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RECLAMATION

Draft Environmental Assessment Pilot Rock Ditch Piping Project

Colorado River Basin 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.

Draft Environmental Assessment Pilot Rock Ditch Piping Project

**Bureau of Reclamation Colorado River Basin Salinity Control
Program**

Upper Colorado Basin: Interior Region 7

Western Colorado Area Office

Prepared for Reclamation by SGM, Inc., Grand Junction Office

Cover Photo: Representative project site conditions (SGM, May 2020).

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CHAPTER 1 – INTRODUCTION

This Environmental Assessment (EA) has been prepared to disclose and evaluate the potential environmental effects of the Pilot Rock Ditch Company's proposed Pilot Rock Ditch Piping Project. The Federal action evaluated in this EA is whether the Bureau of Reclamation (Reclamation) would authorize the use of Federal funds to implement the Pilot Rock Ditch Piping Project. In addition, the USDA Forest Service (USFS) has a connected action of issuing a Temporary Construction Permit and Special Use Authorization to allow project activities on lands administered by the USFS.

This document has been prepared in compliance with the National Environmental Policy Act (NEPA) and the Council on Environmental Quality's (CEQ) NEPA regulations at 40 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 includes two separate components, the Piping Project and the Habitat Replacement Project. These two Projects would occur on two disjunct areas, the Piping Project Area (Figure 1) and the Habitat Replacement Project Area (Figure 2).

The Piping Project Area encompasses the portion of the Pilot Rock Ditch (PRD) to be piped, along with associated structures and access roads, and one staging area (see Figure 1). The Pilot Rock Ditch Company (PRDC) is a non-profit corporation formed in 2019, and the corporation holds a 19.8 cfs direct flow water right from Little Coal Creek, tributary to the Smith Fork of the Gunnison River. The Piping Project Area is located approximately 4 miles east of Crawford, in Delta County, Colorado, in Sections 22 and 23, Township 15 South, Range 91 West, 6th Principal Meridian.

The Proposed Action would also include activities at a Habitat Replacement Project Area, to mitigate for habitat losses which would result from implementation of the Piping Project. The Habitat Replacement Project lies on private land along Doug Creek approximately 5 miles south of the PRD, tributary to Muddy Creek and Crawford Reservoir (see Figure 2). The Habitat Replacement Project is located in Sections 22, 23, and 27, Township 51 North, Range 6 West, New Mexico Principal Meridian, in Montrose County, Colorado.

Throughout this document, the components of the Proposed Action that are located in the PRD and constitute the piping of a portion of the PRD are referred to as the "Piping Project." The surrounding vicinity that is included in the environmental analysis is referred to as the "Piping Project Area."

Throughout this document, the component of the Proposed Action that is located on Doug Creek and constitutes habitat replacement activities is referred to as the "Habitat Replacement Project."

The surrounding vicinity that is included in the environmental analysis is referred to as the “Habitat Replacement Area.”

1.2 – Need for and Purpose of the Proposed Action

The need for the Proposed Action is to reduce salinity concentrations in the Colorado River Basin. The purpose of the Proposed Action is to comply with the Colorado River Basin Salinity Control Act (Act). The Proposed Action would comply with the Act by reducing infiltration and seepage from PRD into underlying saline formations through piping of the PRD.

The need for the connected action by the USFS is to allow for the necessary components of the Proposed Action to occur on USFS-managed lands. The purpose of the USFS action is to comply with the Forest’s Resource Management Plan and the analysis requirements of NEPA.

Improvements to the PRD would use best practices to reduce salinity and selenium in the Colorado River, supporting stewardship of both quantity and quality of local water resources. Reducing seepage losses and increasing the reliability of irrigation delivery systems supports the ability of local agriculture to remain resilient to increasingly varied fluctuations in water supply. The estimated salt reduction total for this project is 665 tons/year.

