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Draft Environmental Assessment for the Turner & Lone Cabin Ditch Combination Salinity Reduction Project

**Basinwide Salinity Control Program
Upper Colorado Basin: Interior Region 7
Western Colorado Area Office**



Mission Statements

The mission of the Department of the Interior is to protect and manage the Nation's natural resources and cultural heritage; provide scientific and other information about those resources; and honor its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities.

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

The mission of the Forest Service is to sustain the health, diversity, and productivity of the nation's forests and grasslands to meet the needs of present and future generations.

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**Basinwide Salinity Control Program
Upper Colorado Basin: Interior Region 7
Western Colorado Area Office**

*Prepared for the Bureau of Reclamation by
Rare Earth Science, LLC*

December 2022

Cover Photo: View toward Lone Cabin Reservoir in the Upper Lone Cabin Project Area in November 2021, Delta County, Colorado (Rare Earth Science, LLC).

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CHAPTER 1 - INTRODUCTION

This Environmental Assessment (EA) has been prepared to explain and evaluate the potential environmental effects of Turner Ditch Company's (Applicant's) proposed Turner and Lone Cabin Ditch Combination Salinity Reduction Project ("Project" or "Proposed Action"). The Federal action evaluated in this EA is whether the U.S. Department of the Interior Bureau of Reclamation (Reclamation) would provide funding assistance to the Applicant for the Proposed Action. Reclamation is authorized by the Colorado River Basin Salinity Control Act's Colorado River Basinwide Salinity Control Program to fund the Proposed Action under the 2019-2020 Funding Opportunity Announcement (FOA) BOR-UC-20-F001. The Applicant has secured funding from other entities to implement the Proposed Action, including the Colorado Water Conservation Board and the North Fork Water Conservancy District.

As the primary funder for the Proposed Action, Reclamation is the lead federal agency. The U.S. Department of the Interior Bureau of Land Management (BLM) and the U.S. Department of Agriculture Forest Service (USFS) are cooperating agencies for authorization of the Proposed Action, since parts of the Project are proposed on BLM and USFS lands.

As the lead agency, Reclamation has prepared this EA in compliance with the National Environmental Policy Act (NEPA) and the Council on Environmental Quality's (CEQ's) NEPA regulations at 40 Code of Federal Regulations (CFR) Parts 1500 – 1508 (2020). If potentially significant impacts to environmental resources are identified, an Environmental Impact Statement (EIS) will be prepared. If no significant impacts are identified, a Finding of No Significant Impact (FONSI) will be issued.

1.1 – Project Location and Legal Description

The Proposed Action would take place in the southeastern part of Delta County and the western part of Gunnison County, Colorado, near the Town of Paonia (see Figure 1, below). The Proposed Action involves a "piping component" and a "habitat replacement component". The piping component involves combining the operations of two existing ditch systems: the Turner Ditch system and the Lone Cabin Reservoir and Ditch system. The physical areas involved in the Proposed Action and their general physical locations are listed in Table 1.

The Upper Turner and Lone Cabin project areas are on a combination of private lands and public lands administered by the BLM and the USFS (Figure 1). The Lower Project Area lies mostly on private land in the Lamborn Mesa area, where most of the water users are located. Part of the Upper Lone Cabin Project Area is in a Colorado Roadless Area managed by the USFS, and part of the Upper Lone Cabin Project Area is on the Roeber State Wildlife Area (SWA), which is a private landholding in a conservation easement with limited public access managed by Colorado Parks and Wildlife (CPW). The Habitat Replacement Site is on land owned by the Town of Paonia and partially occupied by the Town's sewage treatment facility.

Figure 1. Map of project location.

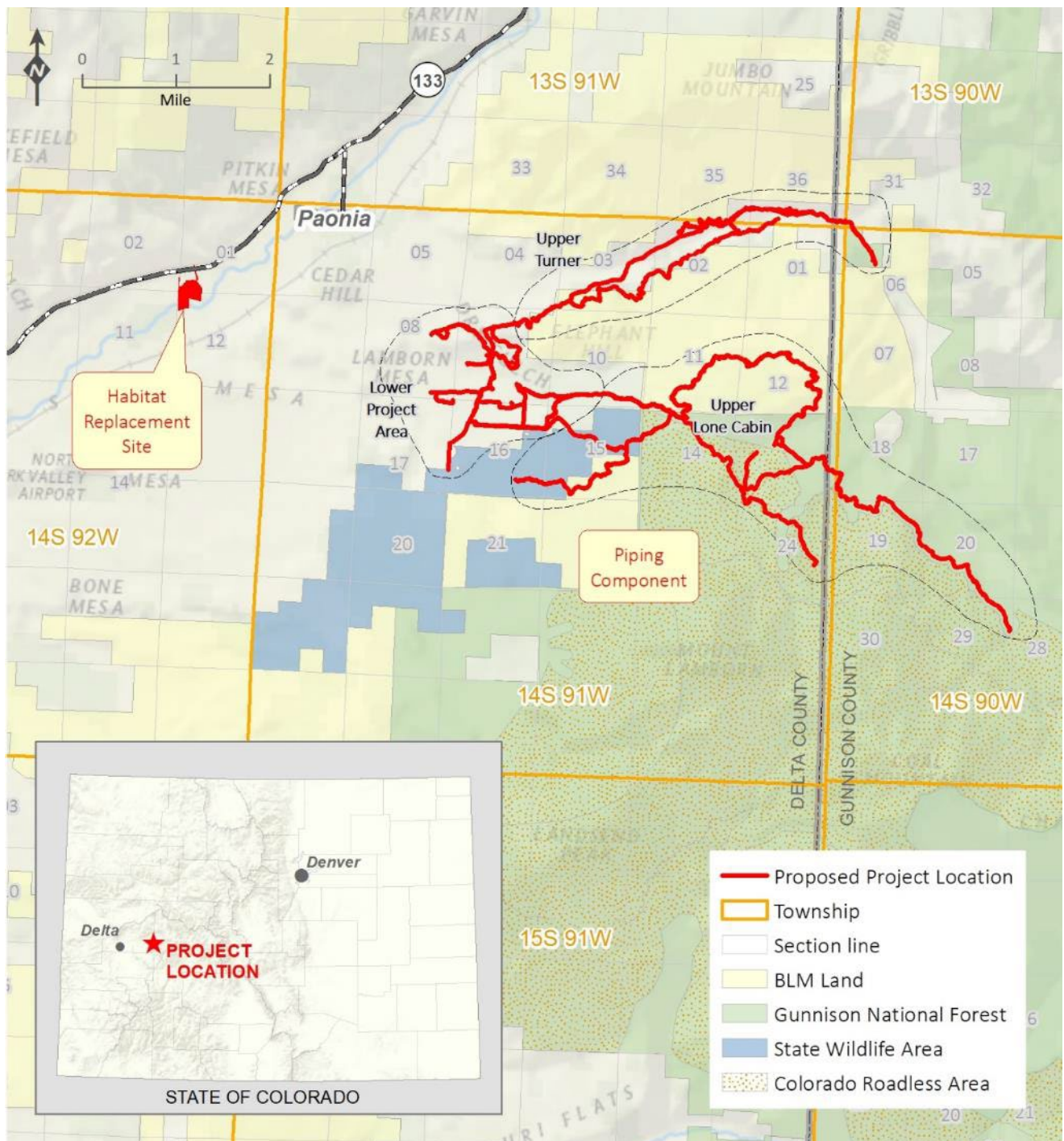


Table 1. Areas Involved in the Proposed Action

Project Area	Main Project Elements	General Physical Location
Upper Turner	The existing Turner Ditch from its current diversion on Minnesota Creek to the east boundary of Excelsior Orchard; the existing Sweezy-Turner Ditch diversion and existing Sweezy-Turner Ditch; the proposed new Turner diversion location (near the existing Sweezy-Turner Ditch diversion); the proposed Spurlock manifold pipeline; and the proposed Turner Ditch main pipeline alignment both within and outside the existing Turner Ditch prism. Includes access routes, staging, and borrow sites. Area is in a combination of National Forest, BLM, and private lands.	T14S R90W (6 th Principal Meridian [6 th PM]): Section 6, in Gunnison County; T13S R90W (6 th PM): Section 31, in Gunnison County; T13S R91W (6 th PM): Sections 35 & 36, in Delta County; and T14S R91W (6 th PM): Sections 2, 3, 4 & 9, in Delta County
Upper Lone Cabin	The existing Lone Cabin Highline Ditch, the existing Lone Cabin Trade Ditch, the existing Lone Cabin Ditch (main lateral) and its north, middle, and south laterals. Includes access routes, staging, and borrow sites. Area is in a combination of National Forest, BLM, and private lands. Some elements are on the Roeber SWA and a Colorado Roadless Area.	T14S R90W (6 th PM): Sections 18, 19, 20 & 29, in Gunnison County; and T14S R91W (6 th PM): Sections 9 – 16, and 24, in Delta County
Lower (combined) Project Area	The existing Turner Ditch below (west of) the east boundary of Excelsior Orchard; the proposed Turner Ditch main pipeline alignment; the existing Turner Ditch Laterals (north, middle, and south); the proposed Turner pipe laterals (Miller Creek Pond, north, middle, south, and Laminger); the existing Lone Cabin Ditch north lateral below the first private land turnout and a part of the existing middle lateral; the proposed Lone Cabin lower main pipeline both within and outside the existing ditch prism; the proposed connector lateral pipelines 1 and 2, and the proposed Lowe manifold pipeline. Includes access routes and staging areas.	T14S R91W (6 th PM): Sections 8, 9, 16 & 17, in Delta County
Habitat Replacement Site	Habitat Replacement Site. The Site is on land owned by the Town of Paonia and partially occupied by the Town's sewage treatment facility.	T14S R92W (6 th PM): Sections 1 & 12, in Delta County

The BLM land involved with the Proposed Action lies within an area managed by the BLM Uncompahgre Field Office (UFO). The USFS land lies within the Gunnison National Forest and is managed by the Paonia Ranger District Office of the Grand Mesa, Uncompahgre, and Gunnison (GMUG) National Forests.

1.2 – Need for and Purpose of the Proposed Action

The need and purpose for the Proposed Action is to reduce salinity concentrations in the Colorado River basin in order to comply with the Colorado River Basin Salinity Control Act (Reclamation's federal nexus). The connected action by BLM would be to acknowledge existing historic prescriptive rights-of-way (ROWs) and grant a new ROW on BLM land to comply with the Federal Land Policy and Management Act of 1976 (BLM's federal nexus). The connected action by the USFS would be to issue a Temporary Construction Permit and Special Use Authorizations to comply with Title 36, Code of Federal Regulations, Part 251, Subpart B (36 CFR part 251, Subpart B) and the GMUG Resource Management Plan (USFS's federal nexus).

The Proposed Action would eliminate water seepage loss from approximately 27.1 miles of open unlined ditches collectively associated with the Turner Ditch system and the Lone Cabin Ditch and Reservoir system, reducing salinity loading by 3,398 tons per year in the Lower Gunnison Basin and the Colorado River Basin. An additional beneficial effect of the Proposed Action would be the reduction of selenium in the Colorado River basin (SMPW 2011), although the amount of selenium reduction has not been quantified.

1.3 – Decision to be Made

Reclamation will decide whether to provide funding to the Applicant to implement the Proposed Action. Since parts of the Proposed Action would take place on BLM and USFS lands, BLM and USFS will make related decisions. In the related decisions, BLM will decide whether to acknowledge historic prescriptive ROWs and whether to grant new ROWs on BLM land to the Applicant to allow for implementation of the Proposed Action. USFS will decide whether to grant a Temporary Construction Permit and Special Use Authorizations on the Gunnison National Forest to allow for implementation of the Proposed Action.

1.4 – Background

1.4.1 – Salinity Control Program

The threat of salinity loading in the Colorado River basin is a major concern in both the United States and Mexico (Reclamation 2017). Salinity affects water quality, which in turn affects downstream users, by threatening the productivity of crops, degrading wildlife habitat, and corroding residential and municipal plumbing. Irrigated agriculture contributes approximately 37 percent of the salinity in the system (Reclamation 2017). Irrigation increases salinity in the system both by depleting in-stream flows, and by mobilizing salts found in underlying geologic formations into the system, especially during flood irrigation practices.

In June 1974, Congress enacted the Colorado River Basin Salinity Control Act, Public Law 93-320, which directed the Secretary of the Interior to proceed with a program to enhance and protect the quality of water available in the Colorado River for use in the United States and Republic of Mexico. Public Law 104-20 of July 28, 1995, authorizes the Secretary of the Interior, acting through the Bureau of Reclamation, to implement a Basinwide Salinity Control Program. The Secretary may carry out the purposes of this legislation directly, or make grants, enter into contracts, memoranda of agreement, commitments for grants, cooperative agreements, or advances of funds to non-federal entities under such terms and conditions as the Secretary may require.

The Basinwide Salinity Control Program funds salinity control projects with a one-time grant that is limited to an applicant's competitive bid. Salinity control projects are awarded based on applications received on Funding Opportunity Announcements (FOAs) issued by Reclamation. As part of the FOAs, applicants are evaluated individually according to the following criteria: cost effectiveness, the ability to enable on-farm salinity control features, risk assessment, detailed project plan, costs & capability to implement the project, future operation & maintenance and management capabilities for the project, past performance, and Department of the Interior goals. Applications are ranked by an Application Review Committee made up of multiple disciplines, and high ranking projects are recommended to the Salinity Control Program Manager for consideration. The Salinity Control Program Manager then provides recommendations to the Grants Officer for award. Once constructed, the facilities are operated, maintained, and replaced by the applicant at their own expense.

The cost effectiveness value of a proposed project is quantified as the estimated total annual salt load (in tons) reduced in the Colorado River basin divided by the project cost amortized over 50 years. Estimated salinity reduction is calculated based on measured total dissolved solids loads in basin streams, geographic information system (GIS)-based model calculations to determine subbasin loads, and ditch mapping data that include average flows, ditch lengths, and average annual days of use. Richards et al. (2014), Schaffrath (2012), and Linard (2013) provide more detailed information on salt loading estimate methodology.

1.4.2 – The Applicant

Turner Ditch Company, the Applicant, is representing both Turner Ditch Company (operating since the 1890s and incorporated in 1922) and the Lone Cabin Ditch and Reservoir Company (operating since the 1890s and incorporated in 1904), the primary entities that would implement the Project. The Applicant proposes to combine the irrigation water delivery operations of the two companies. Two additional unincorporated irrigation entities sourcing water from Minnesota Creek, the Sweezy-Turner Ditch and Spurlock Ranch would also assimilate into the Turner Ditch Company as part of the Project.

1.5 – Relationship to Other Projects

1.5.1 – Salinity Control Program

Reclamation, under the authority of the Colorado River Basin Salinity Control Act, Public Law 93-320, provides funding through the Basinwide Salinity Control Program and the Basin States Program to implement cost-effective salinity control projects in the Colorado River Basin. Reclamation's Western Colorado Area Office is in the process of or has recently utilized Salinity

Control Program funds for the following salinity control projects in the vicinity of the Proposed Action (Figure 2):

- Bostwick Park Siphon Lateral Piping Project
- C Ditch/Needle Rock Piping Project
- Cattleman's Ditches Piping Project Phases I and II
- Clipper Center Lateral Piping Project
- Crawford Clipper Jerdon, West, Hamilton Piping Project
- Eastside Laterals Piping Projects ("UVWUA Project 9" and "UVWUA Project 10")
- Fire Mountain Canal Piping Project
- Forked Tongue/Holman Ditch Piping Project
- Gould Canal Improvement Projects A & B
- Grandview Canal Upper Piping Project
- Grandview Canal Middle and Lower Piping Project
- Upper and Lower Stewart Ditch Piping Projects
- Minnesota Canal Piping Project Phase I and II
- Minnesota L75 Piping Project
- Needle Rock/Lone Rock Piping Project
- North Delta Canal Piping Project
- Orchard Ranch Piping Project
- Pilot Rock Ditch Piping Project
- Short Ditch Extension Piping Project
- Slack and Patterson Lateral Piping Project
- Spurlin Mesa Lateral Piping Project ("Clipper Project 4")
- Waterdog and Shinn Park Laterals Piping Project
- Zanni Lateral Piping Project

1.5.2 – CRSP Basin Funds

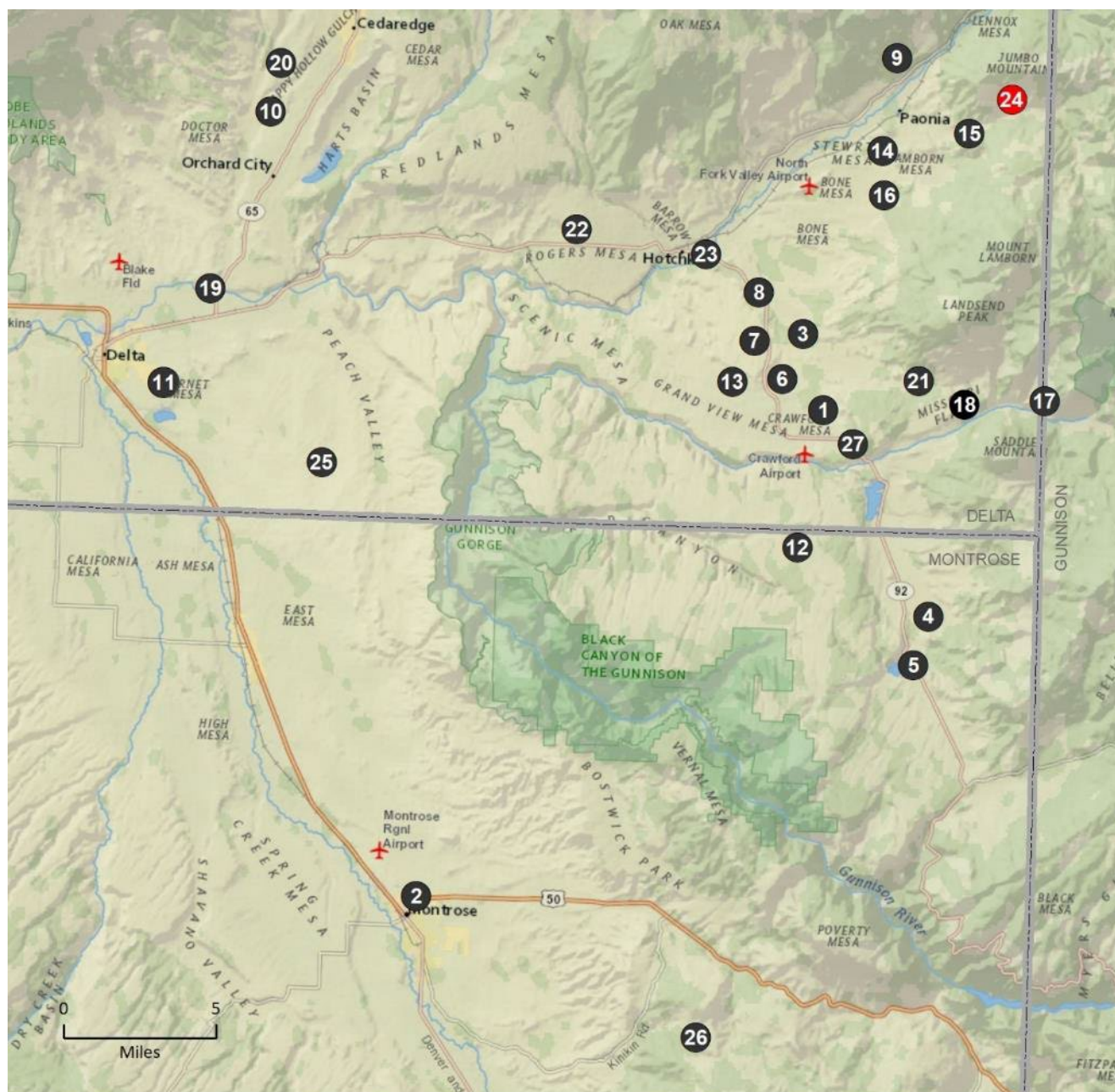
Reclamation's Western Colorado Area Office recently utilized Colorado River Storage Project (CRSP) Basin Funds to implement the Aspen Canal Piping Project and the GK Lateral Piping Project in the vicinity of the Proposed Action Area (Figure 2).

1.5.3 – RCPP Funds

The U.S. Dept. of Agriculture Natural Resources Conservation Service (NRCS) issued a Regional Conservation Partnership Program (RCPP) grant administered by the Colorado River Water Conservation District under the Lower Gunnison Watershed Plan. RCPP irrigation infrastructure improvement projects planned in the vicinity of the Proposed Action include (Figure 2):

- Needle Rock Diversion Project
- Grandview Canal Piping Project
- Crawford Clipper Ditch Upper West Lateral Master Plan Projects (various)

Figure 2. Regional salinity control projects & other related projects.



- | | | |
|--|--|--|
| 1 Aspen Canal Piping Project | 10 Forked Tongue/Holman Ditch Project | 19 North Delta Canal Piping Project |
| 2 Bostwick Park Salinity Control Project | 11 GK Lateral Piping Project | 20 Orchard Ranch Piping Project |
| 3 C Ditch/Needle Rock Pipeline Project | 12 Gould Canal Improvement Projects A & B | 21 Pilot Rock Ditch Piping Project |
| 4 Cattlemans Ditches Pipeline Project Phase I | 13 Grandview Canal Piping Projects | 22 Rogers Mesa WDA Slack & Patterson Laterals |
| 5 Cattlemans Ditches Pipeline Project Phase II | 14 Lower & Upper Steward Ditch Pipelines | 23 Short Ditch Extension Piping Project |
| 6 Clipper Center Lateral Piping Project | 15 Minnesota Canal & Reservoir Projects I & II | 24 Turner/Lone Cabin Combination Piping Project |
| 7 Clipper Jerdon, West, Hamilton Piping | 16 Minnesota L75 Piping Project | 25 UVWUA Phases 9 & 10 |
| 8 Crawford Clipper Project 4 | 17 Needle Rock Diversion Project | 26 Waterdog & Shinn Park Laterals Piping Project |
| 9 Fire Mountain Canal Piping Project | 18 Needle Rock/Lone Rock Piping Project | 27 Zanni Lateral Pipeline Project |

1.6 – Scoping

Scoping for this EA was completed by Reclamation, in consultation with the following agencies and organizations, during the planning stages of the Proposed Action to identify the potential environmental and human environment issues and concerns associated with implementation of the Proposed Action and No Action Alternatives:

- U.S. Bureau of Land Management, Uncompahgre Field Office, Montrose, CO
- U.S. Forest Service, GMUG National Forests, Paonia Ranger District, Paonia, CO
- Colorado State Historic Preservation Office, Denver, CO
- U.S. Army Corps of Engineers, Northwestern Colorado Branch, Grand Junction, CO
- Southern Ute Tribe, Ute Mountain Ute Tribe, and Ute Indian Tribe (Uintah and Ouray Reservation)
- U.S. Fish & Wildlife Service, Ecological Services, Grand Junction, CO
- Colorado Parks & Wildlife (CPW), Grand Junction, CO

Concerns raised during public comment periods on recent similar projects and related informal consultations with local CPW wildlife managers also helped identify potential concerns for the Proposed Action.

Resources analyzed in this EA are discussed in Chapter 3. The following resources were identified as ***not present or not affected***, and are not analyzed further in this EA:

Table 2. Resources Eliminated from Further Analysis

Resource	Rationale for Elimination from Further Analysis
Indian Trust Assets and Native American Religious Concerns	No Indian trust assets have been identified within the Proposed Action Area. No Native American sacred sites were identified within the Proposed Action Area. Neither the No Action Alternative, nor the Proposed Action Alternative, would affect Indian trust assets or Native American sacred sites. To confirm this finding, Reclamation provided the Ute Mountain Ute Tribe, the Ute Indian Tribe (Uintah and Ouray Reservation), and the Southern Ute Indian Tribe on July 11, 2022 with a description of the Proposed Action and a written request for comments regarding any potential effects on Indian trust assets or Native American sacred sites as a result of the Proposed Action Alternative. No comments were received.

Resource	Rationale for Elimination from Further Analysis
Environmental Justice & Socioeconomic Issues	The Proposed Action Area does not occur on Indian reservation lands or within disproportionately adversely affected minority or low-income populations. The Proposed Action Alternative would not involve population relocation, health hazards, hazardous waste, property takings, or substantial economic impacts. Therefore, neither the No Action Alternative nor the Proposed Action Alternative, would have an environmental justice effect.
Wild & Scenic Rivers, Land with Wilderness Characteristics, or Wilderness Study Areas	No Wild and Scenic Rivers, land with wilderness characteristics, or Wilderness Study Areas exist in the Proposed Action Area. Therefore, neither the No Action Alternative nor the Proposed Action Alternative, would have an effect on these resources.

CHAPTER 2 – PROPOSED ACTION AND ALTERNATIVES

Alternatives evaluated in this EA include the No Action Alternative and the Proposed Action Alternative.

2.1 – No Action Alternative

Under the No Action Alternative, Reclamation would not approve funding for the Project. The ditches proposed for piping would continue to flow in open, earthen ditches, and the resultant salt loading to the Lower Gunnison Basin and the Colorado River Basin would continue. The BLM would not go through their formal acknowledgement process to verify the applicant's historic prescriptive ditch ROW and would not grant a new ROW on BLM land. The USFS would not issue a Temporary Construction Permit and Special Use Authorizations.

2.2 – Proposed Action

Under the Proposed Action, Reclamation would authorize funding to the Applicant to implement the Turner & Lone Cabin Ditch Combination Salinity Reduction Project, BLM would acknowledge existing historic ROWs and grant a new ROW to the Applicant to allow for implementation of the Proposed Action on BLM land, and USFS would issue a Temporary Construction Permit and Special Use Authorizations to allow for implementation of the Proposed Action on the GMUG National Forests.

