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RECLAMATION

Muddy Creek Irrigation Company Piping Project Phase III Final Environmental Assessment and Finding of No Significant Impact

Colorado River Salinity Program

Provo Area Office - Upper Colorado River Basin



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**Colorado River Salinity Program
Provo Area Office - Upper Colorado River Basin**

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Cover Photo: Cover Photo: Muddy Creek Irrigation Company canal by Jenna Jorgensen, July 2019

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

FINDING OF NO SIGNIFICANT IMPACT

Muddy Creek Irrigation Company Piping Project Phase III

Emery County, Utah

PRO EA-18-012

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I. Introduction

In compliance with the National Environmental Policy Act of 1969, as amended (NEPA), and the Council on Environmental Quality's regulations implementing NEPA at 40 CFR 1500-1508 that went into effect September 14, 2020, the U.S. Bureau of Reclamation (Reclamation), Provo Area Office conducted an Environmental Assessment (EA) (attached) to examine the potential environmental impacts of the Muddy Creek Piping Project, Phase III (Project or Proposed Action) in the Town of Emery, Emery County, Utah. The Project is proposed by the Muddy Creek Irrigation Company, who applied for and was awarded a grant for co-funding through Reclamation's Salinity Control Program. If the Project is approved, Reclamation would authorize Muddy Creek Irrigation Company to replace approximately 37.5 miles of earthen irrigation canals and ditches with 7.0 miles of buried pipeline.

II. Proposed Action

The Proposed Action would reduce salt mobilization by eliminating water loss via seepage into the ground and evaporating from the canals and ditches, effectively reducing salt loading in the Colorado River Basin. This would also allow landowners to convert from flood-irrigation practices to pressurized sprinkler irrigation, which is a more efficient irrigation method. Additional description of the Proposed Action is found in section 2.3 of the final EA.

III. Summary of Effects

As described in the EA, there would be no significant effects on any resources considered in the EA.

IV. Environmental Commitments

Section 4 of the EA contains environmental commitments that are essential to the Proposed Action. The Muddy Creek Irrigation Company is responsible for incorporating all environmental commitments listed in section 4 as the Project is carried out.

V. Decision

Based on the foregoing information, Reclamation has determined that the Proposed Action will not have a significant effect on the human and natural environment. It is Reclamation's decision, therefore, to issue this FONSI pursuant to NEPA and its implementing regulations at 40 CFR 1500-1508, and authorize the Proposed Action to be implemented.

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Chapter 1. Purpose and Need for Purposed Action

1.1 Introduction

This Environmental Assessment (EA) was prepared to examine the potential environmental impacts of the Muddy Creek Irrigation Company Piping Phase III, proposed by the Muddy Creek Irrigation Company (MCIC) in Emery County, Utah (see map 1 in Appendix A). If approved, the U.S. Bureau of Reclamation would authorize the use of federal funds to replace nearly 37.5 miles of open-channel canals and ditches with 7.0 miles of buried pipeline with the goal of reducing salt mobilization by eliminating water loss through preventing it seeping into the ground and evaporating from the canal. This would also allow landowners to convert from flood-irrigation practices to pressurized sprinkler irrigation, which is a more efficient irrigation method.

This EA evaluates the potential effects of the Proposed Action 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 Action, then a Finding of No Significant Impact (FONSI) would be issued by Reclamation. Otherwise, an Environmental Impact Statement would be necessary to further assess the Proposed Action.

1.2 Background

1.2.1 Colorado River Basin Salinity Control Program

The Colorado River Basin Salinity Control Act of 1974 was enacted to protect the Colorado River's water quality. Reclamation's Salinity Control Program seeks to provide cost-effective regional solutions for reducing the salinity loading of the Colorado River. The Colorado River provides water for approximately 43 million people in the United States and Mexico. Water from the Colorado River is currently used to irrigate 4.5 million acres of land in the United States and 500,000 acres of land in Mexico (Reclamation 2017).

Controlling Colorado River system salinity loading remains one of the most important challenges facing Reclamation. Salinity levels in the Colorado River threaten agricultural, municipal, and industrial water users. High salinity levels make it difficult to grow crops, while salt deposition in municipal and industrial water supply systems obstructs and destroys those systems. Recent salinity levels measured in the lower portion of the Colorado River are typically about 700 milligrams per liter (mg/L), but in the future may be more variable, ranging from 600 and 1,200 mg/L, depending upon the amount of water in the river system. Salinity damage currently costs approximately \$382 million per year in the United States portion of the Colorado River Basin (Reclamation 2017).

1.2.2 Existing Irrigation Facilities

The Muddy Creek irrigation system consists of the Phase I and II pipelines and approximately 37.5 miles of open canals and ditches that provide irrigation water to approximately 3,000 acres of irrigated farmlands in Emery County, Utah. Phase I of the piping project was completed in 2012; approximately 4.7 miles of pipeline delivers water from a sediment basin to a point further downstream on the Emery Canal, which reduces seepage and sedimentation.

Phase II was completed in 2019; a 50/50 split diversion structure was constructed at the end of the Phase I pipeline, and approximately 4.8 miles of pipeline was constructed on the west side of Emery Town that allowed for abandonment of 4.1 miles of the Emery Canal. Approximately 50 percent of the water is diverted into the Phase II pipeline, which provides pressurized irrigation water to irrigators on the west side of the service area. Water from the pipeline is also released into the canals and ditches at their diversion points along the Emery Canal to continue to convey water to the east side of the service area. The remaining 50 percent of the water at the split diversion structure is diverted back into the Emery Canal for delivery to the remaining water users.

Funded separately from these phases, a regulating pond is being constructed immediately east of the diversion structure, on the opposite side of the Emery Canal. Upon completion of the Phase III pipeline, approximately 400 feet of the Emery Canal would be graded so that water would flow back to the regulating pond.

The proposed Phase III pipeline would deliver water from the regulating pond to the remaining water users. This action would result in the decommissioning of the remaining 37.5 miles of canals and ditches currently conveying irrigation water to its users.

1.3 Purpose of and Need for Proposed Action

The purpose of the Proposed Action is to eliminate water loss and maintenance created by the open canal and facilitate the transition from flood-irrigation practices to pressurized sprinkler irrigation.

The need for the Proposed Action is to reduce salt loading into the Colorado River, increase irrigation efficiency, and reduce maintenance of the irrigation system. Reclamation estimates that the existing canal system contributes a salt load of 3,010 tons per year (Appendix B). The current system is also relatively inefficient, as water is lost to seepage and evaporation through open canal conveyance and flood-irrigation methods. Open canals and ditches also require frequent maintenance to maintain effective operation.

1.4 Public Scoping and Involvement

The public involvement process for this EA has been completed (June 2021). Its intent was to present the public, including other agencies, interest groups, and key stakeholders, with opportunities to obtain information about the Proposed Action and opportunities to participate in its development through written comments. Reclamation's objectives during the public involvement process are to create and maintain a well-informed public and receive input on the Proposed Action.

Notices were mailed to relevant property owners, shareholders, and, other interested parties to notify them of the Draft EA availability on Reclamation's website and to provide information on acquiring a hard copy.

No comments were received. For more information on the public involvement process and coordination completed during the development of this EA, please refer to Chapter 5.

1.5 Permits, Licenses, and Authorizations

Implementation of the Proposed Action may require authorizations or permits from state and federal agencies. The MCIC would be responsible for obtaining all permits, licenses, and authorizations required for the Proposed Action. Potential permits or authorizations may include those listed in Table 1-1.

Table 1-1.
Potential Permits and Authorizations

Agency/Department	Purpose
Utah Department of Natural Resources, Division of Water Rights	A State Stream Alteration Permit under Utah statutory criteria of stream alteration described in the Utah Code 73-3-29 would be required for Proposed Action impacts within Christiansen Wash.
Utah State Historic Preservation Office (SHPO)	Consultation pursuant to Section 106 of the National Historic Preservation Act (NHPA; 16 USC 470) would be required.
U.S. Army Corps of Engineers (USACE)	A permit from the USACE, in compliance with Section 404 of the Clean Water Act, would be required prior to the discharge of dredged or fill material into wetlands or waters of the U.S.
Emery County	Encroachment permits would be required for construction within county roads.
Utah Department of Transportation (UDOT)	An encroachment permit would be required for construction within the SR-10 right-of-way.

1.6 Related Projects and Documents

1.6.1 Muddy Creek Irrigation Company Piping Project Phase 1

The Emery Town Water Improvement Project was authorized by the Bureau of Land Management (BLM) in 2011. The project included approval of approximately 4.7 miles of pipeline with a 140-foot-wide right-of-way, a maintenance road, a staging area, and diversion structure on BLM-administered land. The project reduced sedimentation and the risk of animal-borne pathogens or

delivery interruptions for water that was provided for culinary use in and around Emery Town. The proposed diversion structure was not constructed with the rest of the project.

1.6.2 Muddy Creek Irrigation Company Piping Project Phase 2

The MCIC received funding from the Utah Department of Agriculture and Food to permit and construct 4.8 miles of pipeline with appurtenances in support of the Colorado River Salinity Offset Program. The pipeline conveyed irrigation water to support agriculture in cultivated areas surrounding Emery Town. Use of the pipeline replaced approximately 4.1 miles of open canal; the annual salt load reduction is 1,917 tons. The pipeline provides pressurized irrigation water to 2,000 acres, allowing landowners to transition from flood-irrigation practices to pressurized sprinkler-irrigation.

1.7 Scope of Analysis

The purpose of this EA is to determine whether Reclamation should authorize, provide funding for, and enter into an agreement with the MCIC for the piping of the remaining open canal/ditch irrigation system consistent with Reclamation's Salinity Control Program. That determination includes consideration of whether there would be significant impacts to the human and natural environment. 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 because of the Proposed Action.

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, Reclamation would not authorize the use of federal funds to construct the pipelines. The open, unlined canals would continue to deliver irrigation water with no proposed improvements for reducing or eliminating seepage. Seepage would continue to percolate through adjacent soils, resulting in an estimated annual salt load of 3,010 tons into the Colorado River.

2.3 Proposed Action

Under the Proposed Action, Reclamation would authorize the use of federal funds for MCIC to construct approximately 7.0 miles of pipeline, allowing for abandonment of approximately 37.5 miles of open-channel canals and ditches. The proposed piping would reduce salt loading into the Colorado River by an estimated 3,010 tons annually. The pressurized pipe system would allow for more efficient use of irrigation water, enabling landowners to transition from flood-irrigation practices to sprinkler irrigation. The estimated life of the Proposed Action is 50 years.

2.3.1 Phase III Pipeline

The pipeline would begin at the regulating pond north of Emery Town. Approximately 7.0 miles of high-density polyethylene (HDPE) buried pipeline with associated air relief, drain, turnout valves, and other appurtenances would be constructed southward from the pond (see map 1 in Appendix A). Pipeline diameters would vary from 8 to 42-inches along the alignment. The pipeline would be constructed within a temporary easement that varies between 36 and 140-feet-wide. Air vents would be installed approximately every 1,500 feet along the alignment and would typically be steel pipe up to 4 feet tall and 6-inches in diameter, of natural colors to best match the surrounding area. Water meters and valves would be installed at each turnout.

2.3.1.1 Pipeline Construction Procedures

Clearing and grading would be minimized to the extent practicable to safely install the pipeline within the temporary easement.

The pipeline trench would be excavated up to 10 feet-deep and approximately 14-feet-wide to allow for a minimum pipeline cover depth of 4 feet. Topsoil and subsoil would be segregated and stockpiled separately and adjacent to the trench. The 50-foot-long pipe segments would be fused together to create 500-foot-long pipe sections within the construction easement. Each section would then be pulled along the trench to the installation point. The sections would then be fused together and placed in the trench. Stockpiled subsoil would be used to backfill the trench, and the topsoil would be replaced on the surface and graded to pre-disturbance contours.

Once the pipeline was buried, disturbed areas through agricultural fields would be reseeded and cultivated by private landowners. Unirrigated areas would be seeded with the following seed mix:

Common Name	Scientific Name	Pounds of Pure Live Seed/Acre - Drill	Pounds of Pure Live Seed/Acre - Broadcast
Western wheatgrass	<i>Pascopyrum smithii</i>	3	4.5
Indian ricegrass	<i>Achnatherum hymenoides</i>	2.5	3.75
Galleta grass	<i>Pleuraphis jamesii</i>	2	3
Bluebunch wheatgrass	<i>Pseudoroegneria spicata</i>	1.5	2.25
Alkali sacaton	<i>Sporobolus airoides</i>	1	1.5
Muttongrass	<i>Poa fendleriana</i>	1	1.5
Rocky Mountain beeplant	<i>Cleome serrulata</i>	0.3	0.45
Gooseberry leaf globemallow	<i>Sphaeralcea grossulariifolia</i>	0.2	0.3
Western yarrow	<i>Achillea millefolium</i>	0.5	0.75
Winterfat	<i>Krascheninnikovia lanata</i>	1	1.5
Wyoming big sagebrush	<i>Artemisia tridentata wyomingensis</i>	1	1.5
Fourwing saltbush	<i>Atriplex canescens</i>	1	1.5
Shadscale saltbush	<i>Atriplex confertifolia</i>	1	1.5
Total (Application Rate)		16	24

2.3.1.2 Site Access and Staging Areas

All construction-related areas would be accessed by existing roads and adjacent private property. Temporary construction easements would be secured with private landowners along the pipeline alignments for staging areas. Construction-related disturbance of staging areas would be reclaimed following Proposed Action completion.

2.3.1.3 Cultural Resource Protection

Exclusionary fencing would be installed to avoid impacts to an eligible historic period trash scatter and structures within a historic homestead. The fencing would ensure that the trash dump would be avoided by 100 feet, and the barn structure would be avoided by 50 feet.

2.3.1.4 Disturbance Summary

The Proposed Action would consist of both temporary and permanent areas of disturbance. The total anticipated disturbance for the Proposed Action would be approximately 85.4 acres. Temporary disturbance would include clearing some of the vegetation from potential staging areas and the temporary construction easements along the pipeline alignment, as well as excavating the trench for pipelines within the easements. All disturbance would remain within the construction easement area. Clearing and grading would be minimized to the extent practicable to safely complete the Proposed Action. Permanent disturbance would result from establishing a 50-foot-wide maximum permanent easement for pipeline maintenance purposes. The total permanent easement area would be approximately 42.3 acres.

2.3.1.5 Operation and Maintenance

The MCIC would operate the pipelines within the permanent easement, with periodic inspections of aboveground appurtenances. The majority of the permanent easement would be returned to agricultural production following construction completion. Individual shareholders and irrigators would be responsible for operation and maintenance of their turnouts and valves. Winterization and operation of valves, along with springtime flushing and filling of the line, would constitute most of the maintenance and operation efforts.

2.3.2 Canal Abandonment

Completion of the Proposed Action would result in the remaining 37.5 miles of canals and ditches to be abandoned (Map 2, Appendix A). The Phase II pipeline would no longer have to deliver water to the canals and ditches that support the east side of the service area. The remaining open portion of the Emery Canal near the north end of the project would be abandoned. The canals and ditches downstream of the Phase III pipeline would be abandoned as individual pressurized systems will be connected to the pipeline. The abandoned canals would be left in place to avoid impacts to historic properties.

2.3.3 Habitat Replacement Plan

In coordination with Jones and DeMille Engineering, Reclamation has identified wildlife habitat along the open canal/ditch system that would be lost due to water removal as a result of the canal abandonment. The total value of habitat lost would be mitigated through the implementation of a Reclamation-approved Habitat Replacement Plan (HRP; Appendix D). The HRP details the methods for replacing those lost habitat values.

2.3.4 Construction Schedule

Construction would begin as soon as the Proposed Action is authorized in 2021 and is estimated to take up to 8-12 months to complete. Work schedule for the construction period would be five days a week, daylight hours only. Vegetation within the construction corridor would be cleared during the fall and winter to avoid intersecting with the breeding bird season (March 1 – August 31).

2.4 Alternatives Considered and Eliminated from Further Study

The following alternatives were evaluated but eliminated from further study.

2.4.1 Membrane Lining

This alternative involves lining the existing canal with an impermeable membrane, such as an ethylene propylene diene monomer or polyvinyl chloride.

This method would not meet the purpose of and need for the Proposed Action because it would not allow landowners to transition from flood-irrigation practices to pressurized sprinkler irrigation. This alternative would not reduce salt loading of the Upper Colorado River Basin to the same degree as a pipeline. Therefore, it was eliminated from further evaluation in this EA.

2.4.2 Alternative Pipeline Alignments

Other pipeline alignments were considered; however, these alignments required easements from unwilling landowners, and were therefore deemed infeasible.

2.5 Comparison of Alternatives

The suitability of the No Action and Proposed Action alternatives were compared based on three objectives identified for the Proposed Action. The objectives are:

- Decrease salt loading into the Upper Colorado River Basin,
- increase irrigation efficiency, and
- reduce maintenance of the irrigation system.

The No Action alternative did not meet any of the Proposed Action's objectives, while the Proposed Action met all three objectives.

2.6 Minimization Measures Incorporated into the Proposed Action

The minimization measures listed below have been incorporated into the Proposed Action to lessen the potential adverse effects.

- Staging areas would be located in areas of existing disturbance as much as practicable, which would minimize new disturbance of soils and vegetation.
- Ground disturbance would be minimized to the greatest extent practicable.
- Construction vehicles and equipment would be inspected and cleaned prior to entry into the Proposed Action 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 staging areas approved and cleared in advance.
- Best management practices (BMPs) would be applied to comply with the Clean Water Act Sections 401, 402, and 404. A stormwater pollution prevention plan (SWPPP) would be prepared and implemented to minimize erosion, prevent soils from leaving the site, and prevent sediment and other pollutants from discharging into downstream water sources during construction.
- Vegetation removal would occur during the non-breeding, non-nesting season (September 1 – February 28) for birds.

- Topsoil would be segregated from the subsoil, stockpiled separately from other soil materials, and maintained for future use in rehabilitating the site.
- After construction is complete, salvaged topsoil would be re-distributed evenly over disturbed surfaces.
- Soil compaction would be relieved as needed by loosening the top several inches of soil, conducive to seedbed preparation.
- If livestock were grazing in areas where Proposed Action activities occur, temporary fencing would be used to keep livestock out of the Proposed Action area. Existing fences that were removed as part of Proposed Action activities would be repaired as soon as practicable.
- Noxious weed control would be implemented according to county standards.
- Disturbed areas would be seeded with an appropriate mix based on coordination with the respective landowner.

Chapter 3. Affected Environment and Environmental Consequences

3.1 Introduction

This chapter describes the environment that could be affected by the Proposed Action and No Action alternatives. These impacts are discussed under the following resources:

- Geologic and soil resources
- Visual resources
- Cultural resources
- Paleontological resources
- Wilderness and wild and scenic rivers
- Hydrologic conditions
- Waters of the U.S.
- Water quality
- System operations
- Public health, safety, air quality, and noise
- Prime and unique farmlands
- Floodplains
- Wetlands, riparian, noxious weeds, and existing vegetation
- Fish and wildlife resources, including sensitive species
- Threatened and endangered species
- Recreation
- Socioeconomics
- Access and transportation
- Water rights
- Indian Trust Assets (ITAs)
- Environmental justice

This chapter presents the impact analysis for resources assuming successful implementation of minimization measures and BMPs. The environmental effects of the alternatives are summarized in Section 3.7.

3.2 Resources Considered and Eliminated from Further Analysis

The resources listed in Table 3-1 were considered but eliminated from further analysis because they do not occur in the Proposed Action area or the potential effect to the resource would be negligible.