Figure 1: Map of Piping Project Area

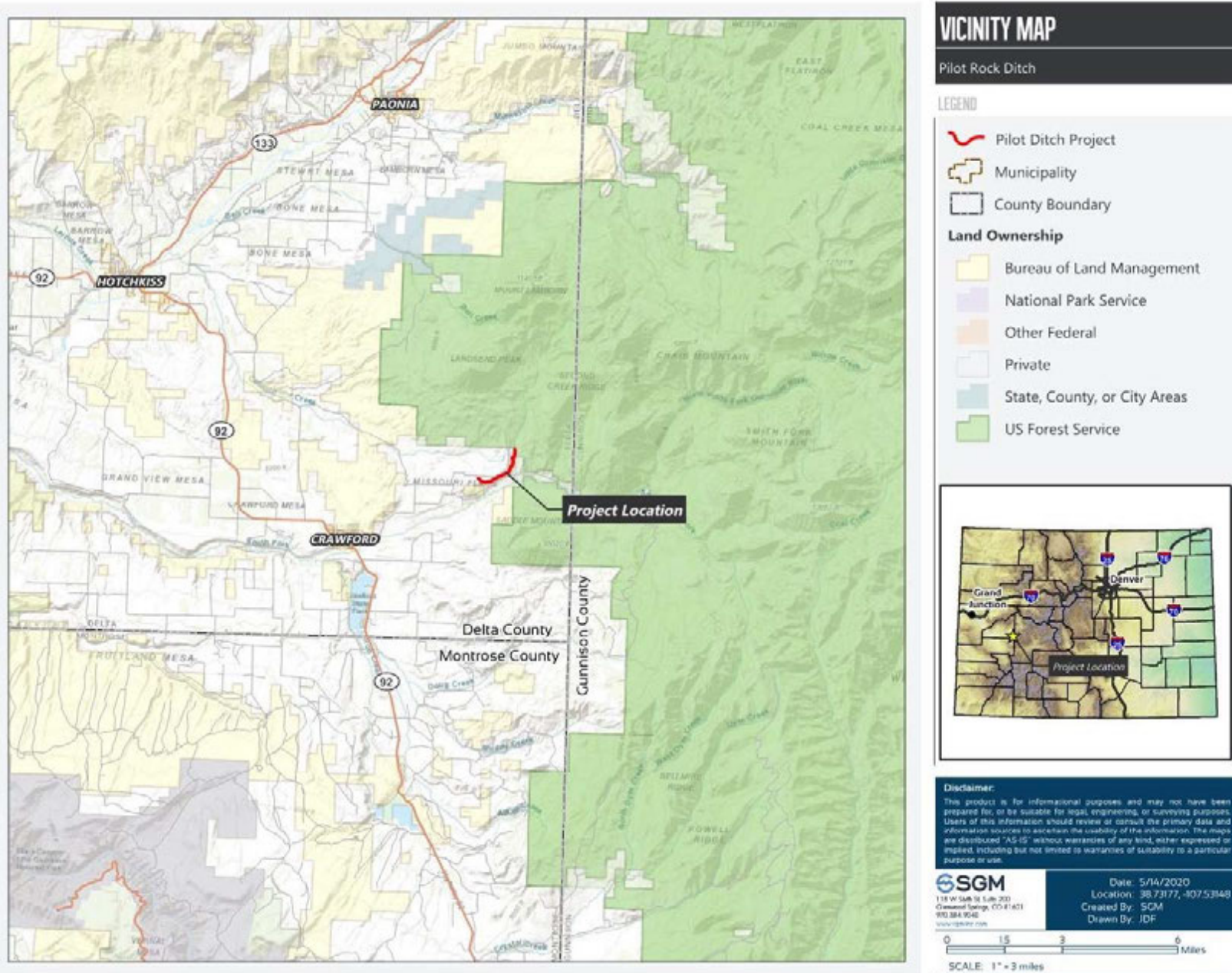
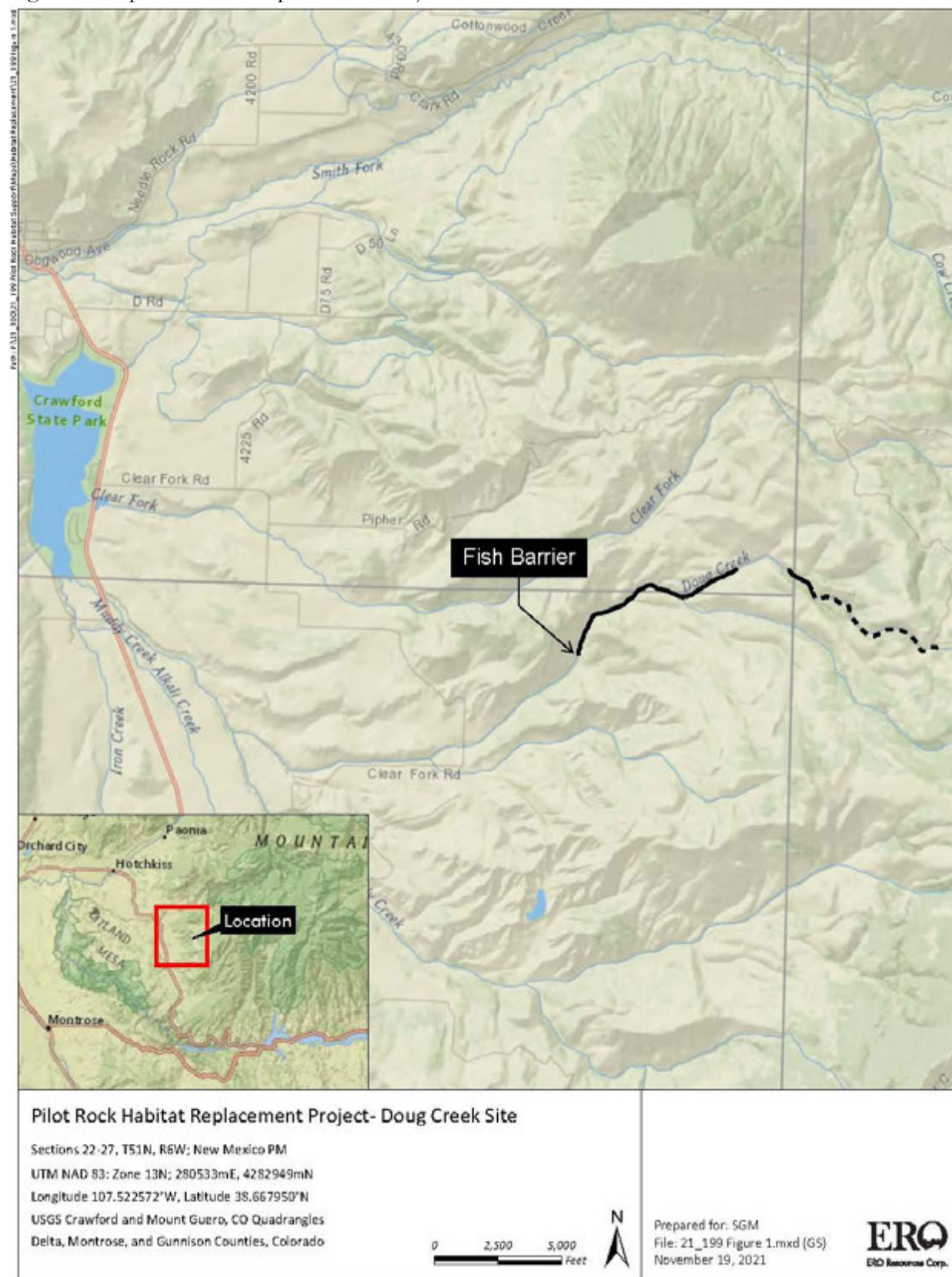


Figure 2: Map of Habitat Replacement Project Area



1.3 – Decision to be Made

Reclamation will decide whether to authorize the use of Federal funds for PRDC to implement the Proposed Action.

