of cottonwood, (*Populus deltoides*), Russian olive (*Elaeagnus angustifolia*), willows (*Salix* spp.), and Siberian elm (*Ulmus pumila*) with a ground cover of grasses and rushes (*Juncus* spp.). A shrub layer is mostly lacking in some areas likely due to grazing. Moving eastward the study area is more open pastures dominated

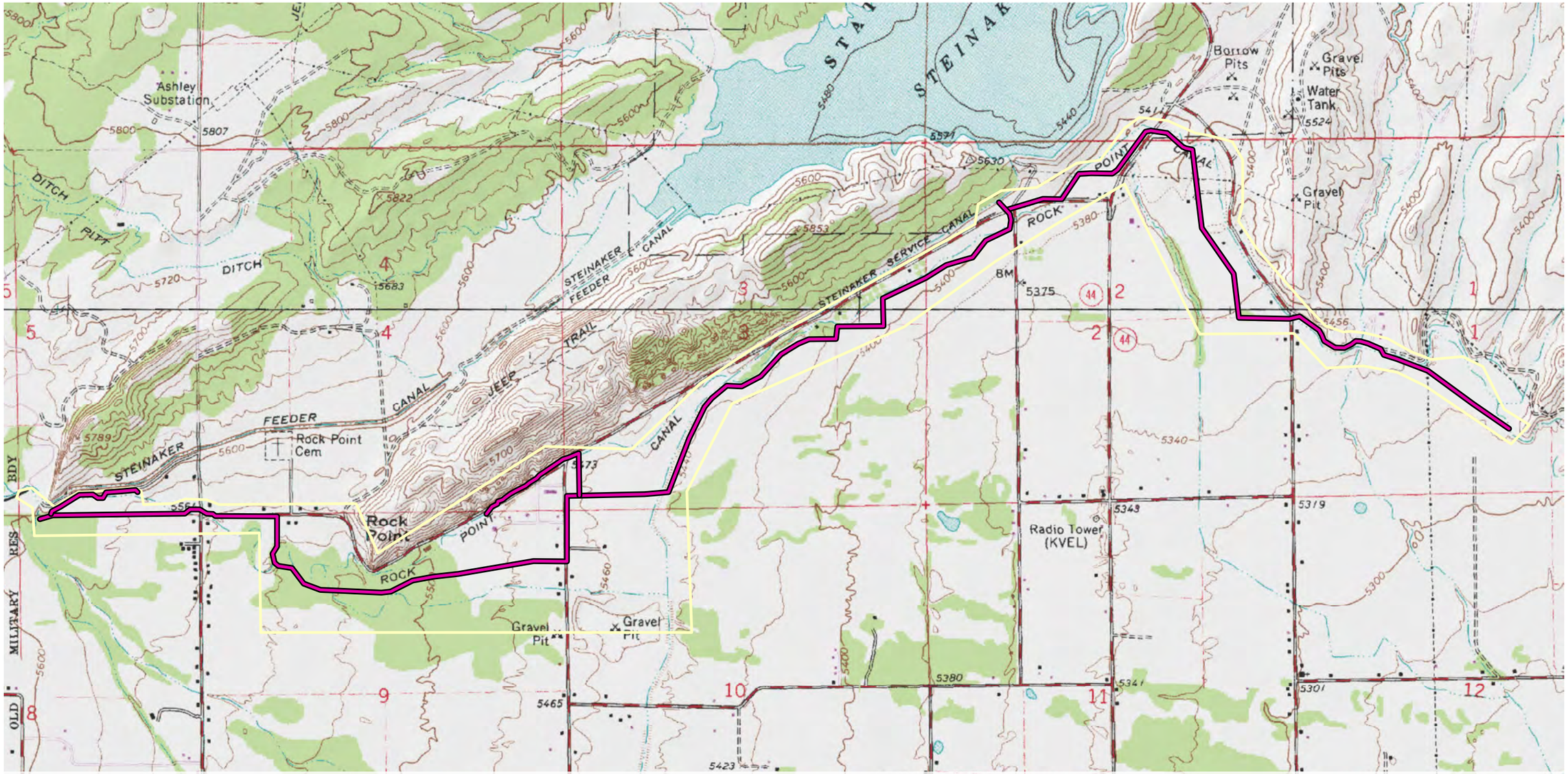


Figure 2:
Study Area on Topographic Map

(2014) 7.5 Minute, 1:24,000 Topography
Vernal Northeast

Study Area

Project Area/Proposed Pipeline
(includes 20 foot buffer)

N

0 1,400 2,800
Feet

by pasture grasses and occasional shrubland habitat dominated by Basin big sagebrush (*Artemisia tridentata* var. *tridentata*). The eastern extent of the study area is mostly alfalfa fields and the occasional corn or small grain field. Vegetation surrounding cultivated fields is mostly weedy species with a few isolated patches of riparian habitat along the existing Rock Point Canal (see Appendix A: Site Photographs).

The study area contains canals, Ashley Creek and a few tributaries, several agricultural fields, and undeveloped pastureland. Water within the study area is fed by creeks and rivers flowing south from the Uinta Mountains. These mountains receive about thirty inches of precipitation annually. The central portion of the Uintah Basin has an elevation of 5,000 to 5,500 feet. The average annual precipitation is about 8.3 inches, with a smaller area around Ouray and Leota receiving less than 6 inches annually. Average low/high temperatures within the study area range from 50/90 degrees in July to 5/30 degrees in January.