2.2.1 – Project Overview

The activities funded by the Proposed Action would include the conversion of approximately 27.1 miles of the existing open ditch systems to a system of approximately 18.9 miles of buried, pressurized pipe alignments (the “Piping Component”) and establishment of an approximately 28.3-acre Habitat Replacement Site (the “Habitat Component”) to maintain the value of the riparian and wetland habitat which would be lost as a result from the Piping Component.

Table 3, below, is a summary of project elements broken out by land status (distances and acreages are approximate). These elements were compiled from a review of the 90 percent design drawings (AECOM 2021) and a GIS analysis using Esri® ArcGIS Desktop software. Of the of 18.9 miles of buried pipe alignments proposed for installation, approximately 11.5 miles of pipeline would be installed in the existing ditch prisms (e.g., direct conversion of ditch to pipeline), about 7.4 miles of pipeline would be installed in re-alignments outside the existing ditch prisms, and 15.6 miles of existing ditches would be decommissioned. Five existing ditch diversions would be removed, one new ditch diversion would be established in a new location, and one existing ditch diversion would be replaced/upgraded at its current location.

The pressurized pipelines would be polyvinylchloride (PVC) irrigation pipe, high-density polyethylene (HDPE), plastic irrigation pipe (PIP) (or similar), and rated for 200 pounds per square inch (psi). Operating pressures would range from 165 to 90 psi. The pipe diameter would range from as large as 30 inches in main lines to as small as 1 inch in manifold lines. A variety of control structures (intakes, gate valves, air vents, drains, pressure reducing vaults, meters, and outlets (“taps”)/farm turnouts) would be installed on the pipe system. Intakes (headgates) would be poured-in-place reinforced concrete with Coanda intake screens. Valves would be slow-close valves, meters would be electromagnetic flow meters. Outlets would be a combination of concrete boxes and standpipes depending on the amount of water delivery required. Four outlets would be provided along the pipelines to provide stock water and wildlife water to tanks on public lands. One stockwater outlet would be on National Forest in the east part of the Upper Turner Project Area, up to two would be on BLM land in the Oak Ridge area of the Upper Lone Cabin Project Area, and one would be on National Forest between the Lone Cabin headgate on the Lake Fork and Lone Cabin Reservoir. No new water storage, pump stations, compressor stations, or new irrigated farm areas would be associated with the Proposed Action.

Table 3. Summary of Project Elements for the Proposed Action

Project Element	Total Involved	On BLM Land	On USFS Land	On Private Land	Comment
Existing ditches involved with the Proposed Action	27.1 mi	6.8 mi	8.6 mi	11.7 mi	Includes all ditches directly maintained by the ditch companies. Some existing ditches would be converted to buried pipelines (pipe would be installed in the existing ditch prisms) and some existing ditches would be decommissioned.

Project Element	Total Involved	On BLM Land	On USFS Land	On Private Land	Comment
Pipeline to be installed	18.9 mi (137.5 acres)	4.4 mi (32.3 acres)	2.8 mi (20.5 acres)	11.6 mi (84.6 acres)	The length of pipeline is based on total distance disturbed (manifold pipes installed alongside the main pipelines are not included in the distance). The width of the construction footprint would vary from approximately 40 to 60 feet depending on site characteristics (acreage is conservatively based on the 60-foot width)
Pipe to be installed in the existing ditch prism (direct conversion from ditch to pipe)	11.5 mi (83.6 acres)	4.2 mi (30.6 acres)	2.4 mi (17.4 acres)	4.9 mi (35.6 acres)	The width of the construction footprint would vary from approximately 40 to 60 feet depending on site characteristics (acreage is conservatively based on the 60-foot width)
Pipe to be installed in a realignment path (outside the existing ditch prism)	7.4 mi (53.6 acres)	0.24 mi (1.7 acres)	0.4 mi (2.9 acres)	6.74 mi (49 acres)	Various route realignments for efficiency and systems connectivity (acreage is conservatively based on a 60-foot-wide construction footprint).
New primary diversion structures (2)	1 acre	--	1 acre	--	A new diversion (pipe inlet) structure in a new location on Minnesota Creek would replace the existing Turner Ditch, Sweezy-Turner Ditch, and Spurlock diversions. The existing Lone Cabin main ditch diversion structure on Lake Fork Creek would be replaced (upgraded) at its current location.

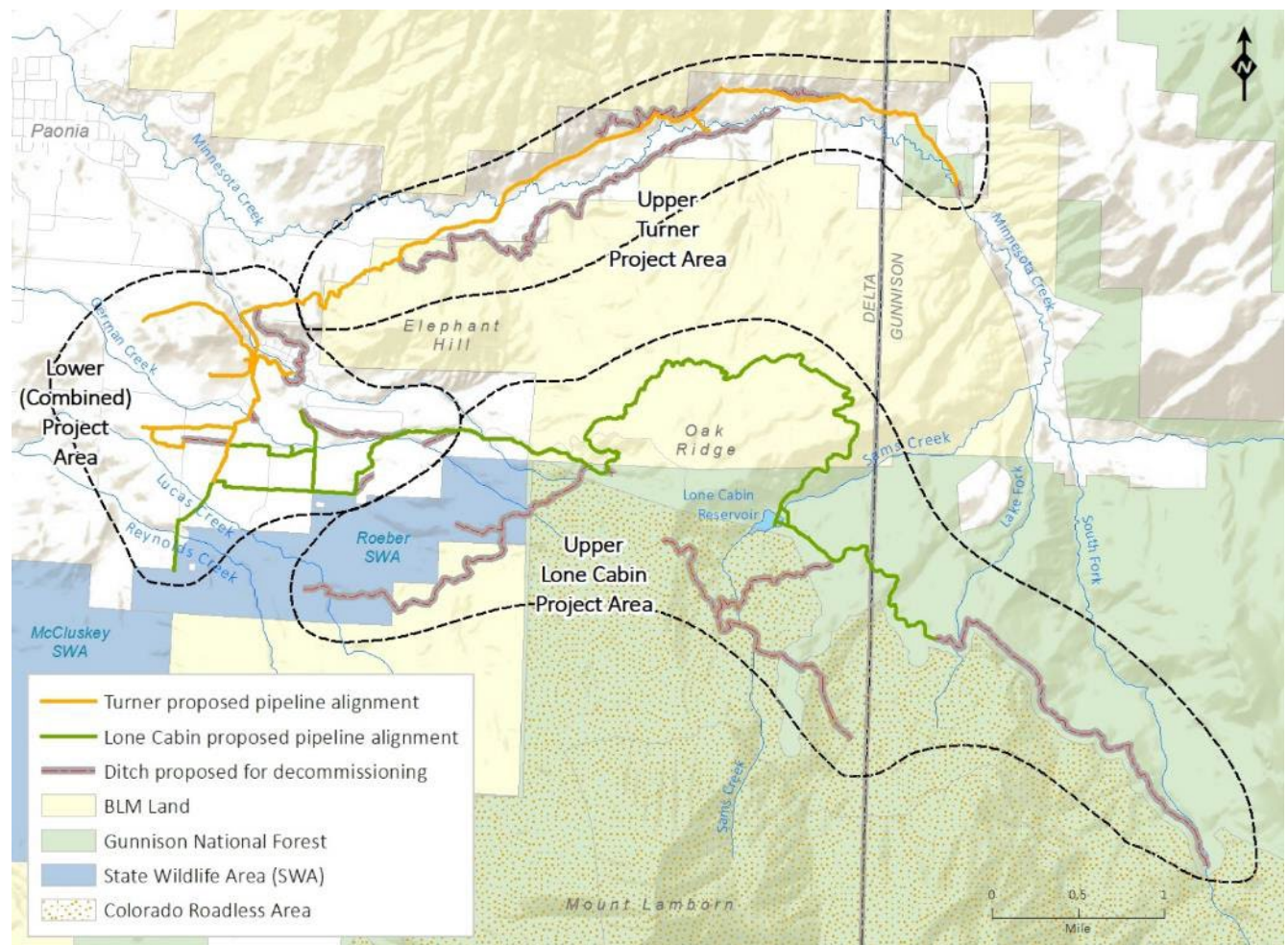
Project Element	Total Involved	On BLM Land	On USFS Land	On Private Land	Comment
Existing points of diversion to be removed (5)	2.5 acres	--	1.5 acres	1 acre	The existing Lone Cabin Trade Ditch diversion on South Fork Creek; the existing Lone Cabin Highline Ditch diversion on Lake Fork Creek; and the existing Turner Ditch, Sweezy-Turner Ditch, and Spurlock diversions on Minnesota Creek would be removed.
Existing ditch to be abandoned / decommissioned	15.6 mi	2.6 mi	6.1 mi	6.9 mi	Ditches to be removed from service (where not being converted in place to pipelines)
Existing natural drainage used to convey irrigation water – use to be discontinued	1.8 mi	--	1.2 mi	0.6 mi	Certain segments of the existing Lone Cabin Ditch system use natural drainages as ditch conveyances – this use would be discontinued and any water control structures removed.
Staging areas (14 total)	29.5 acres total	3 sites (2 acres total)	4 sites (5.5 acres total)	7 sites (22 acres total)	Project materials would be stored on previously/historically disturbed and/or farmed ground.
Borrow areas (3 total)	4 acres total	--	2 sites (1.9 acres total)	1 site (2.1 acres total)	Material borrow would be on previously disturbed ground or ground within the pipeline construction footprint.
Access routes (total)	18.1 mi	4.7 mi	7.4 mi	6 mi	Includes backcountry public routes and private land roads that would be traveled by construction traffic (does not include regular county roads).
Access routes where road grading, graveling or widening may be required	9.7 mi	4.6 mi	2.5 mi	2.6 mi	Project access routes that may need improvement in order to support access of construction equipment and materials.

Project Element	Total Involved	On BLM Land	On USFS Land	On Private Land	Comment
Stock and wildlife water taps	3 to 4	1 to 2	2	--	Stockwater/wildlife water taps would be installed on the pipelines to provide drinking water for animals in public land grazing allotments.
Habitat Replacement	28.3 acres	--	--	28.3 acres	To be improved in accordance with a Habitat Replacement Plan, to replace riparian/wetland habitat values lost as a result of piping the ditches. Location includes Town of Paonia land near the Town's sewage treatment facility.

There are three main geographic areas involved with the Piping Component: the Upper Turner Area in the Minnesota Creek drainage; the Upper Lone Cabin Area in the Lake Fork Minnesota Creek, South Fork Minnesota Creek, Sams Creek, Reynolds Creek, Lucas Creek, German Creek, and Miller Creek drainages; and the Lower Project Area (where the systems combine) on Lamborn Mesa. The Habitat Replacement Component is on the North Fork of the Gunnison River, approximately 1.5 miles southwest of the Town of Paonia. (Figure 1 shows the general locations of these areas). Figure 3 is a schematic of the Piping Component Project Areas with existing major ditch locations and proposed pipeline locations. The following Project Area descriptions provide further detail.

The following subsections explain the construction methods and describe other aspects (staging, schedule, post-construction activities, habitat replacement) of the Proposed Action. For all aspects of the Proposed Action, Best Management Practices (BMPs) would minimize impacts of the project on the human and ecological environments. BMPs and other protective measures are incorporated as part of the Proposed Action, are described and analyzed as part of the Proposed Action in CHAPTER 3 (Affected Environment & Environmental Consequences), and are summarized in CHAPTER 4 (Environmental Commitments).

Figure 3. Overview of the Piping Component Project Areas



Upper Turner Project Area

In the Upper Turner Area (Figure 4 and Figure 5), the primary Project elements are Turner Ditch, Sweezy-Turner Ditch, and the Spurlock diversion. The existing Turner Ditch in the Upper Turner Project Area diverts from Minnesota Creek on private land and flows southwesterly for 4.2 miles on the south side of the Minnesota Creek valley, contouring through a combination of private and BLM lands to its first farm turnout on private land (Excelsior Orchard). The existing Sweezy-Turner Ditch is diverted from Minnesota Creek on National Forest land, and contours along the north side of the Minnesota Creek valley through a combination of National Forest, BLM, and private lands for approximately 3 miles, serving its shareholders in the Upper Turner Project Area.

Figure 4. Proposed Project Plan, Upper Turner Project Area – East Part

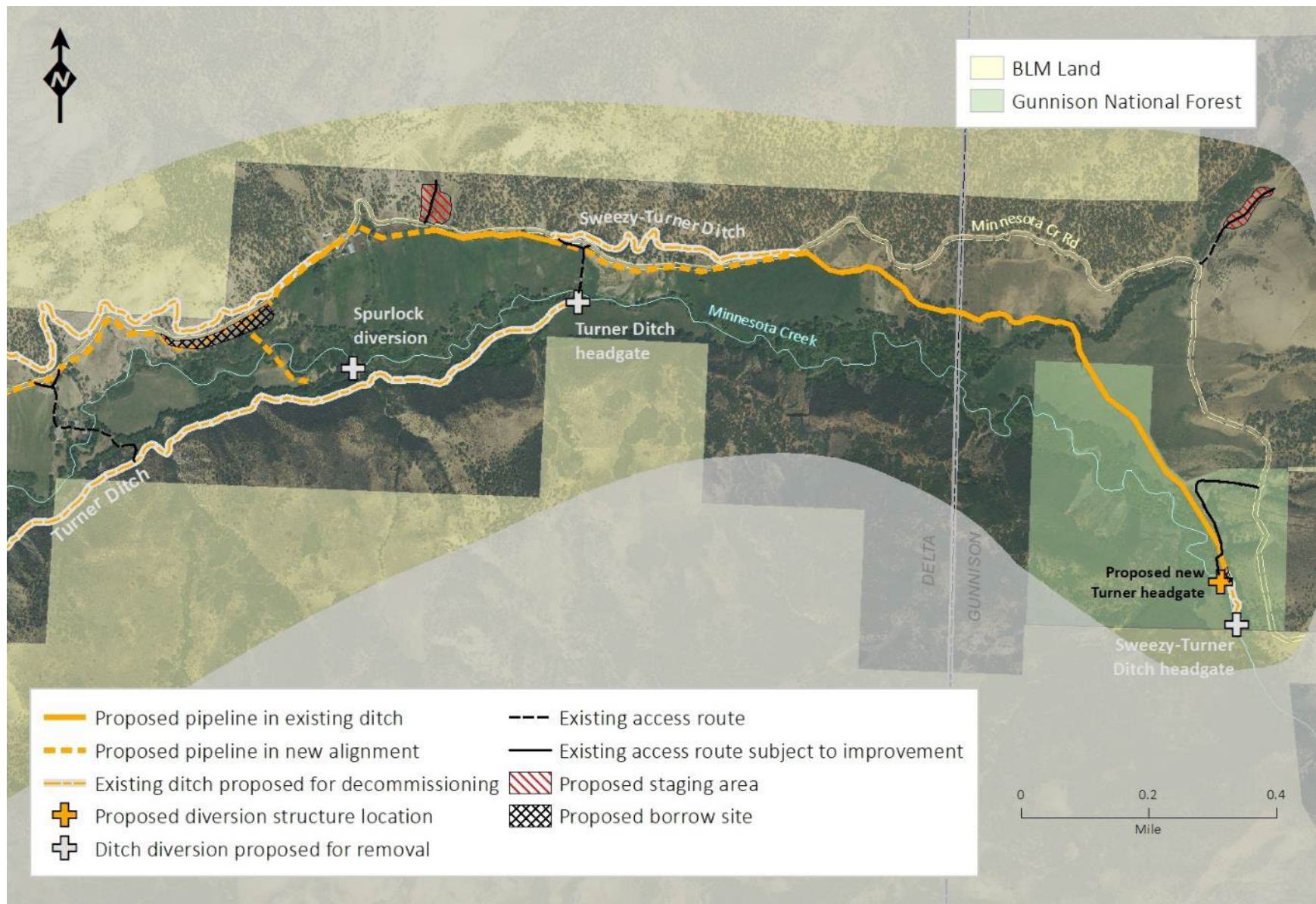
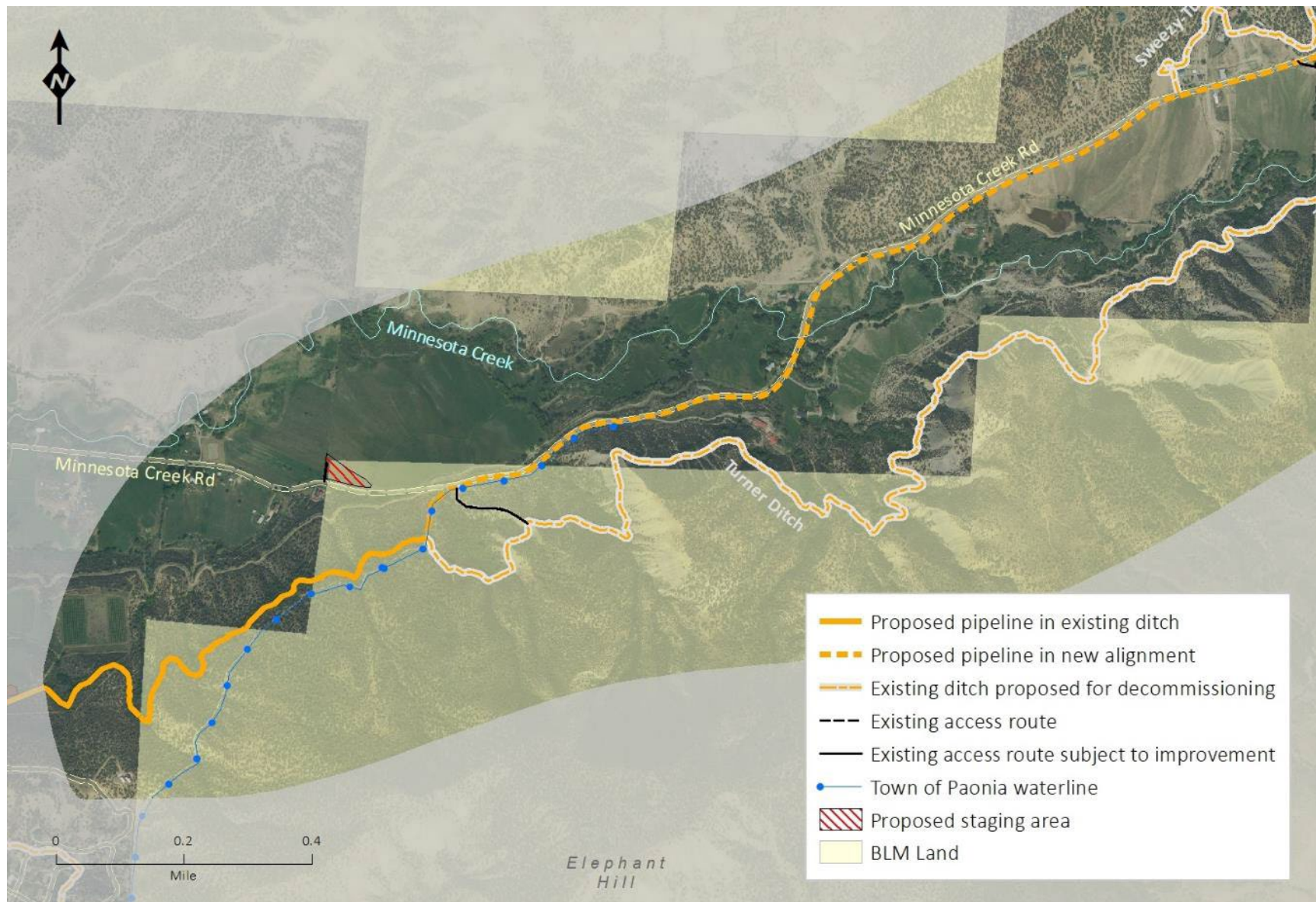


Figure 5. Proposed Project Plan, Upper Turner Project Area – West Part



The Spurlock water right provides early water from Minnesota Creek, diverted on private land to irrigate bottomlands on Spurlock Ranch in the Minnesota Creek valley.

The Applicant proposes to remove the existing Turner Ditch Company headgate, the existing Sweezy-Turner Ditch headgate, and the existing Spurlock diversion, and combine the points of diversion at a new Turner headgate structure on Minnesota Creek on National Forest, about 400 feet north downstream (north) of the existing the Sweeny-Turner Ditch diversion (Figure 4). From this point, a buried pipe would follow the existing Sweezy-Turner Ditch alignment northwesterly on National Forest and private land for approximately 1 mile to the Minnesota Creek Road corridor. Once in the Minnesota Creek Road corridor, the pipeline would proceed west and southwesterly in the Minnesota Creek Road right-of-way on the south side of the road across a combination of private and BLM lands for approximately 3.9 miles, to a point where it would leave the Minnesota Creek Road right-of-way, turn south and cross BLM land in an existing Town of Paonia waterline right-of-way for approximately 0.1 mile to rejoin the existing Turner Ditch alignment. From this point, the buried pipeline would extend approximately 1 mile in the existing Turner Ditch alignment across a combination of private and BLM lands to the east boundary of Excelsior Orchard. The new Turner pipeline in the Upper Turner Project Area would have turnouts for the existing shareholders of the Sweezy-Turner Ditch and a manifold pipeline to deliver the Spurlock water, integrating these shares into the Turner Ditch Company part of the new combination system.

There are three proposed equipment and materials staging areas and two proposed borrow areas in the Upper Turner Project Area (see Sections 2.2.5 and 2.2.6). Access to the Upper Turner Project Area is on existing roads or directly to the construction corridor off Minnesota Creek Road, a county-maintained road in Delta and Gunnison counties. A total of approximately 5 miles of the existing Turner Ditch and the existing Sweezy-Turner Ditch alignments in the Upper Turner Project Area would be abandoned and decommissioned using minimal disturbance methods (see Section 2.2.3).

Construction and future operations and maintenance access to the new Turner headgate structure would be from Minnesota Creek Road across National Forest using the current access route for the existing Sweezy-Turner diversion. Where the pipeline alignment is not adjacent to Minnesota Creek Road, an off-highway vehicle (OHV) trail or one lane (two-track) dirt road would be maintained on the alignment for operations and maintenance.

Upper Lone Cabin Project Area

In the Upper Lone Cabin Project Area (Figure 6 and Figure 7), the existing primary Project elements include the Lone Cabin Ditch (main lateral); the north, middle, and south delivery laterals; two secondary water collection ditches (the Lone Cabin Highline Ditch and the Lone Cabin Trade Ditch); and Lone Cabin Reservoir. The Project would pipe the main and north laterals of Lone Cabin Ditch to reach shareholder properties in the Lamborn Mesa Project Area, and abandon the middle lateral, south lateral, Highline, and Trade ditches, and part of the main ditch.

The existing Lone Cabin Ditch point of diversion is on Lake Fork Creek on the National Forest. From the Lake Fork Creek diversion, Lone Cabin Ditch contours northwesterly for 1.6 miles on National Forest to Lone Cabin Reservoir, and then north and westerly for approximately 4 miles around the north side of Oak Ridge on a combination of National Forest and BLM lands to the existing north lateral split.