The USFS will decide whether to issue a temporary construction permit for use of the existing access, issue long term special use authorization of the existing access, and issue a special use authorization to include appurtenances related to the Proposed Action in the easement.

This EA has been prepared to evaluate adverse and beneficial effects of the Proposed Action and No Action alternatives, and to provide a basis for decisions by Reclamation on whether to fund the Proposed Action, which would be implemented by PRDC. Under the Proposed Action, Reclamation would authorize the use of federal funds to pipe the existing PRD for the purpose of salinity control in the Colorado River Basin. Once funded, PRDC would construct, operate, and maintain the pipeline on 8,200 linear feet of the Pilot Rock Ditch. A project life of 50 years has been identified for this project for the purpose of calculating a project cost per ton of salt controlled over a definite timeframe; however, the functional life of the piping project is expected to be longer than 50 years with proper operation and maintenance. If Reclamation decides not to authorize the use of federal funds to fund the proposed Project, the PRD would not be replaced with a pipeline, and the canal would continue to operate as an open canal.

1.4 – Background

The PRD has delivered irrigation water since 1888, although the PRDC was not officially incorporated until April 2019. The PRD consists of 1.5 miles of earthen ditch from the diversion on Little Coal Creek to the service area. Another 1.8 miles of earthen lateral ditches deliver water to users. In total, the PRD system consists of approximately 3.4 miles of earthen canals delivering irrigation & stock water to 12 users and 345 irrigated acres of grass pasture and hay production. PRD diverts directly from Little Coal Creek, a tributary to the Smith Fork. There is no upstream storage in this system.

PRDC was incorporated in response to a major canal failure along Needle Rock Road in the spring of 2019. PRDC incorporated, contracted with Colorado Water Conservation Board, and supervised repair of the ditch by a local contractor. 120 feet of 48” pipe and 500 feet of temporary liner was installed to repair the break in the main canal above Needle Rock Road. This experience motivated the water users to seek further funding to proactively plan for major improvements to their ditch.

The partnership between local irrigation companies and Reclamation to improve critical irrigation infrastructure puts Reclamation and Department of the Interior in a favorable, supportive role with the agricultural community in Delta County where 72% of the area is federally managed public lands. The proposed improvements to the PRD would help meet not only the goals of the Salinity Control Program, but also meet the following goals of the Colorado Water Plan:

- Supporting a vibrant agricultural economy
- Improving the efficiency of water delivery infrastructure; and

- Promoting a strong & healthy environment by improving water quality in the Colorado River, including aquatic habitat for the four endangered fish species.

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 has recently utilized Salinity Control Program funds for the following salinity control projects in the vicinity of the proposed Project Area (Figure 3):

- Bostwick Park Salinity Control Project
- C Ditch/Needle Rock Piping Project
- Cattleman's Ditches Pipeline Project Phases I and II
- Clipper Center Lateral Piping Project
- Eastside Laterals Piping Projects ("UVWUA Project 9")
- Fire Mountain Canal Piping Project
- Forked Tongue/Holman Ditch Salinity Control Project
- Gould Canal Improvement Projects A & B
- Grandview Canal Pipeline Project
- Lower and Upper Stewart Ditch Pipeline Projects
- Minnesota Canal & Reservoir Company Salinity Control Projects I and II
- Minnesota L75 Piping Project
- Needle Rock/Lone Rock Piping Project
- North Delta Irrigation Canal Salinity Control Project
- Orchard Ranch Piping Project
- Rogers Mesa WDA Slack & Patterson Laterals Piping
- Spurlin Mesa Lateral Piping Project ("Clipper Project 4")
- Turner/Lone Cabin Combination Piping Project
- Waterdog & Shinn Park Laterals Piping Project
- Zanni Lateral Piping Project

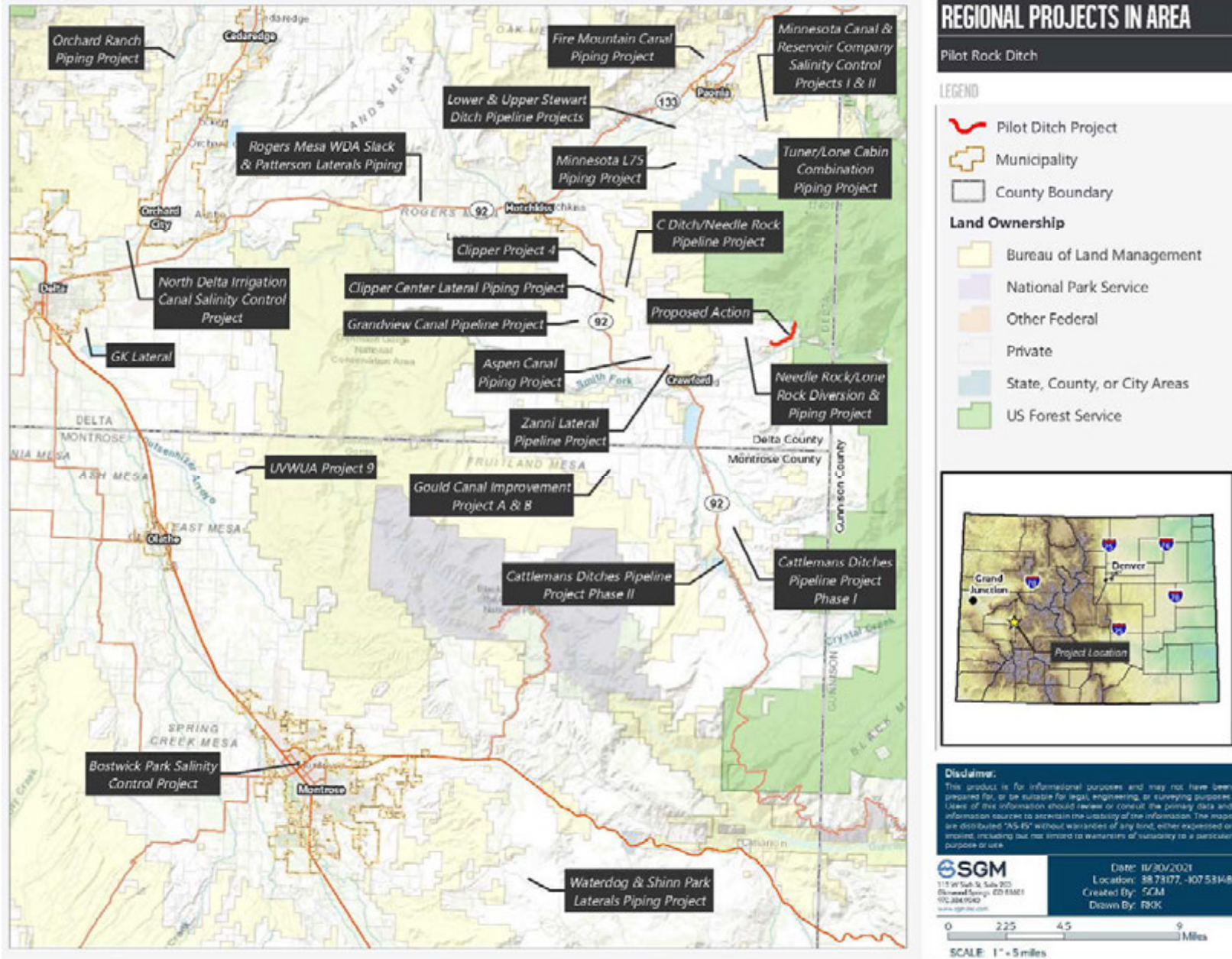
The Proposed Action would be consistent with, and function in concert with, these existing salinity reduction projects to address the need to reduce salinity concentrations in the Colorado River Basin.