1.2 Project Description

The Rock Point Canal, constructed in 1880, is one of the oldest canals in the Vernal area. The canal's bed and banks are porous, and as a result, the canal seeps water into the underlying Mancos Shale formation. This leeches selenium into Ashley Creek, which is potentially harmful to fish and waterfowl. Due to water loss, the canal is unable to efficiently irrigate all serviced land.

To improve canal efficiency, water quality in Ashley Creek, and reduce irrigation water loss, the Rock Point Canal Irrigation Company (CRS Engineers as consultant), with cooperation from Reclamation, proposes to replace approximately 8.7 miles of the earthen Rock Point Canal in Uintah County, Utah with approximately 6.3 miles of underground, pressurized pipeline.

Trenching for the new pipeline will take place along the entire length of the project area (see Figure 3). Pipe for the new pipeline would be constructed with a combination of polyvinyl chloride (PVC) and high-density polyethylene pipe (HDPE) ranging from 2 inches to 34 inches in diameter. The trench will be excavated 4 to 7 feet deep, and varies in width from 2 to 6 feet wide, depending on the diameter of the pipe. Features of the pipeline include:

- 62 outlets (of various sizes depending on the water capacity needed) to provide irrigation water to customers;
- an intake and valve structure at the inlet to the pipe below Steinaker Dam;
- an intake/screening structure at the canal diversion from Ashley Creek;
- 8 subsurface roadway and waterway crossings

The entire 6.3 miles of pipeline would be constructed as a single project. Project construction is scheduled to begin in early September of 2017. Construction of the pipeline would begin near the downstream end of Rock Point Canal and progress upstream. First phase (September) construction would include areas of the pipeline that are outside of the existing canal alignment and are located on lands not being farmed or are only being used for pasture. Once crops are harvested in the fall, and irrigation in the canal has ceased (October), then the remainder of

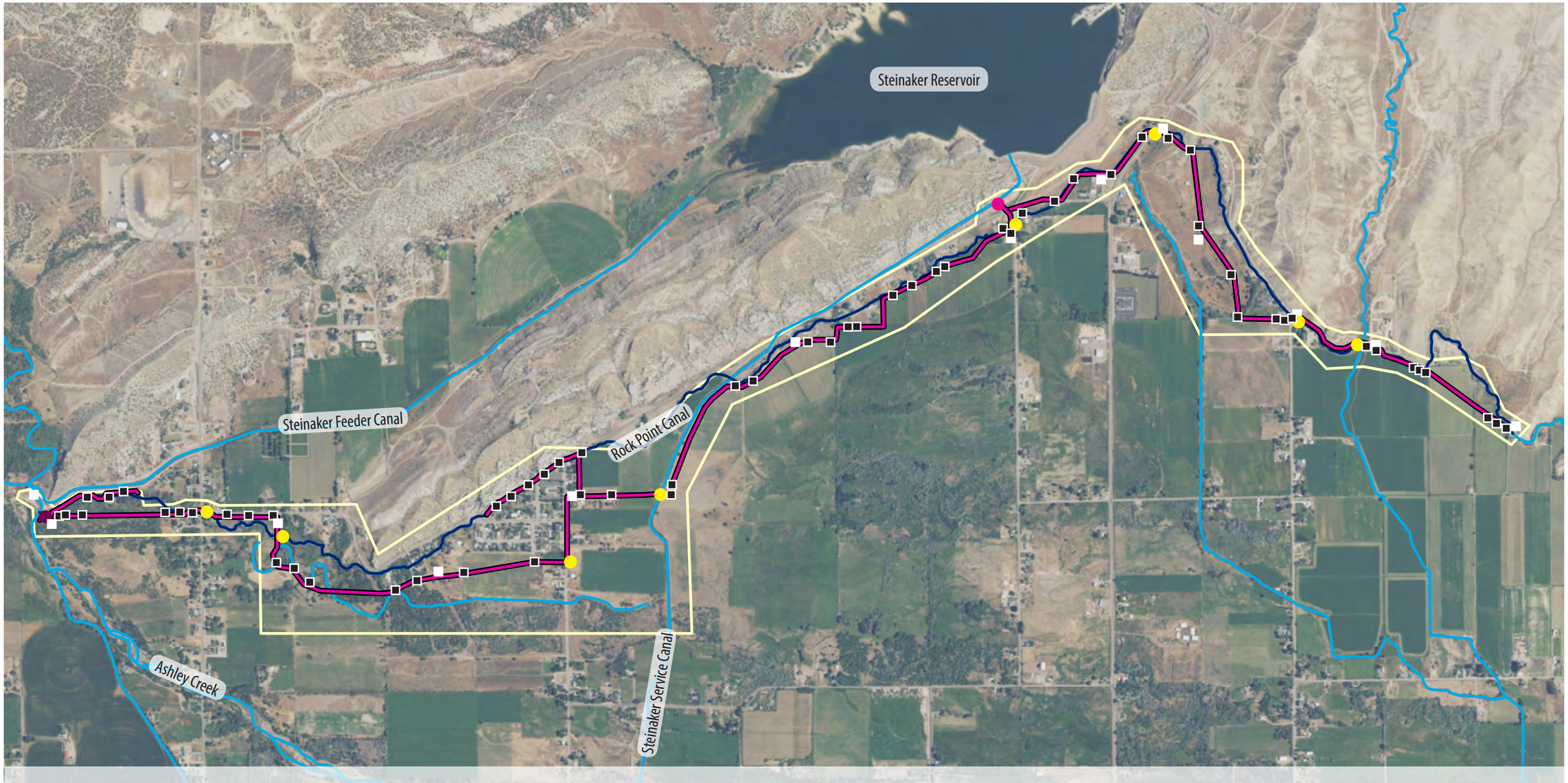


Figure 3.
Study Area and Project Details

2016 Google Imagery

the project is planned for construction. Construction is expected to be complete by the end of March, 2018.