Figure 6. Proposed Project Plan, Upper Lone Cabin Project Area – East Part

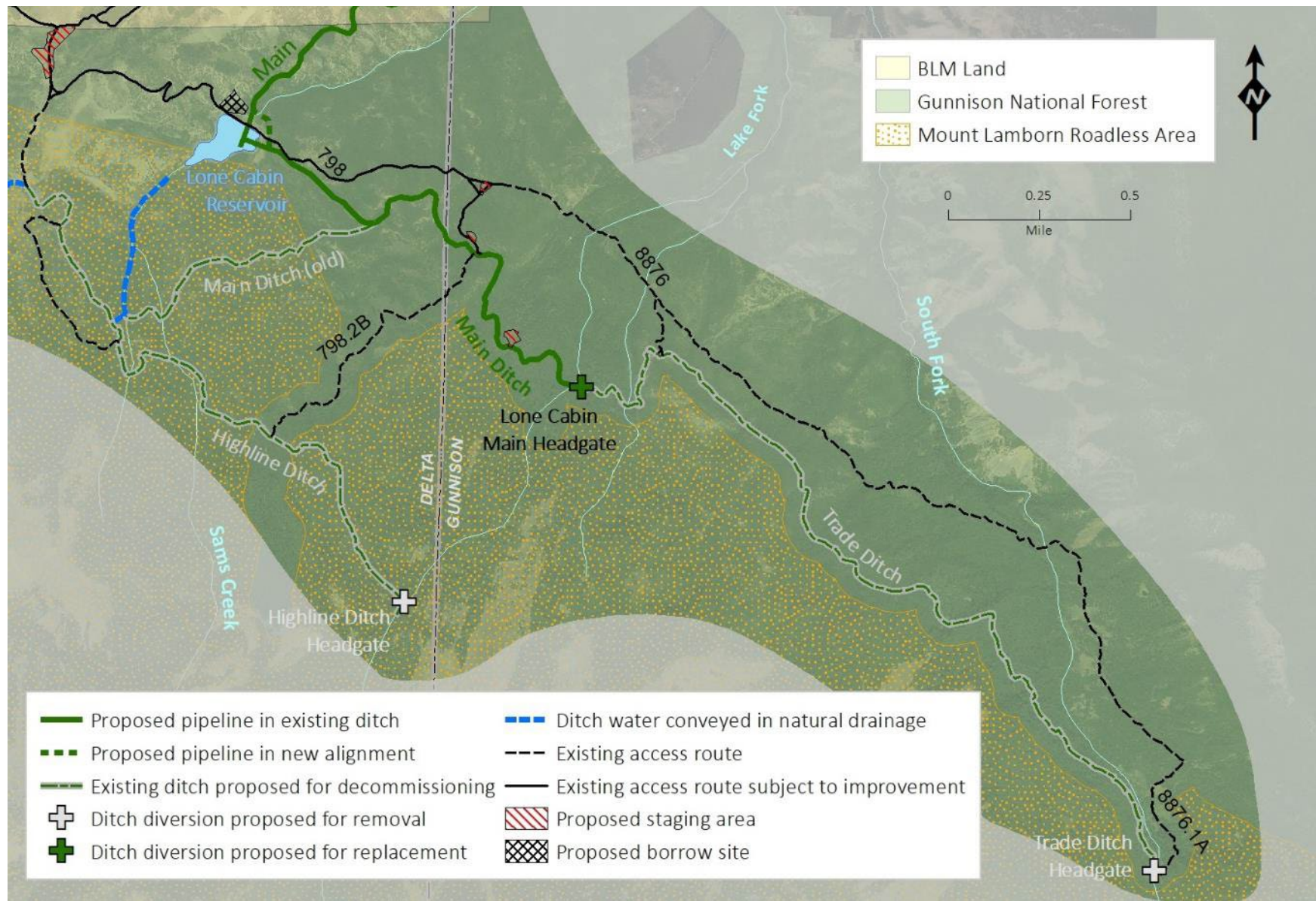
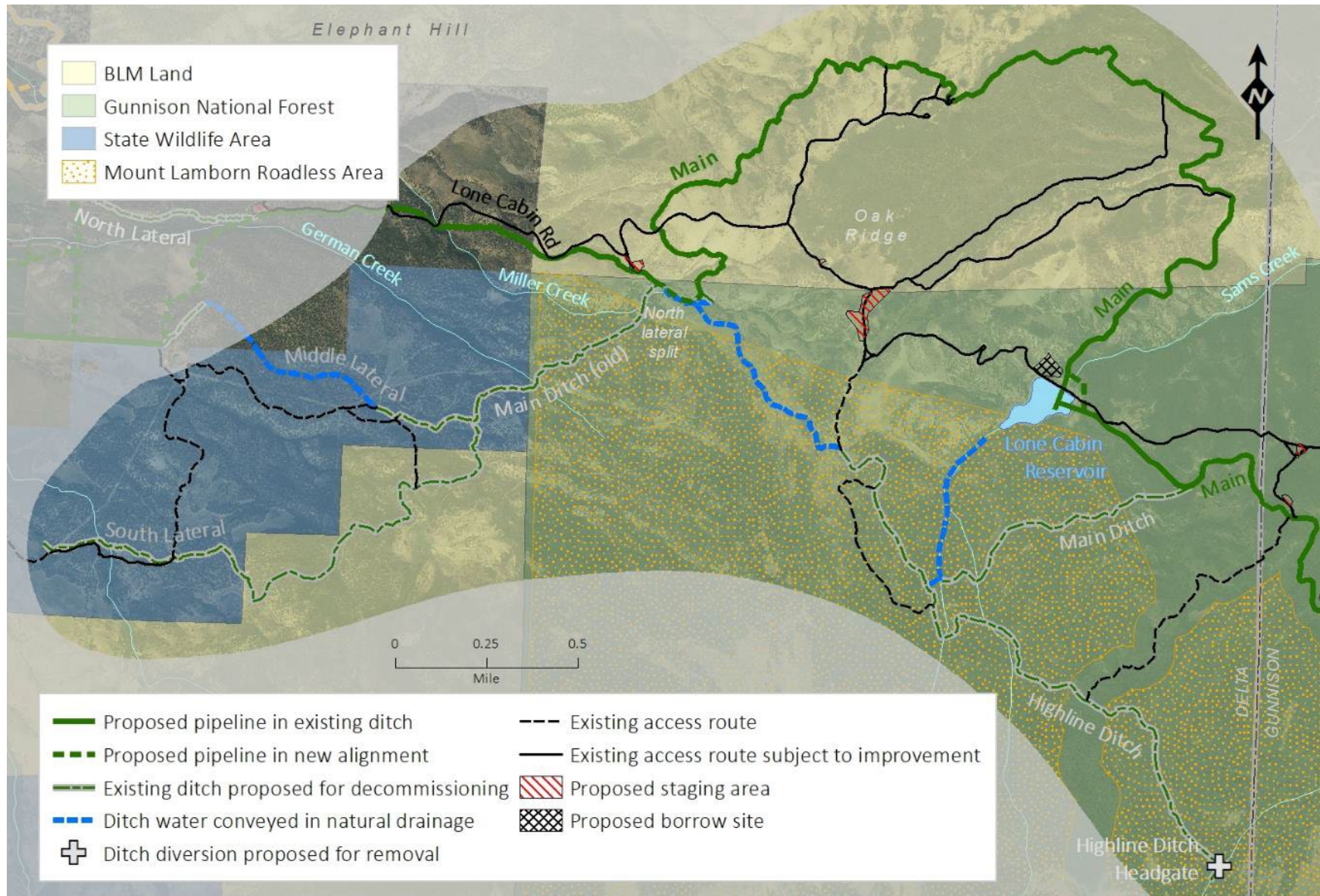


Figure 7. Proposed Project Plan, Upper Lone Cabin Project Area – West Part



From the north lateral split, the existing north lateral continues westerly in the Upper Lone Cabin Project Area for about 0.9 mile on a combination of National Forest, BLM, and private lands to the first private land turnout adjacent to Lone Cabin Road. From the north lateral split, the main lateral continues southwesterly on National Forest and private (Roeber SWA) lands for 0.8 miles, where it splits onto the existing middle and south laterals. From this split, the middle lateral trends west for approximately 0.3 mile before entering a natural drainage and exiting the Upper Lone Cabin Project Area. The south lateral trends southwesterly and westerly for about 1.5 miles and terminates within the Upper Lone Cabin Project Area, where it delivers water to a natural drainage and/or privately maintained delivery ditches for on-farm use.

The existing Lone Cabin Highline Ditch is a 2-mile-long water collection ditch on the National Forest that diverts water from the Lake Fork drainage upstream of the main lateral diversion, and either delivers it to the main lateral at a point west of Oak Ridge or to Lone Cabin Reservoir via the natural channel of a Sams Creek tributary and Sams Creek. The other secondary water collection lateral in the Lone Cabin system is the existing Trade Ditch. The Trade Ditch initiates on South Fork Minnesota Creek on the National Forest and 2.7 miles to the Lone Cabin Ditch main lateral. The purpose of the Trade Ditch is to deliver the Lone Cabin Ditch Company's storage right in Beaver Reservoir (also in the Minnesota Creek drainage basin but within a different sub-basin) to the Lone Cabin system through an inter-basin trade/exchange.

The Applicant proposes to pipe the Lone Cabin Ditch main and north laterals in their existing alignments in the Upper Lone Cabin Area, except in the area of the north lateral split and some stretches of the north lateral, where short lengths of the pipeline would bypass existing segments of ditch that incorporate natural drainages. Additionally, an approximately 700-foot-long segment of buried pipeline for the main lateral would bypass Lone Cabin Reservoir outside of an existing ditch alignment on the Gunnison National Forest.

The Project would abandon and decommission the Lone Cabin Highline Ditch, the Trade Ditch, the existing main lateral downstream of the north lateral split, and the south and middle laterals of the Lone Cabin system. Shareholders on the Lone Cabin system would instead be served by a piping network branching off of the existing Lone Cabin north lateral (see the Lower Project Area narrative, below). Trade Ditch water (the Beaver Reservoir storage right) would instead be delivered to shareholders in the Lower Project Area by the Turner system connection in the Lower Project Area. Water gathered by the Highline Ditch would no longer need to bypass Lone Cabin Reservoir early in the season, but would be collected at the main ditch headgate and delivered in the new piped system. Ditches proposed for abandonment in the Upper Lone Cabin Area would be decommissioned by minimal disturbance methods (see Section 2.2.3). Where natural drainages are currently used to convey irrigation water between segments of constructed ditch, this practice would be discontinued and the natural drainage would not be mechanically disturbed except for removal or decommissioning-in-place of water control structures.

Access to the Upper Lone Cabin Project Area would be from Lone Cabin Road, an unimproved county/public lands route that leads into the high country from Dry Gulch Road on Lamborn Mesa. From Lone Cabin Road, other existing public lands routes would be used the access the pipeline routes and existing ditches (Figure 6 and Figure 7). Five equipment and materials staging areas (totaling 6.3 acres) and one borrow site (1.9 acres), all on public lands, are proposed for the Upper Lone Cabin Project Area (Figure 6 and Figure 7; Sections 2.2.4 and 2.2.6).

Lower (Combined) Project Area

In the Lower Project Area (Figure 8), the existing Turner Ditch extends west-by-southwest across private land (Excelsior Orchard) and south through Hidden Valley subdivision for about 1.4 miles to Foothills Road, then splits into the north, middle, and south laterals, conveying water to shareholders on Lamborn Mesa in the Foothills Road, Lamborn Mesa Road, German Creek Lane, and Minerich Road areas in approximately 1.9 miles of ditches. The existing Lone Cabin Ditch north, middle, and south laterals distribute water to shareholders on Lamborn Mesa in the Roeber Road, Lamborn Mesa Road, and Minerich Road areas.

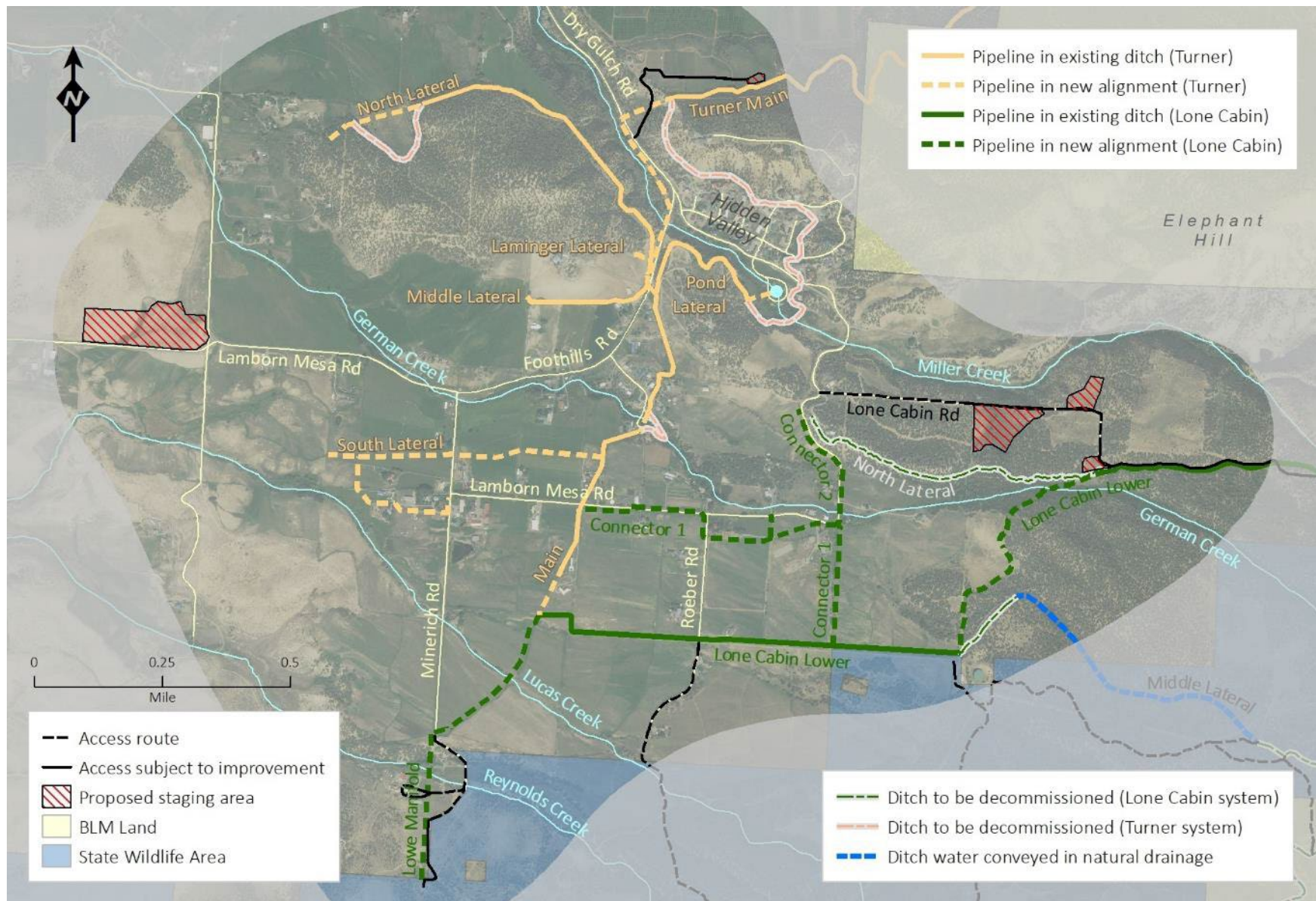
In the Lower Project Area, the Applicant proposes to establish a network of buried pipelines that would serve the respective shareholders and connect the Turner and Lone Cabin systems on Lamborn Mesa (Figure 8). The connected systems would allow the Lone Cabin shareholders to directly access their Beaver Reservoir water without transfers/trades.

The Project would pipe Turner Ditch in its existing alignment from where it enters the northeast part of the Lower Project Area to its south turn toward Hidden Valley Subdivision. From that point, the pipeline would depart from the existing ditch alignment, continue west-by-southwest across Dry Gulch Road, run east-by-southeast along the west side of Dry Gulch Road, then south-by-southwest along the west side of Foothills Road until reaching a split point on the “Foothills Road saddle.” From the saddle area, the north, Laminger, middle, and pond laterals would split from the Turner main pipeline. The north and middle lateral pipelines would follow their existing ditch prism paths, except for an approximately 0.1-mile segment near the end of the north lateral, which would bypass a longer ditch contour in favor of a straight alignment. The pond lateral would be installed in the existing main Turner Ditch prism until reaching a point near the Miller Creek pond in the Hidden Valley Subdivision, from which a buried pipeline would extend outside the existing ditch prism the remaining approximately 200 feet to the pond. The Laminger lateral would be an approximately 500-foot long pipeline in a new alignment extending from the saddle area. The Turner main pipeline would extend south from the saddle area in its existing prism for about 0.8 miles to its connection with the Lone Cabin lower pipeline. The Turner south lateral pipeline would split off this stretch of the Turner main pipeline in a new alignment, and the Lone Cabin connector 1 pipeline would tie in to this stretch. Several local manifold pipelines would extend from the Turner south lateral pipeline.

The Project would pipe the existing Lone Cabin north lateral in its existing ditch path from where it enters the east part of the Lower Project Area for a distance of about 0.3 miles to the point where it departs from the south side of Lone Cabin Road. From this point, the remainder of the Lone Cabin north lateral would be abandoned, and the Lone Cabin lower pipeline would extend southwest and west partially in a new alignment and partially in the existing middle lateral alignment for 1.7 miles to its terminus and connection to the proposed Lowe manifold pipeline. The 0.3-mile-long Lowe manifold pipeline would furnish water to a shareholder currently served by the existing Lone Cabin south lateral, which would be abandoned by the Project. The proposed Lone Cabin connector 1 pipeline would split north from the Lone Cabin lower pipeline, delivering water to shareholders currently on the middle lateral, and would connect into the Turner main pipeline. The Lone Cabin connector 2 pipeline would split north from the connector 1 pipeline to furnish water to shareholders currently at or near the end of the existing north lateral.

The Project would abandon several ditch segments in the Lower Project Area, including Turner Ditch through the Hidden Valley Subdivision to the proposed Miller Creek Pond manifold, the last 0.6 mile of the Lone Cabin north lateral, and a 0.2 mile stretch of the Lone Cabin middle lateral.

Figure 8. Proposed Project Plan, Lower (Combined) Project Area



Other miscellaneous delivery lateral segments would either be abandoned or used as on-farm distribution ditches. The Turner Ditch through Hidden Valley and the Lone Cabin north and middle laterals in the Lower Project Area would be decommissioned by minimal disturbance methods (see Section 2.2.3). Turner Ditch provides drainage/flood control in the Hidden Valley Subdivision and the homeowners association has asked that the ditch remain intact as much as possible through the area to continue to provide flood control. The existing Lone Cabin north and middle laterals are in areas with high natural character where minimal disturbance decommissioning methods are appropriate. The natural drainage that carries water for a portion of the existing Lone Cabin middle lateral would not be disturbed.

Access to the Lower Project Area would be directly from Delta County roads into the construction alignments, or into the construction alignments from designated access routes on private lands indicated on Figure 8. There are five staging areas in the Lower Project Area totaling 19.4 acres, all on private land in currently farmed or disturbed areas (areas previously cleared of brush).

Habitat Replacement Site

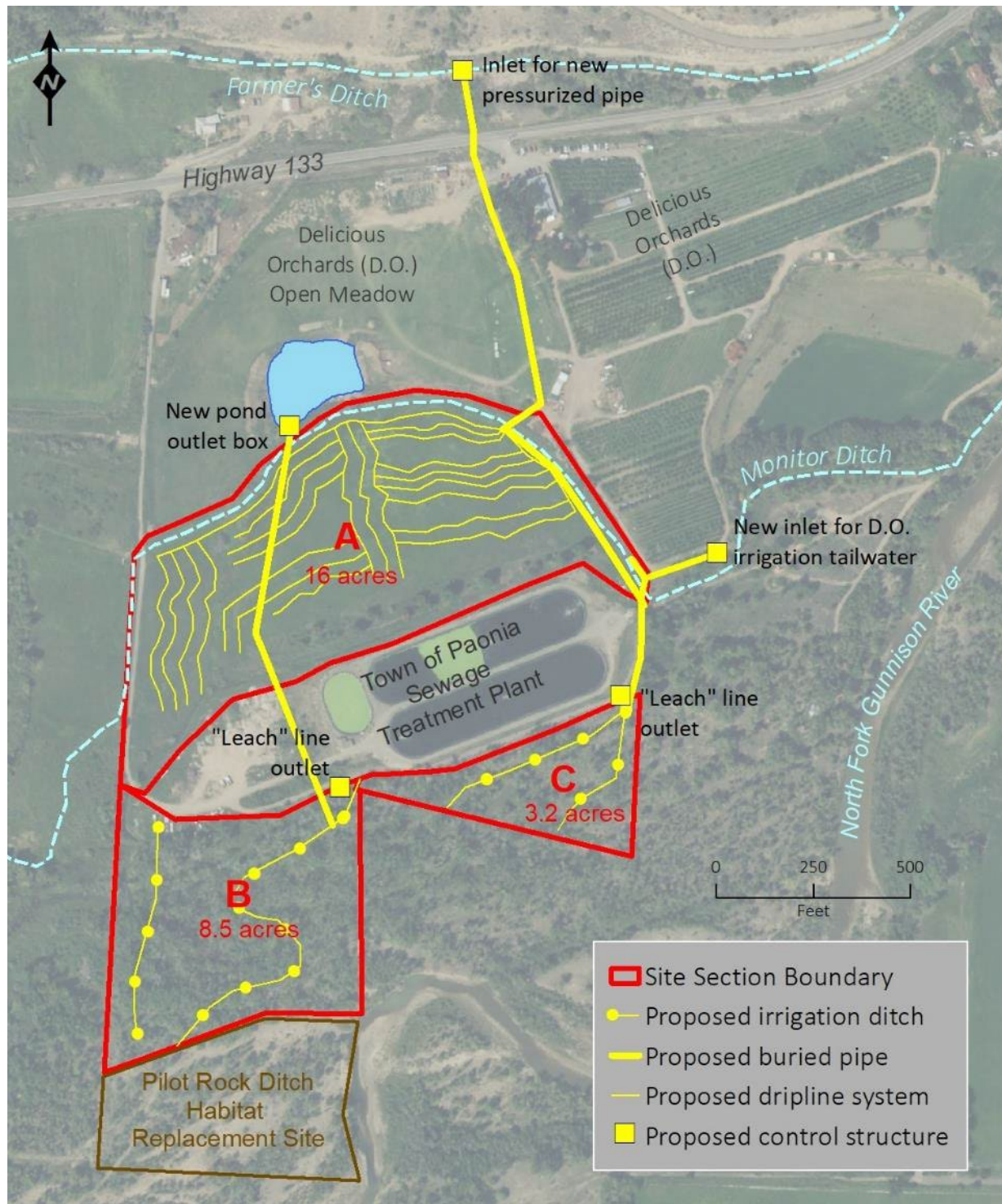
In accordance with the Colorado River Basin Salinity Control Act, habitat replacement would be implemented to maintain the value of the riparian and wetland habitat which would be lost as a result from the Piping Component. As part of the Proposed Action, the Applicant developed a Habitat Replacement Plan (WNRCS 2022) for a site (“Habitat Replacement Site”) at the general location shown on Figure 1. The habitat value of this site would be improved and enhanced in accordance with the Habitat Replacement Plan’s goals of increasing native riparian vegetation structure and diversity and reducing noxious weed cover.

The Habitat Replacement Site is approximately 28 acres on a larger private parcel owned by the Town of Paonia and the site of the Town’s Sewage Treatment Plant (STP). The STP has several treatment ponds that discharge to the nearby North Fork Gunnison River, to the south. Figure 9 shows a schematic of the Habitat Replacement Site. The Habitat Replacement Site is divided into three sections. Section A is 16 acres north of the STP, and consists of an irrigated grass pasture. Sections B (8.5 acres) and C (3.2 acres) are south of the STP in the wooded riparian corridor of the North Fork River. Section B encompasses a cottonwood woodland with understory vegetation dominated by non-native Russian olive and salt cedar. Section C encompasses a stressed cottonwood woodland. When the STP was constructed, water that normally reached Section C from irrigated lands to the north was routed to the southwest with “leach” drains to protect the STP pond liners from floating and inundation. Consequently, many riparian trees and shrubs in Section C have died due to lack of water and the area has lost some of its riparian character.

The Habitat Replacement Plan (WNRCS 2022) proposes to install a shelterbelt planting of about 2,000 riparian trees and shrubs in Section A. Russian olive and salt cedar would be removed from Sections B and C, and pole plantings of cottonwoods and riparian shrubs would be installed. Irrigation water for the Section A plantings would be the Town of Paonia’s 2 shares of Farmer’s Ditch. The existing pipeline from Farmer’s Ditch would be replaced with a pressurized pipe so that the Section A plantings could be watered with an efficient drip system. Sections B and C would receive irrigation water from a combination of sources, including the Town of Paonia Farmer’s Ditch irrigation water shares; overflow from a pond on Delicious Orchards property to the north (which currently flows into Monitor Ditch); irrigation tail water from Delicious Orchards lands to the northeast (which currently flows to Monitor Ditch); water from an existing spring drain tile in Section A (which percolates to Section B), and collection and redirection of the STP “leach” drain

waters (which currently reach only a part of Section B). Water to Sections B and C would be delivered to those areas via new buried lines and outlets, and distributed across those sections in new small earthen ditches. Herbaceous weeds would be treated in an ongoing manner with appropriate herbicides with appropriate timing for effectiveness.

Figure 9. Proposed Project Plan, Habitat Replacement Site



The timing of the construction work at the Habitat Replacement Site would correspond with construction of the piping project and with the most effective and appropriate times for seedings, plantings, weed control, irrigation, and other site maintenance, subject to protective timing restrictions specified in the Environmental Commitments (CHAPTER 4). The Applicant would be responsible for ongoing maintenance of the Habitat Replacement Site for 50 years after its establishment.

2.2.2 – Pipeline System Installation

Pipeline installation in the existing ditch prisms would first involve using trackhoes and bulldozers to grub ditch bank vegetation. Woody vegetation on the side-slopes of ditch prisms, especially in natural areas, would be left intact as much as possible. Grubbed shrubs, trees and stumps would be cut, chipped, or burned onsite or at one of the staging areas, or hauled to a local landfill. No burning would occur on public land.

Following grubbing, trackhoes and bulldozers would be used to reserve existing topsoil (or subsurface soil, depending on the post-construction revegetation method [see Section 2.2.7]) and fill the existing ditch. An excavator would then trench to the appropriate depth in the prism, adjacent to the previous location of the ditch, and prepare the pipe bed. Following installation of the pipe, an excavator would backfill the pipe trench and a dozer would grade the pipe alignment to match the surrounding land contours and restore drainage patterns. Reserved topsoil would be replaced on the prepared surface using a trackhoe, without back-dragging the blade (i.e., without smoothing), to create microtopography for reseeding. A one-lane dirt maintenance road or OHV trail would remain on the pipe alignments following construction. Appropriately-sized culverts would be placed at drainage crossings.

Pipe and supplies would be transported to the construction site on flatbed trucks (or similar) and unloaded with front end loaders with pallet forks. A trackhoe would position the pipe in the trench, and segments of pipe would be fused or joined together in place or alongside the prepared pipe trench. The pipe would be bedded and buried with fill material from within the ditch prism or, if necessary, with bedding or fill obtained from one of the borrow areas proposed for the Project, or from a commercial source. The burial depth would be below frost line. For installation of pipeline segments in the realignment areas, the process would be similar, but without the step of first preparing the existing ditch prism for trenching.

There is the possibility of encountering large boulders or bedrock in pipe trenches that cannot be moved with excavating equipment. In this case, conventional blasting would be used to break rock into pieces manageable with heavy equipment. Blasting would be performed by a state-licensed blasting contractor. Blasting would entail drilling a hole or holes in the (below grade) rock, placing a charge and detonator in each drill hole, and detonating the charge. The blasting activity would take place below grade entirely within the pipeline trench.

There are 16 points where buried pipe alignments of the Turner and Lone Cabin systems would cross public roads. The public road crossings would either be trenched using methods described above, directionally drilled with special equipment, or sleeved in existing culvert crossings, depending on the characteristics of the crossings. Road surfaces would be restored to their preexisting condition, per Delta County Road and Bridge Department specifications or the managing public land entity, following construction.