Table 3-1
Resources Eliminated from Further Analysis

Resource	Rationale for Elimination from Further Analysis
Visual Resources	<p>Visual resources within the area are limited as a result of the existing disturbance associated with agricultural development. The majority of Proposed Action activities would occur within remote cultivated fields, pastures, or canal easements that would not normally be seen by the general public. Most of the Proposed Action area is regularly disturbed by agricultural operations.</p> <p>The Proposed Action would not be visible from most public observation points due to topographical screening and the remote location of the pipeline alignment. The pipeline would be buried and surface appurtenances (i.e., air vents) would be painted natural colors to reduce visual contrast. Installation of a buried pipeline would temporarily disturb the visible ground surface but would not affect scenic beauty as the ground is frequently disturbed for agricultural operations; the level of change to the landscape from construction would be low. Operation of the pipeline would dewater the open channels and likely result in the eventual loss of adjacent riparian vegetation. Vegetation would gradually die where sufficient groundwater was no longer available. This senescence would likely be observed as a natural process and would not create a significant visual contrast within the valley; therefore, implementation of the Proposed Action would not adversely affect visual resources.</p>
Paleontological	<p>A paleontological file search from the Utah Geological Survey (UGS) was requested to determine the nature and extent of paleontological resources within the Proposed Action area. In a letter dated August 19, 2020, the UGS stated that the Proposed Action area has a low to moderate potential for yielding significant fossil localities, and there are no paleontological localities recorded in the Proposed Action area. The letter is attached as Appendix E.</p>
Wilderness and Wild and Scenic Rivers	<p>There are no designated Wilderness areas, or Wild and Scenic Rivers or segments listed on the Nationwide Rivers Inventory within or near the Proposed Action area.</p>

Resource	Rationale for Elimination from Further Analysis
Prime and Unique Farmlands	Construction activities associated with the installation of the buried pipeline would cause temporary disturbance to land classified as prime farmland; however, there would be no conversion of prime farmland to nonagricultural land uses.
Floodplains	The 100-year floodplain has not been mapped by the Federal Emergency Management Agency (FEMA) in this area. Functional floodplains likely occur in association with Christiansen Wash, at the south end of the Proposed Action. Impacts would be temporary during construction, and the buried pipeline would not affect floodplain function in the long-term.
Recreation	There are no recreation resources within the Proposed Action area; therefore, there would be no effects to recreation as a result of the Proposed Action.
Water Rights	Existing water rights would not change under 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 environmental resources, including social and economic conditions, occurring in the affected environment.

3.3.1 Geologic and Soil Resources

The Proposed Action area varies in topographic relief from relatively flat agricultural land through most of the Proposed Action area to undulating foothills at the north end of the Proposed Action. The Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2020) indicates that the soil types summarized in Table 3-2 make up the Proposed Action area.

Table 3-2
Soil Composition of the Proposed Action Area

Soil Type	Slope	Approximate Percentage of Soils in the Proposed Action Area
Beebe very fine sandy loam	1 to 3 percent	2.7
Billings silty clay loam*	1 to 3 percent	11.9
Briny silty clay loam	0 to 3 percent	1.7
Chipeta-Badland complex	3 to 45 percent	1.2
Chipeta-Persayo-Killpack complex	3 to 20 percent	5.8
Ferron peaty silt loam	0 to 3 percent	0.9
Gerst-Strych-Badland complex	30 to 70 percent	0.0
Hunting loam*	1 to 3 percent	12.6
Hunting loam, strongly saline	1 to 3 percent	15.0
Hunting-Gullied land-Libbings complex	0 to 5 percent	1.8
Killpack clay loam	1 to 3 percent	1.5
Libbings-Saseep complex	0 to 3 percent	6.5
Minchey clay loam*	1 to 3 percent	1.9
Minchey loam	1 to 3 percent	2.1
Penner loam*	1 to 3 percent	1.4
Persayo-Chipeta association	3 to 20 percent	1.3
Persayo-Vickel complex	3 to 12 percent	3.2
Ravola loam*	1 to 3 percent	12.2
Sagers-Killpack association	1 to 8 percent	1.3
Tusher fine sandy loam	1 to 3 percent	1.3
Tusher very fine sandy loam	3 to 6 percent	6.5
Vickel-Utaline-Persayo complex	8 to 45 percent	6.3
Yonic loam	1 to 3 percent	0.8
*Considered prime farmland if irrigated		

3.3.1.1 No Action

The No Action alternative would have no effect on geologic resources. However, soils would continue to leach salts into the canal, with those salts eventually discharging into the Colorado River system; continuing to adversely affect water quality.

3.3.1.2 Proposed Action

Trenching and backfilling activities would result in mixing of soil horizons. During trenching activities, topsoil would be salvaged and stockpiled separately from subsoil. Subsoil would be used first in backfilling activities, with the topsoil replaced on the surface. Soil stockpiling would be temporary, as open trenches would be filled within 5 calendar days (3 working days). Disturbed soils would receive soil stabilization treatments, such as seeding, to minimize erosion.

Implementation of the Proposed Action would have no long-term adverse effect on geologic or soil resources.

3.3.2 Cultural Resources

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

The affected environment for cultural resources is identified as the area of potential effect (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 the Proposed Action is 239 acres, which includes all areas of potential physical ground disturbance.

Cultural resource inventories were conducted for the Proposed Action in October of 2019 and June of 2020 by Montgomery Archeological Consultants. A total of 239 acres were inventoried; 13 historic sites were identified.

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

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and that:

- A. are associated with events that have made a significant contribution to the broad patterns of our history; or
- B. are associated with the lives of persons significant in our past; or
- C. embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. have yielded, or may be likely to yield, information important in prehistory or history.

Three sites were determined to be NRHP-eligible. These eligible sites are the Emery Canal, a historic period refuse scatter, and a homestead. The remaining 10 sites were determined to be

ineligible for listing on the NRHP, and included SR-10, ditches, historic period refuse scatter sites, and corrals.

3.3.2.1 No Action

The No Action alternative would have no effect on historic properties.

3.3.2.2 Proposed Action

Reclamation determined that the Proposed Action would have “No Adverse Effect” on historic properties. The Proposed Action is designed to avoid adverse impacts to the NRHP-eligible sites. All NRHP contributing elements of the three historic properties would be avoided by the project. In compliance with 36 CFR Section 800.4 and 36 CFR Section 800.11(e), Reclamation submitted a copy of the cultural resource inventory reports and Findings of Effect for consultation to the Utah SHPO and to tribes that might attach religious or cultural significance to the historic properties that could possibly be affected by the Proposed Action for consultation on November 5, 2020. The Utah SHPO concurred with the Determinations of Eligibility and Findings of Effect in a letter received on November 9, 2020.

3.3 Hydrologic Conditions

The Proposed Action is within three 6th field hydrologic unit code (HUC) subwatersheds: Wash Rock Canyon-Muddy Creek (140700020205), Miller Canyon-Muddy Creek (140700020405), and Christiansen Wash-Quitcupah Creek (140700020107). Subwatersheds are represented in map 3 of Appendix A.

Water for the irrigation system is diverted from Muddy Creek at a point within the Wash Rock Canyon-Muddy Creek subwatershed, north of Emery Town. Muddy Creek originates in the Manti-La Sal Mountains, and flows southward on the east side of Emery Town. The creek converges with the Fremont River downstream of Hanksville, Utah, and together, the two form the Dirty Devil River, which flows into the Colorado River at the north end of Lake Powell.

Irrigation percolation and runoff from operation of the MCIC system drains eastward, transporting salts back into Muddy Creek, and results in an average salt load of 3,010 tons per year to the Colorado River Basin.

3.3.3.1 No Action

The No Action alternative would have no effect on hydrologic conditions. Water from open canal/ditch and flood-irrigation operations would continue transport salts to Muddy Creek, resulting in an increase in salinity downstream in the Colorado River.

3.3.3.2 Proposed Action

Under the Proposed Action, the remaining 37.5 miles of the open canal/ditch irrigation system would be abandoned. Open canal/ditch percolation of irrigation water would be eliminated, as would the resulting subsurface (i.e., groundwater) salt transport to Muddy Creek. Pressurized pipelines would allow agricultural operators to transition from flood to sprinkler irrigation methods, which require less water and would result in less surface and subsurface runoff from the fields.

Implementation of the Proposed Action would not adversely affect hydrologic function within the Proposed Action area and would beneficially reduce the amount of runoff to Muddy Creek.

3.3.4 Waters of the U.S

The Proposed Action area transects one natural intermittent channel, Christiansen Wash, and approximately 3.6 acres of wetlands (see map 4 in Appendix A). Stormwater runoff from the Proposed Action area drains eastward, into Muddy Creek.

3.3.4.1 No Action

The No Action alternative would have no effect on waters of the U.S.

3.3.4.2 Proposed Action

The pipeline would be constructed through Christiansen Wash and approximately 3.6 acres of wetlands. Permitting with the USACE in compliance with Section 404 of the Clean Water Act would be required prior to construction. Compensatory mitigation is not anticipated to be required because impacts within these waters would be temporary, as the pipeline would be buried, and the channel and wetlands would be restored to pre-construction contours. No water would be impounded by the Proposed Action. A Utah state stream alteration permit would also likely be required for alteration of Christiansen Wash; the USACE may approve authorization of a joint permit under PGP 10 for the crossing of Christiansen Wash.

Surface disturbance may also lead to increased turbidity and sedimentation in downstream waters. Construction of the proposed pipeline would disturb up to 85.4 acres; this disturbance could lead to increased erosion and sedimentation of the disturbed soils into Muddy Creek. To reduce or prevent adverse impacts to water quality from construction, a SWPPP would be prepared prior to the initiation of ground disturbance. The SWPPP would detail the best management practices and site-specific measures to prevent sediment and other pollutants from discharging into surface waters during construction. Implementation of the SWPPP would reduce sedimentation and the risk of pollution to surface waters during construction. Seeding disturbed areas would also reduce erosion and sedimentation in the long-term.

With implementation of minimization measures, the Proposed Action would not adversely affect waters of the U.S.

3.3.5 Water Quality

Seepage from unlined irrigation canals/ditches is a substantial source of subsurface water, which mobilizes naturally occurring salts in the soil and contributes to salt loading into the Colorado River. Flood-irrigation practices also result in increased salt-laden surface runoff to down slope water bodies. Reclamation estimates that the current MCIC system contributes a salt load of 3,010 tons per year to the Colorado River.

3.3.5.1 No Action

Under the No Action alternative, there would be no effect to water quality. Salt loading would continue to result from the percolation of canal/ditch seepage and flood-irrigation methods and would continue to degrade water quality in the Colorado River.

3.3.5.2 Proposed Action

The Proposed Action would result in the abandonment of approximately 37.5 miles of open canal/ditch, and the transition from flood to sprinkler irrigation methods. The elimination of canal

seepage and flood irrigation would reduce salt loading into the Colorado River by an estimated 3,010 tons annually. Although beneficial, this effect would not be significant.

Construction activities could add cumulatively to water quality impacts within the larger area, as surface runoff could mobilize salts from newly exposed soils. However, implementation of the minimization measures would decrease the magnitude of potential effects to water quality within the Proposed Action Area. Adverse impacts to water quality would be temporarily additive (during construction and up to 1 year after) but would reduce after salts were mobilized in the first year's precipitation events.

Overall, the Proposed Action would have a beneficial effect on water quality.

3.3.6 System Operations

Currently, irrigation water delivery from the Emery Canal is controlled by headgates associated with each property holding water rights. Shareholders and the water master control the respective headgates to adhere to a delivery schedule managed by the MCIC.

Outside of irrigation season, water may be still delivered through the system for livestock watering. Periodically, water is temporarily shut-off to individual farms for ditch cleaning and maintenance.

3.3.6.1 No Action

Under the No Action alternative, there would be no change to the operations of the current irrigation system. Water would continue to be lost to percolation and evaporation. Ongoing maintenance of the open canal/ditch system would be required due to deterioration of the canal and the accumulation of debris in the open channels.

3.3.6.2 Proposed Action

Under the Proposed Action, water would continue to be delivered to each shareholder; however, water would be delivered via turnouts from the new pressurized pipeline system. Construction of a pressurized pipeline would allow individual shareholders to transition from flood to sprinkler irrigation methods. The canals would be abandoned and left in place to avoid impacts to historic resources.

Water meters and valves at each turnout would allow individual shareholders and irrigation company personnel to properly manage water use. Water loss due to seepage and evaporation during delivery would be eliminated. The Proposed Action would allow for more-consistent water distribution, and could extend the growing season, resulting in increased crop yield.

The system would remain in operation year-round to provide livestock water outside of irrigation season. The proposed system is anticipated to require less maintenance than the existing system.

Implementation of the Proposed Action would improve system operations and maintenance.

3.3.7 Public Health, Safety, Air Quality, and Noise

Public Health and Safety

The Proposed Action is located through agricultural areas around Emery Town; residential areas are avoided. The Proposed Action crosses SR-10 on the east side of town, and numerous local roadways through irrigated fields. Potential risks to public health and safety are low in the area.

Air Quality

The Environmental Protection Agency (EPA) designates areas in the U.S. for “attainment” or “non-attainment” of National Ambient Air Quality Standards (NAAQS). The criteria pollutants include nitrogen oxides, sulfur oxides, particulate matter, ozone, carbon monoxide, and lead. The Proposed Action area is located outside of any NAAQS nonattainment area designated by the EPA, or in other words, Emery County is in attainment for air quality standards. Operation of agricultural machinery and vehicular traffic throughout the valley results in equipment emissions and fugitive dust daily.

Noise

The Proposed Action area includes fields that are routinely disturbed by mechanized farm equipment, highways, and local roadways. The nearest concentration of residential buildings is over 1,000 feet away from the Proposed Action area. Local residents are likely accustomed to noise levels produced by farming operations and highway traffic.

3.3.7.2 No Action

Under the No Action alternative, there would be no effect to public health, safety, air quality, or noise, as current conditions would not change.

3.3.7.3 Proposed Action

Public Health and Safety

To ensure safety during construction, industry standards would be followed. Public access to the Proposed Action area would be restricted. The construction contractor would be responsible for preparing and implementing a traffic management plan. The pipeline would be installed under SR-10 by directional boring, in which would avoid disruptions to vehicle traffic. Increased hazards from construction would be temporary and normal traffic conditions would be re-established immediately upon construction completion. Implementation of the Proposed Action would not adversely affect public health or safety.

Air Quality

Implementation of the Proposed Action would require operation of heavy equipment for construction; such operations would likely result in mobile equipment emissions and particulate emissions resulting from ground disturbing activities (fugitive dust). Such emissions would be localized and only emitted during construction. There would be no long-term emissions as a result of the Proposed Action.

Given the nature and size of the Proposed Action relative to the agricultural development in the area, any increase in emissions would be negligible. Soils would be stabilized upon Proposed Action completion by returning the disturbed areas to current uses, minimizing the potential for fugitive dust release. There would be no adverse effect to air quality with implementation of the Proposed Action.

Noise

The Proposed Action would result in a temporary increase in noise levels during construction. Noise level increases would be localized to the area immediately around the construction activities and would continue along the alignment as construction progressed. Construction would only occur during daylight hours. Implementation of the Proposed Action would not adversely affect noise receptors in the surrounding community.

3.3.8 Wetlands, Riparian, Noxious Weeds, and Existing Vegetation

Wetlands

An aquatic resources delineation was conducted in 2019 (Jones and DeMille Engineering 2020a); approximately 3.6 acres of wetland area occurs within the Proposed Action area (see map 4 Appendix A). The delineated wetlands are generally associated with open canal and ditch seepage or flood-irrigation runoff.

Riparian

Riparian areas occur adjacent to the open canal/ditch system and are created by seepage. Approximately 27.2 acres of riparian vegetation were identified in association with the 37.5 miles of remaining open canals and ditches. The predominant riparian species identified was Russian olive (*Elaeagnus angustifolia*); various grasses, sedges, and rushes were also prevalent. Yellow willow (*Salix lutea*) and sandbar willow (*Salix exigua*) were also present, but not abundant. The existing riparian habitat was evaluated on-site by qualified biologists, and the total habitat value was calculated to be 126.2 units (see Appendix D).

Noxious Weeds

Plants designated and published as noxious for the State of Utah occur throughout the Proposed Action area. Russian olive was the predominant noxious weed observed. Tamarisk (*Tamarix ramosissima*), Canadian thistle (*Cirsium arvense*), phragmites (*Phragmites australis* ssp.), and quackgrass (*Elymus repens*) were also identified during field inventories.

Existing Vegetation

The predominant crop grown throughout the area is alfalfa hay (*Medicago sativa*). Trees in the valley appear to occur only in association with irrigation features and are predominantly Russian olive with scattered Fremont cottonwood (*Populus fremontii*). The north end of the Proposed Action area is relatively undeveloped and is dominated by sagebrush (*Artemisia tridentata*) and rabbitbrush (*Chrysothamnus nauseosus*).

3.3.8.2 No Action

The No Action alternative would have no effect on wetland and riparian systems, nor, noxious weeds, or existing vegetation, as current conditions would not change.

3.3.8.3 Proposed Action

Wetlands

Impacts to approximately 3.6 acres of wetland area would be temporary during construction, as the pipeline would be buried, and the surface would be restored to pre-construction contours. If necessary, permitting with the USACE to receive authorization for impacting wetland areas would be completed prior to construction start. Compensatory mitigation is not anticipated as construction impacts to wetland areas would be temporary.

In the long-term, wetlands associated with open canal and ditch seepage or flood-irrigation runoff may be eliminated by the dewatering that would result from the Proposed Action. Such impacts would be exempt from Clean Water Act Section 404 permitting requirements as these wetland areas were created, over time, via irrigation water.

Riparian

Completion of the Proposed Action would result in canal/ditch permanent dewatering, which would eliminate up to 27.2 acres of riparian area as these riparian areas depend on a long-term water source to persist. As required by the Colorado River Basin Salinity Control Act (43 U.S.C. 1571-1599), any fish and wildlife values lost because of Proposed Action implementation (including the loss of riparian vegetation) would be replaced by the MCIC through the HRP, in coordination with the Bureau of Reclamation and the U.S. Fish and Wildlife Service. Replacement habitat must be of equal or greater value to the riparian habitat lost because of the Proposed Action and must be managed to maintain its value for the life of the Proposed Action (estimated to be 50 years).

With implementation of the HRP, the Proposed Action would not adversely affect riparian habitat.

Noxious Weeds

Construction of the Proposed Action would result in up to 85.4 acres of ground disturbance, which increases the risk of spreading noxious weeds. Adhering to the minimization measures and the proposed environmental commitments (Chapter 4) would reduce the risk of spreading noxious species during construction. Operation of the system is not anticipated to increase the risk of spreading noxious weeds because any future potential for ground disturbance would be minimal.

With adherence to the design features, and because impacts would be temporary (during construction or maintenance), implementation of the Proposed Action would not increase the spreading of invasive species in the short- or long-term.

Existing Vegetation

Construction of the proposed pipeline would temporarily impact agricultural vegetation. Once the pipeline is installed and the trench backfilled, efforts to stabilize the surface soil would be immediately implemented. When stabilization is achieved it is anticipated that normal agricultural practices would resume. Reseeding with appropriate crop or pasture species would be coordinated with each respective landowner within their cultivation areas. Areas that are not currently under irrigation would be seeded with a suitable native species seed mix.

Because disturbed areas would receive soil stabilization treatments, construction, operation, and maintenance of the Proposed Action would have no long-term adverse effect to vegetation.

3.3.9 Wildlife Resources

Wildlife resources that were considered include state sensitive species, migratory birds, and big game species. Species were identified by reviewing the project in the Utah Natural Heritage Program and Utah Conservation Data Center. Fish are eliminated from further consideration because they do not occur in the canal, which is regularly dewatered. Greater sage-grouse have been eliminated from further consideration because suitable sagebrush habitat does not occur within or near the Proposed Action Area. Potential impacts to other wildlife resources are addressed in this chapter.

Birds (Raptors and Migratory Birds)

The Proposed Action Area consists primarily of disturbed pastures and cultivated fields. Suitable migratory bird and raptor habitat may occur in isolated patches along the pipeline alignment. Russian olive, cottonwood, and willow are the most common species that would provide suitable habitat within the area.

Small Mammals, Reptiles, and Amphibians

The Proposed Action was evaluated in the Utah Natural Heritage Program on August 19, 2020 (Appendix F). The species search report identified white-tailed prairie dog (*Cynomys leucurus*) as a wildlife species of concern potentially occurring within the Proposed Action area. The Proposed Action Area provides habitat for breeding, nesting, foraging, cover, and movement corridors for an array of small animals, such as amphibians, reptiles, and small mammals.

Big Game

The entire Proposed Action Area is within Utah Division of Wildlife Resources (UDWR)-mapped winter substantial habitat for elk (*Cervus canadensis*). Mule deer (*Odocoileus hemionus*) are frequently observed in the area. Elk and mule deer likely travel through the Proposed Action area when moving between the uplands on the west and Muddy Creek on the east. Linear riparian corridors associated with the open canals and ditches may provide cover during travel, and cultivated fields may provide forage.

3.3.9.2 No Action

The No Action alternative would not affect any wildlife species or habitat.

3.3.9.3 Proposed Action

Birds (Raptors and Migratory Birds)

Most of the Proposed Action's ground disturbance would occur within actively maintained pastures and cultivated fields, which would not provide suitable nesting or foraging habitat for most bird species. The northern end of the Proposed Action area is at least three-quarters of a mile (0.75 miles) away from suitable cliff nesting habitat. Proposed Action-related disturbance would not differ greatly from routine agricultural disturbance, and birds nesting nearby or foraging within the area would likely be habituated to such types of visual and auditory disturbance. Any vegetation removal would occur during the non-breeding, non-nesting season (September 1 – February 28) as provided in the environmental commitments (Chapter 4), which also include other minimization and avoidance measures.