1.5.2 – Colorado River Storage Project Basin Funds Projects

Reclamation's Western Colorado Area Office recently utilized Colorado River Storage Project (CRSP) Basin Funds to implement the following piping projects on CRSP-participating projects in the vicinity of the proposed Project Area (Figure 3):

- Smith Fork Project: Aspen Canal Piping Project
- Uncompahgre Project: GK Lateral Piping Project

Figure 3: Regional Salinity Control Projects



1.5.3 – National Resources Conservation Service Regional Conservation Partnership Program Projects

The National Resources Conservation Service's (NRCS) Regional Conservation Partnership Program (RCPP) recently utilized RCPP funds to implement the following piping projects in the vicinity of the proposed Project Area (Figure 3):

- Needle Rock Diversion Project
- Grandview Canal Pipeline Project
- Crawford Clipper Ditch Master Plan Projects (various)

1.6 – Scoping & Public Comment

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. Forest Service (USFS), Grand Mesa, Uncompahgre, and Gunnison National Forest, Paonia Ranger District, Paonia, CO
- Colorado State Historic Preservation Office (SHPO), Denver, CO
- Colorado Parks and Wildlife (CPW), Gunnison, CO
- U.S. Fish and Wildlife Service (USFWS), Ecological Services, Grand Junction, CO
- U.S. Army Corps of Engineers (USACE), Colorado West Regulatory Branch, Grand Junction, CO
- Southern Ute Tribe, Ute Mountain Ute Tribe, and Ute Indian Tribe (Uintah and Ouray Reservation)

Coordination occurred via meetings, phone calls, and letters from April 2020 through December 2021.

In compliance with NEPA, this Draft EA will be available for public comment. Any public comments received within the 30-day comment period will be included as an Appendix to the Final EA. Notice of the availability of this Draft EA will be distributed to private landowners adjacent to the Proposed Action, and the organizations and agencies listed in section 5.2.

CHAPTER 2 – PROPOSED ACTION AND ALTERNATIVES

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

2.1 – Alternatives Considered but Not Carried Forward

One other alternative was considered by Reclamation but was eliminated from detailed analysis in accordance with 40 CFR 1502.14. This alternative initially considered included a project to combine the upper Pilot Rock and Gove ditches. This alternative was found to not be sustainable as critical landowner and water user support did not exist to pursue such a project.

2.2 – No Action Alternative

Under the No Action Alternative, Reclamation would not provide funding for the piping of the PRD. The existing PRD would continue to be maintained as an open, unlined ditch. Maintenance activities would continue to include dredging of sediment; control of vegetation, invasive weeds, and rodents along the banks; and monitoring and control of seepage and leaks along the canal. The existing open canal and maintenance roads would continue to be used. The measured and estimated levels of seepage and salinity loading would continue.

2.3 – Proposed Action

Under the Proposed Action, Reclamation would provide funding to the PRDC through the Salinity Control Program to support the Piping Project, including the upper 8,173 feet of the PRD (approximately 1.55 miles). Reclamation would also provide funding to support the completion of the associated Habitat Replacement Project.

Approximately 1200 feet of the PRD which is proposed for piping is located on public land administered by the USFS. Therefore, the USFS has a connected action of issuing special use authorizations for project activities on lands administered by the USFS not covered by existing authorizations.

The details and specific components of the Proposed Action are shown on Figure 4 (Piping Project Area) and Figures 5-8 (Habitat Replacement Project Area).

The total surface disturbance for the Proposed Action is summarized below (Table 1). The majority of the earthwork for the project would be completed with tracked equipment (track hoes and dozers). The Piping Project would require approximately 1,000 cubic yards of fill; the entirety of which would be obtained from the project area by excavation of the existing canal road. The Habitat Replacement Project does not involve any mechanized earthwork.

The Piping Project would occur largely within the existing disturbed area of the PRD, and would involve restoration of approximately 1.9 acres along the ditch alignment to reclaim the overburden on the buried pipeline, along with approximately 2 acres of staging area. The existing canal road, a poorly maintained ATV trail located on top of the downhill embankment (minimum of ~50 inches wide) would not be restored, and instead would be expanded and improved to allow for future maintenance activities. In addition, areas where structures are installed would not be restored (approximately 0.3 acre). All restored areas would be reshaped to blend with existing topography and revegetated following project construction.