A total of 13 staging areas will be located on undeveloped uplands and existing gravel or paved areas on private property (Figure 3). Heavy construction equipment, trench safety equipment such as vertical shores, and pipe segments will be staged in these areas. While the pipeline is under construction, the canal would operate under normal flow conditions. Once the pipeline is complete and connected to the intake/screening structure at Island Dam (adjacent to the confluence of Ashley Creek and the Steinaker Feeder Canal), the pipeline would function as a fully pressurized irrigation system. The existing Rock Point Canal would be left in place, but will only carry water intermittently during the irrigation season after the pipeline is functional.

2.0 Agency Consultation and Species of Concern

The species list obtained from the US Fish and Wildlife Service (USFWS) Information, Planning, and Conservation System (IPaC) and the Utah Division of Wildlife Resources (UDWR) database (dated October 25, 2016, see: Official Species List) indicates 13 proposed, candidate, threatened, and endangered species that warrant ESA consideration for this project. These species, listed in Table 1, are derived from habitat conditions (see Figure 4) and potential species occurrences within Uintah County, Utah.

Table 1 lists all species potentially present in the study area. This assessment will focus specifically on Ute ladies'-tresses and if suitable habitat is likely to be present in or adjacent to the study area and may be affected by the project. Other species listed in Table 1 are unlikely to be present in the study area; therefore, they are not considered further in this BA.

Table 1: Federally listed species with potential to occur in the study area.

Species and Scientific Name	Status	Critical Habitat Status/ Presence	Suitable Habitat Present?	Determination
Canada lynx (*Lynx canadensis*)	Threatened	Final designated/ None in study area	Canada lynx occupy boreal, coniferous forests at high altitudes in Utah, a habitat which is not present in the study area (Interagency Lynx Biology Team, 2013, 24).	The project would have no effect on Canada lynx.
Black-footed ferret (*Mustela nigripes*)	Experimental population, non-essential	None designated	The black-footed ferret is found in short or middle grass prairies. It often makes its homes in abandoned prairie dog burrows (NatureServe Explorer, 2011). Prairie grasses and brush are not commonly observed within the study area. Black-footed ferrets have not been observed in the project area (personal comm. Brian Maxfield, DWR Sensitive Species Biologist 2017).	The project would have no effect on black-footed ferret.
Bonytail chub (*Gila elegans*)	Endangered	Final designated/ None in study area	Bonytail chub prefer backwaters with rocky or muddy bottoms and flowing pools, although they have been reported in swiftly moving water. They are mostly restricted to rocky canyons today, but were historically abundant in the wide downstream sections of rivers (USFWS, 2014a).	The project would have no effect on bonytail chub.

Species and Scientific Name	Status	Critical Habitat Status/ Presence	Suitable Habitat Present?	Determination
Colorado pikeminnow (*Ptychocheilus lucius*)	Endangered	Final designated/ None in study area	The Colorado pikeminnow occurs in the warm, swift waters of the big rivers of the Colorado Basin. Adults inhabit pools and eddies just outside the main current. Young can be found in backwater areas (USFWS, 2014b). Swift waters and big rivers of the Colorado Basin are not located within the study area.	The project would have no effect on Colorado pikeminnow.
Humpback chub (*Gila cypha*)	Endangered	Final designated/ None in study area	The humpback chub have been associated with a variety of habitats ranging from pools with turbulent to little or no current; substrates of silt, sand, boulder, or bedrock; and depth ranging from 1 meter to as deep as 15 meters. Only five known populations exist; no known populations are present within the study area or its water bodies (NatureServe Explorer, 2016).	The project would have no effect on humpback chub.
Razorback sucker (*Xyrauchen texanus*)	Endangered	Final designated/ None in study area	Razorback sucker is a large river species not found in smaller tributaries and headwater streams. Found in water from 4–10 feet in depth, adults are associated with areas of strong current and backwaters (USFWS, 2014b). All waterways within the study area are considered small tributaries, streams, or canals. Currents are not very swift/strong, and are unlikely to accommodate razorback sucker.	The project would have no effect on razorback sucker.
Ute ladies'-tresses *(Spiranthes diluvialis)*	Threatened	None designated	Ute ladies'-tresses is found in wetlands and riparian areas, including spring habitats, mesic meadows, river meanders, and floodplains (US Fish and Wildlife Service, 1992). Wetlands were identified within the study area and surveys in two separate years were conducted by Reclamation biologists.	*Further evaluation conducted.*
Clay reed-mustard (*Schoenocrambe argillacea*)	Threatened	None designated	Clay reed-mustard grows on clay soils that are derived from a mixture of shales and sandstones from the zone of contact between the Uintah and Green River geologic formations in Uintah County, Utah. Soils tend to be rich in gypsum and overlain with sandstone talus. It is often found with other desert shrub species such as black sagebrush and shadscale saltbush (USFWS, 2012a). Gypsum soils and desert shrub species are not present within the study area. Additionally, known populations occur near the Green River, which is not located within the study area.	The project would have no effect on clay reed-mustard.
Shrubby reed-mustard (*Schoenocrambe suffrutescens*)	Endangered	None designated	Shrubby reed-mustard occurs primarily on one or two barren, white shale lenses of the Green River formation in the Uintah Basin. The plant community typically contains mixed desert shrubs and pinon and juniper trees (USFWS, 2012b). Known locations of the plant are outside the study area. Additionally, the study area does not contain white shale lens formations.	The project would have no effect on shrubby reed-mustard.