Small Mammals, Reptiles, and Amphibians

Impacts to burrowing amphibians, reptiles, and small mammals could include direct mortality and displacement during construction activities. Small animal species may experience reduced populations in direct proportion to the amount of habitat disturbed. These species and habitats are relatively common throughout the area and the Proposed Action would not adversely affect population persistence. Pipeline trenches would be filled within 5 days of excavation, which would reduce the potential entrainment of animals. Where practicable, disturbed areas would be reseeded after construction; reseeded areas would be expected to provide suitable cover or forage as soon as the next growing season.

The Proposed Action would likely produce adverse effects to small mammals, reptiles, and/or amphibians resulting from direct impact or displacement due to habitat removal. However, these affects would not be substantial.

Big Game

The Proposed Action would disturb approximately 85.4 acres of the UDWR-mapped elk winter substantial habitat (<https://dwrcdc.nr.utah.gov/ucdc/downloadgis/disclaim.htm>), which does not have management stipulations. The UDWR defines “substantial habitat” as *habitat that is used by a wildlife species but is not crucial for population survival*. There would be minimal loss of habitat value, as most of the Proposed Action area is cultivated fields. Disturbance because of noise and human presence from construction activities could result in displacement of elk and deer; however, Proposed Action activities would be localized to the immediate area of work as construction progressed along the pipeline alignment.

If construction were feasible during winter use periods, Proposed Action activities would occur during daylight hours. Elk and deer would likely travel through the areas at dawn and dusk to access agricultural lands with forage opportunities and would avoid the Proposed Action area during daytime construction activities.

The Proposed Action would not adversely affect big game species.

3.3.10 Threatened and Endangered Species

An official species list was obtained from the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) system on November 10, 2020 (Appendix G). The official species list identified the following species as potentially occurring within the Proposed Action area:

- Mexican spotted owl (*Strix occidentalis lucida*)
- Southwestern willow flycatcher (*Empidonax traillii extimus*)
- Yellow-billed cuckoo (*Coccyzus americanus*)
- Last Chance townsendia (*Townsendia aprica*)
- San Rafael cactus (*Pediocactus despainii*)

No critical habitats occur within or near the Proposed Action area. A Biological Evaluation was prepared to consult with USFWS on the potential effects to listed species (Jones and DeMille Engineering 2020b). As documented, there would be no effect to Mexican spotted owl, yellow-billed cuckoo, Last Chance townsendia, or San Rafael cactus. Potentially suitable riparian nesting for

southwestern willow flycatcher occurs in an isolated patch at the north end of the Proposed Action area.

3.3.10.1 No Action

Under the No Action Alternative, there would be no effect to listed species.

3.3.10.2 Proposed Action

Potentially suitable riparian nesting habitat for southwestern willow flycatcher is limited to a small 7.5-acre patch at the north end of the Proposed Action area. The area contains large cottonwoods and willow thickets. Up to 0.2 acres of potentially suitable nesting habitat in this patch could be removed by construction activities. The potentially suitable habitat that would be removed abuts a well-maintained dirt road; Russian olive and rabbitbrush occur along the edges of the road. This area is also within 900 feet of Highway 10 to the southeast. The remaining 7.3 acres of the patch would likely be lost over time, as the canal would be dewatered and there would no longer be seepage to support the riparian vegetation.

Vegetation would be removed between September and February, which is outside the period when flycatchers are present at North American breeding grounds. Because of the small patch size and its proximity to frequent disturbance from vehicle use on the nearby roads, habitat suitability for southwestern willow flycatcher in this area is minimal, and nesting is unlikely to occur within or near the Proposed Action Area.

USFWS concurred that the Proposed Action may affect but is not likely to adversely affect the southwestern willow flycatcher. That correspondence (December 12, 2020) is provided in Appendix H.

3.3.11 Socioeconomics

The U.S. Census Bureau estimates that Emery Town has an approximate total population of 295 residents. Water from the canal and ditch irrigation system supports agricultural uses, which provide the economic base for Emery Town. The MCIC irrigation system delivers waters for approximately 3,000 acres of agriculture operations.

3.3.11.1 No Action

Without the Proposed Action, existing economic conditions would be expected to continue. Water would continue to be lost to percolation and evaporation, and water users would not have the ability to convert from flood to pressurized irrigation systems.

3.3.11.2 Proposed Action

The Proposed Action would eliminate water losses due to seepage and evaporation during delivery and would allow individual shareholders to transition to sprinkler irrigation methods; these changes would provide more consistent water distribution to and across fields. Improved water distribution would likely result in increased crop yields, resulting in increased revenue for the region. These increases are not anticipated to be substantial.

Implementation of the Proposed Action would have a beneficial effect on socioeconomic conditions for Emery Town.

3.3.12 Access and Transportation

The Proposed Action area crosses SR-10 and numerous county roads.

3.3.12.1 No Action

The No Action alternative would have no effect on access or transportation.

3.3.12.2 Proposed Action

Access on SR-10 would not be affected because the pipeline would be installed under the highway by boring the pipe under the road, avoiding road closure. Impacted county roads would be temporarily closed for up to 5 days to allow for open-cut installation of the pipeline. Any closures and detours would be coordinated with the county, and encroachment permits would be acquired where necessary. Roads would be restored to operating conditions as soon as practicable after pipeline burial.

The Proposed Action would not adversely impact access or transportation due to the remote location of the Proposed Action area and the temporary closure of the remote roads. Pipeline crossings of existing roads would not impact access or transportation long-term.

3.4 Indian Trust Assets

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

Trust assets can be real property, physical assets, or intangible property rights such as lands, minerals, hunting and fishing rights, traditional gathering grounds, and water rights. Impacts to ITAs are evaluated by assessing how the Proposed Action would affect the use and quality of ITAs. Any action that would adversely affect the use, value, quality, or enjoyment of an ITA is considered to have an adverse impact on the resources.

Inquiries about ITA concerns were included in the cultural consultation letters for the Project that were sent out to the Navajo Nation of Arizona, New Mexico, and Utah (Navajo Nation), and the Ute Indian Tribe of the Uintah and Ouray Tribe of Utah (Ute Tribe) on November 5, 2020. Reclamation has received no response from the Ute Tribe to these letters to date. A Navajo Nation cultural specialist responded in an email on December 7, 2020, that there are no known traditional cultural properties in the Proposed Action area.

There are no known ITAs in the Proposed Action area. Therefore, implementation of the No Action or 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.

Within the affected area, the U.S. Census Bureau estimates that approximately 11 percent of the population is below the poverty level and up to 4 percent is considered minority. The Proposed Action would not involve population relocation, health hazards, hazardous waste, or substantial economic impacts; therefore, the Proposed Action would not disproportionately (unequally) affect any low-income or minority communities within the Proposed Action area.

3.6 Cumulative Effects

Reclamation analyzed the Proposed Action for potential significant cumulative impacts to resources affected by the Proposed Action and by other past, present, and reasonably foreseeable activities. The Council on Environmental Quality's regulations for implementing NEPA (40 CFR 1508.7) state that a cumulative impact "is an impact on the environment which results from the incremental effect of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." A cumulative effects analysis 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 may combine to cause an effect.

3.6.1 Spatial and Temporal Context for Effects Analysis

The cumulative impact area represents a landscape surrounding the Proposed Action area where past, present, and reasonably foreseeable future management actions have occurred or will occur. The cumulative impact area varies by resource, and the specific geographical boundaries for each area are described with each resource.

Based on the anticipated Proposed Action lifetime, the timeframe for cumulative effects is 50 years.

3.6.2 Methodology

Reclamation searched agency websites and performed online searches to identify past, present, or reasonably foreseeable Proposed Actions with potential for cumulative effects. The following agencies were identified with Proposed Actions or activities in the cumulative impact area:

- BLM: Reclamation searched BLM's ePlanning website for Proposed Actions in any stage of implementation, from preliminary planning stages to full construction/implementation of the Proposed Action.
- U.S. Forest Service: Reclamation searched the Fishlake National Forest Schedule of Proposed Actions (SOPA).
- NRCS: Reclamation searched NRCS's website and also performed online searches.
- Reclamation: Reclamation internally reviewed Reclamation Proposed Actions and activities.

- Utah Division of Oil, Gas and Mining (UDOGM): Reclamation searched UDOGM's website for oil, gas, and mining permits in the vicinity of the Proposed Action.
- Utah School and Institutional Trust Lands Administration (SITLA): Reclamation searched SITLA's interactive maps for actions in the area.

For private land, Reclamation reviewed aerial imagery to identify current land uses.

3.6.3 Past, Present, and Reasonably Foreseeable Actions

The following actions were identified within the cumulative impact area:

- Reclamation: Reclamation implements numerous projects through the Colorado River Basin Salinity Control Program and other programs throughout the region. Many of these projects focus on increased water use efficiency and reduced salinity.
- BLM: Moore Fiber Optic Line Amendment – NEPA was completed in 2018 to authorize a buried fiber optic line east of the Proposed Action area; <https://eplanning.blm.gov/eplanning-ui/project/100356/510> (accessed 8-18-2020)
- NRCS: Muddy Creek Irrigation Proposed Actions – The San Rafael Conservation District and MCIC are partnering to develop an integrated water supply system that includes a future 1,000-acre-foot storage reservoir, regulating reservoir, transmission pipelines, and pressurized irrigation systems. The goal is to complete the next phase in replacing an aging flood-irrigation system to significantly increase water efficiency, reduce total dissolved solids (salt) loading to impaired waters, reduce soil erosion, increase crop production, and assist local stakeholders and partnering agencies in achieving water quantity and quality objectives within the watershed area; <https://nrcs.maps.arcgis.com/apps/Shortlist/index.html?appid=ab6aa86f9aca48e2af92ed165450d110> (accessed 8-18-2020)
- UDOGM: Coal mining occurs at the Emery Deep Mine and Sufco Mine; https://fs.ogm.utah.gov/PUB/MINES/Coal_Related/MAPS/pubrecmap.pdf (accessed 8-18-2020)
- UDOGM: Mineral mining for shale and rock occurs south of the Proposed Action area; <https://minerals.ogm.utah.gov/index.php> (accessed 8-18-2020)
- UDOGM: Oil wells occur within the subwatersheds that contain the Proposed Action area; <https://dataexplorer.ogm.utah.gov/> (accessed 8-18-2020)
- Private: Residential development, agricultural development, infrastructure development (mainly roads in rural Emery County)

3.6.4 Geologic and Soil Resources

The cumulative impact area for geologic and soil resources is the 82,504-acre 6th field HUC subwatersheds (Wash Rock Canyon-Muddy Creek [140700020204], Miller Canyon-Muddy Creek [140700020205], and Christiansen Wash-Quitcupah Creek [140700020206]) that contain the Proposed Action Area (see map 3 in Appendix A). Cumulative effects to soil resources are unlikely to spread beyond the topographical boundaries of the subwatersheds. Most impacts to soil are due to surface-disturbing activities associated with agricultural, residential, and infrastructure development.

Disturbance from implementation of the Proposed Action could add cumulatively to soil impacts, such as soil loss due to erosion, within the larger area; however, implementation of the minimization measures would stabilize soils and re-establish vegetation, which would decrease the magnitude of potential effects to soil resources within the Proposed Action Area. Adverse impacts to the soil resources would be temporarily additive (during construction and up to 2 years after) but would reduce as reclamation was completed and vegetation was re-established as required through the environmental commitments (Chapter 4).

In the long-term, the Proposed Action would have no cumulative adverse effects to soil resources.

3.6.5 Cultural Resources

Because the NRHP-eligible cultural sites would be avoided and there would be no direct or indirect effects, there would be no cumulative effects to cultural resources.

3.6.6 Hydrologic Conditions

The cumulative impact area for hydrologic conditions is the 82,504-acre impacted subwatersheds area. Most impacts to hydrologic conditions in the cumulative impact area are due to infrastructure development that affects the flow of water.

The reduction of irrigation percolation and runoff would not affect hydrological function within the cumulative impact area. Other actions in the area are unlikely to affect hydrologic conditions of the Proposed Action area, as the irrigation system would be solely operated by the MCIC. Therefore, the Proposed Action would not result in cumulative impacts to hydrologic conditions in the area.

3.6.7 Waters of the U.S.

The cumulative impact area for waters of the U.S. is the 82,504-acre impacted subwatersheds area. Most impacts to waters of the U.S. in the cumulative impact area are due to ground disturbance associated with agricultural and infrastructure development.

Similar to impacts to soils, disturbance from implementation of the Proposed Action could add cumulatively to discharges into waters of the U.S. within the larger area; however, implementation of the minimization measures would stabilize soils and re-establish vegetation, which would decrease the magnitude of potential effects to waters within the Proposed Action Area. Adverse impacts would be temporarily additive (during construction and up to 2 years after) but would reduce as Reclamation was completed and vegetation was re-established.

The Proposed Action would not result in cumulative impacts to waters of the U.S.

3.6.8 Water Quality

The cumulative impact area for water quality is the 246,000-square mile Colorado River Basin, which is the area considered in the Colorado River Basin Salinity Control Act. Proposed Action impacts are intended to affect water quality in the larger cumulative impact area. Most impacts to water quality in the Colorado River Basin area are due to surface-disturbing activities associated with agricultural, residential, and infrastructure development and agricultural water management, including private land irrigation practices and federal salinity control actions.

Within the cumulative impact area, implementation of the Proposed Action would have a countervailing effect on actions that increase salinity within the Colorado River Basin and would add

cumulatively to the effect of other salinity reduction actions. The Proposed Action would have a beneficial cumulative impact on water quality.

3.6.9 System Operations

As the system is owned and managed solely by the MCIC, there would be no cumulative effects to system operations from implementation of the Proposed Action.

3.6.10 Public Health, Safety, Air Quality, and Noise

Since Proposed Action impacts to public health, safety, air quality, and noise would be temporary (during construction and maintenance) and localized to the Proposed Action area, the Proposed Action would not result in cumulative adverse impacts to any of these factors.

3.6.11 Wetlands, Riparian, Noxious Weeds, and Existing Vegetation

As Proposed Action impacts to wetlands would be temporary and localized to the Proposed Action Area, the Proposed Action would not result in significant cumulative adverse impacts to wetlands.

As impacts to riparian habitat would be offset by implementation of the HRP, the Proposed Action would not result in significant cumulative adverse impacts to riparian vegetation.

The cumulative impact area for weeds and vegetation is the 82,504-acre impacted subwatersheds area. The majority of impacts to vegetation in the area are due to surface-disturbing activities associated with agriculture and infrastructure development. The inclusion of these subwatersheds captures similar surface disturbance from motorized vehicles and other activities that could provide transport for noxious weeds and invasive plants into or from the area.

Disturbance from implementation of the Proposed Action could add cumulatively to the spread of invasive or noxious weeds within the cumulative impact area; however, application of the design features would decrease the potential spread of weeds into or from the Proposed Action Area. The risk of weed spreading would be temporarily additive during Proposed Action activities and up to 2 years after but would reduce as Reclamation was completed and desirable vegetation was re-established on disturbed surfaces. Therefore, implementation of the Proposed Action would not result in cumulative long-term adverse impacts to vegetation.

3.6.12 Wildlife Resources

Due to the limited amount of suitable wildlife habitat within the Proposed Action area, the temporary and localized nature of the Proposed Action disturbance, the Proposed Action would not result in significant cumulative adverse impacts to any wildlife species or habitat.

3.6.13 Threatened and Endangered Species

The cumulative impact area of southwestern willow flycatcher includes the Proposed Action area and extends one-half (0.5) linear mile for potential noise disturbance impacts; the total area is approximately 4,756 acres.

Actions that are likely to occur within the area and that have potential to result in cumulative effects include ongoing roadway maintenance, residential development, livestock grazing, and other agricultural practices. These activities may disturb suitable habitat or increase noise within the cumulative impact area. Cumulatively, these past and future actions would contribute to the ongoing habitat alteration and human-caused disturbance in the cumulative impact area; however, the Proposed Action is located in a remote rural area of Emery County, and such activities are

anticipated to be limited in the future.

Due to the limited amount and suitability of potential habitat within the cumulative impact area, the Proposed Action would not result in significant cumulative adverse impacts to the southwestern willow flycatcher or its habitat.

3.6.14 Socioeconomics

Because the Proposed Action benefits are limited to users on the MCIC system and increasing the irrigated area is not allowed under the funding conditions, the socioeconomic benefits would be localized to the current MCIC-service area. The socioeconomic benefits of the Proposed Action would add cumulatively to benefits of other MCIC irrigation efficiency Proposed Actions, such as the NRCS Muddy Creek Irrigation Proposed Action. The Proposed Action would have a beneficial cumulative impact on socioeconomic conditions in the MCIC-service area.

3.6.15 Access and Transportation

Since Proposed Action impacts to access and transportation would be temporary (during construction and maintenance) and localized to the Proposed Action area, the Proposed Action would not result in cumulative adverse impacts to access or transportation.

3.6.16 Summary of Cumulative Effects

The Proposed Action would not result in cumulative adverse impacts to any resource considered in this analysis. Conversely, cumulative beneficial effects to water quality and socioeconomic conditions would be expected to result from implementation of the Proposed Action and other reasonably foreseeable future actions.

3.7 Summary of Environmental Effects

Table 3-3.
Summary of Environmental Effects

Proposed Action Resource	No Action	Proposed Action	Cumulative
Geologic and Soil Resources	No effect	No long-term adverse effect	No cumulative adverse effect
Cultural Resources	No effect	No adverse effect	No cumulative effect
Hydrologic Conditions	No effect	No adverse effect; reduced irrigation runoff	No cumulative effect
Waters of the U.S.	No effect	No long-term adverse effect	No cumulative effect
Water Quality	No beneficial effect	Beneficial net reduction in salt loading into the Colorado River Basin	Beneficial cumulative net reduction in salt loading
System Operations	No effect	Improved operations	No cumulative effect

Proposed Action Resource	No Action	Proposed Action	Cumulative
Public Health, Safety, Air Quality, and Noise	No effect	No long-term adverse effect	No cumulative adverse effect
Wetlands, Riparian, Noxious Weeds, and Existing Vegetation	No effect	Temporary impacts to wetlands and vegetation, low risk of weed spreading	No cumulative adverse effect
Wildlife Resources	No effect	No long-term adverse effect to any species	No cumulative adverse effect
Threatened and Endangered Species	No effect	May affect, not likely to adversely affect southwestern willow flycatcher	No cumulative effect
Socioeconomics	No beneficial effect	Beneficial economic effect	Beneficial cumulative economic effect
Access and Transportation	No effect	No long-term adverse effect	No cumulative adverse effect
Indian Trust Assets	No effect	No effect	No cumulative effect
Environmental Justice	No effect	No adverse effect	No cumulative effect

Chapter 4. Environmental Commitments

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

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

1. Standard Reclamation Best Management Practices - Standard Reclamation Best Management Practices would be applied during construction activities to minimize environmental effects and would be implemented by construction forces or included in construction specifications. 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 would be appropriately installed and left in place until after vegetation 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 of the defined Proposed Action construction area, additional environmental analyses may be necessary.
3. Utah Pollution Discharge Elimination System (UPDES) Permit - Because this Proposed Action would disturb more than 1 acre of land, acquisition of coverage under the UPDES Permit would be required before any ground-disturbing Proposed Action activities. Appropriate measures would be taken to ensure that construction-related sediments would not enter the jurisdictional waters either during or after construction.
4. Fugitive Dust Control - 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.
5. Cultural Resources - In the case that any cultural resources, either on the surface or subsurface, are discovered during construction, Reclamation's Provo Area Office archaeologist must be notified and construction in the area of the inadvertent discovery must cease until an assessment of the resource and recommendations for further work can be made by a professional archaeologist.

6. Paleontological Resources - Should vertebrate fossils be encountered during ground disturbing actions; construction must be suspended until a qualified paleontologist and the Provo Area Archaeologist can assess the find.
7. Wildlife Resources:
 - a. Migratory Bird Protection -
 - i. Perform any ground-disturbing activities or vegetation treatments in suitable habitat 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 in suitable habitat must be scheduled during the migratory bird breeding season, a site-specific survey for nesting birds should be performed starting at least 2 weeks prior to groundbreaking activities or vegetation treatments. Established nests with eggs or young cannot be moved, and the birds cannot be harassed 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 must be implemented to provide full compliance with environmental laws. Raptor surveys would 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 Action would avoid adverse impacts to raptors, including bald and golden eagles. Locations of existing raptor nests and eagle roosting areas would be identified prior to the initiation of Proposed Action activities. Appropriate spatial buffer zones of inactivity would 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.
8. Previously Disturbed Areas - Construction activities must be confined to previously disturbed areas, where possible, for such activities as work, staging, and storage, waste, and vehicle and equipment parking areas. Vegetation disturbance must be minimized as much as practicable.
9. Public Access - Construction sites must be closed to public access. Temporary fencing, along with signs, must be installed to prevent public access. Reclamation must coordinate with landowners or those holding special permits and other authorized parties regarding access to or through the Proposed Action area.