The Habitat Replacement Project would be located at an existing unvegetated structure, and the remainder consists of vegetation improvement through hand-planting of native vegetation. No disturbance or vegetation removal is proposed.

For all aspects of the Proposed Action, Best Management Practices (BMPs) would be used to minimize impacts of the project on the human and ecological environments. BMPs and other protective measures are incorporated as part of the Proposed Action and are described and analyzed as part of the Proposed Action in **Error! Reference source not found.** (Affected Environment & Environmental Consequences), and are summarized in **Error! Reference source not found.** (Environmental Commitments).

Table 1. Pilot Rock Ditch Piping Project Proposed Footprint.

Proposed Action Component	Total Acres of Impact	Acres to Restore/Revegetate
Existing Access Roads	0.0	0.0 ^[1]
Pipeline Overburden in existing trench (approximately 10-ft wide by 8200-ft long)	1.9	1.9
Excavated and Compacted Canal Road (approximately 10-ft wide by 8200-ft long)	1.9	0.0 ^[2]
Structure Construction	0.3	0.0 ^[3]
Staging Areas (one identified area)	2.0	2.0 ^[4]
Habitat Replacement Project	N/A	N/A ^[5]
TOTAL	6.1	3.9

^[1] The existing access roads require maintenance (grading and vegetation trimming) but no new areas of disturbance are proposed

^[2] The canal road would be maintained free of weeds and vegetation for ongoing inspection and maintenance needs

^[3] The proposed structures are located within the existing disturbance footprint, and would be maintained free of weeds and vegetation for ongoing inspection and maintenance needs

^[4] The staging area is located entirely on an existing irrigated pasture. Restoration would be limited to repairing impacts to the pasture vegetation

^[5] No disturbance or vegetation removal is proposed as part of the Habitat Replacement Project.

2.3.1 – Pipeline Construction in Existing Ditch

Under the Piping Project component of the Proposed Action, approximately 1.55 miles of open canal would be converted into buried pipeline. Prior to construction, pipe and other materials would be transported to the staging area and stockpiled. The pipe would be transported to the PRD and set

in place within the construction corridor. Large trees and brush within the disturbance corridor would either be removed or mulched on-site and added to the top layer of fill over the pipeline.

The existing canal bed is already below grade, therefore the canal bed will be excavated only to the extent necessary to reach a firm subgrade. The width of temporary disturbance across the corridor would generally be 20 feet to remain within the ditch easement. Where possible, the top layer of soil would be separated from subsurface fill, set aside, and used for restoring the disturbed ground. Subsurface materials would be separated into fines and larger material, with fines used for bedding and backfill.

Following placement and welding of the 27" PVC pipe within the trench, clean native fill acquired from excavation of the canal road would be placed around the pipe. Loose bedding material will be placed to line the subgrade, and the pipe will be lowered into the trench. The pipe will be buried in native backfill, compacted around the pipe itself. Sufficient backfill will be placed to provide 2 feet of overburden, with the overburden compacted by bucket only. Fittings will be installed similarly, but with slightly-increased depth of compacted backfill. Backfill details are given in the project plans. Salvaged topsoil will be placed on top of the overburden to achieve final grade. 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. Sufficient fill for the project is expected to be produced by excavation of the canal road.

Environmental commitments, including appropriate dust suppression, flagging, and signage, would be followed to minimize effects on the natural and human environment during construction (see Chapter 4).

2.3.2 – Structure Construction

The Piping Project will include several structures in addition to the welded 27" PVC pipe. All structures except the transition manhole and tie-in to the existing turnout are located within the first 200 linear feet of the PRD, on USFS-managed lands. All new structures would be confined to the existing 20-foot wide easement.

The following proposed structures are located on USFS-managed lands, in close proximity to each other:

- A new headgate replacing the existing headgate at the same diversion point on Little Coal Creek, including an improved overflow spillway, sediment flush, and trash rack. This structure would be constructed of pre-fabricated components and cast concrete, set on class 6 roadbase. 48" HP Storm pipe would exit the headgate and discharge to the settling basin.
- A new 75-foot by 5-foot (bottom-width) settling basin at the pipe inlet, lined per Reclamation requirements. The settling basin would be excavated within the existing ditch prism, and lined with geotextile fabric overlain by shotcrete.
- The outlet of the settling basin would incorporate a new measuring flume with a stilling well and data logger, and the 27" PVC pipe would tie into the discharge point of the flume. The 27" PVC pipe would continue down the remainder of the ditch alignment.

At the western terminus of the Piping Project, the 27" PVC pipe would tie into a 72" diameter pre-cast transition structure with manhole access. 48" HP Storm pipe would exit the transition manhole structure outlet and would tie directly into the existing Turnout #1 structure.

2.3.3 – Restoration

The Piping Project would create an estimated 6.1 acres of surface disturbance, generally on areas of existing disturbance. Only 3.9 acres require restoration (Table 1). The extent of necessary soil and vegetation restoration for the Piping Project has been minimized by the use of existing access roads and the confinement of the pipeline to the existing ditch easement and corridor. The majority of the construction corridor would be used as an access and inspection road after construction, and would be permanently maintained sufficiently free of woody vegetation to allow the passage of vehicles for routine inspection and maintenance. Vegetation restoration needs are limited in the temporary staging area because the staging area is located in an irrigated pasture and no excavation or subsurface disturbance is proposed. The existing pasture vegetation is expected to recover from the temporary impact of material storage within one season. The staging area (2.0 acres) would be reseeded with pasture grass if necessary. Significant vegetation restoration efforts will be needed only on the overburden of the pipeline itself, comprising 1.9 acres.