Species and Scientific Name	Status	Critical Habitat Status/ Presence	Suitable Habitat Present?	Determination
Uinta Basin hookless cactus (*Sclerocactus wetlandicus*)	Threatened	None designated	Uinta Basin hookless cactus is generally found on coarse soils derived from cobble and gravel river and stream terrace deposits, or rocky surfaces on mesa slopes. It requires salt desert shrub communities and pinon-juniper woodlands on river benches, valley slopes, and rolling hills (NatureServe Explorer, 2015b). The study area does not contain desert shrub communities and pinon-juniper woodlands.	The project would have no effect on Uinta Basin hookless cactus.
Pariette cactus (*Sclerocactus brevispinus*)	Threatened	None designated	Pariette cactus are endemic to highly saline and alkaline soils, restricted to clay badlands within a single geologic formation in Utah. The plant occurs on exposed clay hills and in saltbush and sagebrush flats (NatureServe Explorer, 2015a). Highly saline and alkaline soils, as well as clay badlands are not present within the study area.	The project would have no effect on Pariette cactus.
Mexican spotted owl *(Strix occidentalis lucida)*	Threatened	Final designated/ None in study area	Mexican spotted owls inhabit forested mountains and canyons with mature trees that create high, closed canopies, which are good for nesting. They prefer old-growth forests (Defenders of Wildlife, 2016). While several trees are located within the study area, closed canopies and forested mountains are not located within the study area.	The project would have no effect on the Mexican spotted owl.
Yellow-billed cuckoo (*Coccyzus americanus)*	Threatened	Proposed/ None in study area	Yellow-billed cuckoo prefer to nest at low- to mid-elevations (2,500–6,000 feet) in dense sub-canopy or shrub layers such as willow (*Salix* spp.), cottonwood (*Populus* spp.), mesquite (*Prosopis* spp.), or other riparian shrubs situated close to water (Wiggins, 2005, 17–18). Sub-canopies including cottonwood and mesquite are sparsely located within the study area.	The project would have no effect on yellow-billed cuckoo.

2.1 Ute Ladies's-tresses

Ute ladies'-tresses (*Spiranthes diluvialis*) is a member of the orchid family. It was first described in 1984 and was federally listed as "threatened" by the USFWS under the ESA in January, 1992 (Fertig et al., 2005, 6). Populations have been found in Utah, Colorado, Wyoming, Montana, Nevada, Idaho, and Washington. Populations of Ute ladies'-tresses (ULT) have been found at elevations ranging from 750 to 7,000 feet (229 to 2,134 meters), with most populations above 4,000 feet (1,219 meters). It is found in wetlands and riparian areas, including spring habitats, mesic meadows, river meanders, and floodplains. They require open habitats, with probability of occurrence declining if trees and shrubs invade the habitat. They are not tolerant of permanent standing water, but prefer well-drained soils, and do not compete well with aggressive species such as reed canary grass (*Phalaris arundinacea*). Flowers bloom during mid-August through mid-September (USFWS, 1992).

Of the 620 acres within the study area, only 4.4 acres (less than 1%) contain wetlands (see Figure 5). A wetland delineation survey was conducted on August 25, 2016. During the survey, 4.20