10. Disturbed Areas - All disturbed areas resulting from the Proposed Action would be smoothed, shaped, contoured, and rehabilitated to as near the pre-Proposed Action construction condition as practicable. After completion of the construction and restoration activities, disturbed areas would be seeded at appropriate times. Weed control on all disturbed areas would be required.
11. Threatened and Endangered Species - Conservation measures identified during Endangered Species Act (ESA) Section 7 consultation would be adhered to in compliance with the ESA.
12. Human Remains - If a person knows or has reason to know that she or he has inadvertently discovered possible human remains on state or federal lands or during the course of a federally funded project, she or he must immediately notify Reclamation's Provo Area Office archaeologist by telephone about the discovery. Work will stop until the proper authorities are able to assess the situation on site. This action will promptly be followed by written confirmation from the Applicants to the responsible federal agency official with respect to federal land. The Utah SHPO and interested Native American tribal representatives will be promptly notified by Reclamation. 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 USC Section 470).
- 13 MCIC must comply with all provisions of the Habitat Replacement Plan prepared for this Proposed Action.

Chapter 5. Consultation and Coordination

5.1 Introduction

This chapter details 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

The draft EA was provided for a 30-day comment period beginning May 13, 2021 and ending June 13, 2021. Prior to this period, Reclamation mailed scoping letters to MCIC and their shareholders, as well as state and federal agencies, and other stakeholders, notifying them of the Proposed Action and availability of the draft EA.

No comments regarding the draft EA were received.

5.3 Native American Consultation

Reclamation is conducting Native American consultation throughout the public involvement process. A consultation letter was sent to the Ute Indian Tribe of the Uintah and Ouray Reservation and the Navajo Nation on November 5, 2020. This consultation was conducted in compliance with 36 CFR 800.2(c)(2) on a government-to-government basis. Through this effort, the tribes are given a reasonable opportunity to identify any concerns about historic properties; to advise on the identification and evaluation of historic properties, including those of traditional religious and cultural importance; to express their views on the effects of the Proposed Action on such properties; and to participate in the resolution of adverse effects.

5.4 Utah Geological Survey

Reclamation requested a paleontological file search from the UGS to determine the nature and extent of paleontological resources within the Proposed Action area. File search results from the UGS were received in a letter dated August 19, 2020. The letter is attached as Appendix E.

5.5 Utah State Historic Preservation Office

The Class III Cultural Resource Inventory Report and a determination of historic properties affected for the Proposed Action were submitted to the Utah State Historic Preservation Office (SHPO) on November 5, 2020. The SHPO concurred with Reclamation's determination of "No Adverse Effect" in a letter dated November 9, 2020. The consultation letters are provided in Appendix I.

5.6 U.S. Fish and Wildlife Service

The USFWS was consulted during Proposed Action planning to determine whether listed species could be impacted by the Proposed Action. An official species list was acquired from the IPaC system on November 10, 2020 (Appendix G). A Biological Evaluation was prepared to consult on potential impacts to southwestern willow flycatcher (Jones and DeMille Engineering 2020b); the USFWS concurred with a determination of "Not Likely to Adversely Affect" for the species on December 21, 2020 (Appendix H).

5.7 U.S. Army Corps of Engineers

The USACE was consulted in June 2020 to discuss the Proposed Action and the best permitting approach. Based on impacts to jurisdictional waters and wetlands, a Clean Water Act Section 404 Permit would be required.

Chapter 6. Preparers

The following is a list of preparers who participated in the development of the EA.

Table 6-1.
Reclamation Preparers and Reviewers

Name	Title	Resource
Thomas Davidowicz	Fish and Wildlife Biologist	Biological Resources
Linda Morrey	Secretary	Writing, Editing
Carley Smith	Archaeologist	Cultural Resources, Paleontological Resources, Indian Trust Assets
Rick Baxter	Program Administrator	NEPA Review
Peter Crookston	Chief, Environmental Group	NEPA Review

Table 6-2.
Non-Reclamation Preparers

Name	Title	Company
Jenna Jorgensen	Environmental Coordinator	Jones and DeMille Engineering

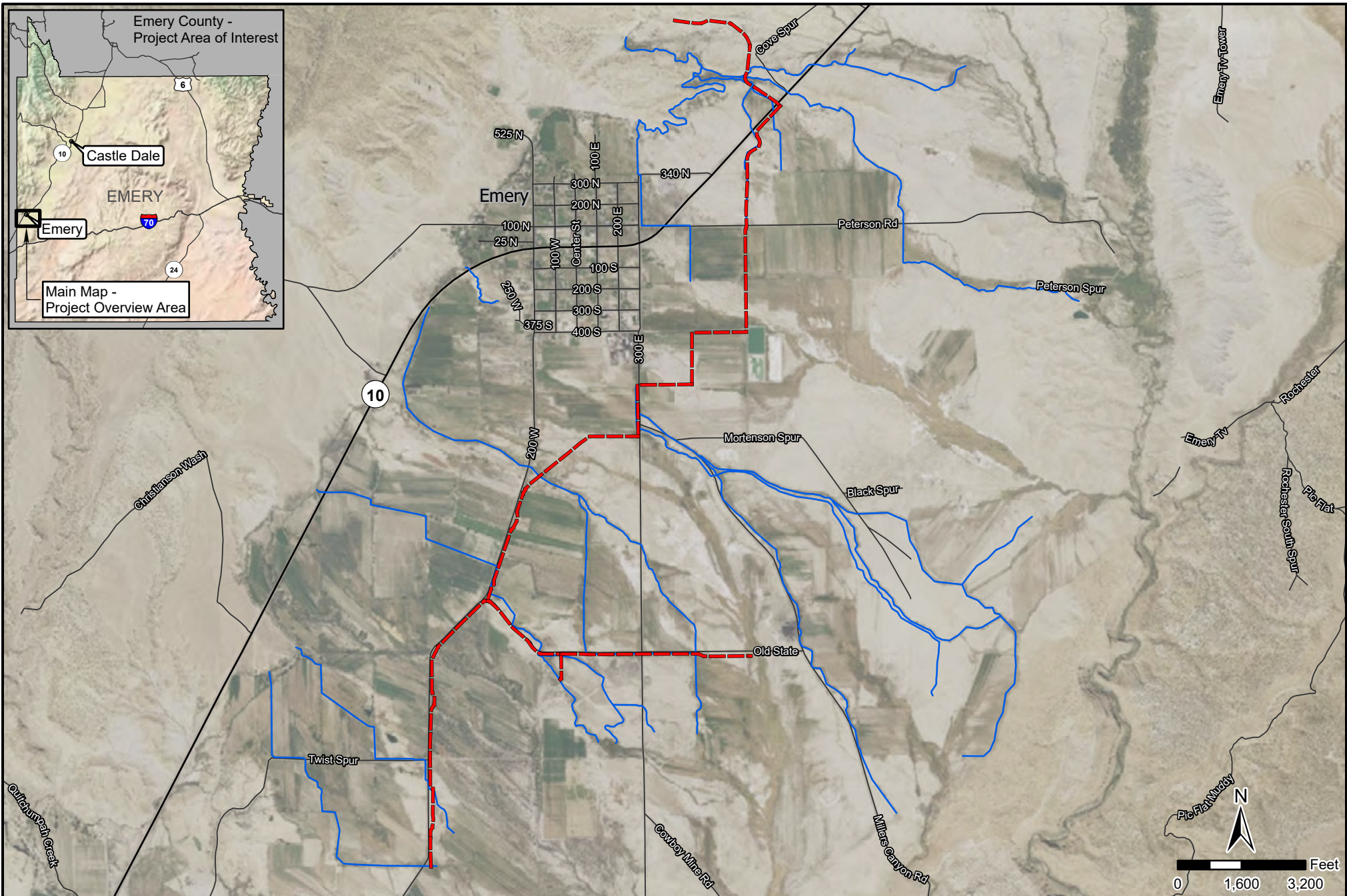
Chapter 7. Abbreviations


Abbreviation	Meaning
APE	Area of potential effect
BLM	Bureau of Land Management
BMP	Best management practice
CFR	Code of Federal Regulations
EA	Environmental assessment
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
HDPE	High-density polyethylene
HRP	Habitat Replacement Plan
HUC	Hydrologic unit code
IPaC	Information for Planning and Consultation
ITA	Indian Trust Asset
MCIC	Muddy Creek Irrigation Company
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
Reclamation	U.S. Bureau of Reclamation
SHPO	Utah State Historic Preservation Office
SITLA	Utah School and Institutional Trust Lands Administration
SOPA	Schedule of Proposed Actions
SWPPP	Stormwater pollution prevention plan
U.S.C.	U.S. Code
UDOGM	Utah Division of Oil, Gas and Mining
UDOT	Utah Department of Transportation
UDWR	Utah Division of Wildlife Resources
UGS	Utah Geological Survey
UPDES	Utah Pollution Discharge Elimination System
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service

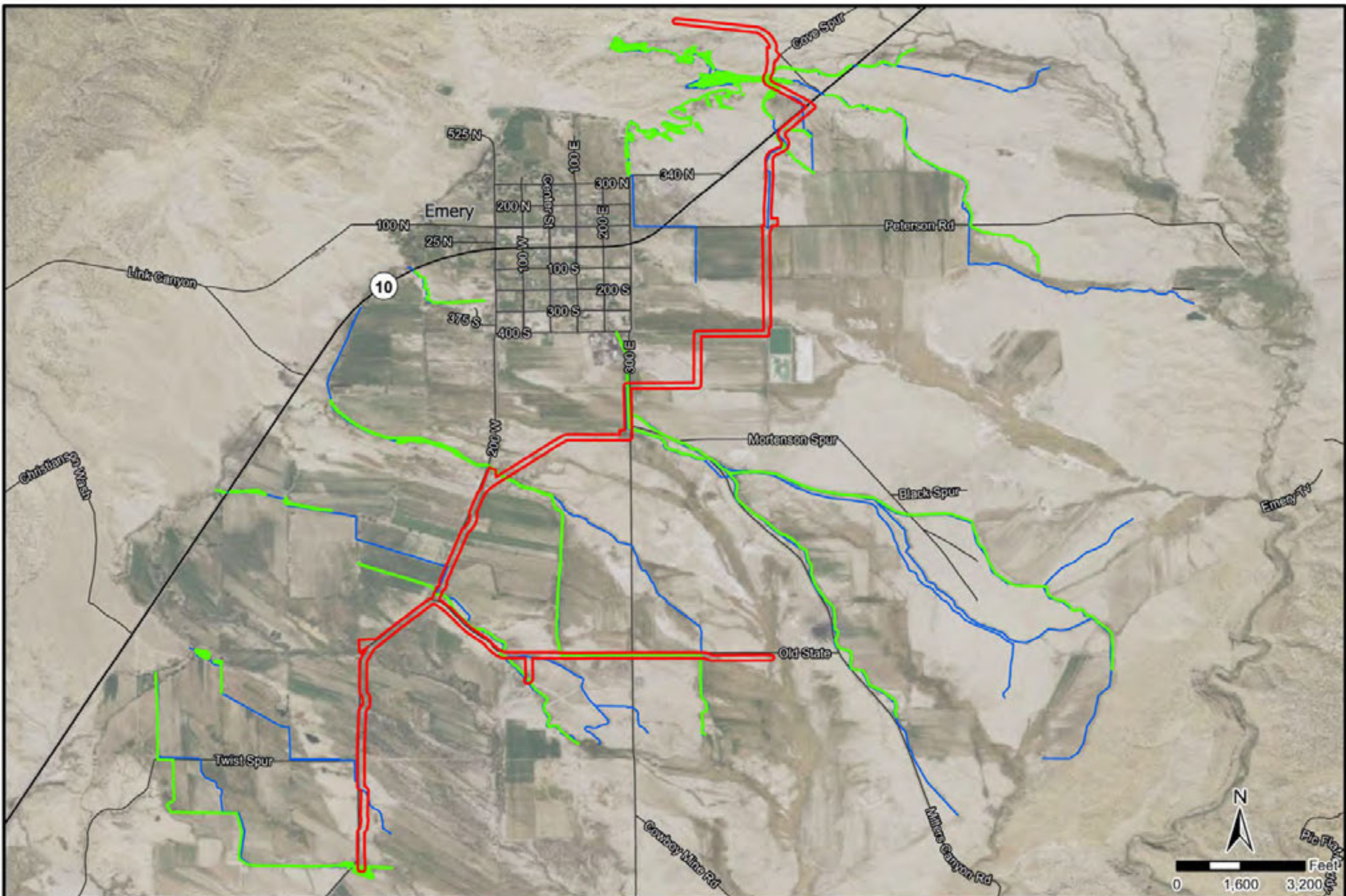
Chapter 8. References

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- _____. 2018. Emery Town Irrigation Pipeline Proposed Action UTU-93042. DOI-BLM-UT-G020-2018-0016-EA. November 2018.
- Jones and DeMille Engineering. 2020a. Aquatic Resource Delineation Report; Muddy Creek Pipeline Phase III. March 4, 2020. 366 pp.
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- NRCS (Natural Resources Conservation Service). 2020. Custom Soil Resource Report for Emery Area, Utah, Parts of Emery, Carbon, Grand, and Sevier Counties. Accessed August 13, 2020.
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- Reclamation (U.S. Bureau of Reclamation). 2017. Colorado River Basin Salinity Control Program. Accessed on March 31, 2020 at <https://www.usbr.gov/uc/progact/salinity/pdfs/ProgressReports/PR25final.pdf>
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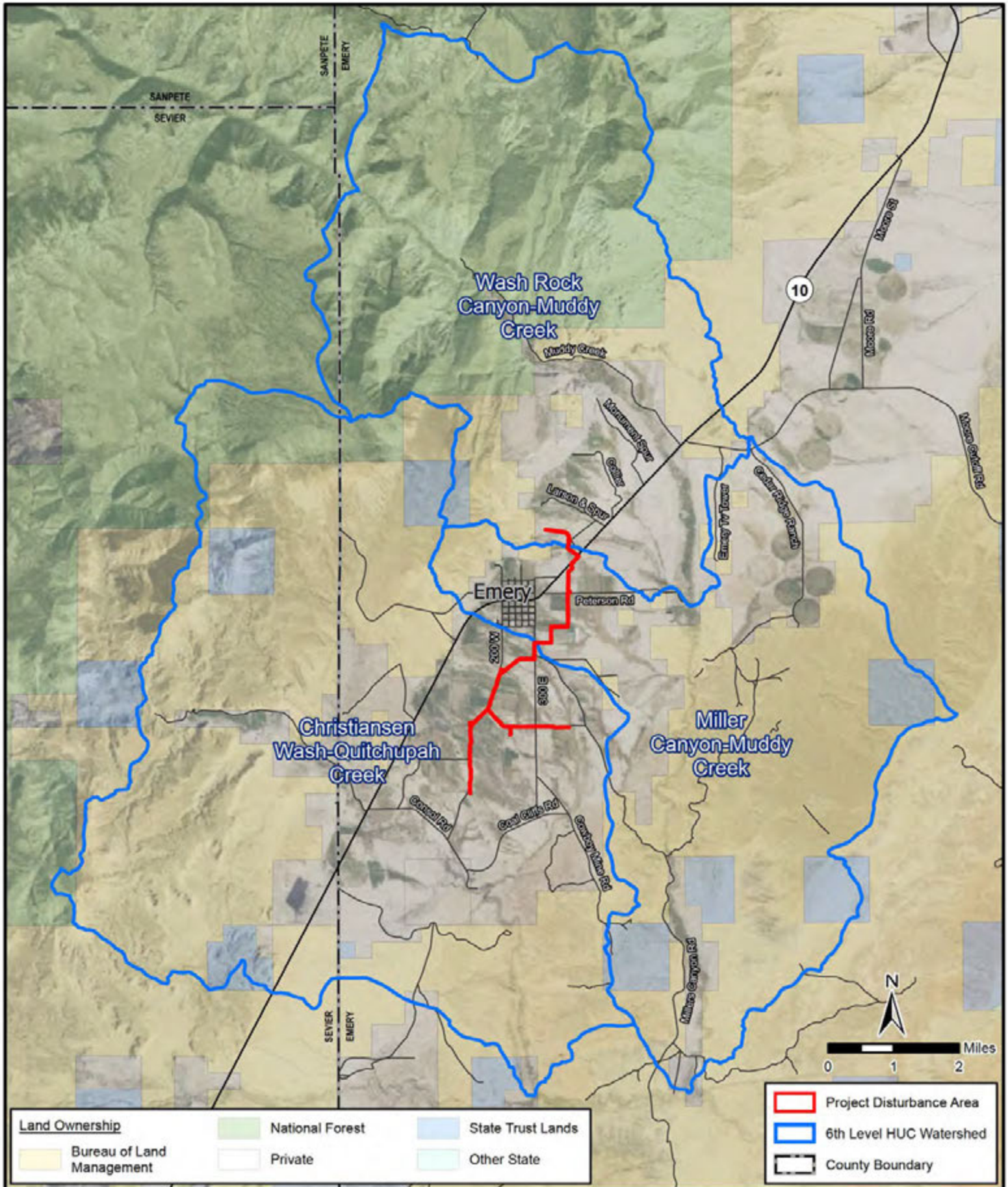
Appendix A - Maps



<p>--- Proposed Pipeline Alignment</p> <p>--- Canals and Ditches to be Abandoned</p>	 <p>Jones & DeMille Engineering</p> <p>- Shaping the Quality of Life -</p> <p>800.748.5275 www.jonesanddemille.com</p>	<p>Muddy Creek Irrigation Company</p> <p>Piping Project - Phase 3</p> <p>Project Overview</p> <p>Map Name: H:\JD\Proj\1803-151\Design\GIS\Projects\Environmental\1803-151_ENV.aprx - 1 Exh MCIC Ph III EA Project Area Overview 8.5x11L</p> <p>Project Number: 1803-151</p> <p>Drawn by: JEM 11-19</p> <p>Last Edit: 07/08/2021</p>	<p>Emery County</p> <p>Scale: 1" = 3,200'</p> <p>1</p>
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<ul style="list-style-type: none"> Phase 3 Abandoned Canals Evaluated Habitat Areas Project Disturbance Area 	 <p>Jones & DeMille Engineering</p> <p>- Shaping the Quality of Life - 800.748.5275 www.jonesanddemille.com</p>	<p>Muddy Creek Irrigation Company</p> <p>Piping Project - Phase 3 Canal Abandonment and Habitat Evaluation Results</p> <p>Map Name: H:\JD\Proj\1803-151\Design\GIS\Projects\Environmental\1803-151_ENV.aprx - 2 Exh MCIC Ph III EA Project Habitat Quality Evaluation & Set11L Project Number: 1803-151 Drawn by: JEM 11-19 Last Edit: 10/15/2020</p>	<p>Emery County</p> <p>Scale: 1" = 3,200'</p> <p>2</p>
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Land Ownership		
	Bureau of Land Management	 National Forest
	Private	 State Trust Lands
		 Other State