Following pipeline construction, the overburden of the pipe would be covered by salvaged topsoil, and revegetated for stability and erosion resistance. The revegetation would take place across the several distinct vegetative communities traversed by the PRD, including mixed mountain shrub within the Little Coal Creek drainage area, pinyon-juniper woodlands along the majority of the Project area, and non-irrigated pasture at the western end of the pipeline. In consultation with USFS, an upland seed mix has been selected that is appropriate for use on the USFS-managed lands and the entirety of the Piping Project overburden restoration area. The seed mix includes 25% slender wheatgrass (*Elymus trachycaulus* ssp. *trachycaulus*), 25% western wheatgrass (*Pascopyrum smithii*), 40% Sandberg bluegrass (*Poa secunda* ssp. *sandbergii*), and 10% muttongrass (*Poa fendleriana*). See Environmental Commitment 25 (Chapter 4).

Revegetation would follow each construction phase as appropriate and at the most effective season for soil stabilization and seeding success. Reclamation seeding would preferentially occur as late as possible during the fall season, preferably on snow, to maximize seed germination rates. PRDC would be responsible for complying with the reclamation standards established for the Proposed Action, including monitoring and continued revegetation efforts as needed following project construction.

The overburden on the pipeline would be graded to a 2% slope on top, and a 1.5:1 slope on the side, with salvaged topsoil placed last. The specified upland seed mix would be used at a rate of 40 seeds per square foot (see Environmental Commitment 26, Chapter 4). Methods for ensuring vegetation success include planting at the appropriate time for germination with broadcast seeding methods and watering, as well as mulch to conserve moisture as necessary. All reclamation activity would be performed from the surface of the adjacent access road. As necessary, to ensure replanted vegetation is not overtopped by weeds, a broadleaf spray would be applied at key times by the PRDC, in the course of weed control efforts on the ditch road as well. PRDC would continue to be responsible for complying with the Colorado Noxious Weed Act, including obtaining appropriate pesticide use permits or hiring contractors with appropriate permits, and for managing listed weed species within the ditch easement.

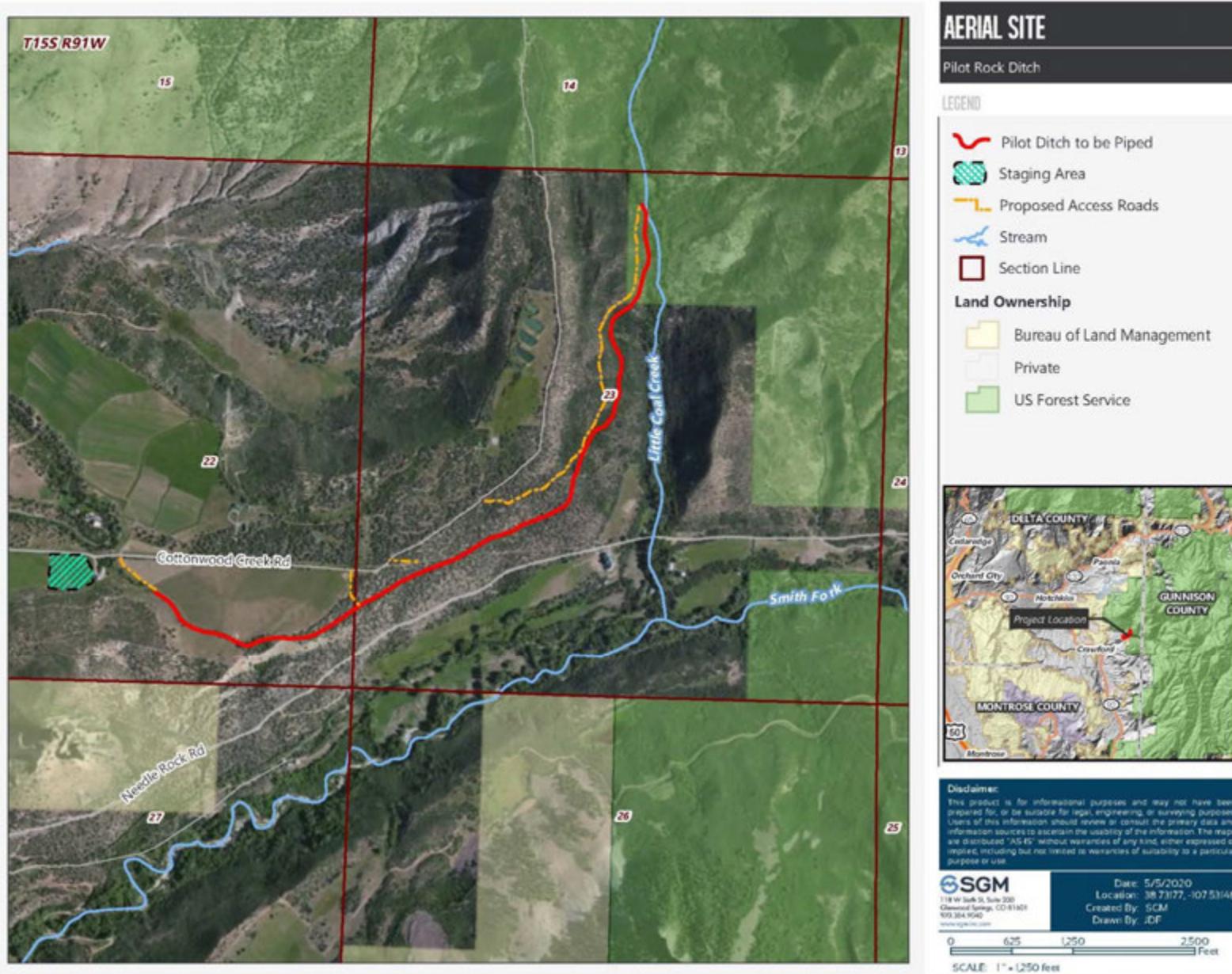
The staging areas would be revegetated following construction, if necessary. Given that no excavation is proposed in the staging area, and that the surface is currently stabilized by a dense growth of agricultural pasture grass, the vegetation is expected to recover quickly after the staged equipment and materials are removed, and only limited reclamation efforts are anticipated to be required. To the minimal extent necessary, the surface would be graded to eliminate minor rutting and to match the surrounding ground surface. The impacted areas would be seeded using an agricultural pasture seed mix selected by the private landowners. Weed control efforts would extend to these areas, although the limited disturbance and robust existing pasture grass vegetation is expected to largely exclude adventitious weed species.