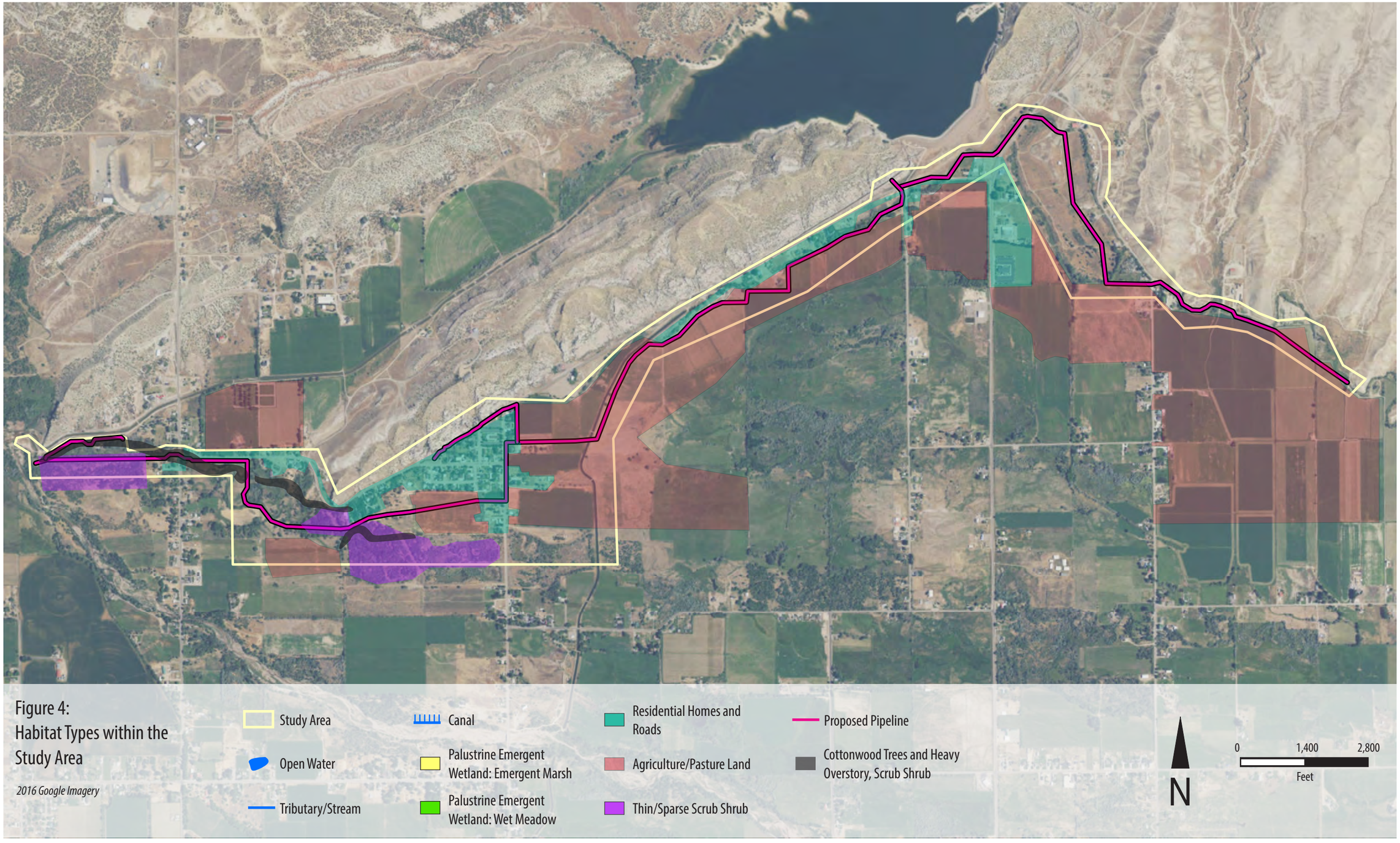


Figure 4:
Habitat Types within the Study Area

2016 Google Imagery

0 700 1,400 2,800 Feet

acres of wet meadow and 0.17 acres of emergent marsh wetlands were identified (see Figure 5). Several types of vegetation were observed, including Baltic rush (*Juncus balticus*), reed canary grass (*Phalaris arundinacea*), and smooth scouring rush (*Equisetum laevigatum*). Soils within wetland areas were classified within the Robido-Uver Complex (1–4% slopes). This soil type is considered hydric, and was only one of three soil types within the study area that was classified as a hydric soil.

There are occurrences of ULT in the vicinity of the study area. The nearest known occurrence is located within 1,000 feet south of the proposed pipeline to the west of 1500 West. The presence or absence of ULT has not yet been determined in the study area. Two surveys were conducted by Reclamation biologists along the existing Rock Point Canal. No ULT were observed during these surveys conducted in August of 2015 and 2016. Very few areas of suitable habitat were present along the canal. However, in accordance with the USFWS survey protocol for ULT, a 2017 survey needs to be conducted to verify the absence of ULT within the areas of suitable habitat (see Appendix C: Ute ladies'-tresses).

Presence/absence surveys of the project area (pipeline ROW and staging areas) have not been completed to date. In June 2017, the project area was surveyed to identify areas of suitable habitat. Areas mapped as "Wet Meadow" in Figure 5 that intersect with the project area were identified as suitable habitat.

2.2 ULT Mitigation Measures

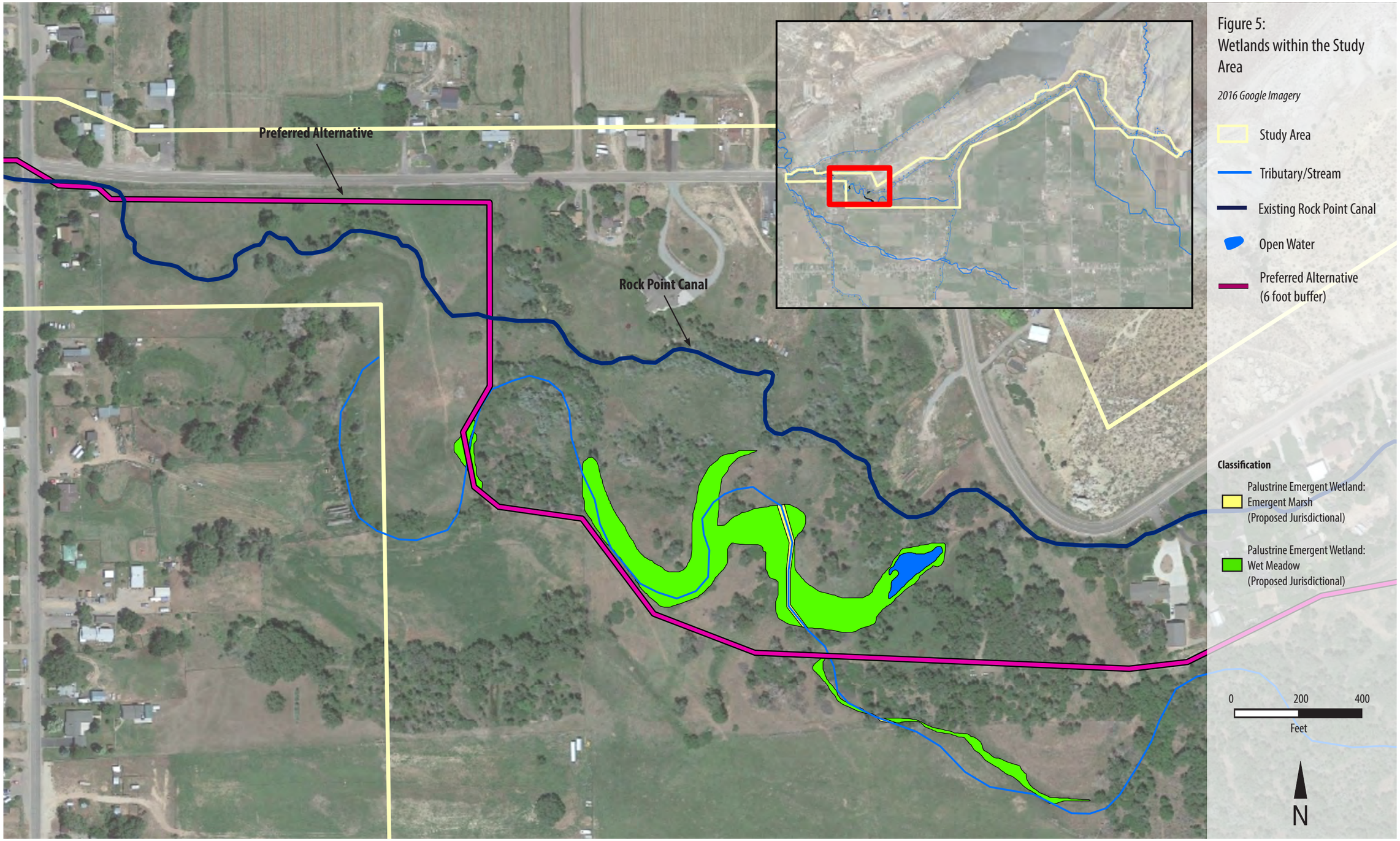
The following measures will be taken to mitigate the effects of the project (see Section 4.0 below) in the event that ULT are located during 2017 surveys:

- transplanting individual plants if found during one more future survey of the existing Rock Point canal to USFWS approved location;

Even though the existing Rock Point Canal will persist, it will receive substantially less flow as a result of the project. It is likely that moisture in the canal would no longer support the survival of ULT plants along the canal if present. The third and final presence/absence survey along the canal will occur during the 2017 blooming period. If no ULT plants are found, no further action will be needed. If plants are found, they would be transplanted to a location of suitable habitat nearby approved by USFWS. Flow in the existing Rock Point Canal would not be diverted and would remain consistent with historic levels until the third year survey is complete and either no plants were found or the transplantation of any plants found is complete.

- redesigning the project to avoid occupied habitat if plants are found during 2017 surveys of the proposed project area;

Prior to commencement of construction within 300 feet of any suitable habitat for ULT, a survey of the project area and a 300 foot buffer surrounding it will be conducted during the 2017 blooming period. If ULT plants are found, the project will be redesigned to avoid impacts to ULT plants. This would involve either realignment of the pipeline or boring under occupied


Preferred Alternative
Rock Point Canal
Figure 5:
Wetlands within the Study Area
2016 Google Imagery
Study Area
Tributary/Stream
Existing Rock Point Canal
Open Water
Preferred Alternative
(6 foot buffer)
Classification
Palustrine Emergent Wetland:
Emergent Marsh
(Proposed Jurisdictional)
Palustrine Emergent Wetland:
Wet Meadow
(Proposed Jurisdictional)
0
200
400
Feet
N

habitat. If realignment is selected, a clearance survey of the new alignment would be conducted during the blooming period. Surveys of ULT suitable habitat within 300 feet of the project area will be conducted during the blooming period for two years following construction. A survey report will be submitted to USFWS by November 1st of 2018 and 2019 reporting the results of the surveys.

- monitoring transplantation site for three years following transplantation in the event transplantation occurs;

The transplant location would be monitored by a qualified botanist during the blooming period for three years following construction. Monitoring would include recording a population count, vigor rating, and reproductive status of each ULT plant present and taking photos of the site from all directions. Invasive weeds and/or other plants that could overgrow and shade out the ULT plants will be removed in the fall, following each monitoring visit. An annual monitoring report documenting the number of ULT plants present, their location, and at least four photos of the site from specified reference locations would be submitted to the USFWS by November 1st starting in 2017 following transplantation, then repeated each year 2018 through 2020.

3.0 Effects Analysis and Determination

This section describes the direct, indirect, and cumulative effects of the proposed project; identifies any interdependent and/or interrelated actions; and delivers our effects determination.

3.1 Direct Effects

Direct effects are those that occur at the same time and result from the proposed project. If found in the project area, the proposed project would directly impact populations of ULT as it is proposed. However, with the measures outlined in section 2.2, these effects will be minimized or avoided.

3.2 Indirect Effects

Indirect effects are those effects that are caused by or will result from the proposed action and are later in time, but are still reasonably certain to occur. If ULT plants are present along the existing canal, ULT occupied habitat could be permanently impacted by proposed changes to the amount and frequency of water. Less water in the canal could also prevent establishment of ULT along the canal in the future. The reduction in Selenium in Green River (part of the Colorado River Basin Salinity Control Program) is likely to have a positive effect on plants including ULT populations along Ashley Creek the Green River downstream from the project area. With measures outlined in section 2.2, indirect negeative effects will be minimized.

3.3 Cumulative Effects

Cumulative effects are those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action

subject to consultation. The proposed project is not expected to cause negative cumulative effects on ULT. By implementing a more efficient water source, the proposed project increases the likelihood of countinued agricultural use of the land surrounding the project area, and decreases the chances it will be sold off for other uses such as residential or commercial development. While agricultural lands are disturbed by grazing and other agricultural practices, they typically provide much better potenial habitat for ULT than other forms of development. Therefore, it is expected that the proposed project would have a positive cumulative effect on ULT.

3.4 Interdependent Effects

Interrelated actions are actions that are part of a larger action and depend on the larger action for their justification. There are no actions dependent on the proposed project outlined in this BA. This project is not part of a larger project, and does not depend on a larger action for its justification.