There are 8 points where buried pipe alignments would cross creeks, including Minnesota Creek (1 crossing), Miller Creek (2 separate crossings), German Creek (3 separate crossings), Lucas Creek (1 crossing), and Reynolds Creek (1 crossing). To install the buried pipeline under a creek channel, the crossing area would first be dried by guiding the flow of the creek into a large-diameter approximately 40-foot-long corrugated culvert placed on the ground in or near the creek channel. A pipeline trench would then be excavated across (perpendicular to) the creek channel, and the pipeline buried in a pipe sleeve in bedding material with approximately two feet of overburden topped with approximately 6 inches of rock. Dewatering of the pipeline trench across the creek channel may be necessary, and would be conducted in accordance the Colorado Department of Public Health & Environment's (CDPHE's) Water Quality Control Division dewatering general permit. A geotextile liner would then be placed over the buried pipe location and covered with riprap. The corrugated culvert carrying the creek flow would be removed and the creek returned to its original flowline.

2.2.3 – Abandoned Ditch Segments Decommissioning

Two different methods for decommissioning ditches proposed for abandonment would be used for the Project: conventional method (for ditches in farmed areas in the Lower Project Area) and the “minimal disturbance” method (for private land ditches where the underlying landowner requests this method in writing to Reclamation and all ditches proposed for abandonment on public lands).

In the conventional method, an excavator would be used to fill the abandoned ditch with material from the existing ditch prism, then a trackhoe would contour the filled ditch alignment to match the surrounding land, including natural drainage patterns that cross the alignment. In some cases, drainages may be rocked across the recontoured ditch alignment, or culverted through the recontoured ditch prism, if necessary, to maintain natural drainage patterns and control erosion. Surface disturbances in these areas would be finished with retained topsoil and reseeded using methods described in Section 2.2.7. Ditches decommissioned with conventional methods include reaches of ditch crossing farmed ground in the Lower Project Area. No maintenance access road or trail would remain on the decommissioned ditch alignment in these areas.

Minimal disturbance methods are proposed by USFS and BLM for ditches with significant growth of natural ditch-bank upland vegetation in mixed mountain shrub or pinyon-juniper woodland environments, and/or where ditch segments contour along the unstable steep side slopes of badland areas and earthwork could trigger excessive erosion or increase slope instability. These ditches would not be filled and re-contoured, but instead would remain mostly undisturbed in their current condition, except to breach their banks where they are intersected by natural drainages. These ditches include the Lone Cabin Trade, Highline, middle lateral, and south lateral ditches in the Upper Lone Cabin Project Area; and those portions of the Sweezy-Turner and Turner Ditches outside the proposed pipeline alignment in the Upper Turner Project Area. Table 3 summarizes the mileage of ditches proposed for decommissioning.

Some reaches of existing ditches proposed for the minimal disturbance method of decommissioning are in buried plastic or metal pipe to help prevent repeated ditch bank failures and erosion on steep slopes. These existing piped lengths include a total of approximately 2,500 feet of Turner Ditch and a total of approximately 3,000 feet of the Lone Cabin system. These buried pipes would be left in place to avoid disturbing natural vegetation that has established on the surface in these reaches. A trackhoe or similar equipment would be used to crush the pipe ends and block them with soil to render them incapable of transmitting water. Some ditch reaches in steep country are also conveyed

in short segments of elevated metal flumes. Such flumes would either be decommissioned in place or dismantled in accordance with landowner preference using a trackhoe and either hauled out for proper disposal, or crushed and buried onsite. Similarly, water diversion structures to be abandoned (South Fork and Lake Fork diversions in the Lone Cabin system on National Forest and the Sweezy-Turner, Turner, and Spurlock old headgates on National Forest and private land, respectively) would be dismantled using a trackhoe and hauled out for proper disposal or crushed and buried onsite. Instructions for handling old flumes and diversion structures would be indicated on the Project construction drawings per the underlying landowner's requirements or in accordance with public land permit stipulations.

Certain portions of the Lone Cabin Highline Ditch, middle lateral, and upper main ditch are conveyed in natural drainages. Transmission of ditch water in these drainages would be discontinued and the drainages themselves would not be mechanically disturbed.

The Applicant would have no ongoing responsibility for maintaining the abandoned and decommissioned ditch alignments following construction of the Project. Ongoing responsibility for maintaining the ditch alignments decommissioned with minimal disturbance methods would fall to the underlying landowner after construction or once permit stipulations are fulfilled.

2.2.4 – Access

The existing ditches involved with the Proposed Action are in historic prescriptive easements. All private landowners in the footprint of the Proposed Action where activities would take place outside the historic prescriptive easement have formally agreed to allow the activities of the Proposed Action to be conducted on their lands. On public lands, where pipeline construction widths, access routes, staging, and borrow sites are outside historic prescriptive easements, appropriate authorizations and/or ROW permits would be obtained (see Section 2.2.10).

The average width of the construction area for the pipeline component of the Proposed Action would be 30 to 40 feet, but could be as wide as 60 feet under certain conditions. The width of the construction footprint would depend on site conditions (slope, nearby infrastructure, nearby sensitive resources) and the ability to operate equipment safely. The authorized construction area widths would not be constrained by the existing ditch centerline, but rather would be adjustable to site conditions in order to complete the work safely and with the smallest possible disturbance footprint. Construction footprints would be limited to only those necessary to safely implement the Proposed Action. The authorized construction width would not be mechanically cleared to its maximum outer limits as a part of site preparation.

Access ways for construction of the pipeline system and ditch decommissioning would be along a combination of the existing ditch prisms and proposed new pipe alignments, or directly to these areas from existing access ways on private lands, public lands backcountry routes, or from county roads, and are limited to those access ways shown on Figures 4 - 9. These accessways have been traditionally used by the Applicant for operation and maintenance of the existing systems. Some access roads (see Figures 4-8) would require improvement (minor grading, smoothing, and widening up to 15 feet wide) in order to accommodate pipe hauling, especially certain stretches of Lone Cabin Road. Accessways and road crossings would be returned to the same or better condition than they were prior to construction. The access ways authorized for the Proposed Action would be clearly marked on the construction drawings.

Following construction, a one-lane dirt maintenance road or OHV trail would remain on the pipe alignments, similar in appearance to the maintenance road currently parallel to the existing ditches. Traditional access routes to the pipe alignments would continue to be used for operation and maintenance of the system.

2.2.5 – Staging

Fourteen staging areas have been identified for the Proposed Action, totaling 29.5 acres. Their locations are shown on Figures 4-8. The largest of these is an 11-acre grass pasture on private land in the Lower Project Area. The remaining staging areas vary in size from 0.1 acre to 5.4 acres, each on previously disturbed, open ground. No vegetation clearing would be performed to prepare staging areas for use. The staging areas would be used to store pipe and other project supplies and equipment. Pipe arriving and leaving the staging area would be transported on flatbed trucks (or similar). Front end loaders with pallet forks (or similar) would be used to handle pipe in the staging areas. As explained in Section 2.2.2, grubbed shrubs, trees and stumps (collectively, “slash”) may be processed in private land staging areas (chipped or burned). Slash processing would only occur on public lands in accordance with permit stipulations. No burning would occur on public land.

To conserve fuel and for the sake of work efficiency, working equipment would remain at active construction locations overnight, on weekends, and during times of brief work gaps due to weather conditions or holidays. Equipment would be removed from public lands if construction work is idled for more than two consecutive weeks.

2.2.6 – Borrow Activities

The necessary pipe bedding and trench fill would be generated from within the construction footprint. To generate fill material onsite, a screening or portable crusher may be used in the construction footprint to prepare the fill material. If additional fill is required, fill would be obtained from any of three designated borrow sites for the Project (Figures 4-8). Borrow material would be loaded to end-dump trucks using an excavator and hauled to the construction site via approved access ways. Borrow material would be acquired from a commercial source and hauled to the Project Area as a last option.

One proposed 1.9-acre borrow site in the Upper Lone Cabin Project Area is near the Lone Cabin Reservoir dam, in a previously disturbed area on the National Forest (Figure 6). There are also two proposed borrow sites in the Upper Turner Project Area: one approximately 0.1-acre in size on National Forest near the current location of the Sweezy-Turner Ditch headgate where previously disturbed materials are stockpiled, and one 2.1-acre site on private land on an embankment within the proposed pipe alignment along Minnesota Creek Road near the proposed location of the Spurlock manifold pipeline split (Figure 4). Material borrowed from the borrow sites on National Forest would only be used on National Forest portions of the Project.

2.2.7 – Weed Control & Post-Construction Revegetation

To prevent the spread of weeds during construction, all equipment and vehicles would be cleaned prior to arriving on work sites. Woody noxious weeds within the Proposed Action Area would be mechanically removed during construction preparation. The Applicant would control noxious weeds in disturbed areas following construction in accordance with county standards and public land permit stipulations. The Applicant would coordinate with BLM and USFS on the use of herbicides

on public lands. The Applicant would provide BLM with Pesticide Use Proposals (PUPs) prior to treatments, as required.

Following construction, disturbed ground would be revegetated in one of two ways: the sterile topsoiling and natural revegetation method, or the conventional method. In irrigated pastures and hayfields, the conventional revegetation method would be used, wherein topsoil retained during construction would be respread on the site, and the site reseeded. In non-farmed areas, the sterile topsoiling and natural revegetation method for reclamation would be used in order to minimize the spread of weeds following construction, unless the underlying landowner specifically requests the conventional reclamation method. Where conventional revegetation is required or requested, weed-free seed mixes appropriate for the surroundings would be used. For instance, roadsides and the margins of agricultural areas would be reseeded with regionally appropriate drought-tolerant grasses. Where irrigated lands are revegetated, the seed mix would be a weed-free hay mix (or similar) acceptable to the landowner. Where the disturbed ground is adjacent to natural vegetation, the weed-free seed mix would include drought-tolerant and locally ubiquitous native grass such as western wheatgrass. Seed mixes used on public lands would be certified weed-free and approved by BLM and USFS. Revegetation success would be monitored subject to agreements between the Applicant and individual landowners or in accordance with public land permit stipulations. The Project construction drawings would indicate where each reclamation method is to be used, and to specify the seed mix, where appropriate.

2.2.8 – Habitat Replacement

The overall concept for habitat replacement is described in Section 2.2.1. The methods for various activities at the Habitat Replacement Site are described by the Reclamation-approved Habitat Replacement Plan (WNRCS 2022) and are summarized as follows:

Non-native trees would be removed mechanically with a skid-steer fitted with a cutting device, and the cut stumps treated with aquatic-safe herbicides. Vegetation slash would be chipped and mulched onsite with fuel-fired portable machinery and spread onsite and used to make OHV maintenance trails around the site. Native shrubs and trees would be planted by hand or with the assistance of a small tractor or similar equipment. Herbicide application to herbaceous weeds would be via a backpack sprayer or an OHV-mounted sprayer. New tree and shrub plantings would be irrigated as necessary and protected from livestock and wildlife damage using temporary fencing or webbing and wire cages. Irrigation would be accomplished by a pressurized drip system in Section A, and by ditches in Sections B and C, as explained in Section 2.2.1. Supplemental irrigation may be required for new plantings, which would be applied as necessary using an OHV-mounted water tank with a stinger sprayer.

Construction of the proposed buried irrigation lines for the Habitat Replacement Site would involve the use of a small backhoe or trencher to bury the small diameter lines. The new buried irrigation pipe from Farmers Ditch serving the Habitat Replacement Site would cross under State Highway 133 in a sleeve through an existing culvert crossing. Buried pipe alignments would be reseeded with appropriate grass and forb mixes by broadcast seeding or seed drilling methods.

2.2.9 – Schedule

Pipeline construction in existing ditch alignments would occur during the irrigation off-season, to avoid interrupting irrigation activities of the shareholders, while observing timing restrictions

protective of wildlife and seasonal backcountry closures (described below). Irrigation off-season varies annually depending on weather patterns, but is typically October 1 through April 1 on the Turner Ditch system, August 1 through April 15 on the Sweezy-Turner Ditch and the Lone Cabin system, and mid-June through mid-April on Spurlock. Pipeline construction in the realignments, decommissioning of abandoned ditch alignments, and most activities at the Habitat Replacement Site would not need to avoid irrigation season and could occur during any time of the year, provided wildlife-protective timing restrictions and backcountry closures are observed. Non-native riparian tree and shrub removal, reseeding and weed treatments would occur during seasons when those activities have the best opportunity for success.

Table 4. Project Schedule Timing Restrictions Summary

Location	Activity	Timing Restriction	Reason
All Project Areas	Vegetation grubbing or clearing	Avoid April 1 - July 15	Protect migratory songbirds during their core nesting season
Upper Turner locations that are not adjacent to Minnesota Creek Road	All	Avoid December 1 - April 30	To protect big game on critical winter range
Upper Lone Cabin	All	Lone Cabin Road closure December 1 - April 30	To protect big game on critical winter range
Upper Lone Cabin Project Area, south of Lone Cabin Reservoir	Ditch abandonment and decommissioning, pipeline construction	Avoid May 15 - June 15	Avoid disturbance to a CPW-mapped elk production (calving) area during calving season
Buffered areas around documented raptor nests	All	Variable, between February 15 - July 31 See species-specific requirements in Section 3.2.11	Protect nesting raptors during their core nesting season (note: location information is restricted from publicly-available maps but would be displayed on construction drawings)
Habitat Replacement Site Sections B and C	Vegetation grubbing or clearing, operation of heavy equipment	Avoid June 1 - August 31	Avoid disturbance to western yellow-billed cuckoos and their habitat during nesting season

Location	Activity	Timing Restriction	Reason
Habitat Replacement Site Sections B and C	Weed treatment, irrigation activities, and other activities requiring human presence	Complete prior to 11am during the period of June 1 - August 31	Avoid disturbance to western yellow-billed cuckoos during nesting season
Habitat Replacement Site Sections B and C	Russian olive and tamarisk removal	Avoid December 1 - April 30	To protect big game on critical winter range

Pipeline construction would occur incrementally or in a sequenced fashion across the Project areas during suitable work periods over a span of approximately three years. When construction is underway, it would occur during daylight hours (typically 7 am to 5 pm), Monday through Saturday. Weather conditions could cause gaps in activity during active work periods.

Timing restrictions would apply to certain project activities and locations, to protect nesting migratory birds and raptors, and other special status species, as summarized in Table 4 and further explained in the Wildlife (Section 3.2.11) and Threatened & Endangered Species (3.2.13) sections. Specific areas with construction timing restrictions, and the nature of those restrictions, would be prominently marked on construction drawings, as required by the Environmental Commitments of this EA (CHAPTER 4).

2.2.10 – Permits & Authorizations

Agreements & Authorizations

If the Proposed Action is approved, the following interagency agreements or permits would be required prior to project implementation:

- BLM historic prescriptive easement acknowledgment for construction in existing ditch alignments on BLM land, and a temporary construction ROW permit for construction activities outside existing ditch alignments on BLM land.
- A BLM ROW permit for ongoing operation and maintenance of pipeline segments installed on BLM land outside the existing ditch alignment.
- A USFS historic prescriptive easement acknowledgement or a Temporary Construction Permit for construction activities outside existing ditch alignments and/or historic prescriptive easement widths on National Forest.
- A USFS Special Use Permit for ongoing operation and maintenance of pipeline segments installed on National Forest outside the existing ditch alignment.
- Completed Endangered Species Act Informal Section 7 Consultation between Reclamation and U.S. Fish & Wildlife Service (FWS), including signed Recovery Agreements between the Applicant and FWS.
- Memorandum of Agreement executed between Reclamation and the Colorado SHPO.

- Clean Water Act (CWA) Section 404 Regional General Permit 5 for Ditch Related Activities in the State of Colorado: 30-Day Advance of Construction Submittal Package (to include “(1) the respective agency’s documentation for compliance with the Endangered Species Act and National Historic Preservation Act and/or the lead Federal Agency NEPA document containing the same, (2) a project description, (3) project plans, and (4) a location map.”).
- Turner Ditch Company is in the process of applying to the District Court, Water Division 4 for a change in point of diversion from its existing headgate on Minnesota Creek (to be abandoned by the Proposed Action), to the new proposed point of diversion on Minnesota Creek.

Construction Permits & Plans

If the Proposed Action is approved, the following construction permits and plans would be required prior to project implementation:

- Stormwater Management Plan, to be submitted to Colorado Department of Public Health & Environment (CDPHE) by the construction contractor prior to construction disturbance.
- CWA Section 402 Storm Water Discharge Permit compliant with the National Pollutant Discharge Elimination System (NPDES), to be obtained from CDPHE by the construction contractor prior to construction disturbance (regardless of whether dewatering would take place during construction).
- Certification under CDPHE Water Quality Division Construction Dewatering Discharges Permit COG070000 (when dewatering is to take place during construction).
- Spill Response Plan, to be prepared in advance of construction by the contractor for areas of work where spilled contaminants could flow into water bodies.
- Utility clearances, to be obtained by the construction contractor prior to construction activities from local utilities in the area.
- Any construction, access, or use permits which may be required by the Delta County Planning Department, Delta County Road & Bridge District #3, Gunnison County Planning Department, Gunnison County Public Works Department, or Colorado Department of Transportation.

Compliance with the following laws and Executive Orders (E.O.) are required prior to and during project implementation:

Natural Resource Protection Laws

- Clean Air Act of 1963 (42 U.S.C. § 7401)
- Endangered Species Act of 1973 as amended (16 U.S.C. 1531-1544, 87 Stat. 884)
- Clean Water Act of 1972 as amended (33 U.S.C. 1251 et seq.)
- Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712)
- Bald and Golden Eagle Protection Act of 1940 (16 U.S.C. 668- 668c)
- Federal Land Policy and Management Act of 1976 (FPLMA) as amended (43 U.S.C. 1701-1785)
- The Act of October 27, 1986, amended Title V of FLPMA aka the Colorado Ditch Bill (43 U.S.C. 1761; 90 Stat. 2776)
- 2012 Colorado Roadless Rule (16 U.S.C. 472, 529, 551, 1608, 1613; 23 U.S.C. 201, 205.)

- 1866, July 26 – 14 Stat. 251, Act Granting Right of Way to Ditch and Canal Owners Over Public Land

Cultural Resource Laws

- National Historic Preservation Act of 1966 (16 U.S.C. 470 et seq.)
- Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa-470mm et seq.)
- Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. 3001 et seq.)
- American Indian Religious Freedom Act of 1978 (42 U.S.C. Public Law 95-341)
- Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines (48 FR 44716)

Paleontological Resource Laws

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

CHAPTER 3 – AFFECTED ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

3.1 – Introduction

This chapter discusses resources that would be affected by the Proposed Action Alternative and the No Action Alternative. For each resource, the affected area and/or interests are identified and the existing conditions and impacts are described under the No Action and Proposed Action Alternatives. This section is concluded with a summary of impacts.

3.2 – Affected Environment & Environmental Consequences

3.2.1 – Water Rights & Use

The following table summarizes the water rights involved with the Project.

Table 5. Water Rights Involved with the Project

Entity	Summary of Water Rights
Turner Ditch Company	<ul style="list-style-type: none"> • 12 cubic feet per second (cfs) of decreed water rights adjudicated in several filings between 1889 and 1986 (source is Minnesota Creek) • 4/16th interest (400 acre-ft storage right) in Beaver Reservoir (a 1,600 acre-foot reservoir on the East Fork Minnesota Creek) • 1.5 cfs of winter stock water (source is Minnesota Creek) – delivery is limited during winter months with freezing temperatures

Entity	Summary of Water Rights
Lone Cabin Ditch & Reservoir Company	<ul style="list-style-type: none"> • 19 cfs of decreed water adjudicated in three filings between 1914 and 2007 (source is Lake Fork and South Fork of Minnesota Creek) • 3/16th interest (300 acre-ft storage right) in Beaver Reservoir (the area served by Lone Cabin Ditch and Reservoir Company lies in a different sub-basin than Beaver Reservoir, so this water is diverted from the South Fork of Minnesota Creek via the Lone Cabin Trade Ditch and stored in Lone Cabin Reservoir)
Sweezy-Turner Ditch	7.035 cfs of decreed water rights adjudicated in several filings between 1889 and 1954 (source is Minnesota Creek).
Spurlock	2.0 cfs of decreed water rights adjudicated in two filings in 1954 (source is Minnesota Creek)
Town of Paonia	2 shares of North Fork Farmer's Ditch (this water right is associated with the Town of Paonia's Sewage Treatment Plant (STP) property and irrigates a 16-acre pasture on that property; source is North Fork Gunnison River)

Together the Turner, Lone Cabin, Sweezy-Turner, and Spurlock water rights supply irrigation water to a total of 67 farms encompassing approximately 956 irrigated acres. The water rights are considered adequate in average snow pack years. Principal crops produced in the area include alfalfa and grass hay, pasture forage, and fruit orchards. Also produced are silage corn, hops, cut flowers, vegetables, and hops. Irrigation is primarily accomplished by flood methods directly from ditch laterals, and to a lesser extent with gated pipe. The Turner Ditch system also carries 1.5 cfs of winter stock water to its shareholders during the non-irrigation season, however delivery of this water is only possible during times when the water is not frozen. It is estimated that 25 percent of the irrigation water diverted by the ditch companies is lost during conveyance in the ditch systems due to evaporation and seepage.

The Town of Paonia Farmers Ditch irrigation water is delivered in an existing buried pipeline to an irrigated pasture on the town's STP property, the proposed Habitat Replacement Site for the Project. Other water input to the Town of Paonia property is an existing spring drain tile in the irrigated pasture. Irrigation tail water from the pasture and groundwater is captured in "leach" drain lines that guide the water around the lined STP ponds to prevent the liners from floating. Monitor Ditch runs through the Town of Paonia property, but is not involved in actively irrigating the property. Monitor Ditch currently captures irrigation tail water from the Delicious Orchards property to the north and northeast.

There may be domestic wells in the area permitted by the State of Colorado to draw on natural sources of groundwater. Pursuant to Colorado Revised Statute (CRS) § 37-86-103, "...a ditch right-of-way includes the right to construct, operate, clean, maintain, repair, and replace the ditch and appurtenant structures, to improve the efficiency of the ditch, including by lining or piping the ditch..." There is an ongoing trend to pipe earthen irrigation ditches in the region (see Figure 2).

Currently, there are regional efforts underway in the Lower Gunnison and Colorado River watersheds to reduce water lost to seepage and evaporation, like that which is lost from open,

unlined irrigation canals. These efforts are primarily focused on improving the efficiency of irrigation systems.

No Action Alternative: The No Action Alternative would have no effect on water rights and uses within the Gunnison River Basin. The water delivery system would continue to function as it has in the past.

Proposed Action: Under the Proposed Action Alternative, the operations of Turner Ditch Company and Lone Cabin Ditch and Reservoir Company would be combined in two connected, pressurized pipeline systems. The Sweezy-Turner Ditch and Spurlock would join the Turner Ditch Company. The existing Sweezy-Turner and Spurlock diversions would be consolidated with the Turner Ditch diversion, which would be moved to a point farther upstream on Minnesota Creek. The proposed Lamborn Mesa connections between the Turner Ditch and Lone Cabin Ditch systems would allow the Lone Cabin system to directly access its Beaver Reservoir water from the Turner system, rather than by the Lone Cabin Trade Ditch. The new higher elevation diversion of Turner Ditch would allow the Turner system to equalize pressures to the Lone Cabin system on Lamborn Mesa when the Lone Cabin Reservoir storage is depleted.

As a result, the companies would collectively have the ability to better manage irrigation water with efficiencies gained from combining their operations. There would be no adverse significant effect to water rights as a result of the Proposed Action. By eliminating ditch seepage and evaporative loss, the Project would result in an estimated 25 percent more water delivered per share. The connection of the Lone Cabin and Turner systems would allow for improved management of Beaver and Lone Cabin Reservoirs and a savings of 150 acre-feet of stored water, providing more reliable late-season irrigation. The new farm turnout structures would include adequate controls and measuring devices which would further improve overall water management in the systems. The availability of pressurized water to the stockholders would encourage future installation of high-efficiency on-farm sprinklers. The companies determined that 79 percent of their shareholders are interested in on-farm sprinkling.

Winter stock water delivery to Turner Ditch shareholders would be temporarily affected by the Proposed Action. Turner Ditch shareholders would be notified prior to construction activities affecting winter stock water delivery so they can make individual temporary arrangements for stock water during the construction period. Alternative arrangements for winter stock water are common due to the inability of the ditch to deliver the stock water when temperatures are low enough that the stock water freezes. Winter stock water would be unavailable for Turner Ditch shareholders for one winter season. Following construction, winter stock water would be available to Turner Ditch shareholders throughout the winter season, including during periods of freezing. Due to the temporary nature of the unavailability of winter stock water and due to the availability of temporary alternative stock water arrangements, the Proposed Action's effects on winter stock water would not rise to the level of significant.

The plantings on the Habitat Replacement Site would be watered with the Town of Paonia's two Farmer's Ditch shares, redirection of spring drain tile and leach line waters, and with irrigation tail water from Delicious Orchards which currently flows to Monitor Ditch. The spring drain tile and irrigation tail waters have not been previously filed on and are not currently put to beneficial use. The Applicant and the Town of Paonia, and the Applicant and Delicious Orchards, have executed 50-year agreements for the Applicant's use of these water to maintain the Habitat Replacement Site.

The Town of Paonia is in the process of filing for water rights on the spring captured in the drain tile and the irrigation tail water from Delicious Orchards. There would be no adverse effect to water rights as a result of implementing the plantings at the Habitat Replacement Site.