2.3.4 – Right-of-Way and Land Ownership

PRDC is a privately-owned ditch company. No realignments are planned; the ditch would remain in the existing alignment throughout. All lands are private except for the first 1,100 linear feet, which are located in the Gunnison National Forest, managed by the USFS Paonia Ranger District. The portion of the PRD located on the National Forest is within a 20-foot wide ditch easement and the work would remain within that easement.

The Habitat Replacement Project is located entirely on lands belonging to the Higher Ground Ranch, which has been a partner in developing the habitat enhancements. The Higher Ground Ranch is in the process of acquiring a conservation easement for the property, which would include the Habitat Replacement Project Area and protect the habitat enhancements in perpetuity. That conservation easement has not been completed at the time of this report, however an interim protective mechanism would be recorded until such time as the conservation easement is in place (see the Habitat Replacement Plan, ERO 2021).

Figure 4: Piping Project Area Detail



2.3.5 – Habitat Replacement

As part of the Proposed Action, improvements to habitat would occur on the Higher Ground Ranch, a private property located approximately 5 miles south of PRD and the Piping Project Area (Figures 5-8).

Habitat replacement activities would compensate for the 16.99 habitat units that are expected to be lost due to the loss of canal seepage after pipeline installation (see Habitat Replacement Plan, ERO 2021). In-stream habitat replacement procedures (Reclamation 2018, 2021) were used to calculate replacement credits along 9,000 linear feet of Doug Creek where it flows through property owned by the Higher Ground Ranch. As part of the Habitat Replacement Project, riparian shrubs would be planted along stretches of the creek that have been over-grazed, and a fish barrier would be installed at the downstream end to protect a genetically pure green lineage Colorado River Cutthroat Trout (cutthroat trout) found to be in the stream in 2020 (CPW 2020). An estimated 17.1 credits would be provided by the habitat replacement project.

The fish barrier would be a 1:1 replacement of an existing gate diverting water out of Doug Creek into the Texas Ditch. The barrier would consist of a 4-foot high by 8-inch deep by 10-foot wide concrete apron, a flume diverting water into the ditch, and a 4.5-foot drop onto native rock at the downstream outlet into the creek, effectively preventing upstream travel for non-native fish. The barrier location and design has been developed with the assistance and approval of CPW (E. Gardunio, pers. comm., 2021).

A staging area adjacent to the Texas Gate would be used during habitat construction (ERO 2021), including fish barrier construction and riparian vegetation restoration. Access would be by All-Terrain Vehicle (ATV), for transporting plants and tools. The fish barrier would be constructed adjacent to the road and about 15 feet downstream of the road crossing, at the existing location of the Texas Gate and within the existing extent of disturbance.

The riparian vegetation work would be performed on sections of Doug Creek upstream from the Texas Gate and the fish barrier. Degraded sites that are reasonably accessible by ATV or foot would be selected and prepared for seeding. These areas would be reseeded with native grasses and forbs to mitigate weed cover, and containerized woody shrub species would be planted in the reseeded areas. The planting material could consist of approximately 60 containerized shrubs, including native plants such as chokecherry, chokeberry, sumac, snow berry, and buffalo berry. Shrubs would be hand-planted in the riparian area adjacent to the stream. Light equipment (such as a harrow behind a truck or ATV) may be used to roughen the ground surface, where needed, and seeds hand-broadcast or drilled.