3.5 Effects Determination

Based on this effects analysis, and given the mitigation measures outlined in section 2.2, CRS determined the proposed project may affect, but is not likely to adversely affect Ute ladies'-tresses.

4.0 Conclusion

According to Section 7 of the ESA, consultation is only required when a proposed federal action may affect listed species or their habitats. We have reviewed the UDWR database and the USFWS IPaC system. Both databases indicate that federally threatened or endangered species could be found within or adjacent to the study area. CRS evaluated habitat within the study area, comparing it to habitat of 13 proposed, candidate, threatened, and endangered species (see Table 1). Of the 13 species identified, only one species, the Ute ladies'-tresses had potential to occur within the study area.

Following a detailed analysis of Ute ladies'-tresses and the proposed action, including mitigation measures, CRS determined that the proposed project may affect, but is not likely to adversely affect Ute ladies'-tresses. These mitigation measures include:

- transplanting individual plants if found during one more future survey of the existing Rock Point canal to USFWS approved location;
- redesigning the project to avoid occupied habitat if plants are found during 2017 surveys of the proposed project area;
- monitoring transplantation site for three years following transplantation in the event transplantation occurs;

5.0 Literature Cited

Defenders of Wildlife. (2016). "Basic Facts about Mexican Spotted Owls." Accessed October 28, 2016. Retrieved from http://www.defenders.org/mexican-spotted-owl/basic-facts.

Fertig, W., R. Black, and P. Wolken (2005). "Rangewide Status Review of Ute Ladies'-Tresses (*Spiranthes diluvialis*)." US Fish and Wildlife Service and Central Utah Water Conservancy District 30. Retrieved from http://www.fws.gov/mountain-prairie/species/plants/uteladiestress/SPDI_Status%20review_Fertig2005.pdf.

Interagency Lynx Biology Team. (2013). "Canada lynx conservation assessment and strategy. 3rd edition." Missoula, MT: USDA Forest Service, USDI Fish and Wildlife Service, USDI Bureau of Land Management, and USDI National Park Service. Retrieved from http://www.fs.fed.us/biology/resources/pubs/wildlife/LCAS_revisedAugust2013.pdf.

NatureServe Explorer. (2016). "Gila cypha- Humpback Chub." Accessed October 27, 2016. Retrieved from http://explorer.natureserve.org/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=102735&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=102735&offPageSelectedElType=species&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=102735.

NatureServe Explorer. (2015a). "Heil and Martin Pariette Cactus." Accessed October 31, 2016. Retrieved from http://explorer.natureserve.org/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=161086&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=161086&offPageSelectedElType=species&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=161086.

NatureServe Explorer. (2015b). "Uinta Basin Hookless Cactus." Accessed October 31, 2016. Retrieved from http://explorer.natureserve.org/servlet/NatureServe?searchName=Sclerocactus+wetlandicus.

NatureServe Explorer. (2013). "Gila elegans." *The IUCN Red List of Threatened Species 2013.* Accessed October 28, 2016. Retrieved from http://www.iucnredlist.org/details/9186/0.

NatureServe Explorer. (2011). "Mustela nigripes- Black-footed Ferret." Accessed October 26, 2016. Retrieved from http://explorer.natureserve.org/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=102031&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=102031&offPageSelectedElType=species&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=102031.

United States Fish and Wildlife Service (USFWS). (1992). "Interim Survey Requirements for Ute Ladies'-tresses Orchid (*Spiranthes Diluvialis*)." Accessed October 28, 2016. Retrieved from https://www.fws.gov/utahfieldoffice/Documents/Plants/SPDI_interimSurveyRequirements_1992.pdf.

United States Fish and Wildlife Service (USFWS). (2014a). "Bonytail Chub (*Gila elegans)*." Accessed October 28, 2016. Retrieved from https://www.fws.gov/nevada/protected_species/fish/species/btail_chub.html.

United States Fish and Wildlife Service (USFWS). (2014b). "The Colorado Pikeminnow and the Razorback Sucker." Accessed October 28, 2016. Retrieved from https://www.fws.gov/southwest/sjrip/gb_fs.cfm.

United States Fish and Wildlife Service (USFWS). (2012a). "Clay Reed-mustard (*Schoenocrambe argillacea*)." Accessed October 31, 2016. Retrieved from https://www.fws.gov/mountain-prairie/species/plants/clayreedmustard/ClayReed-mustardFactsheet2012.pdf.

United States Fish and Wildlife Service (USFWS). (2012b). "Shrubby Reed-mustard (*Schoenocrambe suffrutescens*)." Accessed October 31, 2016. Retrieved from https://www.fws.gov/mountain-prairie/factsheets/ShrubbyReed-mustardFactSheet.pdf.

Ulev, E. (2007). "Mustela nigripes." *Fire Effects Information System [Online].* United States Department of Agriculture. Accessed October 26, 2016. Retrieved from http://www.fs.fed.us/database/feis/animals/mammal/muni/all.html#STATES/PROVINCES.

Wiggins, David A. (2005). "Yellow-billed Cuckoo (*Coccyzus americanus*): A Technical Conservation Assessment." Rocky Mountain Region: USDA Forest Service. http://www.fs.fed.us/r2/projects/scp/assessments/yellowbilledcuckoo.pdf.

A Biological Evaluation Appendix: Site Photographs

Figure A1: Existing Rock Point Canal.

Figure A2: Tributary/Stream labeled in Figure 5.

Figure A3: Wet meadow wetlands and upland vegetation within the study area.

Figure A4: Wet meadow wetlands and upland vegetation within the central portion of the study area.

Figure A5: Agriculture fields located in the eastern portion of the study area.