The Proposed Action contributes to the growing amount of piped irrigation conveyances in the region, which are cumulatively reducing water seepage and improving irrigation water delivery efficiency on a larger scale. The Proposed Action would not include new water storage or the irrigation of new farmlands. No adverse cumulative effects on irrigation water rights or winter stock water delivery in the Gunnison or Colorado River Basins would occur due to implementation of the Proposed Action.

Ditch companies have the right to improve the efficiency of their ditches pursuant to CRS § 37-86-103. Consequently, domestic water well owners cannot rely on canal seepage water to recharge domestic water wells. The proposed project would not alter natural sources of groundwater. Therefore, there would be no significant adverse effect on domestic well permits, which authorize wells to draw on natural sources of groundwater.

There would be no significant adverse impacts to water rights and use as a result of the Proposed Action.

3.2.2 – Water Quality

Irrigation practices in the region and in the Proposed Action area are contributing to elevated downstream salinity levels and create an adverse effect on the water quality of the Gunnison River and in the greater Colorado River Basin. In addition, selenium occurs in the region's soils in soluble forms such as selenate, which is leached into waterways by runoff and irrigation practices, and is toxic to living organisms when present beyond trace amounts. There is a regional effort to reduce salinity in the lower Gunnison and Colorado River watersheds, resulting in improved water quality at a basinwide scale (see Section 1.4). There are also ongoing regional efforts to reduce selenium loading in the lower Gunnison and Colorado river basins (SMPW 2011, Reclamation 2020).

Most irrigation ditches are considered Waters of the U.S., and are under the jurisdiction of the Clean Water Act (CWA). In 2021, the Corps issued Regional General Permit 5 (RGP-5) for Ditch Related Activities in the State of Colorado.

No Action Alternative: Under the No Action Alternative, the estimated 3,398 tons of salt annually contributed to the Colorado River Basin from the ditches involved with the Project would continue. Current selenium loading levels would continue.

Proposed Action: In the long term, the Proposed Action would eliminate seepage from the involved ditch systems, reducing salt loading to the Colorado River Basin at an estimated rate of 3,398 tons per year. The Proposed Action would reduce selenium loading into the Gunnison River basin, although the amount of selenium loading reduction that would result from the Proposed Action has not been quantified. Improved water quality would benefit downstream aquatic species by reducing salt and selenium loading in the Gunnison River, an important Colorado River Basin tributary. Maintenance or improvement of water quality in the Gunnison River is of high importance to users and to wildlife. The beneficial effects of improved water quality resulting from the Proposed Action would contribute to the regional efforts underway to reduce salinity and selenium in the lower Gunnison and Colorado River watersheds.

The Proposed Action would affect waters under the jurisdiction of CWA Section 404 (the ditches themselves) and disturb irrigation-induced wetland and riparian vegetation associated with the ditches. As a “ditch related activity in the State of Colorado” that is “conducted under a binding agreement with the USBR” (Reclamation), the Proposed Action would be authorized under RGP-5, by submitting documentation required by RGP-5 to the Army Corps at least 30 days in advance of construction. The required documentation for the new Proposed Action, as a salinity control project per a binding agreement with Reclamation is as follows: “(1) the respective agency’s documentation for compliance with the Endangered Species Act and National Historic Preservation Act and/or the lead Federal Agency NEPA document containing the same, (2) a project description, (3) project plans, and (4) a location map.” RGP 5 includes terms and conditions with which project proponents must comply to ensure their proposed projects will have minimal individual or cumulative adverse effects on the aquatic environment. The USACE has the authority to determine if an activity complies with the terms and conditions of an RGP. By authorizing use of RGP 5 for the proposed action, the USACE has determined that the proposed action have minimal individual or cumulative adverse effects on the aquatic environment. Therefore, there would be no significant impact to waters under the jurisdiction of CWA Section 404.

BMPs embedded in the Proposed Action description (Section 2.2) and listed in CHAPTER 4 would be implemented during construction to minimize erosion and further protect water quality. Project construction would take place in the ditch prism when water is not present. Pipeline creek crossings would be conducted in accordance with CDPHE’s Water Quality Control Division Dewatering General Permit to protect water quality in streams. The construction contractor would be required to operate under a Stormwater Management Plan, a Stormwater Discharge Permit, a Spill Response Plan, and a Dewatering Permit (when dewatering is conducted) (see Section 2.2.10 and CHAPTER 4).

There would be no significant adverse impacts to water quality as a result of the Proposed Action.

3.2.3 – Air Quality

The Clean Air Act specifies limits for criteria air pollutants. If the levels of a criteria pollutant in an area are higher than National Ambient Air Quality Standards (NAAQS), the airshed is designated as a nonattainment area. Areas that meet the NAAQS for criteria pollutants are designated as attainment areas. Delta and Gunnison counties are in attainment for all criteria pollutants (EPA 2022). Minor impacts to air quality from routine maintenance of the ditch system involved with the Proposed Action include dust and exhaust from occasional travel in light vehicles along the Proposed Action corridor, and occasional ditch cleaning and maintenance activities involving heavy equipment and occasional ditch burning. The Paonia Winter Woodlands Habitat Improvement Project on the National Forest is expected to initiate in 2023 and will involve controlled burns and mechanical treatments of brush around the flanks of Mount Lamborn and Landsend at some point during the next approximately 10 years, as conditions permit.

No Action Alternative: There would be no effect on air quality in the Proposed Action Area from the No Action Alternative. The ditches would continue to operate in their current condition and dust and exhaust would occasionally be generated by vehicles and equipment conducting routine maintenance and operation.

Proposed Action: Exhaust and dust from construction activities, and occasional burning of slash within staging areas on private lands, would have a minor, short-term effect on the air quality in the

immediate Proposed Action Area. There would be no long-term significant impacts to air quality from the Proposed Action, as Delta and Gunnison Counties would remain in attainment for all criteria pollutants. BMPs would be implemented to further minimize dust in the Project Area. Burning would be conducted in accordance with county burn ordinances and restrictions. Following construction, impacts to air quality from routine maintenance and operation activities along the pipeline corridor would be insignificant, as they would be similar or less in magnitude to those currently occurring for the existing ditch. The potential exists for other ditch piping projects in the region currently in NEPA review to be constructed concurrently with the Proposed Action. The potential exists for controlled burn and mechanical brush treatment activities related to the Paonia Winter Woodlands Habitat Improvement Project on the National Forest to be conducted concurrently with slash burning for the Project. Even if other projects occur concurrently with the Proposed Action, the cumulative impact on air quality in the area would be temporary and would not rise to the level of significant, as the area would remain in attainment for any criteria pollutants in Delta or Gunnison Counties.

There would be no significant adverse impacts to air quality as a result of the Proposed Action.

3.2.4 – Access, Transportation, & Safety

The irrigation entities involved with the Proposed Action currently operate on private land, BLM land, and USFS land in historic prescriptive rights-of-way (collectively, the “right-of-way”) in the Proposed Action area.

Private roads, county roads, and public land routes generally provide access and mobility for residents traveling in and out of the pipeline Project Areas. Minnesota Creek Road is the public access route in the Upper Turner Project Area, and Lone Cabin Road is the main route into the Upper Lone Cabin Project Area. Minnesota Creek Road in the Upper Project Area is open year-round and receives moderate local traffic, and Lone Cabin Road is closed seasonally to motorized traffic from December 1 through April 30 to protect wintering big game. Lone Cabin Road receives daily light to moderate traffic mostly by recreators accessing public lands. The main public routes in the Lower Project Area are Lamborn Mesa, Foothills, and Dry Gulch roads – all with moderate local residential traffic. The Habitat Replacement Site is accessed off State Highway 133 using an unnamed private road to the Town of Paonia’s STP. Highway 133 is the main regional route between the towns of Paonia and Hotchkiss and receives moderate to heavy traffic depending on time of day and time of year. The main public transportation routes that intersect the Proposed Action are listed in Table 6, below.

Table 6. Public Roads Intersected by the Proposed Action

Project Area	Total Number of Construction Crossings	Project Component/Road Crossing
Upper Lone Cabin	6	Lone Cabin main pipeline: USFS routes 798 and 798.2B (1 crossing each), Lone Cabin Road (4 separate crossings)

Project Area	Total Number of Construction Crossings	Project Component/Road Crossing
Lower (combined) Project Area	11	<ul style="list-style-type: none"> • Turner main pipeline: Dry Gulch Road, Foothills Road, German Creek Lane, Lamborn Mesa Road (1 crossing per road) • Turner south lateral pipeline: Minerich Road (1 crossing) • Lone Cabin lower main pipeline: Roeber Road, Minerich Road (1 crossing per road) • Lone Cabin connector 1 pipeline: Lamborn Mesa Road (2 separate crossings), Roeber Road (1 crossing) • Lone Cabin connector 2 pipeline: Dry Gulch Road (1 crossing)
Habitat Replacement Site	1	Town of Paonia irrigation pipe replacement from Farmer's Ditch: State Highway 133 (1 crossing)

Various overhead or buried utilities are present near some Project Areas of the Proposed Action. The utility entities include the Town of Paonia (domestic water), Delta Montrose Electric Association (electricity and fiber optic internet), TDS Telecom, and Black Hills Energy (natural gas).

There are safety risks associated with sources of open, moving water. The Proposed Action Area is served by the Delta County Sheriff, The Delta County Ambulance District, and the Delta County Fire Protection District 5.

No Action Alternative: There would be no effect to public safety, transportation, or public access from the No Action Alternative.

Proposed Action: All construction activities related to the Proposed Action would take place entirely in the approved/authorized and prescriptive project rights-of-way and approved access routes. There would be no need for construction of new access roads outside of the construction areas. There are no known bridges with weight restrictions that would be used by construction vehicles.

Some short-term disruption of traffic at the involved public roads would occur when equipment and materials are hauled into a Project location, and when pipe crossings are constructed across public roads. Appropriate traffic signage would be used to notify drivers of active construction ingress/egress. The Applicant and/or the Applicant's contractor would coordinate with the county and sheriff departments when traffic or access would be delayed or substantially re-routed. Due to the temporary nature of the traffic disruptions and the traffic management provided by coordination with the county and sheriff departments, the impacts on traffic would not rise to the level of significant.

A significant portion of the Turner pipeline would be buried in the Minnesota Creek Road right-of-way. Any required construction, access, or use permits would be obtained from the Delta County Planning Department, County Engineering and County Road & Bridge District #3. The proposed

irrigation pipe crossing from Farmer's Ditch through an existing culvert crossing of Highway 133 to the Habitat Replacement Site would be coordinated with Colorado Department of Transportation.

All utilities would be located and marked and, if necessary, relocated or raised, prior to any construction activities in the Project area. If relocation or raising of utilities is necessary during construction, a brief interruption of utility services would occur. Due to the temporary nature of the interruptions, the impacts on utilities would not rise to the level of significant.

Active construction areas would be adequately marked and barricaded to prevent public access. Trenches left open overnight would be limited to the extent practicable. In the case that a trench is left open overnight, it would be covered to adequately prevent entrapment of people, livestock, or wildlife. Therefore, there would be no significant effect on public safety.

No significant impacts to access, transportation, and public safety would occur as a result of the Proposed Action.

3.2.5 – Colorado Roadless Area

Part of the Upper Lone Cabin Project Area falls within the 22,552-acre Lamborn Roadless Area, a Colorado Roadless Area on the Gunnison National Forest (see Figure 6 and Figure 7). Colorado Roadless Areas are regulated under the 2012 Colorado Roadless Rule to protect roadless values by restricting certain activities such as tree cutting, road construction and reconstruction, and linear construction zones. Under the 2012 Roadless Rule, permitted activities must be designed to conserve roadless area characteristics, which are listed in Table 7, below.

No Action Alternative: There would be no effect to the Lamborn Roadless Area on the Gunnison National Forest from the No Action Alternative.

Proposed Action: The elements of the Project in the Lamborn Roadless Area are the following Lone Cabin Ditch system elements to be decommissioned: two reaches of the Lone Cabin Main Ditch (totaling approximately 1.6 miles), two reaches of the Lone Cabin Highline Ditch (totaling approximately 1.2 miles), the Lone Cabin Highline Ditch headgate, and other minor appurtenances (i.e., flumes or small water control structures) on these ditches. The existing ditch segments and appurtenant structures occupy approximately 6.8 acres (based on a 20-foot corridor) in the roadless area. Two existing primitive roads (totaling approximately 0.8 mile) provide access to these features within the roadless area (see Figure 6 and Figure 7). The Project activities in the roadless area constitute a decommissioning of a linear construction zone under the 2012 Colorado Roadless Rule. The Project activities on the roadless area are consistent with the Rule, in that they would be done in a manner that minimizes ground disturbance, and conserves the roadless area characteristics in the long-term.

Table 7. Analysis of Project Impacts on Roadless Area Characteristics

Roadless Characteristic	Description of Effects of the Project on Roadless Area Characteristics
1 - High quality or undisturbed soil, water or air resources	Project activities would cause temporary minor disturbance to soils in the roadless area, where ditches and appurtenant structures are proposed for decommissioning using minimal disturbance techniques. These soils in these locations are previously disturbed, are not high-quality, and are not in irrigated agricultural production. As described in Section 3.2.15, these impacts would not rise to the level of significant. Project activities in the roadless area would contribute to the overall purpose of the Project: to reduce salinity loading in the Colorado River basin, resulting in the beneficial effect of improved water quality (Sections 3.2.1, 3.2.2). Water resources in the roadless area itself would not be affected. Following the temporary insignificant impacts to air quality during Project construction, the beneficial effect of a net reduction of air quality impacts in the roadless area would result from the Project following decommissioning of the ditches and appurtenant structures, because no further ditch-related maintenance activities (that generate dust and vehicle exhaust) would be conducted there (as described in Section 3.2.3).
2 - Sources of public drinking water	The Project would have no effect on natural sources of public drinking water sourced from the roadless area. Note that domestic water well owners cannot rely on canal seepage water to recharge domestic water wells (Sections 3.2.1, 3.2.2).
3 - Diversity of plant and animal communities	Project construction would entail incremental activity, and vegetation and ground disturbance throughout the Project area. In the roadless area, these disturbances would result in minor temporary impacts to big game. Construction impacts to small animals would occur; however, population-level significant impacts would not occur. There would be no effect to migratory birds or raptors (Section 3.2.12). Construction of the pipeline would result in a minor impact to upland native vegetation located within the construction corridor, and would result in the permanent loss of approximately 15.5 acres of riparian and wetland vegetation associated with the unlined ditches; however, these impacts would not rise to the level of significant (Section 3.2.10). The Project would have no effect on the diversity of the plant and animal communities in the roadless area.
4 - Habitat for threatened, endangered, proposed, candidate, and sensitive species, and for those species dependent on large undisturbed areas of land	No threatened, endangered, proposed, or candidate, or sensitive species occur or have critical habitat within or near that part of the roadless area intersected by the Project (3.2.13). Therefore, there would be no effect to threatened, endangered, proposed, candidate, and sensitive species in the Roadless Area as a result of the Project. Project activities in the roadless area include ditch and appurtenant structure decommissioning using minimal disturbance techniques, with the purpose of maintaining the current characteristics of the habitat as much as possible (Section 3.2.10).

Roadless Characteristic	Description of Effects of the Project on Roadless Area Characteristics
5 - Primitive and semi-primitive non-motorized, and semi-primitive motorized classes of dispersed recreation	Public recreation activities would be temporarily interrupted, and the quality of experience temporarily decreased by construction noise, construction traffic, and the visual presence of equipment and machinery working and idled on the construction site in or near the roadless area or in staging areas. These disruptions would be minor as they would not prohibit recreational activities in the roadless area, and the disruptions would end following the completion of construction (Section 3.2.8). Noise associated with construction of the Proposed Action would be short-term and would not raise the noise level of the area above the moderate noise baseline (Section 3.2.6).
6 - Reference landscapes for research study or interpretation	No effect. Reference landscapes are not present in the roadless area.
7 – Naturally appearing landscapes with high scenic quality	Ditches planned for decommissioning and abandonment in the roadless area would undergo negligible visual change, since decommissioning would be by minimal disturbance methods with the objective of maintaining the ground condition and native vegetation that currently attends these ditches as much as possible (Sections 3.2.7 and 3.2.10).
8 - Traditional cultural properties and sacred sites	No effect. There are no traditional cultural properties or sacred sites in the Proposed Action Area (Section 1.6).
9 - Other locally unique characteristics	The ditches planned for decommissioning on the roadless area have been inventoried as cultural resources eligible for listing on the NRHP (Section 3.2.14). An MOA between Reclamation, BLM, USFS, and the Colorado SHPO outlines stipulations to conserve the value of the eligible cultural resources, and therefore the effect on cultural resources would not rise to the level of significant. There are no other locally unique characteristics within the project area.

No significant impacts to Colorado Roadless Areas would occur as a result of the Proposed Action.

3.2.6 – Noise

A moderate baseline level of detectable noise occurs in the Proposed Action area, associated with farming and ranching activities, regular traffic on public roads, county road maintenance activities, and the Applicant's operation and routine maintenance of the ditch systems. Operation and maintenance involve the use of light-duty trucks and, occasionally, heavy equipment. Farming and ranching activities involving the use of farming equipment, light vehicles, all-terrain vehicles, and occasionally heavy equipment are ongoing in the immediate area and surroundings of the Proposed Action. OHV and other recreational motorized travel is also a popular use of Lone Cabin Road in the Upper Lone Cabin Project Area from May through November.

No Action Alternative: There would be no noise effects from the No Action Alternative.

Proposed Action: Proposed Action construction activities would generate a temporary source of noise audible to residents near the Proposed Action. Sources of noise would include heavy equipment moving earth or crushing rock, trucks hauling pipe and other materials, and heavy equipment grubbing vegetation. As explained in Section 2.2.2, blasting may also be required to help prepare the pipe trench if bedrock is encountered. Blasting would occur inside the trench and below grade. The noise associated with such blasting would resemble a muffled “pop” from a firearm. These disturbances would occur during daylight hours (typically 7 am to 5 pm), Monday through Saturday, on a sequenced basis along the ditch section involved with the Proposed Action. Activities at the Habitat Replacement Site would occasionally result in a temporary source of noise generated by heavy equipment, such as when trees are mechanically removed. Such noise would occur on a periodic, as-needed basis during daylight hours, for several days at a time when in progress. Once the removal of noxious weed trees is completed during the initiation of Site work, some repeated grubbing may be necessary during coming years to maintain the Site. Noise associated with construction of the Proposed Action would be short-term and would not raise the noise level of the area above the moderate noise baseline; therefore, the short-term increase in noise would not be significant.

The Proposed Action would not contribute to long-term local or regional increases in noise levels, and therefore no long-term cumulative noise impacts would occur. There is the potential for other similar ditch-piping projects to be occurring concurrently in the local area, specifically similar habitat improvement projects. The Pilot Rock Ditch Habitat Replacement Site is directly south of the Habitat Replacement Site for the Proposed Action, and construction activities associated with the Pilot Rock Ditch Habitat Replacement Site would create short-term elevations in noise; however, work completed at the Pilot Rock Ditch Habitat Replacement Site would be implemented consecutively with the Proposed Action Habitat Replacement Site, rather than concurrently. Noise associated with implementation of either of the Habitat Replacement Sites would not occur at the same time, and therefore would not cumulatively raise the noise level of the area above the moderate noise baseline.

No significant impacts to noise would occur as a result of the Proposed Action.

3.2.7 – Visual Resources

The Proposed Action is in an area of pastoral beauty, with a pleasing array of colors and textures across the relatively open landscape—a mosaic of irrigated agricultural areas, rural residential areas, natural shrublands and badlands, and wooded riparian corridors—against a backdrop of near and distant foothills and mountains. A baseline level of visual disturbance occurs in the Proposed Action Area, associated with residential and farmstead developments, local ranching and farming activities, local construction projects, and the Applicant’s operation and routine maintenance of the ditch system. Regular operating activities can involve vehicles, machinery, earth moving, field and ditch burning, and can generate dust and smoke. The ditches that traverse the area are linear features, often bermed and/or contouring along steep hillsides, and with an attendant access road and soil spoil piles remaining alongside or on the bermed area (ditch prism). The ditches support occasional mature cottonwood trees which are visible on the relatively open landscape.

BLM’s UFO Resource Management Plan (RMP) characterizes the BLM land on the north side of the Minnesota Creek valley in the Upper Turner Project Area as Visual Resource Management

(VRM) Class II and the BLM land on the south side of the Minnesota Creek valley as VRM Class IV (BLM 2020). In the Upper Lone Cabin Project Area, the RMP characterizes BLM land involved with the Proposed Action as VRM Class IV. BLM's management objective for VRM Class II lands is to retain the existing character of the landscape. The management objective for VRM Class IV lands is to allow for modification of the existing character of the landscape while minimizing visual impacts. The Forest Plan (USFS 1983, as amended) does not specify management restrictions for the visual resource aspect of National Forest lands involved with the Proposed Action.

No Action Alternative: There would be no visual impacts from the No Action Alternative.

Proposed Action: Temporary impacts related to visual disturbance during and after construction would result from the Proposed Action. Machinery would be operating on the landscape and highly visible from public roads in certain locations on a spatially incremental basis mostly during fall and early winter months. Following construction in the pipeline alignment and certain abandoned ditch reaches in the Lower Project Area, the disturbance footprint would be a linear area of bare ground, rather than an open earthen ditch. Within a few growing seasons, revegetation would help the disturbed ground blend with the surroundings. Ditches planned for decommissioning and abandonment in the Upper Turner and Upper Lone Cabin Project Areas would have negligible visual change, since the objective is to maintain the ground condition and native vegetation that currently attends these ditches as much as possible. The Habitat Replacement Site is not visible from public lands and not highly visible from public roads.

Overall, the long-term level of change to the visual characteristics of the landscape in and around the Proposed Action Area during and following construction would be minor and not out of character with the surrounding landforms or with the rural and agricultural character of the vicinity. Project activities on the VRM Class II area on BLM involve abandoning and decommissioning about 0.1 mile of Sweezy-Turner Ditch using minimal disturbance methods, and would therefore maintain the existing character of the landscape. The remainder of Project activities on public lands would take place on BLM VRM Class IV lands or on lands under National Forest general management, and would not lead to visible changes significantly different or more dominant in the long-term than what is already present on the landscape. The Proposed Action would not contribute to cumulative impacts to visual resources, as the post-project landscape would maintain the existing character of the surrounding landforms or the rural and agricultural character of the vicinity.

No significant impacts to visual resources would occur as a result of the Proposed Action.

3.2.8 – Public Recreation

Public lands involved in the Proposed Action (Figure 3) provide dispersed outdoor recreational opportunities for the public, mostly in the Upper Lone Cabin Project Area. These include big game hunting during established hunting seasons, dispersed camping, motorized and non-motorized travel on designated routes, horseback riding, and hiking. Lone Cabin Road is closed to motorized travel from December 1 through April 30. Part of the Upper Lone Cabin Project Area intersects the Roeber State Wildlife Area, private land with limited public access during big game hunting seasons.

No Action Alternative: There would be no impacts to public recreation from the No Action Alternative.

Proposed Action: The pipeline aspect of the Proposed Action would take place on BLM and USFS lands with designated travel routes, dispersed camping, and big game hunting opportunities for the public, especially in the Upper Lone Cabin Project Area. Public recreation activities would be temporarily interrupted and the quality of experience temporarily decreased by construction noise, construction traffic, and the visual presence of equipment and machinery working and idled on the construction site or in staging areas. These disruptions would be minor as they would not prohibit recreational activities in the Action Area, and they would end following the completion of construction.

The Proposed Action would not result in long-term cumulative impacts to recreational lands, as any disruptions to the recreational experience would cease after project completion, and access to recreational lands would be unchanged.

No significant impacts to public recreation would occur as a result of the Proposed Action.

3.2.9 – Grazing

Public lands involved within the Proposed Action Area fall within four public lands grazing allotments (Table 8) administered by either BLM or USFS. The allotments are used seasonally for cattle grazing by local permit holders or pools of permit holders.

Table 8. Public Land Grazing Allotments Intersected by the Proposed Action

Allotment Name	Allotment Size/Capacity	Project Area	Comments
BLM Oak Ridge Common	3,700 acres/417 animal unit months (AUMs)	Upper Lone Cabin, Upper Turner	The Lone Cabin Ditch (main lateral) intersects this grazing allotment for a total of about 3.5 miles.
BLM Reynolds-McDonald	4,550 acres/271 AUMs	Upper Lone Cabin	An approximately 1 mile section of the Lone Cabin south lateral (to be decommissioned) intersects this allotment
BLM Jumbo Mountain	5,920 acres/120 AUMs	Upper Turner	About 0.1 mile total of the Sweezy-Turner Ditch (to be decommissioned) intersects the south boundary of this allotment
USFS West Elk	96,150 acres/approx. 1,025 cow-calf pairs	Upper Lone Cabin	Lone Cabin Ditch (main) from the Lake Fork headgate to the National Forest boundary 0.4 mile downstream of Lone Cabin Reservoir and 0.4-mile of the main from the north lateral split to the forest boundary, and the entirety of the Lone Cabin Highline Ditch, Trade Ditch, and the Lone Cabin Reservoir.

No Action Alternative: There would be no impacts to livestock grazing from the No Action Alternative.

Proposed Action: Under the Proposed Action, a total of approximately 30.6 acres of grazing rangelands within the BLM grazing allotments and 20.5 acres within the USFS allotment would experience a temporary impact. Impacts from construction on the grazing allotments and grazing livestock would be negligible, as the Proposed Action Area represents a total of only 0.1 percent of the combined grazing allotment acreage and the impact is short-term in nature. Surface disturbances would be reclaimed as explained in Sections 2.2.2 and 2.2.7, and additional grazing would become available where pipelines would be installed in existing ditch prisms and backfilled. Approximately 2.6 linear miles of ditches to be decommissioned and abandoned are on BLM grazing allotments and 6.1 linear miles are on the USFS allotment. Decommissioning and abandonment would require very little ground and vegetation disturbance (Section 2.2.3) and would not have a measurable effect on the grazing allotments or grazing activities. There are no public land grazing allotments affected in the Lower Project Area or the Habitat Replacement Site. No public lands currently capable of being grazed in the Proposed Action Area would be rendered permanently incapable of being grazed as result of the Proposed Action.