	Project Disturbance Area
	6th Level HUC Watershed
	County Boundary

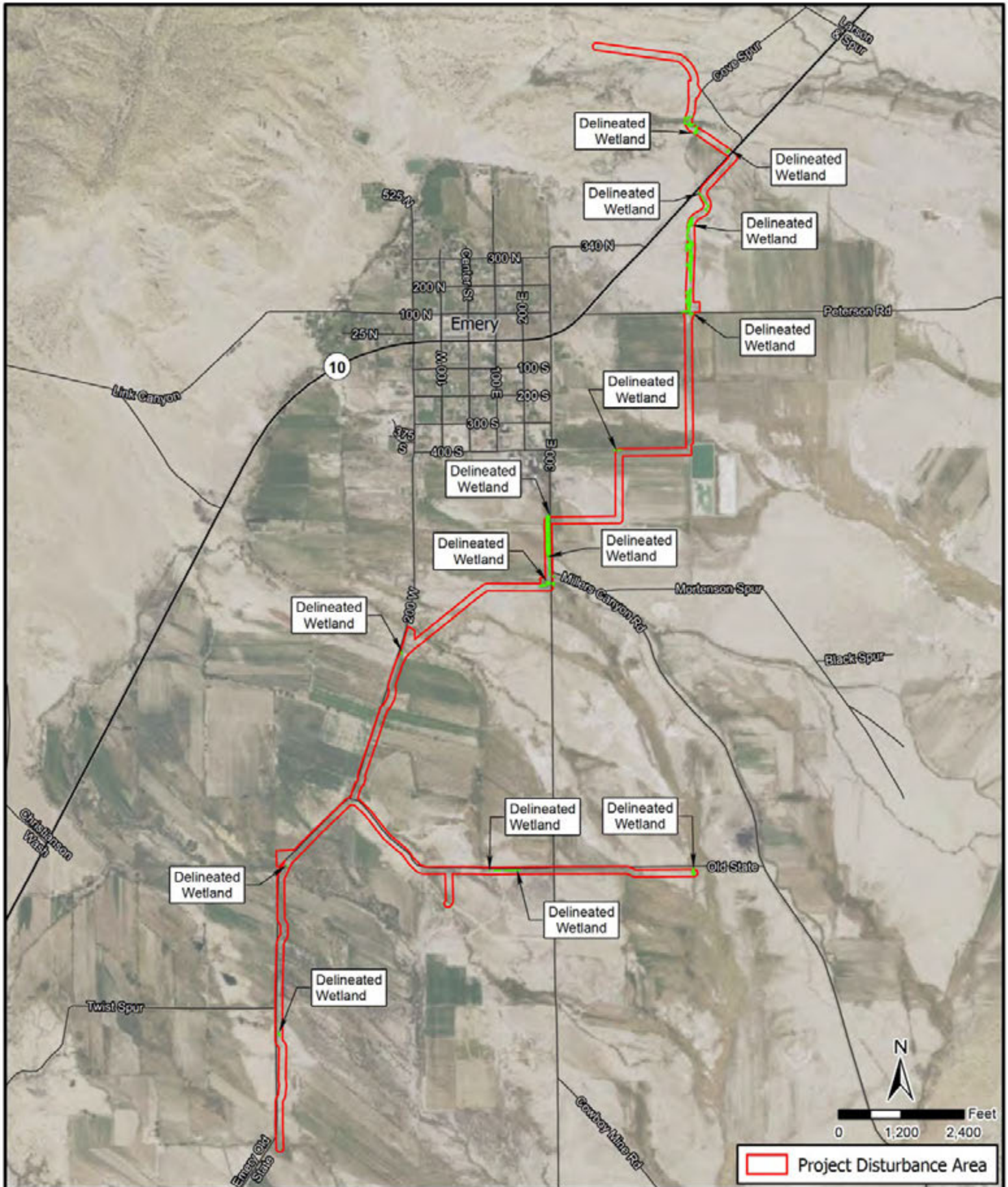


Jones & DeMille Engineering

- Shaping the Quality of Life -
800.748.5275 www.jonesanddemille.com

Muddy Creek Irrigation Company	
Piping Project - Phase 3	
6th Level HUC Watershed Overview	
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Project Number: 1803-151	Drawn by: JEM 08-20
Last Edit: 10/15/2020	

Emery County
Scale: 1" = 2 miles
3



Appendix B - Salt Load Reduction Basis and Estimate

UC-240
ADM-13.00

Mr. Morris Sorensen, President
Muddy Creek Irrigation Company
386 South 100 East
Emery, UT 84066

Subject: Funding Opportunity Announcement (FOA) No. BOR-UC-17-F003 – Colorado River Basinwide and Basin States Salinity Control Programs – Salt Load Reduction Estimate for the Muddy Creek Irrigation Company – Muddy Creek Phase III Salinity Project.

Dear Mr. Sorensen:

Thank you for submitting the Salt Load Reduction Worksheet and the relevant appendices. We understand your project will involve replacing approximately 198,002 feet of earthen canal/lateral/ditch. Based on the accepted salinity studies in the Price - San Rafael salinity area, the annual salt load reduction estimate for your proposed irrigation delivery system improvements is 3,010 tons. Salt load reduction estimates for the individual components of the proposed project are listed in the enclosed table.

The salt load reduction estimates provided in this letter are based on the best and current available information. In many areas of the Colorado River Basin, salinity studies are continually being updated and re-interpreted and thus these estimates may change. The salt load estimates provided during this FOA are only valid for this FOA. In future FOAs, current salt load estimates will need to be requested.

The salt load reduction estimate must be reported in the application as the off-farm estimated salt load reduction in Part III, item C.3 and Part I, item F. It must also be used to calculate the cost effectiveness of the project in Part III, item C.4; the cost effectiveness also must be reported in Part I, item G. This letter and the enclosed table must be attached to the project proposal as Appendix F.

As stated in Section IV.B of the FOA, your final application must be received by 3 p.m. MST, November 14, 2017. It is important that you provide the requested information for all applicable sections of the required format in a brief and concise manner in the spaces provided for your responses. The required electronic format for the project proposal can be downloaded from www.grants.gov

We strongly encourage you to read the OMB Circulars that apply to your organization. The circulars can be found at http://www.whitehouse.gov/omb/grants/grants_circulars.html.

Funding agreements resulting from this solicitation will reimburse your organization of the actual allowable costs you incur to complete the project, up to the amount of the award. Successful applicants will be required to utilize competitive processes for the acquisition of materials and construction subcontracts. Sole source subcontracts will not be allowed except for engineering design, accounting, and legal services.

Cost allowability is governed by Office of Management and Budget (OMB) Circulars A-87, A-110, and A-122, depending upon the type of organization. Any cost incurred for the project in excess of the agreement amount is the responsibility of your organization.

It will be a requirement of the funding agreements executed with successful applicants that all facilities (i.e., earthen canals and laterals and diversion structures) being replaced, shall be rendered unusable by removal of the structures and refilling the prisms in order to assure the proposed salinity reduction. Costs for removing structures and refilling the prisms should be included in the cost of the salinity project.

False claims or mistakes made in the application that are discovered during the agreement award process will require that application to be re-rated, re-ranked and could result in the application not being awarded or termination of the agreement award.

If you have any questions, please contact me at 801-524-3753, Brad Parry at 801-524-3723 or, Ben Radcliffe at 801-379-1213

Sincerely,

Kib Jacobson
Colorado River Basin Salinity Control
Program Manager

Enclosures

bc: UC-240, UC-242, UC-823, UC-826
PRO-211, WCG-JSottolare

APPENDIX E: EXISTING IRRIGATION DELIVERY FACILITIES DATA SHEET

(Use required format provided below)

Item	Units	Identify individual canal, lateral, or ditch				
		Emery Canal	Broderick	Burr	Ed Larson	Lewis
<u>Length of existing canal/lateral/ditch</u>	feet	52747	7709	15470	8131	6547
<u>Irrigated acreage served</u>	acres	5310	416	291	234	615
<u>Irrigation season</u>						
Average diversion flow	cfs	51.8	3.69	2.65	2.9	5.5
Average seasonal diversion	ac-ft	13357	960	689	736	1430
Average no. of days water carried	days	130	130	130	130	130
<u>Non-irrigation season (winter water)</u>						
Average diversion flow	cfs	10.4	NA	NA	NA	NA
Average seasonal diversion	ac-ft	NA	NA	NA	NA	NA
Average no. of days water carried	days	NA	NA	NA	NA	NA
Length of ditch carrying winter water	feet	NA	NA	NA	NA	NA
<u>Describe EXISTING lined or piped sections</u>						
Lined length (see Note 3)	feet	NA	0	0	0	0
Liner type (concrete, earth, etc)	See Note 1	NA	NA	NA	NA	NA
Year installed	year	NA	NA	NA	NA	NA
Liner condition	See Note 2	NA	NA	NA	NA	NA
Piped length (see Note 3)	feet	48365	NA	NA	NA	NA
Remaining unlined/unpiped length	feet	4382	NA	NA	NA	NA
<u>Unlined Length to be replaced/improved</u>	feet	4382	7709	15470	8131	6547
<u>Existing piped/lined Length to be replaced/improved</u>	feet	0	0	0	0	0
<u>Proposed replacement material</u>	pressurized pipe, non-pressurized pipe, or liner	Pressurized HDPE	Pressurized HDPE	Pressurized HDPE	Pressurized HDPE	Pressurized HDPE
<u>Salt Load Reduction</u>	Tons per year	181	123	217	118	122

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.

APPENDIX E: EXISTING IRRIGATION DELIVERY FACILITIES DATA SHEET

(Use required format provided below)

Item	Units	Identify individual canal, lateral, or ditch				
		Nels Anderson	Pete Christensen	Pete Nielson	Pete Olson	Town Field
<u>Length of existing canal/lateral/ditch</u>	feet	10402	20540	20750	19695	63466
<u>Irrigated acreage served</u>	acres	97	344	380	279	655
<u>Irrigation season</u>						
Average diversion flow	cfs	.87	2.5	3.43	2.52	4
Average seasonal diversion	ac-ft	226	650	892	655	1040
Average no. of days water carried	days	130	130	130	130	130
<u>Non-irrigation season (winter water)</u>						
Average diversion flow	cfs	NA	NA	NA	NA	NA
Average seasonal diversion	ac-ft	NA	NA	NA	NA	NA
Average no. of days water carried	days	NA	NA	NA	NA	NA
Length of ditch carrying winter water	feet	NA	NA	NA	NA	NA
<u>Describe EXISTING lined or piped sections</u>						
Lined length (see Note 3)	feet	0	0	0	0	0
Liner type (concrete, earth, etc)	See Note 1	NA	NA	NA	NA	NA
Year installed	year	NA	NA	NA	NA	NA
Liner condition	See Note 2	NA	NA	NA	NA	NA
Piped length (see Note 3)	feet	NA	NA	NA	NA	NA
Remaining unlined/unpiped length	feet	NA	NA	NA	NA	NA
<u>Unlined Length to be replaced/improved</u>	feet	10402	20540	20750	19695	63466
<u>Existing piped/lined Length to be replaced/improved</u>	feet	0	0	0	0	0
<u>Proposed replacement material</u>	pressurized pipe, non-pressurized pipe, or liner	Pressurized HDPE	Pressurized HDPE	Pressurized HDPE	Pressurized HDPE	Pressurized HDPE
<u>Salt Load Reduction</u>	Tons per year	95	282	322	271	1046

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 piped or concrete lined segments with individual lengths of less than 100 feet.

3. Disregard dispersed piped or concrete lined segments with individual lengths of less than 100 feet.

APPENDIX E: EXISTING IRRIGATION DELIVERY FACILITIES DATA SHEET

(Use required format provided below)

Item	Units	Identify individual canal, lateral, or ditch				
		Will Petty	Keele	Reed Larsen	Town	Christiansen
<u>Length of existing canal/lateral/ditch</u>	feet	9663	5280	528	951	4488
<u>Irrigated acreage served</u>	acres	116				
<u>Irrigation season</u>						
Average diversion flow	cfs	1.05	2	0.53	2.23	1.96
Average seasonal diversion	ac-ft	273	520	780	580	510
Average no. of days water carried	days					
<u>Non-irrigation season (winter water)</u>						
Average diversion flow	cfs	NA	NA	NA	NA	NA
Average seasonal diversion	ac-ft	NA	NA	NA	NA	NA
Average no. of days water carried	days	NA	NA	NA	NA	NA
Length of ditch carrying winter water	feet	NA	NA	NA	NA	NA
<u>Describe EXISTING lined or piped sections</u>						
Lined length (see Note 3)	feet	0	0	0	0	0
Liner type (concrete, earth, etc)	See Note 1	NA	NA	NA	NA	NA
Year installed	year	NA	NA	NA	NA	NA
Liner condition	See Note 2	NA	NA	NA	NA	NA
Piped length (see Note 3)	feet	NA	NA	NA	NA	NA
Remaining unlined/unpiped length	feet	NA	NA	NA	NA	NA
<u>Unlined Length to be replaced/improved</u>	feet	9663	5280	528	951	4488
<u>Existing piped/lined Length to be replaced/improved</u>	feet	0	0	0	0	0
<u>Proposed replacement material</u>	pressurized pipe, non-pressurized pipe, or liner	Pressurized HDPE	Pressurized HDPE	Pressurized HDPE	Pressurized HDPE	Pressurized HDPE
<u>Salt Load Reduction</u>	Tons per year	95	66	4	12	56

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 piped or concrete lined segments with individual lengths of less than 100 feet.

APPENDIX E: EXISTING IRRIGATION DELIVERY FACILITIES DATA SHEET

(Use required format provided below)

Item	Units	Identify individual canal, lateral, or ditch				
						TOTALS
<u>Length of existing canal/lateral/ditch</u>	feet					246,637
<u>Irrigated acreage served</u>	acres					
<u>Irrigation season</u>						
Average diversion flow	cfs					
Average seasonal diversion	ac-ft					
Average no. of days water carried	days					
<u>Non-irrigation season (winter water)</u>						
Average diversion flow	cfs					
Average seasonal diversion	ac-ft					
Average no. of days water carried	days					
Length of ditch carrying winter water	feet					
<u>Describe EXISTING lined or piped sections</u>						
Lined length (see Note 3)	feet					
Liner type (concrete, earth, etc)	See Note 1					
Year installed	year					
Liner condition	See Note 2					
Piped length (see Note 3)	feet					48,365
Remaining unlined/unpiped length	feet					198,002
<u>Unlined Length to be replaced/improved</u>	feet					198,002
<u>Existing piped/lined Length to be replaced/improved</u>	feet					0
<u>Proposed replacement material</u>	pressurized pipe, non-pressurized pipe, or liner					
<u>Salt Load Reduction</u>	Tons per year					3010

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 piped or concrete lined segments with individual lengths of less than 100 feet.

Appendix C - Public Comments

The public comment period occurred from May 13, 2021 to June 13, 2021.

No public comments were received.

Appendix D - Habitat Replacement Plan

OMITTED

Habitat Replacement Plan

Muddy Creek Irrigation Company Piping Project Phase III

Agreement #R18AC00094



November 2020

Prepared by:

Jenna Jorgensen
Jones & DeMille Engineering
1535 South 100 West Richfield, Utah 84701




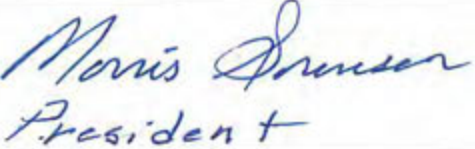


Prepared for:

Muddy Creek Irrigation Company
386 South 100 East, Emery, Utah 84522

Prepared in Support of:

US Department of Interior
Bureau of Reclamation
Provo Area Office
NEPA Study EA-18-012

Certification and Approval of Muddy Creek Irrigation Company Piping Project
Phase III – Habitat Replacement Plan

Approvals		
Action	Signature and Title	Date
Prepared By: (Contractor)	 Environmental Coordinator Jones and DeMille Engineering	12-9-2020
Submitted By: (Irrigation Company)	 President	Dec 9-2020
Reviewed By: (Reclamation)		March 15, 2021
Approved By: (Reclamation)		March 15, 2021

Scheduled completion date of implementation is no later than September 30, 2023.

This habitat replacement project will be maintained to achieve the objectives of this plan for 50 years from approval of this Plan.

Disclaimer: This habitat replacement project is projected to create at least 262.4 habitat units. This scoring is an estimated projection, and is not a guarantee or a statement of habitat units available to Muddy Creek Irrigation Company. These units are estimated to be 262.4 once the habitat project has reached its full potential, which can take multiple years depending on project objectives. Excess habitat units which may be created by this habitat project are only available for use by future salinity control projects once those units are actually realized.

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Appendix A. MCIC Habitat Evaluation

Appendix B. Olsen Reservoir Habitat Map

Appendix C. Olsen Reservoir Habitat Scoring Summary

1. Introduction and Background

The U.S. Bureau of Reclamation (Reclamation) requires the development of a Habitat Replacement Plan under the Salinity Control Program, in accordance with Public Law 98-569 when proposing to provide funding to a project that would remove wildlife habitat. If approved, Reclamation would authorize the use of federal funds to replace nearly 37.5 miles of open channel canals and laterals with 7.0 miles of buried pipeline with the goal of reducing salt mobilization by eliminating canal seepage and allowing landowners to transition from flood irrigation practices to pressurized sprinkler irrigation.

This Habitat Replacement Plan (Plan) was prepared by Jones and DeMille Engineering for the Muddy Creek Irrigation Company (MCIC) to address impacts of the Muddy Creek Irrigation Company Piping Project Phase III (Project) on wildlife habitat that is supported by wetland and riparian systems in Emery County, Utah. A habitat evaluation for the Project was conducted by Jenna Jorgensen, Wyatt Shakespear, and Tom Davidowicz in April, June, and July of 2019; operation of the pipeline and the abandonment of the channels is anticipated to eliminate up to 27.2 acres of wildlife habitat throughout the irrigation service area (see evaluation report in Appendix A). Each canal segment and the associated habitats were surveyed to verify each classified habitat's location, size, diversity, overall condition, and water source. An estimated total of 126.2 units of habitat value would be lost as a result of the Project.

Reclamation requires that wildlife habitats that would 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. The goal of this Plan is to meet or exceed the initial Total Habitat Value (THV) by preserving, enhancing, and/or developing existing or proposed habitat areas. This Plan proposes to have the MCIC provide funds to The Nature Conservancy for wildlife habitat improvement measures at Olsen Reservoir to compensate for habitat losses associated with the Project.

The habitat replacement site was selected because of the potential to increase and enhance wildlife habitats associated with Olsen Reservoir. The reservoir is accessible from State Route 10 in Carbon County, and is approximately 9 miles east from the highway turn-off, in Emery County (see map in Appendix B).

2. Existing Conditions

Olsen Reservoir was created in 1936 by the construction of an earthen dam on Marsing Wash. Flows in Marsing Wash originate from precipitation runoff and Carbon Canal Company irrigation return flows. Peak flows generally occur during the early springtime, and flows reduce substantially during the summer. Water from Marsing Wash passes through the reservoir and continues down Marsing Wash until it reaches the Price River.

The Natural Resources Conservation Service (NRCS), with the Utah Division of Wildlife Resources (UDWR) as the project sponsor, is proposing to partially fund through the Watershed Protection and Flood Prevention Act (Public Law [PL] 83-566) improvements to Olsen Reservoir to increase wildlife habitat at the reservoir and downstream in the lower Price River. The Nature Conservancy is a partner

with the UDWR for the Olsen Reservoir project. The dam and reservoir are located within BLM-administered land. BLM and Reclamation are cooperating agencies for the NRCS-led National Environmental Policy Act (NEPA) process, which is expected to be completed in 2021.

The project considers two dam alternatives: 1) to reconstruct and raise the existing dam; or 2) to construct a new dam downstream of the existing. The total reservoir storage volume would increase from approximately 50 acre-feet to 600 acre-feet with either alternative. The UDWR would be able to store irrigation push water from the Carbon Canal that is currently drained into South Marsing Wash. This increase in storage volume would also increase the reservoir surface area and wetted perimeter, where wildlife habitats are supported. Stored water would be released to sustain flows in the lower Price River when it may otherwise be dewatered.

Additionally, The Nature Conservancy is pursuing securing additional water rights that would further increase the inundation period of the reservoir and allow for more frequent water releases to the Price River.

2.1. Habitat Type and Wildlife Use

Wetland and riparian vegetation currently occur in association with the wetted area of Olsen Reservoir. Based on habitat evaluation efforts in 2018, Reclamation estimates that the reservoir currently provides 77.9 acres of wildlife habitat, with an equivalent 395.6 habitat value units (see scoring summary in Appendix C). Habitat types include open water, emergent bulrush marsh, and cattail-bulrush. Wildlife species that use these habitats include coots, ducks, ibis, sandpipers, herons, and marsh hawks. The following criteria were assessed in determining the habitat values present:

- Uniqueness/Abundance: These habitats are considered relatively scarce in the vicinity; values range between medium and highly unique.
- Connectivity and Alteration: Connectivity was considered contiguous across all recorded habitat types; the area connects unprotected areas of varying wildlife value. Alteration was considered to be limited to the dam site itself, which does not result in habitat fragmentation. Human disturbance is limited in this remote area of the county.
- Plant community/Vegetation: Vegetation in the area consists of bulrush, tamarisk, cattail, bunchgrasses, and salt grass. Most vegetation was in very good health at the time of assessment, and provides suitable habitat for many bird species.
- Vegetative diversity: Diversity was assessed as being low to moderately diverse based on the number of species present.
- Stratification: For most of the area, only one layer was typically present and functioning. A few mature trees are only found at the dam embankment.
- Noxious weeds: Noxious weeds were limited to a patch of tamarisk
- Water supply: Water supply was assessed to be uncertain at times, with non-natural seasonal flows.
- Interspersion of open water with vegetation: Interspersion varied between moderate and no interspersion, depending on the habitat type.