Figure A6: Upland vegetation adjacent to the existing Rock Point Canal in the eastern portion of the study area.

Figure A7: Area adjacent to the proposed intake and valve structure south of the Steinaker Dam.

Figure A8: Upland vegetation in the eastern portion of the study area.

B

Biological Evaluation Appendix: Official Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Utah Ecological Services Field Office
2369 WEST ORTON CIRCLE, SUITE 50
WEST VALLEY CITY, UT 84119
PHONE: (801)975-3330 FAX: (801)975-3331
URL: www.fws.gov; www.fws.gov/utahfieldoffice/

Consultation Code: 06E23000-2017-SLI-0027 October 26, 2016
Event Code: 06E23000-2017-E-00037
Project Name: Rock Point Canal Rehabilitation Project

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment

United States Department of Interior
Fish and Wildlife Service

Project name: Rock Point Canal Rehabilitation Project

Official Species List

Provided by:

Utah Ecological Services Field Office
2369 WEST ORTON CIRCLE, SUITE 50
WEST VALLEY CITY, UT 84119
(801) 975-3330
http://www.fws.gov
http://www.fws.gov/utahfieldoffice/

Consultation Code: 06E23000-2017-SLI-0027
Event Code: 06E23000-2017-E-00037

Project Type: WATER SUPPLY / DELIVERY

Project Name: Rock Point Canal Rehabilitation Project
Project Description: Due to water conservation, salt load, and operation cost concerns (among others), the Rock Point Canal Company in cooperation with Reclamation is proposing to replace the upper approximately 5.9 miles (31,000 feet) of open unlined portion of Rock Point Canal with 4.8 miles (25,500 feet) of 18-inch PVC, 28-inch HDPE, and 10-inch HDPE pipeline.

Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.

Project Location Map:

Project Coordinates: The coordinates are too numerous to display here.

Project Counties: Uintah, UT

Endangered Species Act Species List

There are a total of 9 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Birds	**Status**	**Has Critical Habitat**	**Condition(s)**
Mexican Spotted owl *(Strix occidentalis lucida)* Population: Wherever found	Threatened	Final designated	
Yellow-Billed Cuckoo *(Coccyzus americanus)* Population: Western U.S. DPS	Threatened	Proposed	
Fishes			
Bonytail chub *(Gila elegans)* Population: Wherever found	Endangered	Final designated	
Colorado pikeminnow *(Ptychocheilus lucius)* Population: Wherever found, except where listed as an experimental population	Endangered	Final designated	
Humpback chub *(Gila cypha)* Population: Wherever found	Endangered	Final designated	
Razorback sucker *(Xyrauchen texanus)* Population: Wherever found	Endangered	Final designated	

Flowering Plants			
Ute ladies'-tresses *(Spiranthes diluvialis)* Population: Wherever found	Threatened		
Mammals			
Black-Footed ferret *(Mustela nigripes)* Population: U.S.A. (WY and specified portions of AZ, CO, MT, SD, and UT, see Â§17.84(g)(9))	Experimental Population, Non-Essential		Experimental, non-essential population of black-footed ferrets established pursuant to Section 10(j) of the ESA. Section 7 consultation not required except on lands administered by the U.S. Fish and Wildlife Service or the National Park Service.
Canada Lynx *(Lynx canadensis)* Population: Contiguous U.S. DPS	Threatened	Final designated	

Critical habitats that lie within your project area

There are no critical habitats within your project area.

C

Biological Evaluation Appendix:
Ute ladies'-tresses
Correspondence

Chuck Easton

From: Snyder, David <dsnyder@usbr.gov>
Sent: Friday, October 7, 2016 6:40 AM
To: Chuck Easton
Cc: Peter Crookston
Subject: Re: Rockpoint Canal alignments

Chuck,

Here is the information I have received from the biologist who surveyed the Rockpoint Canal for ULT's.

No ULT observed in the 2015 or 2016 surveys. There are very few areas of potentially suitable habitat; however, we'll still need to survey in 2017 to verify their absence or try for a "may affect, but not likely to adversely affect" based on poor habitat.

Based on the survey results, you will need to prepare a draft Biological Assessment and send that over to Peter so that we can begin the informal consultation process with the USFWS.

Thank you,

On Wed, Oct 5, 2016 at 9:08 AM, Chuck Easton <chuck.easton@crsengineers.com> wrote:

> Hi Dave,
>
> Hope you are doing well! This is just a follow up to our conversation regarding ULT and habitat around the Rockpoint Canal project. When you and I spoke over the phone you mentioned that you had surveyed the area for ULT habitat and had found none. You had also mentioned that you could provide those results in a memo to me, for inclusion in the EA. Is there anything I can do to help that along?
>
> Thanks,
>
> Chuck
>
> **Chuck Easton, MA, RPA** | Manager, Environmental
>
> **CRS ENGINEERS** | PO Box 280 | 160 S Main, Suite 200 | Farmington, UT 84025
>
> Main: (801) 939-5565 | Cell: (801) 361-7020

www.crsengineers.com

From: Chuck Easton
Sent: Tuesday, August 9, 2016 5:10 PM
To: 'dsnyder@usbr.gov' <dsnyder@usbr.gov>; 'cmower@usbr.gov' <cmower@usbr.gov>
Subject: Rockpoint Canal alignments

Great speaking with you this afternoon, Dave. Attached are the KMZ files. As discussed, the alignment may change in a few spots, but where it crosses the existing canal, will remain as shown on these KMZs.

Please let me know if we have potential ULT habitat in these locations, or if there are any other concerns we need to address.

Thanks,

Chuck

Chuck Easton, MA, RPA | Manager, Environmental

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