Piping of the ditches through public land grazing allotments would remove a source of stock water that the permittees are accustomed to relying on; however, there are other sources of stock water available throughout the grazing allotments, and therefore this impact does not rise to the level of significant. As a courtesy, the Applicant is installing stock watering taps on the pipelines at 4 locations on public lands to make stock water available in the immediate area.

The allotment permittee would be notified of activities under the Proposed Action. During construction, pipeline trenches left open overnight would be kept to a minimum and covered to reduce potential for entrainment of livestock. Covers would be secured in place and strong enough to prevent livestock or wildlife from falling through. Where trench covers would not be practical, animal escape ramps would be utilized.

The Paonia Winter Woodlands Habitat Improvement Project on the National Forest is expected to initiate in 2023 and will involve controlled burns and mechanical treatments of brush around the flanks of Mount Lamborn and Landsend Peak at some point during the next approximately 10 years, as conditions permit. Activities of the Proposed Action may occur concurrently with the Habitat Improvement Project in the Upper Lamborn Project Area. The Proposed Action would not contribute significantly to cumulative impacts to grazing lands, as any disruptions to the grazing activities would cease after project completion, and access to grazing lands would be unchanged.

No significant impacts to grazing would occur as a result of the Proposed Action.

3.2.10 - Vegetation

The ditches involved with the Proposed Action in the Upper Turner Project Area are surrounded primarily by pinyon (*Pinus edulis*)-juniper (*Juniperus osteosperma*) woodlands and mixed mountain shrublands. In the east part of the Upper Lone Cabin Project Area, the surrounding vegetation community is mixed mountain shrublands dominated by Gambel oak (*Quercus gambelii*), with scattered stringers of aspen (*Populus tremuloides*) and Douglas fir (*Pseudotsuga menziesii*) in the far reaches and in intersecting drainages (see the cover photograph of this EA). The west part of the Upper Lone Cabin Project Area is a mosaic of Gambel-oak dominated mixed mountain shrublands,

big sagebrush (*Artemisia tridentata*) shrublands, and pinyon-juniper woodlands, with interstitial grassy or shrub-steppe type meadows. The Lower Project Area intersects previously disturbed irrigated farmlands and residential areas, with pockets of pinyon-juniper woodlands and sagebrush shrublands. The Habitat Replacement Site is located in riparian cottonwood (*Populus deltoides* and *P. angustifolia*) woodlands and an irrigated grass pasture near the North Fork Gunnison River. The proposed staging areas are on farmed or previously disturbed ground or ground previously cleared of brush.

The Lone Cabin Trade, Highline, middle, and south laterals in the Upper Lone Cabin Project Area, and the west end of the existing Lone Cabin north lateral in the Lower Project Area support very little riparian vegetation, due to the short time they carry water (see Photograph 1). The ditches are relatively shallow and narrow, often contouring on steep slopes. Similarly, the existing Sweezy-Turner Ditch and some upper parts of the Turner Ditch support very little riparian vegetation. A total of approximately 1 mile of reaches of the above-described ditches collectively are already in plastic or metal pipe where they pass through landslide-prone areas and ditch-bank failure has been a problem in the past. The piped reaches are grown over with native upland vegetation (see Photograph 2).

Photograph 1. Example of a reach of Lone Cabin Highline Ditch, and typical appearance of a ditch proposed for decommissioning using minimal disturbance methods (Rare Earth Science, November 2021)



Photograph 2. Example of a reach of Turner Ditch that is already piped in a problematic landslide area and proposed for decommissioning using minimal disturbance methods (Rare Earth Science, November 2021)



In the Lower Project Area and the west parts of the Upper Lone Cabin and Upper Turner Project Areas, the ditch banks of the main ditches support a narrow margin of discontinuous riparian vegetation dominated by coyote willow (*Salix exigua*), but also including cattails (*Typha* sp.), sedges (*Carex* and *Elyocharis* spp.), and rushes (*Juncus* spp.), pasture grasses, and occasional cottonwoods (*Populus* spp.), boxelder (*Acer negundo*), chokecherry (*Prunus virginiana*) and scattered non-native Russian olive (*Elaeagnus angustifolia*).

Vegetation along the ditches involved with the Proposed Action, especially in the Lower Project Area, is disturbed by routine maintenance, which includes periodic mechanical clearing with heavy equipment and occasional burning or application of herbicides.

There is a regional effort to reduce salinity in the lower Gunnison and Colorado River watersheds, resulting in an ongoing area-wide conversion of artificially-created riparian and wetland habitat to uplands. Consistent with the Colorado River Basin Salinity Control Act, habitat replacement projects compensate for the loss of riparian and wetland habitat values.

No Action Alternative: There would be no effect on existing vegetation from the No Action Alternative.

Proposed Action: Construction of the pipeline would result in a minor impact to upland native vegetation located within the construction corridor. The impact would be evident in the project area for a period of several years. The impacted upland native vegetation is abundant in the surrounding areas. Following pipeline construction, disturbed areas in the pipeline alignment would be recontoured and either topsoiled and reseeded with a seed mix appropriate for the surrounding

vegetation community or finished with sterile subsurface soil and unseeded, depending on the wishes of the underlying landowner. Where applicable, the seed mix for the reseeded areas would be a native drought-tolerant weed-free seed mix approved by Reclamation, BLM, USFS or the underlying private landowner and appropriate for the surrounding habitat (approved seed mixes will be appended to the final EA). Disturbed agricultural areas would be contoured to the surrounding grade and reseeded with compatible hay or pasture seed mixes. Agricultural areas are expected to return to a condition similar to or better than their pre-construction condition within a year of construction. The unseeded areas would require several years to recolonize the subsurface sterile soil that would be placed on the final graded surface. Natural colonization of native plants is preferable to reseeding on reserved topsoil in these areas. Redistributed topsoil has a low probability of success in germinating commercial seed mixes following construction, especially in drought conditions, and instead has germinated its own existing seed banks of ruderal weeds adapted to ground disturbance. Finishing the ground surface with subsurface soil would help eliminate the weed seed bank in the construction area. Surrounding native vegetation would colonize the construction corridor over a period of several years as the new topsoil becomes weathered. Because the upland native vegetation is abundant in the surrounding areas and would colonize the construction corridor, the minor impact to upland native vegetation would not rise to the level of significant and the impacts would not contribute to a cumulative impact on the resource.

The Proposed Action would result in the permanent loss of approximately 15.5 acres of riparian and wetland vegetation associated with the unlined ditches. However, as stipulated by the Salinity Control Act, a habitat replacement project is included as a component of the Proposed Action to ensure there would be no net loss of fish and wildlife values (in this case, riparian and wetland vegetation) associated with implementation of the Proposed Action. Because there would be no loss of riparian and wetland values associated with implementation of the Proposed Action, the effects of the loss of riparian and wetland vegetation would be insignificant. The region has experienced the permanent loss of riparian and wetland vegetation associated with piping and lining earthen ditches over the past fifteen to twenty years. Because there would be no loss of riparian and wetland values associated with implementation of the Proposed Action, the Proposed Action would not contribute to cumulative effects on riparian and wetland vegetation within the region.

A habitat evaluation was performed within the Action Area to quantify the fish and wildlife values that would be lost due to implementation of the Proposed Action (WNRCS 2021). The evaluation followed the methodology outlined in Reclamation's April 2018 *Basinwide Salinity Control Program: Procedures for Habitat Replacement*. The value of the habitat loss which would occur due to the Proposed Action is 117.8 habitat units (WNRCS 2021). The Habitat Replacement Site to be developed for the Proposed Action would generate 120.3 habitat units to fully maintain the value of the fish and wildlife values to be lost as a result of the Proposed Action.

Construction activities would directly disturb the staging areas, irrigated agricultural areas, and roadsides. These areas experience routine disturbance, and their post-project conditions would not significantly differ from their pre-project conditions. Dust from operating equipment and vehicles would also temporarily affect nearby vegetation, however increased dust would be minor and temporary (see Section 3.2.3), and therefore the impact to nearby vegetation would be minor and temporary. Across the entire project, vegetation removal and construction footprints would be confined to the smallest portion of the ditch prism or construction ROW necessary for safe completion of the work. Construction of the Proposed Action, including the Habitat Replacement

Site, would follow BMPs to further minimize temporary impacts, to protect water quality, and to further minimize dust and soil erosion.

Ditches to be abandoned on private lands would be decommissioned using conventional methods unless the underlying landowner submits a request in writing for the minimal disturbance method.(see Section 2.2.3). BLM and USFS have indicated their preference for decommissioning ditches on public lands using minimal disturbance methods (rather than conventional surface-disturbing methods), since native upland vegetation is already well established along these ditches. Decommissioning the ditches in these locations would have no effect on the established native upland vegetation.

The Paonia Winter Woodlands Habitat Improvement Project on the National Forest is expected to initiate in 2023 and will involve controlled burns and mechanical treatments of brush around the flanks of Mount Lamborn and Landsend Peak at some point during the next approximately 10 years, as conditions permit. Part of the Habitat Improvement Project's target area is within the Upper Lone Cabin Project Area of the Proposed Action. The purpose of the Habitat Improvement Project is to enhance range conditions for big game. The impacts of the Proposed Action on mixed mountain shrublands in the Upper Lone Cabin Project Area would be similar in character to that of the Habitat Improvement Project but would not contribute significantly to cumulative effects on this habitat type in the Project Area because the scope of the Proposed Action is orders of magnitude smaller than the Habitat Improvement Project.

No significant impacts to vegetation would occur as a result of the Proposed Action.

3.2.11 – Noxious Weeds

The most conspicuous noxious weeds present within the Proposed Action Area are whitetop (*Lepidium draba*), perennial pepperweed (*Lepidium latifolium*), Russian knapweed (*Acroptilon repens*), and Canada thistle (*Cirsium arvense*) (WNRCS 2021). These weeds are associated with ditches in the Lower Project Area, and to some extent along Lone Cabin Ditch on Oak Ridge in the Upper Lone Cabin Project Area. The Applicant manages noxious weeds on the ditch prisms by spot-spraying or mowing seasonally, or by mechanical removal with heavy equipment, as resources permit. BLM also has inventoried and manages weeds on BLM lands in the Lone Cabin area. Vehicles, people and their dogs, livestock, and wildlife traveling on the ditch prism can contribute to the spread of weeds. Flowing water in irrigation ditches is also a vector for the continued spread of weeds. Disbursed recreation and livestock grazing, especially in the west part of the Upper Lone Cabin Project Area, contributes to the propagation of weeds in that area.

Common weeds in the Habitat Replacement Site are Russian olive (*Elaeagnus angustifolia*) and salt cedar (*Tamarisk* spp.), as well as Canada thistle, whitetop, and houndstongue (*Cynoglossum officinale*). These weeds are mainly in riparian woodland Sections (B and C) of the Habitat Replacement Site (Section A is an irrigated pasture).

No Action Alternative: There would be no effect on noxious weeds from the No Action Alternative.

Proposed Action: The Proposed Action would remove segments of open water, a key element of invasive seed transport. Finishing the ground surface with subsurface soil would help eliminate the weed seed bank in the construction area. Certain segments of the ditch would no longer require regular maintenance, lowering the potential for the continued spread and establishment of weeds.

Downgradient herbaceous and woody noxious weeds which rely on ditch seepage would no longer be supported. Despite these beneficial effects to noxious weed presence, noxious weeds would continue to be present throughout the Project Area. Because noxious weeds are currently present in the Project Area, their ongoing presence within the Project Area would not constitute a significant impact.

To further curtail the spread of noxious weeds, environmental commitments (CHAPTER 4) such as power washing vehicles and equipment prior to bringing them onsite and conducting weed management following construction would help minimize the risk of increasing weed infestations. After construction and reclamation of the Project Area, noxious weed presence would be monitored subject to agreements between the Applicant and BLM, USFS, and individual landowners, and regulated by Delta and Gunnison Counties in accordance with county standards (Delta County 2020, Gunnison County 2013).

The Habitat Replacement Site weed infestations would be treated as part of the Habitat Replacement Plan (WNRCS 2022), with goals for maintaining total weed cover below 5 percent in Section A and below 10 percent in Sections B and C of the Habitat Replacement Site.

In the long-term, piping the ditch laterals involved with the Proposed Action, along with other salinity control projects in the region, would cumulatively remove an important vector of weed seed transport in the vicinity—open water. Seeps from the earthen ditches that currently support herbaceous and woody noxious weeds would be dried and the cumulative ability of the environment to support these weeds would be diminished.

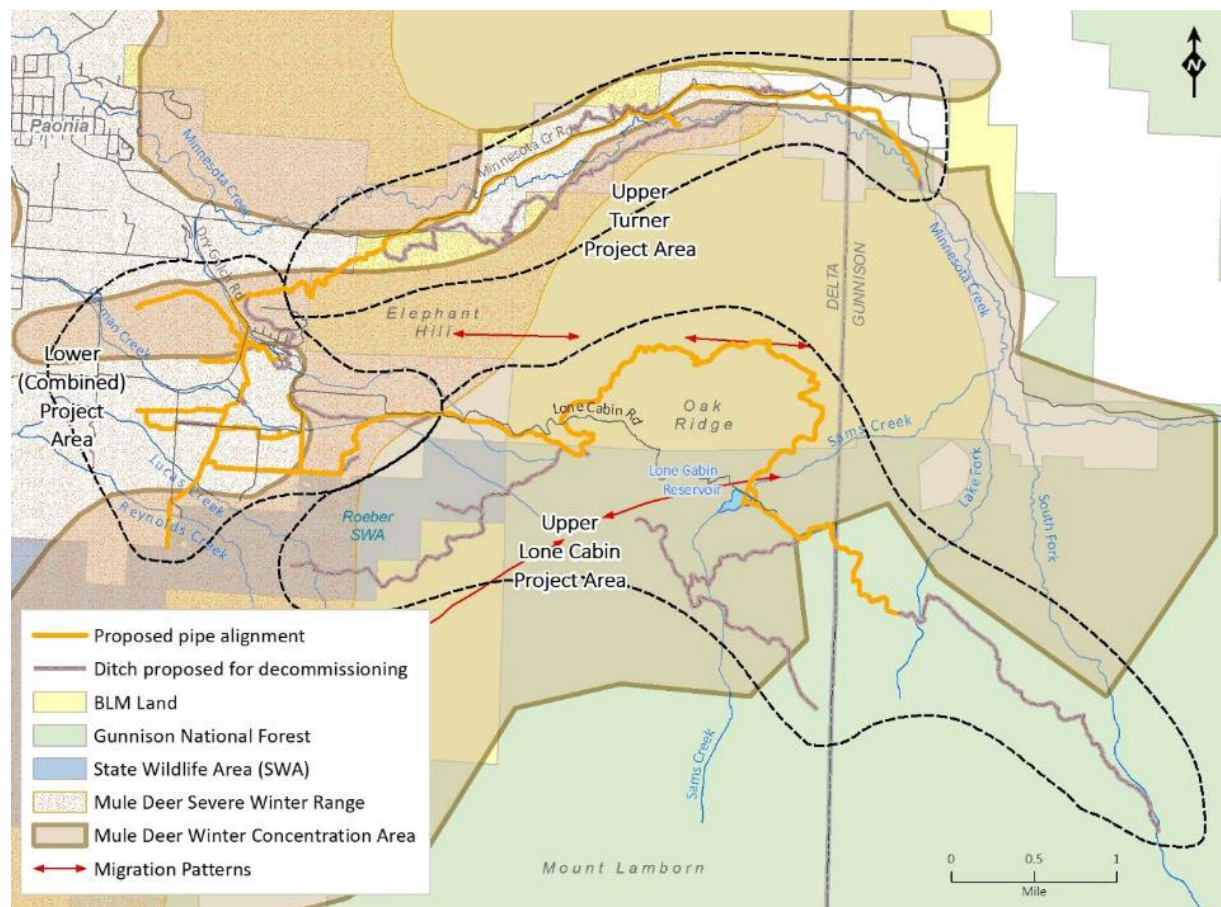
No significant impacts to noxious weeds would occur as a result of the Proposed Action.—

3.2.12 - Wildlife Resources

A variety of mammals, reptiles, and amphibians inhabit the general Proposed Action Area. Those that would be likely to use the ditch corridor or adjacent areas include elk, mule deer, black bear and mountain lion, as well as red fox, coyote, bobcat, badger, beaver, white-tailed prairie dog, cottontail rabbit, white-tailed jackrabbit, woodrat, striped skunk, raccoon, several species of mice, voles, and shrews, several species of bats, western terrestrial garter snake, smooth green snake, Woodhouse's toad, chorus frog, northern leopard frog, and tiger salamander. Many species of neotropical migratory songbirds and raptors inhabit the area, as well as wild turkey. Fish such as brook trout and native sculpins and suckers may be present in the creeks in the Proposed Action Area.

The Upper Turner, Upper Lone Cabin, and Lower Project Areas intersect critical ranges of mule deer and elk in Game Management Unit 53, which include severe winter range (where 90 percent of animals are located when snowpack is at maximum and temperatures are at minimum in the two worst winters of ten); winter concentration areas (where animal densities are at least 200 percent greater than surrounding winter range, from first heavy snowfall through spring green-up); and an elk calving area (Figure 10 and Figure 11). The Habitat Replacement Site lies entirely within an elk winter concentration area and mule deer winter range.

Figure 10. Mule Deer Critical Range in the Piping Component Areas of the Proposed Action

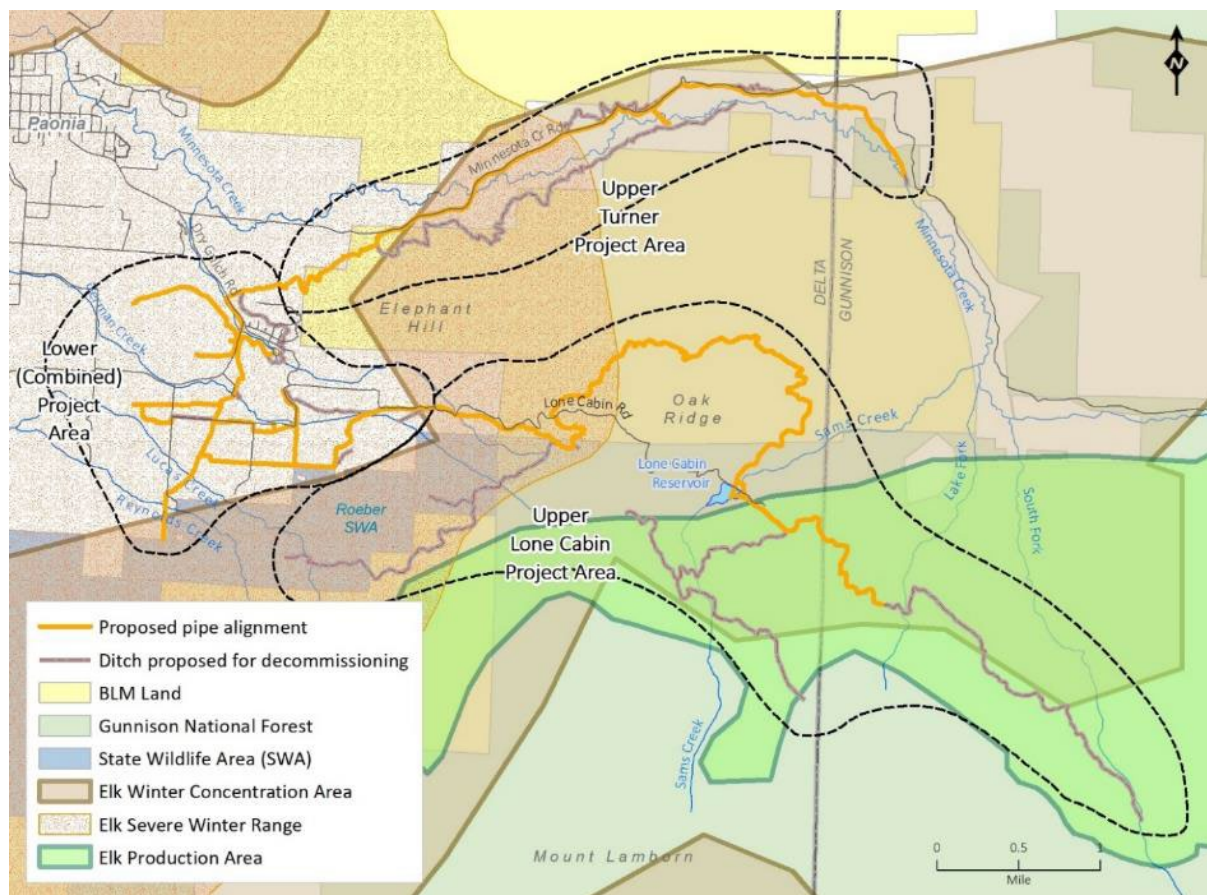


The primary nesting season for migratory songbirds in the Proposed Action Area is April 1 through July 15. The core nesting season for raptors in the area is also April 1 through July 15; however, individuals—especially red-tailed hawk and great-horned owl—may begin courtship and nest construction as early as February 15 (CPW 2020). A nesting raptor survey conducted for the Proposed Action Area during April of 2020 and 2021 identified two red-tailed hawk nests within 1/3 mile of the construction corridor in the Lower Project Area (on private land), and one Cooper’s hawk nest within 1/4 mile of the construction corridor in the Upper Lone Cabin Project Area on National Forest. Nearly the entire Proposed Action lies within CPW-mapped bald eagle winter range, the Lower Project Area, the Upper Turner Project Area, and the west part of the Upper Lone Cabin Project Area are in bald eagle winter forage range. The Habitat Replacement Site is in a bald eagle winter concentration area and winter foraging range (CPW 2022). The Upper Turner Project Area lies within a wild turkey winter concentration area (CPW 2022).

Wildlife in the Proposed Action Area experiences a baseline level of disturbance from suburban residential activities, domestic pets, people and vehicles traveling on public and private roads, and ranching and farming activities. The Habitat Replacement Area is in the forested riparian corridor of the North Fork River, which is closely flanked by open agricultural fields and areas with light industrial and light commercial use (the Paonia Water Treatment Plant and Delicious Orchards).

There is a regional effort to reduce salinity in the lower Gunnison and Colorado River watersheds by piping irrigation ditches, resulting in an ongoing area-wide conversion of artificially-created riparian and wetland habitat to uplands. Wildlife distribution across the landscape, especially wildlife that depend on riparian and wetland habitat, is changing in response to these habitat changes. Consistent with the Colorado River Basin Salinity Control Act, projects to replace the value of the riparian and wetland habitat losses are completed in conjunction with the piping projects.

Figure 11. Elk Critical Range in the Piping Component Areas of the Proposed Action



No Action Alternative: There would be no effect on wildlife resources from the No Action Alternative. Salt and selenium loading from the area would continue to affect aquatic dependent species.

Proposed Action: Construction would create incremental activity and ground disturbance throughout the Project area, resulting in minor temporary impacts to mule deer and elk within the Proposed Action area. Reclamation consulted with CPW to assign appropriate timing restrictions protective of big game to each Project Area. These timing restrictions consider the quality and importance of specific areas of the critical range and level of baseline human activity already present in each Project Area, and ensure the temporary impacts to mule deer and elk are minor. The timing restrictions are summarized in Table 4 and incorporated into the Environmental Commitments (CHAPTER 4) for the Proposed Action, and would be prominently marked on the project construction drawings. There would be a short-term loss of vegetative cover in big game critical winter habitat until the areas are revegetated. However, the construction footprint of the Proposed Action represents less

than approximately 0.1 percent of the total amount of elk and mule deer critical winter habitat in Game Management Unit 53, and this temporary loss of vegetative cover would result in negligible effects to big game critical winter habitat.

Construction impacts to small animals, especially burrowing amphibians, reptiles, and small mammals, would include direct mortality and displacement during construction activities, both in the existing ditch alignment and new pipe alignments. However, these species and habitats are relatively common throughout the area. The species would continue to propagate and population-level significant impacts would not occur.

There would be no effect to nesting songbirds as pre-construction vegetation grubbing would occur outside the primary nesting season (potential nesting habitat including shrubs and trees along the ditch would be grubbed and removed outside the period of April 1 through July 15). Vegetation grubbing timing restrictions would be clearly noted on the Project construction drawings.

There would be no effect to the three raptor nests identified near the Proposed Action Area as they would be avoided with sensitive area buffers and construction timing restrictions per CPW recommendations (CPW 2020). The red-tailed hawk nest protective buffer would be established as a 1/3-mile radius, excluding those areas where the nest is shielded by topography. Construction activities would not occur within a red-tailed hawk sensitive area buffer during February 15 to July 15 with the following exception: construction may be initiated prior to February 15, but must operate on a daily basis until completion through the sensitive area. Construction activities would not occur within 0.25-mile of a Coopers hawk nest during the period of April 15 to July 31. These restrictions may be lifted on the National Forest if the USFS biologist determines that the nest is not active that year, and on private land if a Reclamation-approved biologist determines that the nest is not active that year. If a new active raptor nest is discovered within 1/3 mile of the Proposed Action during construction, construction would cease until Reclamation could complete evaluations and consultations with FWS and CPW, and BLM or USFS as appropriate. Sensitive areas for raptors would be prominently marked on the construction drawings with their timing restrictions. The same timing restrictions applied to the respective Project Areas to protect wintering deer and elk would also be protective of wintering bald eagles and wild turkey.