3. Desired Conditions

The objectives of the Olsen Reservoir project are to increase the reservoir storage capacity of the reservoir and to provide more sustained flows in the lower Price River. These outcomes would increase the amount and quality of available wildlife habitat in the area.

Due to the site capability and proposed project effects, most evaluation criteria would not change at Olsen Reservoir. Vegetative diversity and stratification would not be expected to increase significantly. Connectivity and uniqueness would not change. Open water and emergent bulrush marsh habitat types would increase in size, and tamarisk and salt grass areas would decrease. Human alteration would remain minimal. Water supply would increase in certainty, as seasonal irrigation push water would be stored in the reservoir. In the ideal scenario, if water rights were purchased, water supply would further increase in certainty, though it would still be seasonal due to constraints on the conveyance system. The anticipated habitat value units for the expanded reservoir are estimated to be 658.0; this would be a net increase of 262.4 units (see scoring summary in Appendix C).

4. Project Description and Statement of Work

The project would provide habitat replacement funds to The Nature Conservancy to partially fund either of two habitat improvement measures : 1) construction of a new or larger dam (or a related component) that would result in increased reservoir surface area, which in turn would increase wildlife habitat area , or 2) purchase of downstream water rights that could then be diverted upstream of the reservoir and into the reservoir where it would be stored. This would also increase reservoir surface area. The Nature Conservancy and the UDWR are pursuing both options, which would work in concert to increase not only the reservoir surface area, but wildlife habitat in the larger watershed. Construction of the dam is dependent on completion of the NRCS-led NEPA process, acquisition of funding for construction, and authorization for occupancy of public lands from the BLM. The purchase of the water rights is dependent on the current owner's willingness to sell and approval from the Utah Division of Water Rights to change the diversion location. Both options are considered feasible at this time.

5. Maintenance and Management

Maintenance or management by the Muddy Creek Irrigation Company would not be required, as the monetary transfer would occur once. The Nature Conservancy and UDWR would have a maintenance agreement with the NRCS for the dam if constructed with PL-566 funds. There would be no maintenance associated with the purchase and use of water rights. Management of the water would be the responsibility of the UDWR.

6. Monitoring

Monitoring would not be required as the monetary transfer would occur once. The Nature Conservancy and UDWR would operate the reservoir per their agreement with the NRCS; Reclamation would develop

a Memorandum of Agreement (MOA) with The Nature Conservancy and UDWR for management and implementation of the project that would be consistent with the operation agreement with the NRCS

7. Summary

Implementation of this plan consists of the following action: providing habitat replacement funds to The Nature Conservancy and UDWR for project measures to increase wildlife habitat at Olsen Reservoir and in the lower Price River.

Appendix A. MCIC Habitat Evaluation

An Evaluation of Fish and Wildlife Habitat Impacts Associated with the Muddy Creek Phase III Project



Location: Emery County, 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:

Jenna Jorgensen
Jones & DeMille Engineering
1535 South 100 West Richfield, Utah 84701

December 2, 2020

1. Introduction

Public Law 104-20 authorizes the Bureau of Reclamation (Reclamation) to pursue and fund salinity control efforts within the Colorado River Basin. In 2017, Reclamation solicited applications for salinity control efforts within the Upper Colorado River Basin. An application from the Muddy Creek Irrigation Company (MCIC) was submitted entitled “Muddy Creek Irrigation Company Piping Project Phase III” (Project) under this solicitation and accepted for implementation.

Reclamation will provide funding for work associated with the Project, which includes replacing 37.5 miles of open channel canal and laterals with approximately 7.3 miles of pipe (see map 1 in Attachment A), and implementation of a habitat replacement plan. The MCIC will construct, operate, and maintain the Project. It is anticipated that the Project will result in the annual reduction of approximately 3,010 tons of salt in the Colorado River at a cost-effectiveness value of \$57.78/ton.

The Project is located in and around Emery Town in Emery County. The irrigation system is fed by Muddy Creek, which flows down from the Manti-La Sal National Forest and north of town. Muddy Creek flows into the Fremont River, and the two rivers form the Dirty Devil River, which is a tributary of the Colorado River. The project area has an elevation of around 6,200 feet above sea level, and average annual precipitation is about 9 inches.

This evaluation identifies habitat value losses anticipated as a result of implementing the Project.

2. Habitat Evaluation

The purpose of the evaluation is to determine existing fish and wildlife habitats that would be affected as a result of implementing the Project. Site visits were conducted in April, June, and July of 2019 to identify wetland and riparian habitat associated with the Project. Each canal or ditch segment to be abandoned was visited by Jenna Jorgensen and Wyatt Shakespear, environmental staff with Jones and DeMille Engineering. Thomas Davidowicz instructed for the site visits in April and June. On-site assessment of each segment verified each classified habitat’s location, size, diversity, overall condition, and water source. Acreages of habitat were calculated using ArcGIS. A map displaying the evaluated habitat relative to the abandoned water courses is included as map 2 in Attachment A.

The habitat inventory and evaluation methods followed the guidelines developed and included in Reclamation’s “Salinity Control Program: Fish and Wildlife Habitat Evaluation Procedures,” updated April 16, 2018.

3. Results

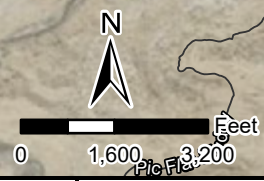
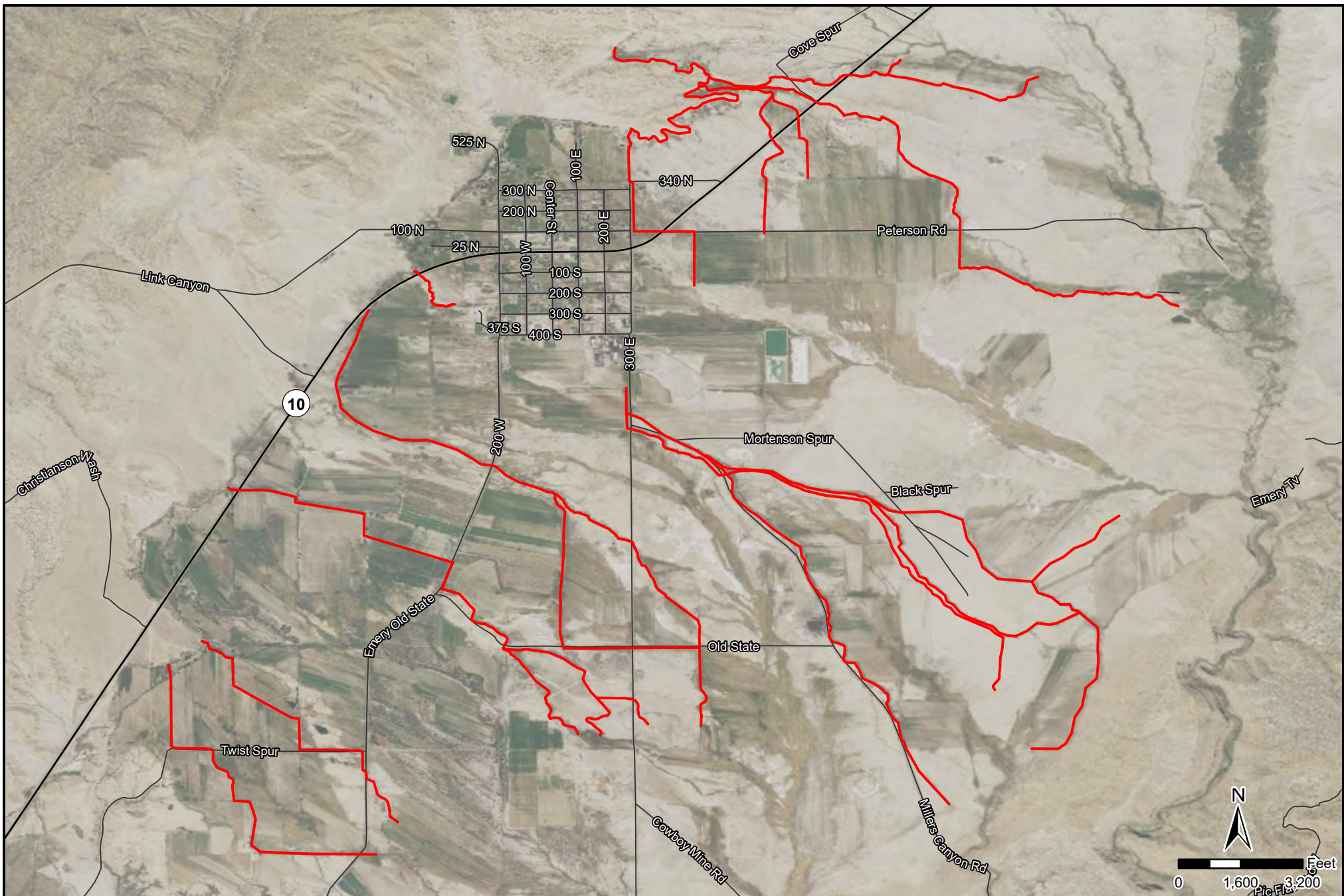
The canals were divided into segments of habitat based on a preliminary visual assessment of the conditions, and each segment was evaluated. Acreage was determined by estimating habitat width along a given length of canal during the site visit, or mapping habitat polygons in ArcGIS with aerial imagery. The habitat area, evaluation score, and habitat value for each polygon are summarized in Table 1. Detailed scoring is included as Attachment B.


Table 1. Summary of habitat assessment values for habitat lost as a result of the Project

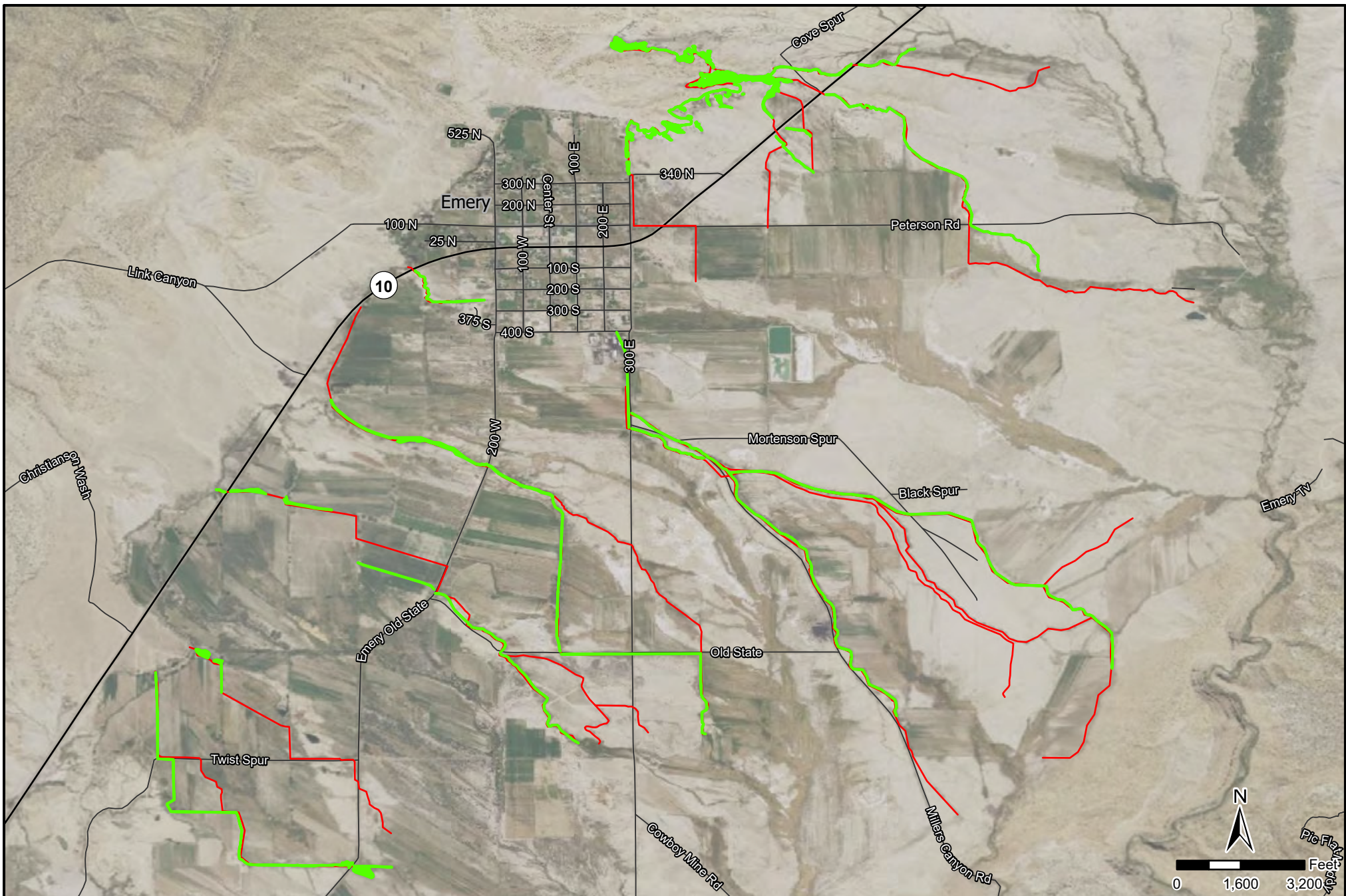
Area ID	Area (acres)	Value Score	Habitat Value
4-18-5	2.24	5.4	12.1
4-18-6	0.89	4.5	4.0
4-18-7	0.68	4.6	3.1
4-18-8	7.47	6.1	45.6
4-18-9	0.61	3.7	2.3
4-18-10	0.01	3.2	0.0
6-20-1	0.68	5.6	3.8
6-20-2	0.10	4.1	0.4
6-20-3	2.04	4.5	9.2
7-18-1	2.07	4	8.3
7-18-2	0.18	4.6	0.8
7-18-3	0.44	3.7	1.6
7-18-4	1.01	4	4.0
7-18-5	0.76	5.4	4.1
7-18-6	2.96	2.7	8.0
7-18-7	0.14	3.1	0.4
7-18-8	1.21	4.3	5.2
7-18-9	0.97	4.4	4.3
7-23-1	1.43	3.7	5.3
7-23-2	0.27	3.7	1.0
7-23-3	0.59	2.4	1.4
7-23-4	0.17	3.5	0.6
7-23-5	0.13	2.6	0.3
7-23-6	0.14	1.9	0.3
Total	27.21	95.7	126.2


An estimated total of 126.2 units of habitat value would be lost as a result of the Project. Representative photos of the habitat that would be lost as a result of the project area included as Attachment C.

Attachment A. Map



<p>— Phase 3 Abandoned Canals</p>	<div data-bbox="546 1396 1029 1559">  <p>Jones & DeMille Engineering</p> <p>- Shaping the Quality of Life - 800.748.5275 www.jonesanddemille.com</p> </div>	<p>Muddy Creek Irrigation Company</p>	<p>Emery County</p>
		<p>Piping Project - Phase 3 Habitat Evaluation - Phase 3 Abandoned Canals</p>	<p>Scale: 1" = 3,285'</p>
		<p>Map Name: H:\JD\Proj\1803-151\Design\GIS\Projects\Environmental\1803-151_ENV.aprx - Exh Phase 3 Abandoned Canals 8.5x11 Project Number: 1803-151 Drawn by: JEM 09-19 Last Edit: 010/02/2019</p>	<p>1</p>



<p>— Phase 3 Abandoned Canals</p> <p>— Evaluated Habitat Areas</p>	 <p>Jones & DeMille Engineering</p> <p>- Shaping the Quality of Life - 800.748.5275 www.jonesanddemille.com</p>	<p>Muddy Creek Irrigation Company</p> <hr/> <p>Piping Project - Phase 3 Habitat Evaluation Results</p> <hr/> <p>Map Name: H:\JD\Proj\1803-151\Design\GIS\Projects\Environmental\1803-151_ENV.aprx - Exh Habitat Quality Evaluation 8.5x11L</p> <p>Project Number: 1803-151 Drawn by: JEM 11-19 Last Edit: 11/19/2019</p>	<p>Emery County</p> <hr/> <p>Scale: 1" = 3,200'</p> <hr/> <p>2</p>
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Attachment B. Habitat Assessment Values

Site	4-18-5	4-18-6	4-18-7	4-18-8	4-18-9	4-18-10	6-20-1	6-20-2	6-20-3	7-18-1	7-18-2	7-18-3	7-18-4	7-18-5	7-18-6	7-18-7	7-18-8	7-18-9	7-23-1	7-23-2	7-23-3	7-23-4	7-23-5	7-23-06	
Vegetation Diversity	8	6	6	9	5	2	10	6	5	4	5	4	3	6	5	4	5	4	4	4	3	4	2	3	
Stratification	8	5	5	9	5	2	8	2	4	3	6	3	3	9	2	3	8	4	2	6	1	1	2	1	
Noxious Weeds	0	0	0	0	0	9	0	0	8	9	9	9	9	9	0	0	0	9	7	0	9	8	0	0	
Overall Vegetative Condition	9	6	7	9	9	9	9	9	9	9	10	9	9	9	9	9	9	9	9	9	0	8	9	4	
Interspersion of open water	1	1	1	1	1	1	1	1	0	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Connectivity	5	5	5	6	2	2	4	4	4	3	2	2	3	3	2	2	4	3	3	3	3	3	3	3	
Uniqueness or Abundance	8	7	7	9	6	1	9	6	4	3	5	3	5	8	2	4	6	5	4	5	2	1	2	2	
Water Supply	4	4	4	4	4	2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
Alteration	7	7	7	9	3	3	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	
Wildlife Use	4	4	4	5	2	1	7	5	3	3	4	2	3	5	2	4	6	5	3	5	1	1	3	1	
Value Score	5.4	4.5	4.6	6.1	3.7	3.2	5.6	4.1	4.5	4	4.6	3.7	4	5.4	2.7	3.1	4.3	4.4	3.7	3.7	2.4	3.5	2.6	1.9	
GIS Acres	2.24	0.89	0.68	7.47	0.61	0.01	0.68	0.10	2.04	2.07	0.18	0.44	1.01	0.76	2.96	0.14	1.21	0.97	1.43	0.27	0.59	0.17	0.13	0.14	27.21
Habitat Value	12.11	4.02	3.14	45.55	2.27	0.04	3.80	0.41	9.20	8.29	0.81	1.62	4.04	4.13	8.00	0.44	5.19	4.29	5.27	1.01	1.42	0.59	0.33	0.27	126.23

Attachment C. Photos



Figure 1. Representative photo of Area 7-18-5; taken July 18, 2019

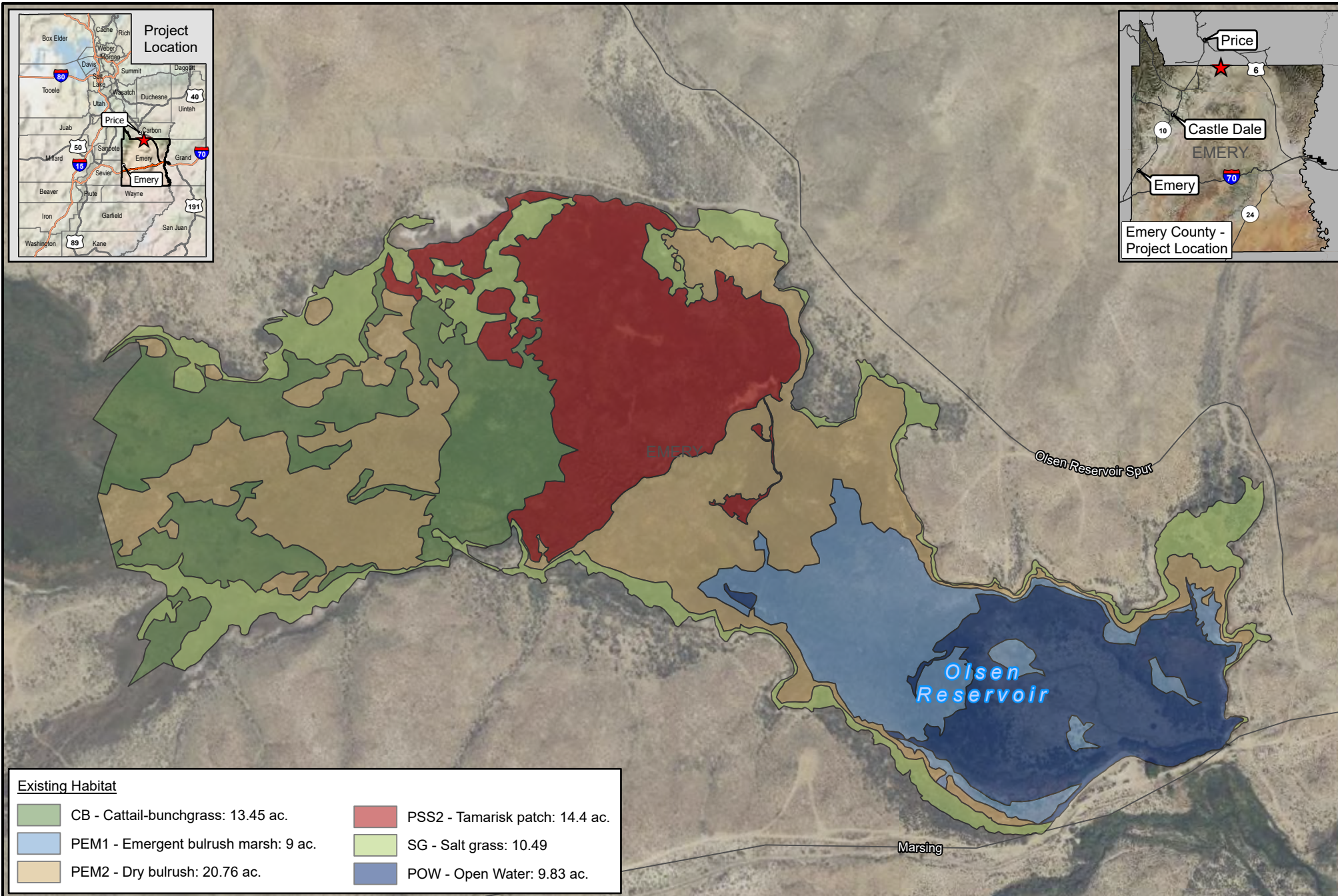
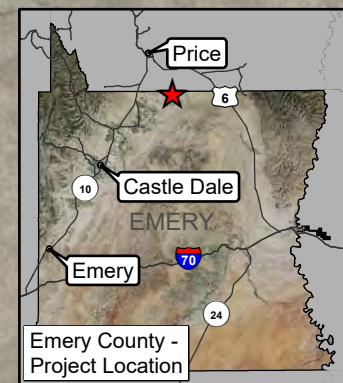
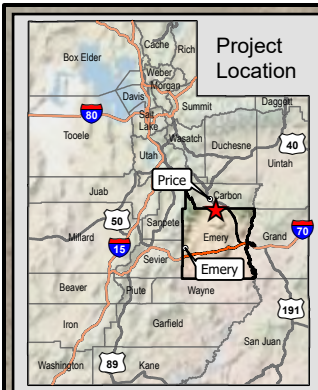


Figure 2. Representative photo of Area 7-23-4; taken October 1, 2019









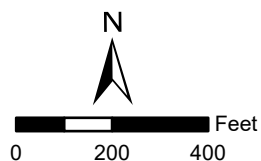
Figure 3. Representative photo of Area 4-18-5; taken April 18, 2019

Appendix B. Olsen Reservoir Habitat Map



Existing Habitat

	CB - Cattail-bunchgrass: 13.45 ac.		PSS2 - Tamarisk patch: 14.4 ac.
	PEM1 - Emergent bulrush marsh: 9 ac.		SG - Salt grass: 10.49
	PEM2 - Dry bulrush: 20.76 ac.		POW - Open Water: 9.83 ac.



Muddy Creek Irrigation Company

Emery County

Piping Project - Phase 3
BOR - Olsen Reservoir Habitat Replacement Plan Overview

Scale: 1" = 400'

Map Name: H:\JD\Proj\1803-151\Design\GIS\Projects\Environmental\1803-151_ENV.aprx - Exh MCIC Ph III BOR HRP Olsen Reservoir Existing Habitat Overview 8.5x11L
 Project Number: 1803-151 Drawn by: JEM 11-20 Last Edit: 11/10/2020

Appendix C. Olsen Reservoir Habitat Scoring Summary

Site	Open water ¹	Emergent bulrush marsh ²	Dry bulrush	Tamarisk patch	Cattail-bunchgrass ³	Salt grass	Totals
Vegetation Diversity	-	1	4	7	5	4	
Stratification	-	2	3	5	3	2	
Noxious Weeds	-	9	8	0	9	8	
Overall Vegetative Condition	-	10	1	9	9	9	
Interspersion of open water	3	7	0	4	1	0	
Connectivity	4	4	4	4	4	4	
Uniqueness or Abundance	8	8	4	7	7	6	
Water Supply	3	3	3	3	3	3	
Alteration	9	9	9	9	9	9	
Wildlife Use	8	8	2	6	6	4	
Mean Value Score	5.8	6.1	3.8	5.4	5.6	4.9	
Baseline Acres	9.8	9.0	20.8	14.4	13.5	10.5	77.9
Baseline Habitat Value	57.3	54.9	78.9	77.8	75.3	51.4	395.6
Proposed Acres	30.9	71.3	1.4	0.0	1.4	6.2	111.1
Proposed Habitat Value	180.0	434.8	5.3	0.0	7.8	30.2	658.0
¹ Wildlife: Coots, dabbling ducks, diving ducks							
² Wildlife: Yellow-headed black birds, coots, white-faced ibis, sandpiper							
³ Wildlife: Red-winged blackbirds, black-crowned night heron, marsh hawk							
Note: Connectivity and water supply were rated for the Olsen site as a whole and did not vary among the habitat types.							
Note: There was very little human alteration in the area, except the dam, which prevented the habitats from achieving a 10.							
Note: Some assumptions about the proposed action - tamarisk will be eradicated, the upper 12" (capillary fringe) will be salt grass, the lower 12" (capillary fringe) will be emergent vegetation, and the west end of the inundation zone will be split evenly between PEM2 and CB.							

Summary: 658.0 - 395.6 = **262.4 habitat units gained**

Appendix E - Paleontological Letter



GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

State of Utah

DEPARTMENT OF NATURAL RESOURCES

BRIAN STEED
Executive Director

Utah Geological Survey

R. WILLIAM KEACH, II
State Geologist/Division Director

August 19, 2020

Jenna Jorgensen
Jones and DeMille Engineering, Inc.
1535 South 100 West
Richfield UT 84701

RE: Paleontological file search and recommendations for the Muddy Creek Irrigation Company Piping Project Phase III, Emery County, Utah
U.C.A. 79-3-508 (Paleontological) Compliance; Request for Confirmation of Literature Search.

Dear Jenna:

I have conducted a paleontological file search for the Muddy Creek Irrigation Company Piping Project in response to your email of August 18, 2020.

There are no paleontological localities recorded in our files in this project area. Quaternary and Recent alluvial deposits and the Cretaceous Blue Gate Shale of the Mancos Shale deposits that are exposed along this project right-of-way have a low to moderate potential for yielding significant fossil localities (PFYC 2 - 3). Unless vertebrate 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
Paleontological Assistant



Appendix F - Utah Natural Heritage Program On-line Species Search Report



Utah Division of Wildlife Resources
Utah Natural Heritage Program
1594 W. North Temple
PO Box 146301
Salt Lake City, UT 84116

Utah Natural Heritage Program Online Species Search Report

Project Information

Project Name

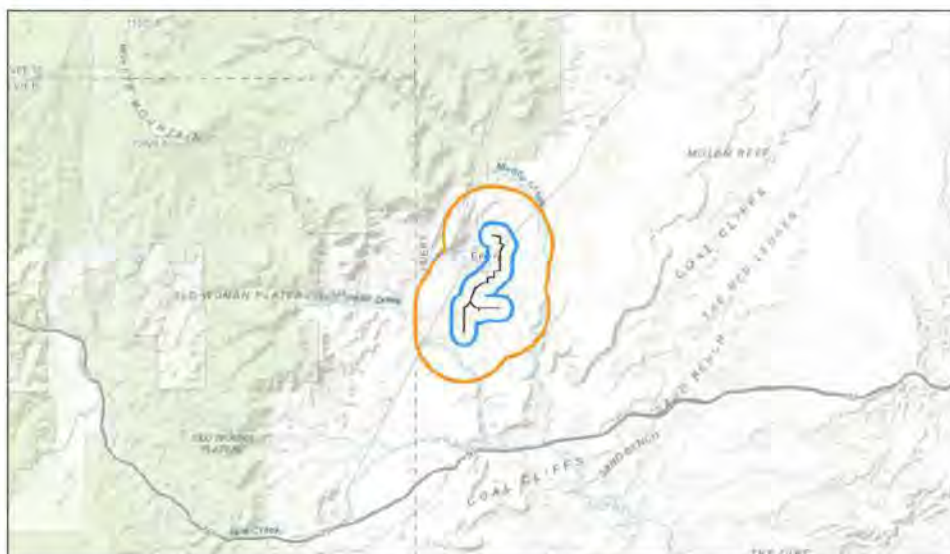
Muddy Creek Irrigation Company Piping Project Phase III

Project Description

Construction of an irrigation pipeline to replace open-channel irrigation methods around Emery Town

Location Description

North, east, and south of Emery Town in Emery County



August 19, 2020

0 200,561
0 5 10 12 miles
Sources: Best available terrain, imagery, elevation, and other data collected by the
FWS, BRS, BRCAL, Gerdner, G.H. Robinson (IL), Ordway Survey, etc.
August 19, 2020 (Muddy Creek) (1) (Copyright: 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 2681, 2682, 2683, 2684, 2685, 2686, 2687, 2688, 2689, 2690, 2691, 2692, 2693, 2694, 2695, 2696, 2697, 2698, 2699, 2700, 2701, 2702, 2703, 2704, 2705, 2706, 2707, 2708, 2709, 2710, 2711, 2712, 2713, 2714, 2715, 2716, 2717, 2718, 2719, 2720, 2721, 2722, 2723, 2724, 2725, 2726, 2727, 2728, 2729, 2730, 2731, 2732, 2733, 2734, 2735, 2736, 2737, 2738, 2739, 2740, 2741, 2742, 2743, 2744, 2745, 2746, 2747, 2748, 2749, 2750, 2751, 2752, 2753, 2754, 2755, 2756, 2757, 2758, 2759, 2760, 2761, 2762, 2763, 2764, 2765, 2766, 2767, 2768, 2769, 2770, 2771, 2772, 2773, 2774, 2775, 2776, 2777, 2778, 2779, 2780, 2781, 2782, 2783, 2784, 2785, 2786, 2787, 2788, 2789, 2790, 2791, 2792, 2793, 2794, 2795, 2796, 2797, 2798, 2799, 2800, 2801, 2802, 2803, 2804, 2805, 2806, 2807, 2808, 2809, 2810, 2811, 2812, 2813, 2814, 2815, 2816, 2817, 2818, 2819, 2820, 2821, 2822, 2823, 2824, 2825, 2826, 2827, 2828, 2829, 2830, 2831, 2832, 2833, 2834, 2835, 2836, 2837, 2838, 2839, 2840, 2841, 2842, 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3673, 3674, 3675, 3676, 3677, 3678, 3679, 3680, 3681, 3682, 3683, 3684, 3685, 3686, 3687, 3688, 3689, 3690, 3691, 3692, 3693, 3694, 3695, 3696, 3697, 3698, 3699, 3700, 3701, 3702, 3703, 3704, 3705, 3706, 3707, 3708, 3709, 3710, 3711, 3712, 3713, 3714, 3715, 3716, 3717, 3718, 3719, 3720, 3721, 3722, 3723, 3724, 3725, 3726, 3727, 3728, 3729, 3730, 3731, 3732, 3733, 3734, 3735, 3736, 3737, 3738, 3739, 3740, 3741, 3742, 3743, 3744, 3745, 3746, 3747, 3748, 3749, 3750, 3751, 3752, 3753, 3754, 3755, 3756, 3757, 3758, 3759, 3760, 3761, 3762, 3763, 3764, 3765, 3766, 3767, 3768, 3769, 3770, 3771, 3772, 3773, 3774, 3775, 3776, 3777, 3778, 3779, 3780, 3781, 3782, 3783, 3784, 3785, 3786, 3787, 3788, 3789, 3790, 3791, 3792, 3793, 3794, 3795, 3796, 3797, 3798, 3799, 3800, 3801, 3802, 3803, 3804, 3805, 3806, 3807, 3808, 3809, 3810, 3811, 3812, 3813, 3814, 3815, 3816, 3817, 3818, 3819, 3820, 3821, 3822, 3823, 3824, 3825, 3826, 3827, 3828, 3829, 3830, 3831, 3832, 3833, 3834, 3835, 3836, 3837, 3838, 3839, 3840, 3841, 3842, 3843, 3844, 3845, 3846, 3847, 3848, 3849, 3850, 3851, 3852, 3853, 3854, 3855, 3856, 3857, 3858, 3859, 3860, 3861, 3862, 3863, 3864, 3865, 3866, 3867, 3868, 3869, 3870, 3871, 3872, 3873, 3874, 3875, 3876, 3877, 3878, 3879, 3880, 3881, 3882, 3883, 3884, 3885, 3886, 3887, 3888, 3889, 3890, 3891, 3892, 3893, 3894, 3895, 3896, 3897, 3898, 3899, 3900, 3901, 3902, 3903, 3904, 3905, 3906, 3907, 3908, 3909, 3910, 3911, 3912, 3913, 3914, 3915, 3916, 3917, 3918, 3919, 3920, 3921, 3922, 3923, 3924, 3925, 3926, 392

Definitions

State Protection Status

S-ESA	Federally-listed or candidate species under the Endangered Species Act
SPC	Wildlife species of concern
CS	Species receiving special management under a Conservation Agreement in order to preclude the need for Federal listing

U.S. Endangered Species Act

LE	A taxon that is listed by the U.S. Fish and Wildlife Service as "endangered" with the probability of worldwide extinction
LT	A taxon that is listed by the U.S. Fish and Wildlife Service as "threatened" with becoming endangered
LE;XN	An "endangered" taxon that is considered by the U.S. Fish and Wildlife Service to be "experimental and nonessential" in its designated use areas in Utah
C	A taxon for which the U.S. Fish and Wildlife Service has on file sufficient information on biological vulnerability and threats to justify it being a "candidate" for listing as endangered or threatened
PT/PE	A taxon "proposed" to be listed as "endangered" or "threatened" by the U.S. Fish and Wildlife Service

Disclaimer

The information provided in this report is based on data existing in the Utah Division of Wildlife Resources' central database at the time of the request. It should not be regarded as a final statement on the occurrence of any species on or near the designated site, nor should it be considered a substitute for on-the-ground biological surveys. Moreover, because the Utah Division of Wildlife Resources' central database is continually updated, any given response is only appropriate for its respective request.

The UDWR provides no warranty, nor accepts any liability, occurring from any incorrect, incomplete, or misleading data, or from any incorrect, incomplete, or misleading use of these data.

The results are a query of species tracked by the Utah Natural Heritage Program, which includes all species listed under the U.S. Endangered Species Act and species on the Utah Sensitive Species List. Other significant wildlife values might also be present on the designated site. Please [contact](#) UDWR's regional habitat manager if you have any questions.

Contact the U.S. Fish and Wildlife Service at (801) 975-3330 for the purpose of consultation under the Endangered Species Act.

Please contact our office at (801) 538-4759 or habitat@utah.gov if you require further assistance.

Your project is located in the following UDWR region(s): Southeastern region

Report generated for:

Jenna Jorgensen
Jones and DeMille Engineering
1535 S. 100 W.
Richfield, UT 84754
(435) 896-8266
jenna.j@jonesanddemille.com



Appendix G - IpaC Report



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 84119-7603
Phone: (801) 975-3330 Fax: (801) 975-3331
<http://www.fws.gov>
<http://www.fws.gov/utahfieldoffice/>



In Reply Refer To:

November 10, 2020

Consultation Code: 06E23000-2020-SLI-0016

Event Code: 06E23000-2021-E-00184

Project Name: Muddy Creek Pipeline Phase III

Subject: Updated 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(s):

- Official Species List
 - USFWS National Wildlife Refuges and Fish Hatcheries
 - Migratory Birds
-

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Utah Ecological Services Field Office

2369 West Orton Circle, Suite 50

West Valley City, UT 84119-7603

(801) 975-3330

Project Summary

Consultation Code: 06E23000-2020-SLI-0016

Event Code: 06E23000-2021-E-00184

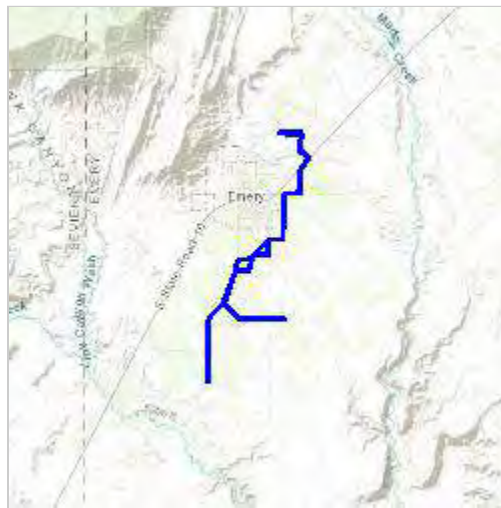
Project Name: Muddy Creek Pipeline Phase III

Project Type: AGRICULTURE

Project Description: Construction of a pipeline to replace open channel canals and reduce salinity in the Colorado Basin

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/38.909627793218476N111.24779477269436W>



Counties: Emery, UT

Endangered Species Act Species

There is a total of 5 threatened, endangered, or candidate species on this 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.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Mexican Spotted Owl <i>Strix occidentalis lucida</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8196 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/129/office/65411.pdf	Threatened
Southwestern Willow Flycatcher <i>Empidonax traillii extimus</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6749 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/149/office/65411.pdf	Endangered
Yellow-billed Cuckoo <i>Coccyzus americanus</i> Population: Western U.S. DPS There is proposed critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/6901/office/65411.pdf	Threatened

Flowering Plants

NAME	STATUS
Last Chance Townsendia <i>Townsendia aprica</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2897 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/853/office/65411.pdf	Threatened
San Rafael Cactus <i>Pediocactus despainii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3614 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/1034/office/65411.pdf	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

-
1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

THERE ARE NO FWS MIGRATORY BIRDS OF CONCERN WITHIN THE VICINITY OF YOUR PROJECT AREA.

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ “What does IPaC use to generate the migratory birds potentially occurring in my specified location”. Please be aware this report provides the “probability of presence” of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the “no data” indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ “Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds” at the bottom of your migratory bird trust resources page.

Appendix H - Correspondence with USFWS

Biological Evaluation

Muddy Creek Irrigation Company Piping Project Phase III

Bureau of Reclamation – Provo Office

Location: Emery Town, Emery County, Utah

T 22 S, R 6 E, Sections 03, 09, 10, 15, 16, 20, 21, 22, 28, and 29

Contact Information:

Tom Davidowicz
Bureau of Reclamation, Provo Area Office
302 East Lakeview Parkway
Provo, Utah 84606
(801) 379-1062

November 11, 2020

Concur not likely to adversely affect
Species: Southwestern willow flycatcher

Critical Habitat: NA

YVETTE
CONVERSE

Digitally signed by YVETTE
CONVERSE
Date: 2020.12.21 14:41:39 -07'00'

U.S. Fish and Wildlife Utah Field Supervisor
TAILS #: 21-I-0130

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APPENDIX A

Maps

1. Introduction

This biological evaluation (BE) analyzes the potential effects to species listed under the Endangered Species Act (ESA) of 1973, as amended, from the potential effects created by the proposed Muddy Creek Irrigation Company Phase III Pipeline Project in Emery County (Action). The Action would replace nearly 37.5 miles of open channel canals and laterals with 7.0 miles of buried pipeline with the goal of reducing salt mobilization by eliminating canal seepage and allowing landowners to transition from flood irrigation practices to pressurized sprinkler irrigation.

A federal nexus with the Action results from the Bureau of Reclamation (Reclamation) approving a grant that was applied for under the Colorado River Basin Salinity Control Program. Final funding authorization for the Action will require Reclamation approval based, in part, on compliance with the ESA and other related federal law. By submitting this BE, Reclamation requests the US Fish and Wildlife Service to initiate informal consultation in compliance with section 7 of the ESA.

2. Project Description

2.1. Project Location

The project is located around Emery Town in Emery County, Utah. The project area includes parts of T 22 S, R 6 E, Sections 03, 09, 10, 15, 16, 20, 21, 22, 28, and 29 (Map 1, Appendix A).