Bird, bat, reptile, and amphibian species dependent on wetland and riparian habitats would experience a long-term (greater than five years) loss of habitat due to the Proposed Action. These species are relatively common in wetland and riparian habitat throughout the area. These species would continue to propagate in the area and population-level significant impacts would not occur. The habitat value associated with the lost wetland and riparian habitat would be fully maintained with the implementation of the Habitat Replacement Site (see Section 2.2.8). Because the value of these species' habitat would be fully maintained, there would not be a significant impact to bird, bat, reptile, and amphibian species resulting from the loss of the ditch-induced wetland and riparian habitat.

To further reduce the potential for effects to wildlife, pipeline trenches left open overnight during construction would be kept to a minimum and covered to reduce potential for entrainment of deer, elk, and other wildlife. Covers would be secured in place and strong enough to prevent wildlife from falling through. Where trench covers would not be practical, wildlife escape ramps would be utilized.

The Proposed Action would contribute to a regional trend resulting in the relocation of artificially-created riparian and wetland values from earthen irrigation conveyances to habitat replacement sites. These activities are resulting in the redistribution of riparian and wetland-dependent wildlife across the landscape. Given the minor and temporary nature of the effects listed above, and given that the riparian and wetland values are being relocated rather than lost, the Proposed Action would not generate effects which would contribute to a significant cumulative effect on wildlife resources.

No significant impacts to wildlife resources would occur as a result of the Proposed Action.

3.2.13 – Threatened & Endangered Species

The species listed as threatened or endangered under the Endangered Species Act of 1973, as amended, with the potential to be affected by the Proposed Action are the western yellow-billed cuckoo (*Coccyzus americanus*), and the four endangered Colorado River basin fish species: bonytail chub (*Gila elegans*), Colorado pikeminnow (*Ptychocheilus lucius*), the humpback chub (*Gila cypha*), and the razorback sucker (*Xyrauchen texanus*).

Sections B and C (a total of 11.7 acres) of the Habitat Replacement Site lie within designated critical habitat for the western yellow-billed cuckoo and contain potentially suitable nesting and foraging areas for this species. The western yellow-billed cuckoo is a migratory songbird requiring large patches of continuous forested riparian habitat with significant vegetative structural diversity for nesting success. Their breeding season is June 1 through August 31. Yellow-billed cuckoos could be using the Habitat Replacement Site from late May through early September. Foraging or migrating individuals could also occur incidentally in the Lower Project Area during this time.

None of the four endangered Colorado River fishes occurs in the Proposed Action Area and the Proposed Action Area does not occur within or adjacent to designated critical habitat. However, because water depletions in the Gunnison Basin diminish backwater spawning areas for the Colorado River endangered fishes in downstream designated critical habitat, impacts to the endangered fishes result from continuing irrigation practices in the Gunnison Basin. The average historic depletion rate from the Turner Ditch Company's system operations is estimated as 2,083 acre-feet per year (including Sweezy-Turner and Spurlock depletions), and the average historic depletion rate from Lone Cabin Ditch and Reservoir Company's system is estimated as 1,103 acre-feet per year. At the Habitat Replacement Site, historic depletions are estimated as 175 acre-feet per year, and new depletions are estimated as less than 100 acre-feet per year.

The Upper Colorado River Endangered Fish Recovery Program, a partnership of public and private organizations working to recover the four species while allowing continued and future water development, was established in 1988. Recovery strategies include conducting research, improving river habitat, providing adequate stream flows, managing non-native fish, and raising endangered fish in hatcheries for stocking. In 2018, the FWS determined that the Recovery Program had made "sufficient progress to be the reasonable and prudent alternative to avoid the likelihood of jeopardy to the endangered fishes, and to avoid destruction or adverse modification of their critical habitat" for "existing depletions" (FWS 2022). Furthermore, the Gunnison River Basin PBO (PBO) issued by FWS in 2009 found that the Recovery Program is the reasonable and prudent alternative to avoid jeopardy to the endangered Colorado River fishes and avoid adverse modification of designated critical habitat.

The Gunnison Basin Selenium Management Program is a private/public partnership of concerned parties working together to identify and implement solutions to reduce selenium concentrations in the Gunnison and Colorado rivers. The goal of the Gunnison Basin Selenium Management Program is to reduce adverse effects of selenium on the four endangered fish species in the Gunnison and Colorado rivers.

No Action Alternative: There would be no effect on western yellow-billed cuckoo and its designated critical habitat, or the four Colorado River endangered fishes or their designated downstream critical habitat from the No Action Alternative.

Proposed Action: Based on an August 10, 2022 informal technical consultation with FWS, the Proposed Action may affect but is not likely to adversely affect, the western yellow-billed cuckoo and its designated critical habitat. In order to avoid direct impacts to western yellow-billed cuckoo at the Habitat Replacement Site, the use of machinery to remove and mulch non-native trees and shrubs and to conduct new vegetation plantings in Habitat Replacement Site Sections B and C would avoid yellow-billed cuckoo breeding season, and human presence in Habitat Replacement Site Sections B and C during breeding season (to irrigate or control herbaceous weeds) would be restricted to the morning hours before 11 am. While removal of non-native understory vegetation would temporarily affect the structure of yellow-billed cuckoo critical habitat, the amount of cuckoo habitat affected by the Project (11.7 acres) is relatively small compared to the designated critical habitat unit within which it lies (2,300 acres). The planned vegetation plantings would improve nesting and foraging conditions for cuckoo within a few growing seasons. At the pipeline construction sites elsewhere in the Proposed Action Area, suitable cuckoo breeding habitat is not present, nor is there any designated critical habitat. Because the Proposed Action would avoid direct impacts to the yellow-billed cuckoo and would ultimately improve yellow-billed cuckoo critical habitat, the Proposed Action would not have a significant impact on the yellow-billed cuckoo or its critical habitat.

No change to the Turner Ditch Company or Lone Cabin Ditch and Reservoir Company's historic annual consumptive use rate or historic water depletions from operations of their systems within the Colorado River Basin would occur as a result of the Proposed Action. Historic water depletions associated with the Town of Paonia's Farmer's Ditch water right for irrigation of the Habitat Replacement Site would remain unchanged. New water rights filed by the Town of Paonia and leased by the Turner Ditch Company or Lone Cabin Ditch and Reservoir Company to maintain the Habitat Replacement Site would constitute a new depletion. Based on previously issued biological opinions that all depletions within the Upper Colorado River Basin may adversely affect these fish species and their critical habitat, it is determined that the Proposed Action may adversely affect the bonytail chub, Colorado pikeminnow, humpback chub, and razorback sucker and their critical habitat. However, the Recovery Program ensures impacts to endangered fishes or adverse modification of their designated critical habitat resulting from projects covered under the PBO would not result in jeopardy to the species. To ensure Turner Ditch Company's (including Sweezy-Turner and Spurlock's) and Lone Cabin Ditch and Reservoir Company's depletions are covered under the Gunnison Basin PBO, each company would execute Recovery Agreements with FWS (to be included in Appendix B of the Final EA). Because the Proposed Action would be covered under the Gunnison Basin PBO following execution of Recovery Agreements, the Proposed Action would not result in jeopardy to the species, and there would be no significant impact to the endangered fishes or their designated critical habitat.

The Proposed Action would avoid direct impacts to the yellow-billed cuckoo and would ultimately improve yellow-billed cuckoo critical habitat; therefore, the Proposed Action would not contribute to cumulative impacts on the yellow-billed cuckoo or its critical habitat. While the Proposed Action would adversely affect the listed Colorado river fishes due to Turner Ditch Company's and Lone Cabin Ditch and Reservoir Company's historic depletion rates and due to historic and new depletions at the Habitat Replacement Site, the Recovery Program ensures cumulative effects to the fishes and their designated critical habitat do not occur due to projects covered under the PBO. The reduction in selenium loading to the Colorado River and Gunnison River basins as a result of the Proposed Action would contribute to the cumulative beneficial effects of the Gunnison Basin Selenium Management Program in improving water quality within designated critical habitat for the Colorado pikeminnow, razorback sucker, humpback chub, and bonytail throughout the Colorado River and lower Gunnison River basins.

No significant impacts to threatened and endangered species and their critical habitat would occur as a result of the Proposed Action

3.2.14 – Cultural Resources

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

Alpine Archaeological Consultants conducted Class III cultural resource inventories of the Proposed Action Area (Prouty et al. 2022). All ditch reaches involved with the Proposed Action were inventoried, as well as the habitat replacement site, roads subject to improvement, and staging/borrow areas. The inventories resulted in the documentation of several sites within the Proposed Action Area that are eligible for listing in the National Register of Historic Places (NRHP).

There is an ongoing trend of piping earthen irrigation ditches in the region (see Figure 2), many of which are eligible for listing in the NRHP. This conversion is typically viewed as an adverse effect on the eligible cultural resource.

No Action Alternative: The No Action Alternative would have no effect on cultural resources.

Proposed Action: As a result of the Class III cultural resources inventory of the Proposed Action Area, and in consultation with the Colorado State Historic Preservation Officer (Colorado SHPO), Reclamation has determined that the Proposed Action would have an adverse effect on several ditch elements involved with the Proposed Action, which are resources eligible for listing in the NRHP. A Memorandum of Agreement (MOA) is being executed between Reclamation, BLM, USFS, and the Colorado SHPO, with the Applicant participating as an invited party, regarding the management of cultural resources related to the Proposed Action. The MOA will outline stipulations designed to conserve the value of the eligible cultural resources. The completed MOA will be appended to the final EA (Appendix C). Conserving the value of the eligible cultural resources would ensure that piping the canal would not result in the loss of knowledge of early irrigation systems, their design, or reduce the ability to gain knowledge of early irrigation systems into the future. Because the value of the cultural resources related to the Proposed Action would be conserved, there would be no significant impacts to cultural resources as a result of implementing the Proposed Action.

The Proposed Action would contribute to an area-wide adverse effect on NRHP eligible cultural resources which is occurring as a result of irrigation piping projects. However, the value of the eligible cultural resources in the area which have been or may be affected due to federally funded irrigation piping projects have been and would continue to be maintained due to the project stipulations developed with the Colorado SHPO, and therefore the adverse cumulative effect of the piping projects on cultural resources would not rise to the level of significant.

No significant impacts to cultural resources would occur as a result of the Proposed Action.

3.2.15 – Soils & Farmlands of Agricultural Significance

The soils units mapped by the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) in the Proposed Action Area are generally clay loams that have Mancos shale parent material and are a source of salinity in irrigation water in the region. There is an ongoing trend to pipe earthen irrigation ditches in such soils in the region (see Figure 2).

Several soils in the Proposed Action Area are agriculturally significant since they are classified by NRCS as “prime farmland if irrigated,” “farmland of unique importance,” or “farmland of statewide importance” under the Farmland Protection Policy Act (NRCS 2007).

The Lone Cabin Trade, Highline, middle, and south laterals in the Upper Lone Cabin Project Area, and the west end of the existing Lone Cabin north lateral in the Lower Project Area are relatively shallow and narrow, often contouring on steep slopes where they pass through landslide-prone areas where erosion has led to ditch-bank failure in the past.

No Action Alternative: The No Action Alternative would have no effect on soils characterized by NRCS as agriculturally significant. Farmlands in the Proposed Action Area would continue to produce as in the past. Salinity loading from deep percolation of irrigation water through saline soils along the ditches related to the Proposed Action would continue as it has in the past.

Proposed Action: Under the Proposed Action Alternative, installation of the buried pipelines would temporarily disturb soils in or near the previously-disturbed ditch prisms. Staging activities would take place on existing irrigated pastures or existing disturbed areas. Project activities would cause temporary disturbance to soils that are either not in irrigated agricultural production, or soils directly adjacent to irrigated agricultural lands, or irrigated lands. Some currently farmed agriculturally significant soils would be temporarily directly disturbed by the Proposed Action, but would be put back into production prior to the following irrigation season. No farmlands would be permanently altered or removed from production as a result of the Proposed Action, and no interruption to agricultural production would occur. Therefore, there would be no significant impact to soils, farmlands, or agricultural production as a result of implementing the proposed action.

The ditches involved with the Proposed Action also convey irrigation water to agriculturally significant soils downstream of the Proposed Action Area; however, no change to or effect on the configuration of irrigated lands would occur because of the Proposed Action. No part of the irrigation season would be lost during implementation of the Proposed Action.

The Proposed Action would have a beneficial effect on the Applicant’s ability to manage irrigation water with efficiencies gained from piping the systems.

Soil erosion from irrigation water conveyances would be substantially reduced where ditch reaches are proposed for replacement with buried pipe. Therefore, no adverse effects on soil erosion would occur due to implementation of the Proposed Action.

Due to the temporary nature of impacts to soils, and due to the lack of adverse effects on farmlands and agricultural production, the Proposed Action would not contribute to cumulative effects on those resources. The Proposed Action contributes to the growing amount of piped irrigation conveyances in the region, which are collectively having a beneficial cumulative effect on the reduction of soil erosion on a larger scale.

No significant impacts to Soils & Farmlands of Agricultural Significance would occur as a result of the Proposed Action.

3.3 – Summary

Table 9 provides a summary of environmental impacts for the resources evaluated in this EA. Resource impacts are outlined for both the No Action and the Proposed Action Alternatives. As described throughout Chapter 3, environmental impacts of the Action Alternative were not determined to be significant.

Table 9. Summary of Impacts for the No Action Alternative and Proposed Action Alternative.

Resource	Impacts: No Action Alternative	Impacts: Proposed Action Alternative
Water Rights and Use	No Effect	The companies would collectively have the ability to better manage irrigation water with efficiencies gained from combining their operations. By eliminating ditch seepage and evaporative loss, the Project would result in an estimated 25 percent more water delivered per share. Winter stock water delivery to Turner Ditch shareholders would be temporarily affected by the Proposed Action; however, following construction, winter stock water would be available to Turner Ditch shareholders throughout the winter season, including during periods of freezing. The Proposed Action contributes to the growing amount of piped irrigation conveyances in the region, which are collectively reducing water seepage and improving irrigation water delivery efficiency on a larger scale.

Resource	Impacts: No Action Alternative	Impacts: Proposed Action Alternative
Water Quality	Salt and selenium loading from the Proposed Action Area would continue to affect water quality in the Colorado River Basin	An estimated salt loading reduction of 3,398 tons per year to the Colorado River Basin would result from implementation of the Proposed Action. The Proposed Action would reduce selenium loading into the Gunnison River (the amount has not been quantified). Improved water quality would benefit downstream aquatic species by reducing salt and selenium loading in the Gunnison and Colorado rivers. The beneficial effects of improved water quality resulting from the Proposed Action would contribute to the regional efforts underway to reduce salinity and selenium in the lower Gunnison and Colorado River watersheds.
Air Quality	No Effect	Exhaust and dust from construction activities would have a minor, short-term effect on the air quality in the immediate Proposed Action Area. Following construction, impacts to air quality from routine maintenance and operation activities along the pipeline corridor would be similar or less in magnitude to those currently occurring for the existing ditch. If other construction projects occur concurrently with the Proposed Action, the cumulative impact on air quality in the area would be temporary and would not rise to the level of significant, as the area would remain in attainment for any criteria pollutants in Delta or Gunnison Counties.
Access, Transportation & Safety	No Effect	Some short-term disruption of traffic at the involved public roads would occur when equipment and materials are hauled into a Project location, and when pipe crossings are constructed across public roads. If relocation or raising of utilities is necessary during construction, a brief interruption of utility services would occur. No cumulative effects.

Resource	Impacts: No Action Alternative	Impacts: Proposed Action Alternative
Colorado Roadless Area	No Effect	<p>Insignificant temporary impacts would occur on resources associated with the following Roadless Area Characteristics: high quality or undisturbed soil, water or air resources; diversity of plants and animal communities; primitive and semi-primitive non-motorized, and semi-primitive motorized classes of dispersed recreation; naturally appearing landscapes with high scenic quality; and other locally unique characteristics.</p> <p>Insignificant long-term impacts would occur on resources associated with the following Roadless Area Characteristics: diversity of plants and animal communities, other locally unique characteristics. Beneficial impacts would occur on resources associated with the following Roadless Area Characteristics: high quality or undisturbed soil, water or air resources. No cumulative effects to Roadless Area Characteristics would occur.</p>
Noise	No Effect	Proposed Action construction activities would generate a temporary source of noise audible to residents near the Proposed Action. No cumulative effects.
Visual Resources	No Effect	<p>Machinery would be operating on the landscape and highly visible from public roads in certain locations on a spatially incremental basis mostly during fall and early winter months. Following construction in the pipeline alignment and certain abandoned ditch reaches in the Lower Project Area, the disturbance footprint would be a linear area of bare ground, rather than an open earthen ditch. Within a few growing seasons, revegetation would help the disturbed ground blend with the surroundings. No cumulative effects.</p>
Public Recreation	No Effect	Public recreation activities would be temporarily interrupted and the quality of experience temporarily decreased by construction noise, construction traffic, and the visual presence of equipment and machinery working and idled on the construction site or in staging areas. No cumulative effects.
Grazing	No Effect	A total of approximately 30.6 acres of grazing rangelands within the BLM grazing allotments and 20.5 acres within the USFS allotment would experience a temporary impact. Piping of the ditches through public land grazing allotments would remove a source of stock water that the permittees are accustomed to relying on. No cumulative effects.

Resource	Impacts: No Action Alternative	Impacts: Proposed Action Alternative
Vegetation	No Effect	Construction of the pipeline would result in a minor impact to upland native vegetation located within the construction corridor. The impact would be evident in the project area for a period of several years. The Proposed Action would result in the permanent loss of approximately 15.5 acres of riparian and wetland vegetation associated with the unlined ditches. The value of the habitat loss which would occur due to the Proposed Action is 117.8 habitat units (WNRCS 2021). The Habitat Replacement Site to be developed for the Proposed Action would generate 120.3 habitat units to fully maintain the value of the fish and wildlife values to be lost as a result of the Proposed Action. No cumulative effects.
Noxious Weeds	No Effect	The Proposed Action would remove segments of open water, a key element of invasive seed transport. Finishing the ground surface with subsurface soil would help eliminate the weed seed bank in the construction area. Certain segments of the ditch would no longer require regular maintenance, lowering the potential for the continued spread and establishment of weeds. Downgradient herbaceous and woody noxious weeds which rely on ditch seepage would no longer be supported. Noxious weeds would continue to be present throughout the Project Area. Piping the ditch laterals involved with the Proposed Action, along with other salinity control projects in the region, would cumulatively remove an important vector of weed seed transport in the vicinity—open water. Seeps from the earthen ditches that currently support herbaceous and woody noxious weeds would be dried and the cumulative ability of the environment to support these weeds would be diminished.

Resource	Impacts: No Action Alternative	Impacts: Proposed Action Alternative
Wildlife Resources	No effect on terrestrial and avian wildlife; salt and selenium loading from the Proposed Action Area would continue to affect aquatic dependent species	Construction would create incremental activity and ground disturbance throughout the Project area, resulting in minor temporary impacts to mule deer and elk within the Proposed Action area. There would be a short-term loss of vegetative cover in big game critical winter habitat until the areas are revegetated. Construction impacts to small animals, especially burrowing amphibians, reptiles, and small mammals, would include direct mortality and displacement during construction activities, both in the existing ditch alignment and new pipe alignments. Bird, bat, reptile, and amphibian species dependent on wetland and riparian habitats would experience a long-term (greater than five years) loss of habitat due to the Proposed Action. However, the habitat value associated with the lost wetland and riparian habitat would be fully maintained with the implementation of the Habitat Replacement Site. The Proposed Action would contribute to a regional trend resulting in the relocation of artificially-created riparian and wetland values from earthen irrigation conveyances to habitat replacement sites.
Threatened & Endangered Species	Historic depletions and salt and selenium loading from the Proposed Action Area would continue to affect the four Colorado River basin endangered fishes and their critical habitat downstream.	The Proposed Action may affect but is not likely to adversely affect, the western yellow-billed cuckoo and its designated critical habitat. The Habitat Replacement Site contains potential nesting and foraging habitat for cuckoo, and one of the intentions of the habitat work there is to improve conditions for cuckoo. The Proposed Action may adversely affect the bonytail chub, Colorado pikeminnow, humpback chub, and razorback sucker and their critical habitat. However, Turner Ditch Company's and Lone Cabin Ditch and Reservoir Company's historic and new depletions are covered under the PBO, and the Recovery Program ensures impacts to endangered fishes or adverse modification of their designated critical habitat resulting from projects covered under the PBO would not result in jeopardy to the species. The reduction in selenium loading to the Colorado River and Gunnison River basins as a result of the Proposed Action would contribute to the cumulative beneficial effects of the Gunnison Basin Selenium Management Program in improving water quality within designated critical habitat for the Colorado pikeminnow, razorback sucker, humpback chub, and bonytail throughout the Colorado River and lower Gunnison River basins.

Resource	Impacts: No Action Alternative	Impacts: Proposed Action Alternative
Cultural Resources	No Effect	The Proposed Action would have an adverse effect on several ditch elements involved with the Proposed Action, which are resources eligible for listing in the NRHP. The Proposed Action would contribute to an area-wide adverse effect on NRHP eligible cultural resources which is occurring as a result of irrigation piping projects.
Agricultural Resources and Soils	No Effect	Installation of the buried pipelines would temporarily disturb soils in or near the previously-disturbed ditch prisms. Project activities would cause temporary disturbance to soils that are either not in irrigated agricultural production, or soils directly adjacent to irrigated agricultural lands, or irrigated lands. Some currently farmed agriculturally significant soils would be temporarily directly disturbed by the Proposed Action, but would be put back into production prior to the following irrigation season. The Proposed Action would have a beneficial effect on the Applicant's ability to manage irrigation water with efficiencies gained from piping the systems. The Proposed Action contributes to the growing amount of piped irrigation conveyances in the region, which are collectively having a beneficial cumulative effect on the reduction of soil erosion on a larger scale.

CHAPTER 4 – ENVIRONMENTAL COMMITMENTS

This section summarizes the design features, BMPs, conservation measures, and other requirements (collectively, “Environmental Commitments”) developed to lessen the potential adverse insignificant effects of the Proposed Action. The actions in the following environmental commitment list would be implemented as an integral part of the Proposed Action and shall be included in any contractor bid specifications. Additionally, the generic BLM ROW Permit stipulations are included as Appendix E.

Note that in the event there is a change in the Proposed Action description, or any construction activities are proposed outside of the inventoried Proposed Action Area or the planned timeframes outlined in this EA, additional environmental review by Reclamation would be required to determine if the existing surveys and information are adequate to evaluate the changed project scope. Additional NEPA documentation may be required.

Table 10. Environmental Commitments

Type	Environmental Commitment	Affected Resource	Authority
Construction Contractor Plan or Certification Requirement	A Spill Response Plan shall be prepared in advance of construction by the contractor for areas of work where spilled contaminants could flow into water bodies.	Water Quality	Clean Water Act of 1972 as amended
Construction Contractor Plan or Certification Requirement	A Stormwater Management Plan shall be prepared and submitted to CDPHE by the construction contractor prior to construction disturbance.	Water Quality	Clean Water Act of 1972 as amended
Construction Contractor Plan or Certification Requirement	A CWA Section 402 Storm Water Discharge Permit compliant with the National Pollutant Discharge Elimination System (NPDES) shall be obtained from CDPHE by the construction contractor prior to construction disturbance (regardless of whether dewatering would take place during construction).	Water Quality	Clean Water Act of 1972 as amended
Construction Contractor Plan or Certification Requirement	Certification under CDPHE Water Quality Division Construction Dewatering Discharges Permit COG070000 shall be obtained by the construction contractor prior to any dewatering activities related to construction.	Water Quality	Clean Water Act of 1972 as amended
Construction Contractor Plan or Certification Requirement	Any construction, access, or use permits required by the Delta County Planning Department, County Engineering and County Road & Bridge District #3, or the Montrose County Planning & Development Department, shall be obtained in advance of road crossings.	Access, Transportation & Safety	County Ordinances and Regulations

Type	Environmental Commitment	Affected Resource	Authority
General NEPA Compliance	To satisfy the requirements of RGP-5, submit the following package to the Army Corps at least 30 days in advance of construction: (1) documentation for compliance with the Endangered Species Act and National Historic Preservation Act and/or the lead Federal Agency NEPA document containing the same, (2) a project description, (3) project plans, and (4) a location map.”	Wetlands	RGP-5, Section 404, Clean Water Act of 1972 as amended
General BMP	Construction limits shall be clearly flagged or marked onsite to avoid unnecessary plant loss or ground disturbance. No grading or blading shall occur inside the project ROW other than that necessary within the actual construction footprint.	Vegetation, Weeds, Habitat, Wildlife	Delta & Gunnison County Weed Management Plans (Delta County 2020; Gunnison County 2013); BLM ROW Permit Stipulation
General BMP	All equipment shall be power-washed before it is brought to the construction area, to minimize transport of new weed species to the construction area.	Vegetation, Weeds, Habitat, Wildlife	Delta & Gunnison County Weed Management Plans (Delta County 2020; Gunnison County 2013); BLM ROW Permit Stipulation

Type	Environmental Commitment	Affected Resource	Authority
General BMP	Prior to construction, vegetative material (“slash”) shall be removed by mowing or chopping, and either reserved for mulch onsite, or hauled to the County landfill or to a staging area to be processed (burned, chipped, and/or mulched). Stumps shall be grubbed and hauled to the County landfill or a proposed staging area to be burned. Slash processing would only occur on public lands in accordance with permit stipulations. No burning shall occur on federal public lands.	Soil, Vegetation, Weeds, Habitat	Delta & Gunnison County Weed Management Plans (Delta County 2020; Gunnison County 2013); Public Land Permit Stipulations; County burn ordinances and restrictions
General BMP	Vegetation removal shall be confined to the smallest portion of the Proposed Action Area necessary for completion of the work.	Soil, Vegetation, Weeds, Habitat	Delta & Gunnison County Weed Management Plans (Delta County 2020; Gunnison County 2013); BLM ROW Permit Stipulation
General NEPA Requirement	Tree grubbing and vegetation removal in all project areas shall avoid the primary nesting season of migratory birds (April 1 – July 15). This timing restriction shall be noted on Project construction drawings.	Wildlife	Migratory Bird Treaty Act of 1918
Conservation Measure	Tree grubbing and other activities involving heavy equipment in Sections B and C of the Habitat Replacement Site shall avoid the breeding season of western yellow-billed cuckoo (June 1 – August 31). Irrigation and herbaceous weed control activities in Sections B and C during breeding season shall be limited to morning hours before 11 am. These restrictions shall be noted in the Habitat Replacement Plan (WNRCS 2022).	Threatened & Endangered Species	Endangered Species Act of 1973 as amended

Type	Environmental Commitment	Affected Resource	Authority
General BMP and Design Feature	Following pipeline construction, disturbed areas in the pipeline alignment shall be recontoured and either topsoiled and reseeded with a seed mix appropriate for the surrounding vegetation community or finished with sterile subsurface soil and unseeded, depending on the wishes of the underlying landowner. Reseeding success shall be monitored subject to public land permit stipulations and agreements between the Applicant and individual landowners.	Soil, Vegetation, Weeds, Habitat	Delta & Gunnison County Weed Management Plans (Delta County 2020; Gunnison County 2013); Public Land ROW Permit Stipulations
General BMP	Weed control shall be implemented by the Applicant or its contractor in accordance with the most current Delta County and Gunnison County weed control standards and public lands permit stipulations. Noxious weed presence shall be monitored subject to agreements between the Applicant, BLM, USFS, and individual landowners, and regulated by Delta and Gunnison Counties in accordance with county standards.	Soil, Vegetation, Weeds, Habitat	Delta & Gunnison County Weed Management Plans (Delta County 2020; Gunnison County 2013)
General BMP	Straw wattles, silt curtains, cofferdams, dikes, straw bales, or other suitable erosion control measures shall be used to prevent erosion from entering water bodies during construction.	Water Quality	Clean Water Act of 1972 as amended
General BMP	Any concrete pours shall occur in forms and/or behind cofferdams to prevent discharge into waterways. Any wastewater from concrete-batching, vehicle wash down, and aggregate processing shall be contained and treated or removed for off-site disposal.	Water Quality	Clean Water Act of 1972 as amended
General BMP	The construction contractor shall transport, handle, and store any fuels, lubricants, or other hazardous substances involved with the Proposed Action in an appropriate manner that prevents them from contaminating soil and water resources.	Water Quality, Soil	Clean Water Act of 1972 as amended

Type	Environmental Commitment	Affected Resource	Authority
General BMP	Equipment shall be inspected daily and immediately repaired as necessary to ensure equipment is free of petrochemical leaks.	Water Quality, Soil	Clean Water Act of 1972 as amended
General BMP	Ground disturbances and construction areas shall be limited to only those areas necessary to safely implement the Proposed Action.	Soil, Vegetation, Weeds, Habitat, Wildlife	Archaeological Resources Protection Act of 1979; Paleontological Resources Preservation Act of 2009
General BMP	Pipeline trenches left open overnight shall be kept to a minimum and covered to reduce potential for hazards to the public and to wildlife. Covers shall be secured in place and strong enough to prevent people, livestock, or wildlife from falling through. Where trench covers would not be practical, wildlife escape ramps shall be used.	Wildlife, Public Safety	C.R.S. 33-1-101 to 125 Parks and Wildlife Article 1: Wildlife
General NEPA Compliance	If previously undiscovered cultural or paleontological resources are discovered during construction, construction activities must immediately cease in the vicinity of the discovery and Reclamation must be notified. In this event, the SHPO shall be consulted, and work shall not be resumed until consultation has been completed, as outlined in the Unanticipated Discovery Plan in the anticipated MOA (to be included in the final EA). Stipulations in the MOA shall be incorporated into the final EA by reference. Additional surveys shall be required for cultural resources if construction plans, or proposed disturbance areas are changed.	Cultural Resources	National Historic Preservation Act of 1966 Archaeological Resources Protection Act of 1979 Paleontological Resources Preservation Act of 2009

Type	Environmental Commitment	Affected Resource	Authority
General NEPA Compliance	In the event that previously undocumented threatened or endangered species are encountered during construction, the contractor shall stop construction activities until Reclamation has consulted with FWS to ensure that adequate measures are in place to avoid or reduce impacts to the species.	Threatened & Endangered Species	Endangered Species Act of 1973 as amended
General NEPA Compliance	Construction activities shall take place only in accordance with the schedule restrictions outlined in this EA and summarized in Table 4. These schedule restrictions and their spatial extents shall be clearly marked on the project construction drawings.	Wildlife	Migratory Bird Treaty Act of 1918; Bald and Golden Eagle Protection Act of 1940
General NEPA Compliance	<p>To avoid disturbance to nesting raptors, construction activities within species-specific CPW-recommended (CPW 2020) buffer distances are time-restricted as follows:</p> <p>Red-tailed hawk: no construction activity within 1/3 mile of a nest February 15 through July 15, with the following exception: pipeline construction within 1/3 mile of a nest could begin prior to February 15, so long as the construction activities were initiated prior to February 15, and operated on a daily basis until completion (it is assumed that red-tailed hawks that initiate nesting during ongoing construction activities are tolerant to such activities).</p> <p>Coopers hawk: no construction activity within 1/4 mile of an active nest April 15 through July 31, except on the National Forest if the USFS biologist determines that the nest is not active that year, or on private land if a Reclamation-approved biologist determines the nest is not active that year</p> <p>These timing restrictions and sensitive areas shall be noted on Project construction drawings.</p>	Wildlife	<p>Migratory Bird Treaty Act of 1918</p> <p>Bald and Golden Eagle Protection Act of 1940</p>

Type	Environmental Commitment	Affected Resource	Authority
General NEPA Compliance	If a previously undocumented active raptor nest is discovered within 1/3 mile or a previously unknown bald eagle nest is discovered within 1/2 mile of the Proposed Action Area during construction, construction shall cease until Reclamation can complete consultations with CPW, FWS, and BLM or USFS as appropriate.	Wildlife	Migratory Bird Treaty Act of 1918 Bald and Golden Eagle Protection Act of 1940
General BMP	Following construction, except where other finishing techniques indicated on the construction drawings, all disturbed areas shall be smoothed with tracked equipment (without back dragging blade), shaped, and contoured to as near to their pre-project conditions as practicable.	Soil, Vegetation, Weeds, Habitat	Clean Water Act of 1972 as amended
Design Feature	All drainage patterns that intersect the ditch shall be shaped to their natural flow patterns following ditch piping.	Soil, Vegetation, Habitat	Clean Water Act of 1972 as amended
General BMP	All equipment shall be cleaned before it is transported to another job site, to avoid introducing weed species from the construction area to another job site.	Vegetation, Weeds, Habitat	Delta & Gunnison County Weed Management Plans (Delta County 2020; Gunnison County 2013)

CHAPTER 5 – CONSULTATION AND COORDINATION

5.1 – Introduction

Reclamation's public involvement process presents the public with opportunities to obtain information about a given project, and allows interested parties to participate in the project through written comments. This chapter discusses public involvement activities taken to date for the Proposed Action.

5.2 – Public Involvement

Notice of the public review period and availability of the Draft EA will be distributed to private landowners adjacent to the Proposed Action, and the organizations and agencies listed in Appendix D. The publicly-available electronic version of the Draft EA will meet the technical standards of Section 508 of the Rehabilitation Act of 1973, so that the document can be accessed by people with disabilities using accessibility software tools.

CHAPTER 6 – PREPARERS

The following list contains the individuals who participated in the preparation of this EA.

Table 11. List of Preparers

Name	Agency	Title	Areas of Responsibility
Jenny Ward	Reclamation	Environmental Protection Specialist	EA review, general authorship, cultural resources
Dawn Reeder	Rare Earth Science (Consultant to the Ditch Companies)	Principal Biologist	General authorship, mapping
Levi Broyles	USFS	District Ranger	EA review
Abigail Rader	USFS	Lands & Special Uses Program Manager	EA review
Niccole Mortenson	USFS	NEPA Specialist/FOIA Coordinator	EA review
Valerie Horncastle	USFS	Wildlife Biologist	EA review

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CHAPTER 8 – ABBREVIATIONS AND ACRONYMS

Abbreviation or Acronym	Definition
BLM	U.S. Bureau of Land Management
BMP	Best management practice
CAA	Clean Air Act
CDPHE	Colorado Department of Public Health and Environment
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cfs	cubic feet per second
CPW	Colorado Parks and Wildlife
C.R.S.	Colorado Revised Statute
CRSP	Colorado River Storage Project
CWA	Clean Water Act
EA	Environmental Assessment
EIS	Environmental Impact Statement
E.O.	Executive Order
EPA	Environmental Protection Agency
ESA	U.S. Endangered Species Act
FOA	Funding Opportunity Announcement
FONSI	Finding of No Significant Impact
FWS	U.S. Fish & Wildlife Service
GIS	Geographic information system
GMUG	Grand Mesa, Uncompahgre, and Gunnison National Forests
HDPE	High-density polyethylene
Interior	U.S. Department of the Interior
mi	mile
MOA	Memorandum of Agreement
NAAQS	National Ambient Air Quality Standards
NCA	National Conservation Area
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMPM	New Mexico Principal Meridian
NPDES	National Pollutant Discharge Elimination System
NRCS	U.S. Department of Agriculture Natural Resources Conservation Service
NRHP	National Register of Historic Places
OHV	Off-highway vehicle
PBO	Programmatic Biological Opinion
PIP	Plastic irrigation pipe
PM	Principal meridian
psi	Pounds per square inch

Abbreviation or Acronym	Definition
PUP	Pesticide Use Proposal
PVC	Polyvinylchloride
RCPP	Regional Conservation Partnership Program
Reclamation	U.S. Bureau of Reclamation (also USBR)
RMP	Resource Management Plan (see BLM 2020 reference)
ROW	Right-of-way
SHPO	State Historic Preservation Officer
SMPW	Selenium Management Program Workgroup
STP	Sewage treatment plant
USACE	U.S. Army Corps of Engineers
USBR	U.S. Bureau of Reclamation
U.S.C.	United States Code
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
VRM	Visual Resource Management
WNRCS	Wildlife and Natural Resource Concepts & Solutions, LLC

APPENDIX A – SEED LIST

The following certified weed-free seed mix is approved by BLM/USFS (approval pending)/Reclamation and required for revegetating natural areas planned for reseeding.

Code	Common	Cultivar	Genus	species	lbs PLS/acre
PASM	Western wheatgrass	X-ARRIBA	<i>Pascopyrum</i>	<i>smithii</i>	4
ACHY	Indian ricegrass	rimrock	<i>Achnatherum</i>	<i>hymenoides</i>	4
ELEL5	Bottlebrush squirreltail	Tusas	<i>Elymus</i>	<i>elymoides</i>	3
SPCR	Sand dropseed	UP/X-VNS	<i>Sporobolus</i>	<i>cryptandrus</i>	0.25
ELTR	Slender wheatgrass	White River	<i>Elymus</i>	<i>trachycaulus</i>	3
POSE	Sandburg bluegrass	UP	<i>Poa</i>	<i>secunda</i>	0.5
POFE	Muttongrass	UP/Ruin Canyon	<i>Poa</i>	<i>fendleriana</i>	1
KOMA	Prairie junegrass	UP Sims Mesa	<i>Koeleria</i>	<i>macrantha</i>	0.25
CLSE	Rocky mountain bee plant	X-VNS	<i>Cleome</i>	<i>serrulata</i>	1
HEAN3	Annual sunflower	X-VNS	<i>Helianthus</i>	<i>annuus</i>	0.5
				TOTAL	17.5

APPENDIX B – ESA COMPLIANCE DOCUMENTATION

Reserved for the FWS memo and Recovery Agreements.

APPENDIX C – CULTURAL RESOURCE COMPLIANCE DOCUMENTATION

Reserved for the SHPO/Reclamation MOA.

APPENDIX D – DISTRIBUTION LIST

All landowners adjacent to the Proposed Action
Black Hills Natural Energy
Citizens for a Healthy Community
Colorado Department of Transportation
Colorado Office of Archaeology and Historic Preservation
Colorado Parks and Wildlife
Colorado River Water Conservation District
Colorado Water Conservation Board
Colorado West Land Trust
Delta Montrose Electric Association
Delta County Road & Bridge Department District #3
Delta County Planning Department
Delta County Independent
Grazing Permit Holder, BLM Jumbo Mountain Allotment
Grazing Permit Holder, BLM Oak Ridge Common Allotment
Grazing Permit Holder, BLM Reynolds-McDonald Allotment
Grazing Permit Holder, USFS West Elk Allotment
Gunnison County Community & Economic Development Department
Gunnison County Public Works Department
North Fork Water Conservancy District
TDS Telecom
Town of Paonia
Trout Unlimited
U.S. Army Corps of Engineers
U.S. Department of the Interior Bureau of Land Management, Uncompahgre Field Office
U.S. Department of Agriculture Forest Service, Paonia Ranger District
U.S. Department of Agriculture Natural Resources Conservation Service
U.S. Fish and Wildlife Service
Western Slope Conservation Center

APPENDIX E – BLM ROW PERMIT STIPULATIONS

A. Construction Plans

A1 The holder shall construct, operate, and maintain the facilities, improvements, and structures within this right-of-way in strict conformity with the Environmental Assessment (EA) and Finding of No Significant Impact – Turner and Lone Cabin Ditch Combination Salinity Reduction Project. Any relocation, additional construction, or use that is not in accord with the EA shall not be initiated without the prior written approval of the authorized officer. If there are any conflicts between the EA and the stipulations, the EA would prevail. A copy of the complete right-of-way grant, including all stipulations and approved plan(s) of development, shall be made available on the right-of-way area during construction, operation, and termination. Noncompliance with the above will be grounds for an immediate temporary suspension of activities if it constitutes a threat to public health and safety or the environment.

A3 The holder shall contact the authorized officer at least 14 days prior to the anticipated start of construction and/or any surface disturbing activities. The authorized officer may require and schedule a preconstruction conference with the holder prior to the holder's commencing construction and/or surface disturbing activities on the right-of-way. The holder and/or his representative shall attend this conference. The holder's contractor, or agents involved with construction and/or any surface disturbing activities associated with the right-of-way, shall also attend this conference to review the stipulations of the grant including the plans(s) of development.

A4 The holder shall designate a representative(s) who shall have the authority to act upon and to implement instructions from the authorized officer. The holder's representative shall be available for communication with the authorized officer within a reasonable time when construction or other surface disturbing activities are underway.

A5 The authorized officer may suspend or terminate in whole, or in part, any notice to proceed which has been issued when, in his judgment, unforeseen conditions arise which result in the approved terms and conditions being inadequate to protect the public health and safety or to protect the environment.

A16 No signs or advertising devices shall be placed on the premises or on adjacent public lands, except those posted by or at the direction of the authorized officer.

B. Cultural/Pesticides/Weeds/Survey Monuments

B1 Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

B2 Use of pesticides shall comply with the applicable Federal and state laws. Pesticides shall be used only in accordance with their registered uses and within limitations imposed by the Secretary of the Interior. Prior to the use of pesticides, the holder shall obtain from the authorized officer written approval of a plan showing the type and quantity of material to be used, pest(s) to be controlled, method of application, location of storage and disposal of containers, and any other information deemed necessary by the authorized officer. Emergency use of pesticides shall be approved in writing by the authorized officer prior to such use.

a. As of the date of this grant, the following is deemed necessary by the authorized officer if using herbicides:

i. If herbicides are to be used, a Pesticide Use Proposal (PUP) will be applied for from the BLM 30 days prior to treating any noxious weeds (they are good for 3 years).

ii. If herbicides were approved and used, a Pesticide Application Record (PAR) will be turned into the BLM 24 hours post-application.

B3 The holder shall be responsible for weed control on disturbed areas within the limits of the right-of-way. The holder is responsible for consultation with the authorized officer and/or local authorities for acceptable weed control methods (within limits imposed in the grant stipulations).

a. As of the date of this grant, the authorized officer's acceptable weed control methods include:

i. All vehicles and heavy equipment will be free of dirt and debris before engaging in maintenance or new construction on BLM lands.

ii. A noxious/invasive species inventory will be completed of the area prior to new construction or maintenance or significant disturbance.

iii. Noxious weeds will be treated annually for a minimum of three years following construction and then for the life of the right-of-way as necessary.

B4 The holder shall protect all survey monuments found within the right-of-way. Survey monuments include, but are not limited to, General Land Office and Bureau of Land Management Cadastral Survey Corners, reference corners, witness points, U.S. Coastal and Geodetic benchmarks and triangulation stations, military control monuments, and recognizable civil (both public and private) survey monuments. In the event of obliteration or disturbance of any of the above, the holder shall immediately report the incident, in writing, to the authorized officer and the respective installing authority if known. Where General Land Office or Bureau of Land Management right-of-way monuments or references are obliterated during operations, the holder shall secure the services of a registered land surveyor or a Bureau cadastral surveyor to restore the disturbed monuments and references using surveying procedures found in the Manual of Surveying Instructions for the Survey of the Public Lands in the United States, latest edition. The holder shall record such survey in the appropriate county and send a copy to the authorized officer. If the Bureau cadastral surveyors or other Federal surveyors are used to restore the disturbed survey monument, the holder shall be responsible for the survey cost.

C. Civil Rights/Corp of Engineers 404 Permits

C1 The holder of this right-of-way grant or the holder's successor in interest shall comply with Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d et seq.) and the regulations of the Secretary of Interior issued pursuant thereto.

C2 The holder shall comply with the construction practices and mitigating measures established by 33 CFR 323.4, which sets forth the parameters of the "nationwide permit" required by Section 404 of the Clean Water Act. If the proposed action exceeds the parameters of the nationwide permit, the holder shall obtain an individual permit from the appropriate office of the Army Corps of Engineers and provide the authorized officer with a copy of same. Failure to comply with this requirement shall be cause for suspension or termination of this right-of-way grant.

F. Construction

F1 No construction or routine maintenance activities shall be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts in excess of 3 inches deep, the soil shall be deemed too wet to adequately support construction equipment.

F3 The holder shall conduct all activities associated with the construction, operation, and termination of the right-of-way within the authorized limits of the right-of-way.

F4 Construction holes left open overnight shall be covered. Covers shall be secured in place and shall be strong enough to prevent livestock or wildlife from falling through and into a hole.

F5 All design, material, and construction, operation, maintenance, and termination practices shall be in accordance with safe and proven engineering practices.

G. Cattleguards/Fences

G4 When construction activity in connection with the right-of-way breaks or destroys a natural barrier used for livestock control, the gap, thus opened, shall be fenced to prevent the drift of livestock. The subject natural barrier shall be identified by the authorized officer and fenced by the holder as per instruction of the authorized officer.

H. Drainage Structures

H6 The holder shall construct low-water crossings in a manner that will prevent any blockage or restriction of the existing channel. Material removed shall be stockpiled for use in rehabilitation of the crossings.

H7 The holder shall design and construct adequate water-control structures in each drainage crossing to prevent excessive erosion along the pipeline and protect the pipeline from the natural erosion process within the drainage.

I. Construction Access

I1 Specific sites as identified by the authorized officer (e.g., archaeological sites, areas with threatened and endangered species, or fragile watersheds) where construction equipment and vehicles shall not be allowed, shall be clearly marked onsite by the holder before any construction or surface disturbing activities begin. The holder shall be responsible for assuring that construction personnel are well trained to recognize these markers and understand the equipment movement restrictions involved.

I2 The holder shall provide for the safety of the public entering the right-of-way. This includes, but is not limited to, barricades for open trenches, flagmen/women with communication systems for single-lane roads without intervisible turnouts and attended gates for blasting operations.

I3 The holder shall permit free and unrestricted public access to and upon the right-of-way for all lawful purposes except for those specific areas designated as restricted by the authorized officer to protect the public, wildlife, livestock, or facilities constructed within the right-of-way.

I4 Construction-related traffic shall be restricted to routes approved by the authorized officer. New access roads or cross-country vehicle travel will not be permitted unless prior written approval is given by the authorized officer. Authorized roads used by the holder shall be rehabilitated or maintained when construction activities are complete as approved by the authorized officer.

I7 If "cross country" access is necessary, clearing vegetation or grading a roadbed will be avoided whenever practicable. All construction and vehicular traffic shall be confined to the right-of-way or designated access routes, roads, or trails unless otherwise authorized in writing by the authorized officer. All temporary roads used for construction shall be rehabilitated after construction is completed. Only one road or access route will be permitted to each site requiring access.

N. Fire

N3 During conditions of extreme fire danger, operations shall be limited or suspended in specific areas, or additional measures may be required by the authorized officer.

Q. Right-of-Way Maintenance

Q2 Holder shall maintain the right-of-way in a safe, usable condition, as directed by the authorized officer. (A regular maintenance program shall include, but is not limited to, blading, ditching, culvert installation, and surfacing).

Q3 Except rights-of-way expressly authorizing a road after construction of the facility is completed, the holder shall not use the right-of-way as a road for purposes other than routine maintenance as determined necessary by the authorized officer in consultation with the holder.

R. Hazardous Waste/Liability/Waste Disposal

R1 Construction sites shall be maintained in a sanitary condition at all times; waste materials at those sites shall be disposed of promptly at an appropriate waste disposal site. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.

R2 A litter policing program shall be implemented by the holder, and approved of in writing by the authorized officer, which covers all roads and sites associated with the right-of-way.

R3 The holder(s) shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder(s) shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, et seq.) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

R4 The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C 9601, et seq. or the Resource Conservation and Recovery Act of 1976, 42 U.S.C. 6901, et. seq.) on the right-of-way (unless the release or threatened release is wholly unrelated to the right-of-way holder's activity on the right-of-way). This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

X. Air Quality

X2 The holder shall meet Federal, State, and local emission standards for air quality.

Fire Prevention and Control Stipulations

1. The Holder shall indemnify the United States for any and all injury, loss or damage to life or property, including fire suppression costs, the United States may suffer as a result of losses, claims, demands or judgments caused by Holder's use or occupancy of public lands under this grant or permit.

2.The Authorized Officer may suspend or terminate in whole, or in part, any notice to proceed which has been issued when, in his or her judgment, conditions arise which result in the approved terms and conditions being inadequate to protect the public health and safety or to protect the environment.

3.Holder shall maintain the ROW in a safe, usable condition.

5.When performing construction and maintenance (including emergency repairs) activities during the “closed” fire season (May 10 – October 20), as set by Colorado State Law, or during any other closed fire season prescribed by the BLM Colorado State Director, the Holder, including any persons such as contractors, etc. working on their behalf, shall equip at least one on-site vehicle with firefighting equipment, including, but not limited to, fire suppression hand tools (i.e. shovels, rakes, Pulaski's, etc.), a 16-20 pound fire extinguisher, and a sufficient supply of water for initial attack, with a mechanism to effectively spray the water (i.e. backpack pumps, water sprayer, etc.).

7.During conditions of extreme fire danger or when the State of Colorado and/or the BLM Colorado State Director issues a fire restriction order, operations shall be limited or suspended in specific areas, or additional mitigation measures may be required by the BLM Authorized Officer.

8.In accordance with 43 CFR 2805.12(d) (or subsequent revisions), the Holder shall do everything reasonable to prevent fires on or in the immediate vicinity of the ROW. The Holder will immediately report fires to the BLM local fire dispatch at 970-249-1010 and take all necessary fire suppression actions, when safe to do so, with their personnel and equipment on any fires they cause to ignite.

9.Holder shall maintain the condition of the origin area of the fire from further damage to enable the Fire Investigator to properly assess the origin area and cause of the fire. The Holder shall report to the Fire Investigator or BLM Incident Commander and shall not enter into the origin area on fires unless given permission to do so.

10. The Holder will cooperate with the BLM in its efforts to investigate, suppress and respond to all future fires. The duty to “cooperate” includes, but is not limited to, the following duties regardless of whether BLM is on the scene:

i. The duty to provide the BLM local fire dispatch 970-249-1010 with reasonable and timely notice concerning all fires involving the Holder's facilities, or discovered during routine operations.

ii. The duty to share factual information with the BLM concerning fires, including but not limited to the names of Holder's employees and/or contractors with knowledge of the incident; and to allow employees and/or contractors to be interviewed by BLM's investigators regarding factual information relating to a fire.

iii. It is the duty of the Holder to preserve the point of ignition, fire scene and reasonably account to the BLM for Holders actions taken at the scene of a fire.

iv. The duty to minimize disturbance of potential evidence located at the scene; to not engage in any evidence collection or destructive testing without BLM and or its counsel's express written consent; to properly handle and preserve any evidence collected and to make all documents and evidence, including expert reports, available to the BLM in a rapid and timely manner upon request of BLM and/or its counsel.

v. The duty to not hamper the BLM investigation of origin and cause of the fire; and to reasonably assist BLM's investigation at the scene.

vi. The duty to provide information upon request of BLM and/or its counsel concerning the construction, monitoring, inspection, maintenance and/or repairs of any of Holder's facilities located at or adjacent to a fire.

vii. The duty to provide information upon request of BLM and/or its counsel concerning the monitoring, inspection, and or alteration by Holder of any condition on public land, including but not limited to, public land adjacent to any of the Holder's facilities.

viii. The duty, during BLM fire suppression efforts: to defer to and follow the instructions of the BLM's Incident Commander regarding activities within the boundaries of the fire and checking in and out of the fire; and to recognize BLM's primary authority over the incident scene.