2.2. Phase III Pipeline

The pipeline would begin at the regulating pond north of the town. Approximately 7.0 miles of high-density polyethylene (HDPE) buried pipeline with associated air relief, drain, and turnout valves would be constructed from the pond to points south (Map 1, Appendix A). Pipeline diameters would vary from 42- to 8-inches along the alignment. The pipeline would be constructed within a temporary easement that is a maximum of 140 feet wide. Clearing and grading would be minimized to the extent practicable to safely install the pipeline; the full 140-foot width would not be disturbed along the entire alignment.

The pipeline trench would be excavated up to 10 feet deep and approximately 14 feet wide to allow for a minimum pipeline cover depth of 4 feet. Topsoil and subsoil would be segregated and stockpiled separately adjacent to the trench. The 50-foot-long pipe segments would be fused together to create 500-foot-long pipe sections within the construction easement. Each section would then be pulled along the trench to the installation point. The sections would then be fused together and placed in the trench. Stockpiled subsoil would be used to backfill the trench, and the topsoil would be replaced on the surface and graded to pre-disturbance contours. Once the pipeline is buried and the construction corridor is regraded, disturbed areas through agricultural fields would be reseeded and cultivated by private landowners. Unirrigated areas would be seeded with a Reclamation-approved native seed mix.

2.3. Conservation Measures

The following conservation measure is proposed:

1. Vegetation removal will occur during the non-breeding, non-nesting season (September 1 – February 28).

3. Action Area

The Action Area for plant species consists of the proposed 123-acre pipeline right-of-way area where ground disturbance could occur; the Action Area for animal species extends one-half (0.5) linear mile beyond the right-of-way limits to address potential noise disturbance impacts. The 4,756-acre Action Area for animals overlaps residential development associated with Emery Town, irrigated fields, local roadways, and State Road 10. Ongoing activities in the area include agricultural development, livestock grazing, highway operation and maintenance, and residential development.

Elevation of the Action Area is between 6,120- and 6,340-feet above sea level. Most of the area is irrigated crop and pastureland. Riparian areas occur adjacent to the open channel irrigation system and are created by seepage from the channels. The predominant riparian species is Russian olive (*Elaeagnus angustifolia*); various grasses, sedges, and rushes are also prevalent. Isolated Fremont cottonwoods (*Populus fremontii*) are scattered along the channels throughout the valley. The north end of the Action Area is relatively undeveloped and is dominated by shrubby sagebrush (*Artemisia tridentata*) and rabbitbrush (*Chrysothamnus nauseosus*).

4. Listed Species Considered

4.1. Listed Species that May Be Present

An official species list was obtained from the Information for Planning and Consultation (IPaC) system on November 10, 2020. The species listed as threatened or endangered that “may be present in the area of the proposed action” are listed in Table 1 below. There are no critical habitats within the Action Area.

Table 1. Listed species that may be present in the Action Area, and rationale for further consideration in this biological evaluation.

Species	Status	Species Likely Occurrence in the Action Area and Consideration in this BE
Mexican spotted owl (<i>Strix occidentalis lucida</i>)	Threatened	Not considered. Suitable canyon nesting habitat (USFWS 2012) does not occur within 1 mile of the Action Area. The nearest critical habitat is over 30 miles to the south of the Action Area. Any owls in the area would be incidental and would likely avoid project activities. There would be no effect to Mexican spotted owl.
Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)	Endangered	Considered. Potentially suitable riparian nesting habitat as described in Sogge et al. (2010) occurs in an isolated patch at the north end of the Action Area.
Yellow-billed cuckoo (<i>Coccyzus americanus</i>)	Threatened	Not considered. Suitable riparian woodlands with high canopy closure and cooler microclimates (USFWS 2020) do not occur within the Action Area; riparian vegetation is limited to narrow linear strips adjacent to the canal banks.
Last Chance townsendia (<i>Townsendia aprica</i>)	Threatened	Not considered. Suitable habitat consisting of soils derived from shale lens and very high alkalinities (USFWS 1993) do not occur in the Action Area.

San Rafael cactus (<i>Pediocactus despainii</i>)	Endangered	Not considered. Based on known distribution of the species in Emery County, the project would not impact suitable habitat for this species.
---	------------	---

Reclamation has determined that the following species will experience no effect from the proposed Action:

- Mexican spotted owl
- yellow-billed cuckoo
- Last Chance townsendia, and,
- San Rafael cactus.

Additionally, there is no designated critical habitat within the Action Area.

4.2. Species Carried Forward

The southwestern willow flycatcher was identified as potentially occurring within the Action Area. The following section presents an effects analysis.

5. Effects Analysis

5.1. Southwestern willow flycatcher

The nearest southwestern willow flycatcher designated critical habitat is over 118 miles south of the Action Area. Areas of dense vegetation may provide suitable nesting habitat for the flycatcher (Sogge et al. 2010); patches of suitable size or age class within the Action Area are limited to a small 7.5-acre patch at the north end of the project (Map 2, Appendix A). This patch contains large cottonwoods and thickets of willow (*Salix exigua* and *S. lutea*).

No more than 0.2 acres of this habitat would be removed by construction activities. This patch is also immediately adjacent to disturbed areas supporting weedy plant species such Russian olive and rabbitbrush. Furthermore, this patch is with 900 feet northwest of State Road 10, where noise levels may reduce habitat suitability. Reclamation anticipates that the remaining 7.3 acres of this patch would likely be lost over time as it is presumed the canal that would be piped provides the only water source supporting this potential habitat.

Vegetation clearing of the construction corridor would occur between September and February, which is outside the period when flycatchers are present in breeding grounds. Because of the small patch size and its proximity to frequent noise disturbance from vehicle use on the nearby road, habitat suitability for southwestern willow flycatcher in this area is considered minimal, resulting in nesting potential here to be unlikely in the Action Area.

Because nesting is considered unlikely, and vegetation clearing would occur during the non-breeding season, potential effects to this species are considered discountable due to probability and insignificant due to the small potential habitat area relative to that available to the species throughout its breeding range.

5.2. Interrelated and Interdependent Effects

The project is not part of a larger action, nor would any other actions be dependent upon this project; therefore, there are no interrelated or interdependent effects of the proposed action.

5.3. Cumulative effects

Non-federal activities that are likely to occur within the Action Area and that have potential to cause cumulative effects include ongoing non-federally funded roadway maintenance, livestock grazing, and other agricultural practices. These activities may continue to disturb suitable habitat through physical impacts and/or increased noise within the Action Area. Cumulatively, these past and future actions might contribute to the ongoing habitat alteration and human-caused disturbance in the Action Area; however, the Action Area is located in a rural area of Emery County, and such activities are anticipated to be limited, or not likely to increase, in the future due to a lack of land development pressure.

6. Conclusion and Determination of Effect

Considering all the potential effects, Reclamation has determined that the proposed action may affect, but is not likely to adversely affect the southwestern willow flycatcher. The U.S. Bureau of Reclamation requests concurrence of this determination from the U.S. Fish and Wildlife Service.

7. Literature Cited

- Sogge, M. K., D. Ahlers, and S. J. Sferra. 2010. A natural history summary and survey protocol for the southwestern willow flycatcher: U.S. Geological Survey Techniques and Methods 2A-10.
- USFWS. 1993. Last Chance Townsendia Recovery Plan. U.S. Fish and Wildlife Service. Region 6.
- _____. 2012. Final Recovery Plan for the Mexican Spotted Owl (*Strix occidentalis lucida*), First Revision. Albuquerque, New Mexico, USA.
- _____. 2020. Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo. February 27, 2020. Federal Register 85:11458-11594.

8. List of Contacts Made

Tracey Willey – Reclamation contacted Tracey in March of 2020 regarding the potential for *Pediocactus despainii* to occur within the project area.

Joslin Heyward - Reclamation contacted Joslin in May of 2020 regarding the potential for southwestern willow flycatcher and yellow-billed cuckoo to occur within the project area.

9. Preparers

Jenna Jorgensen, Jones and DeMille Engineering
Tom Davidowicz, Reclamation

Appendix I - Correspondence with Utah SHPO



GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Jill Remington Love
Executive Director
Department of
Heritage & Arts



Christopher Merritt
State Historic Preservation Officer

Kevin Fayles
Interim Director

November 9, 2020

Kent Kofford

Dear

We concur with your determinations of eligibility and “No Adverse Effect” for this undertaking.

This letter serves as our comment on the determinations you have made within the consultation process specified in §36CFR800.4. If you have questions, please contact me at or by email at

Sincerely,

Savanna Agardy



IN REPLY REFER TO:

United States Department of the Interior

BUREAU OF RECLAMATION
Provo Area Office
302 East Lakeview Parkway
Provo, UT 84606



PRO-636
2.1.1.04

VIA ELECTRONIC MAIL ONLY

Christopher Merritt, Ph.D.
Historic Preservation Officer
Utah State Historic Preservation Office
300 Rio Grande Street
Salt Lake City, Utah 84101

Subject: National Historic Preservation Act Section 106 Consultation for the Class III Cultural Resource Survey for the Muddy Creek Irrigation Company's Proposed Pipeline Project Phase III, Emery County, Utah; State Historic Preservation Office Project No. U19MQ0705; Bureau of Reclamation Project No. PRO-EA-18-012

Dear Dr. Merritt:

In compliance with 36 CFR § 800, Section 106 of the National Historic Preservation Act (NHPA) of 1966, and all other laws, regulations, and directives that are pertinent to this Federal undertaking, the Bureau of Reclamation, Provo Area Office is consulting with you regarding the subject project in Emery County, Utah. The project is located on private lands. The project is partially funded by Reclamation's WaterSMART grant program.

The Muddy Creek Irrigation Company (MCIC), working with Jones & DeMille Engineering proposes to construct approximately 7.3 miles

abandon approximately
37.5 miles of open channel canal, laterals, and ditches. The project area encompasses 239 acres on private property.

The area of potential effects (APE) for the MCIC Phase III project was defined to encompass all areas of potential physical ground disturbance. The APE includes 48,598 feet of buried irrigation line and six associated staging areas on approximately 239 acres in secs. 3, 9, 10, 15, 16, 17, 20, 21, 22, 27, and 28, T. 22 S., R. 6 E., of the Salt Lake Meridian and Baseline. The APE is depicted on the USGS Emery East and Emery West, Utah 7.5-minute topographic quadrangle maps (Figures 1-2). Intensive surveys were conducted on 239 acres.

INTERIOR REGION 7 • UPPER COLORADO BASIN

COLORADO, NEW MEXICO, UTAH, WYOMING

Adam Thomas of Montgomery Archaeological Consultants, Inc. (MOAC) conducted file searches for reported projects and previously recorded cultural sites using the Utah Division of State History's Preservation Pro Database on October 4, 2019 and with the SEGO database on June 25, 2020. At that time, there were 17 previous cultural resource inventories and 30 previously recorded cultural sites within a half mile of the proposed project area. Nine previously documented historical sites were found adjacent to or with the project APE. These nine sites are the National Register of Historic Places (NRHP) ineligible State Route 10 (42EM2277), the NRHP eligible Emery Canal (42EM2609), a NRHP ineligible, unnamed earthen irrigation ditch (42EM2899), a second ineligible, unnamed earthen irrigation ditch (42EM2900), an eligible historic refuse dump (42EM2903), an ineligible barrel dump (42EM2905), an ineligible historic corral complex (42EM3908), an eligible homestead (42EM3924), and the ineligible Town Ditch Canal (42EM4338). MOAC has completed site updates for 42EM2899, 42EM2900, 42EM3908, 42EM3924, and 42EM4338. Reclamation agrees with all the previous site eligibility recommendations and determinations.

The inventory of the APE occurred on October of 2019 and June of 2020. The inventory identified four new archaeological sites. The new sites are a historic corral (42EM5323), a 1930s-1960s refuse scatter (42EM5324), a mid-20th century refuse scatter (42EM5325), and a historic domestic site with structural debris and a refuse scatter (42EM5412). In agreement with MOAC's recommendations, Reclamation has determined that the four newly documented sites do not qualify for the NRHP under any Criteria.

The project will avoid all contributing portions of the Emery Canal (42EM2609) and will avoid site 42EM2903. The pipeline will cross site 42EM3924 which is eligible under NRHP Criterion C but will avoid the barn and cabin structures (Features A and D). These avoidance measures will result in no adverse effect to historic properties 42EM2609 and 42EM3924. There will be no effect to 42EM2903.

Based on the record search and inventory data and according to 36 CFR § 800.5, Reclamation has determined a finding of No Adverse Effect to Historic Properties for the proposed undertaking. The inventory and the enclosed report constitute Reclamation's reasonable and good faith effort to identify and evaluate cultural resources located in the project's APE.

Thank you for your consideration of this proposed undertaking. We understand no comment from your office within 30 days will constitute concurrence with our determination of No Adverse Effect to Historic Properties. If you have any questions, please contact Ms. Carley Smith at (801) 379-1082 or by e-mail at csmith@usbr.gov. For Text Telephone Relay Service access, call the Federal Relay System Text Telephone (TTY) number at (800) 877-8339.

Sincerely,

Kent Kofford
Area Manager

Enclosures - Class III Cultural Resource Survey for the Muddy Creek Irrigation Company's Proposed Pipeline Project Phase III, Emery County, Utah

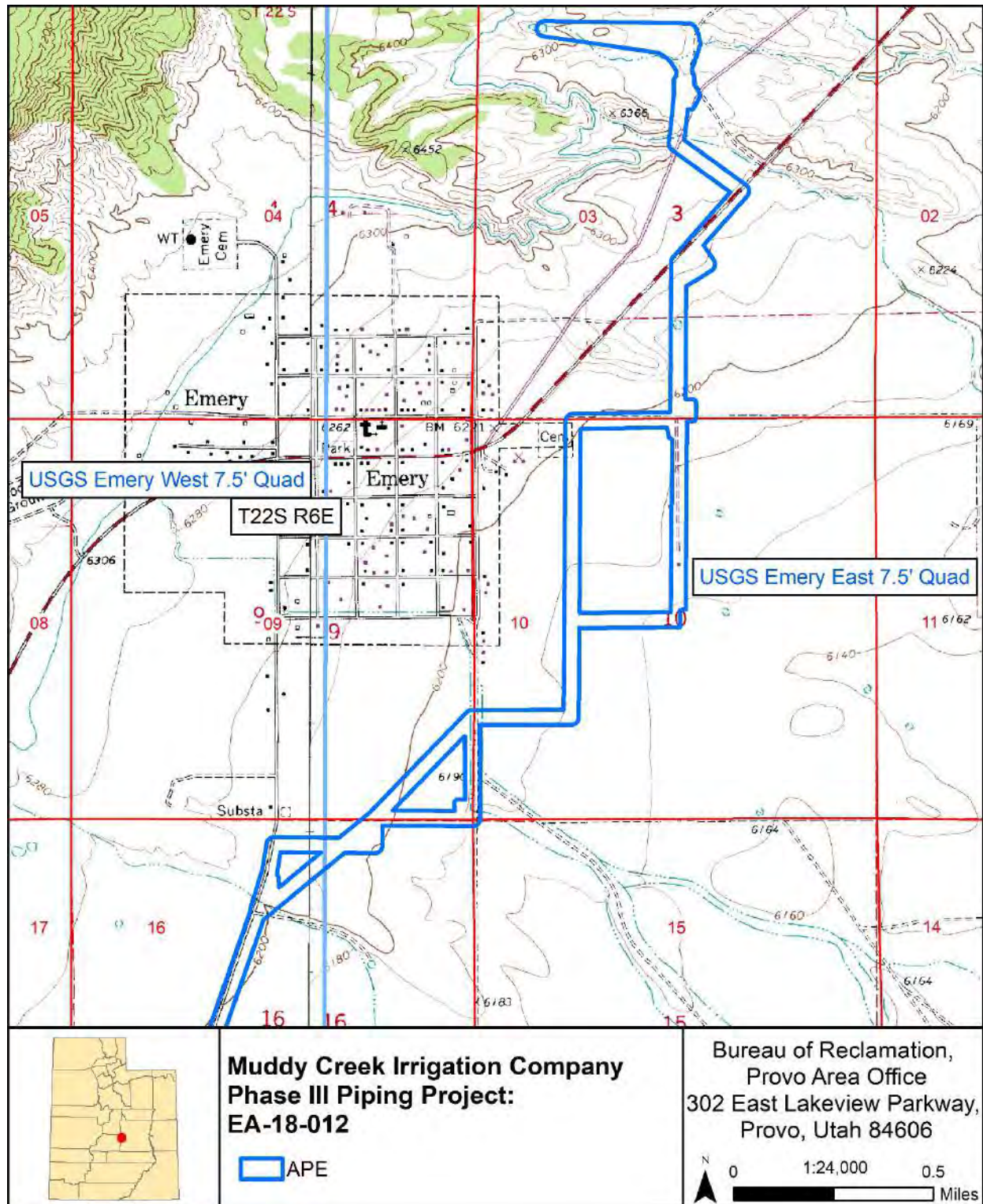


Figure 1: Map showing project APE.

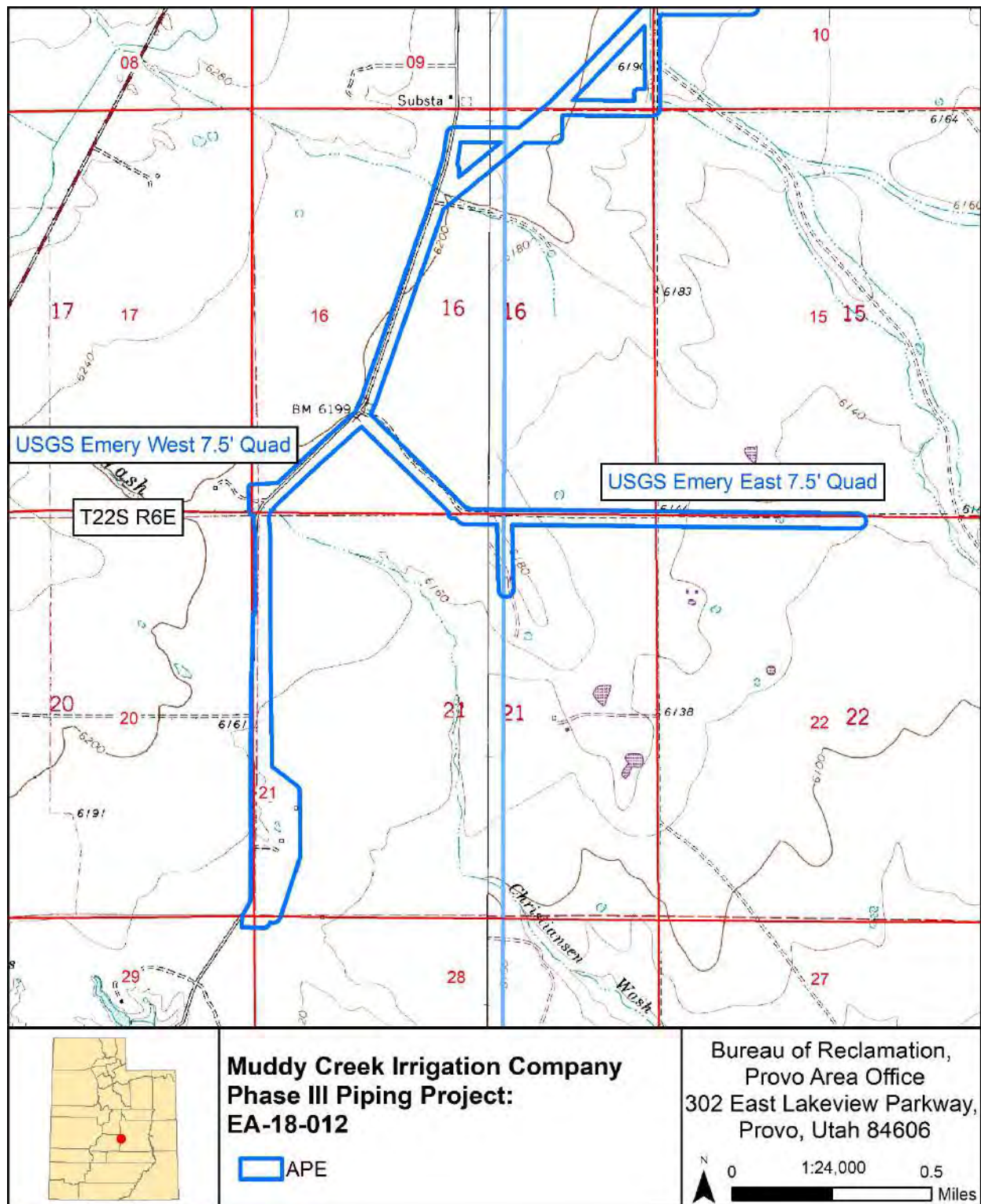


Figure 2: Map showing project APE.