Figure 5: Habitat Replacement Project Detail, Map A

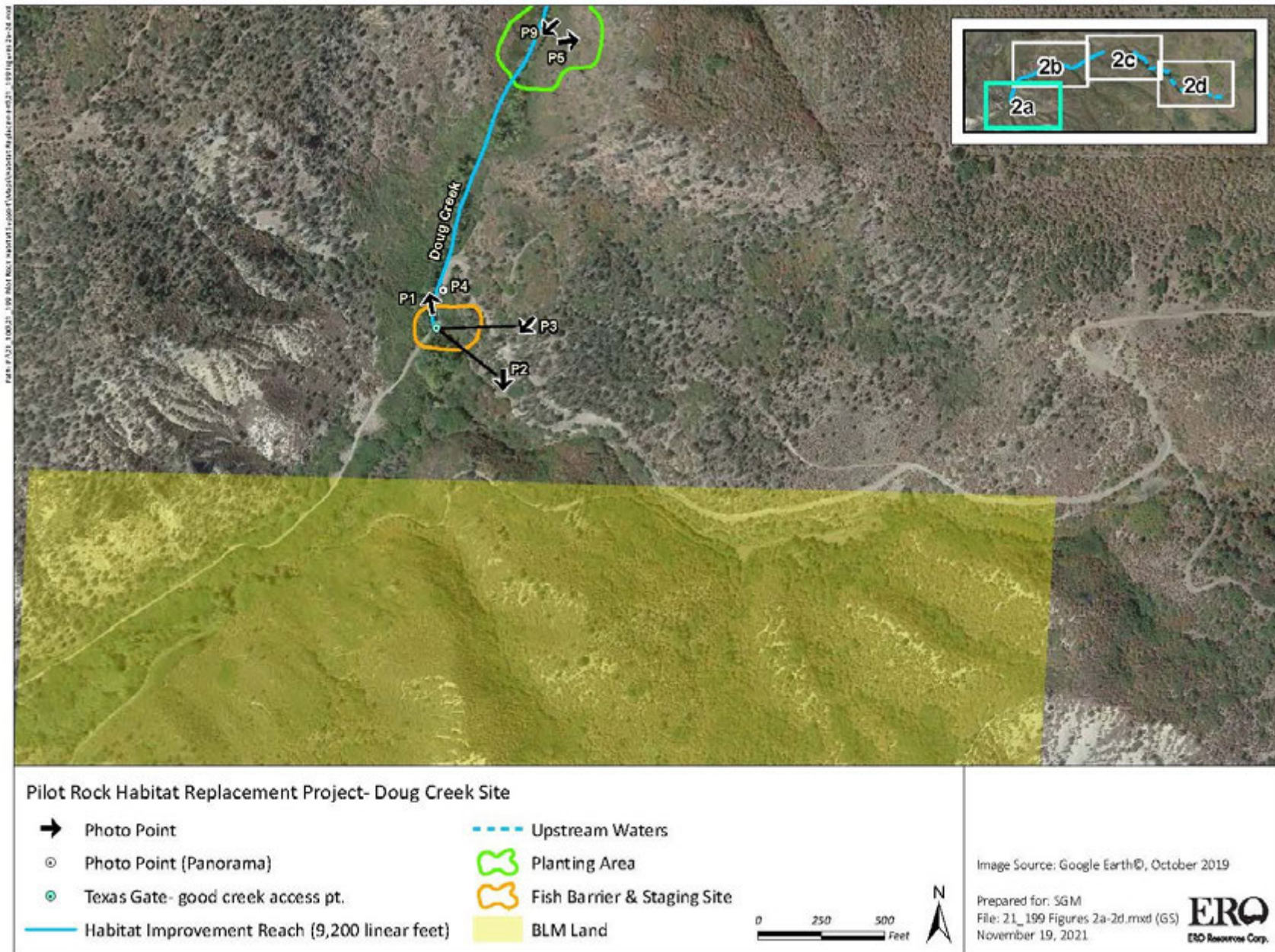


Figure 6: Habitat Replacement Project Detail, Map B

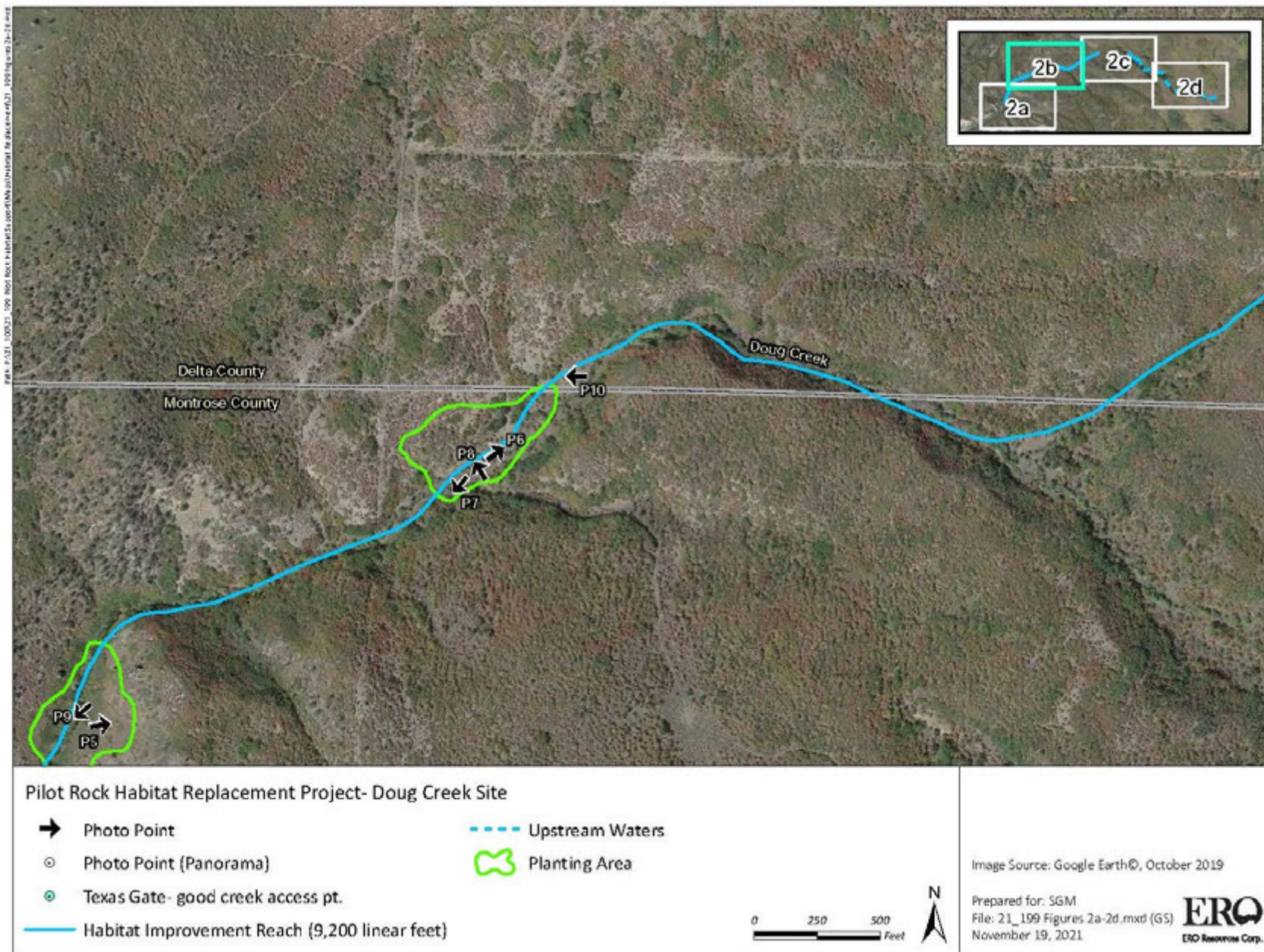


Figure 7: Habitat Replacement Project Detail, Map C

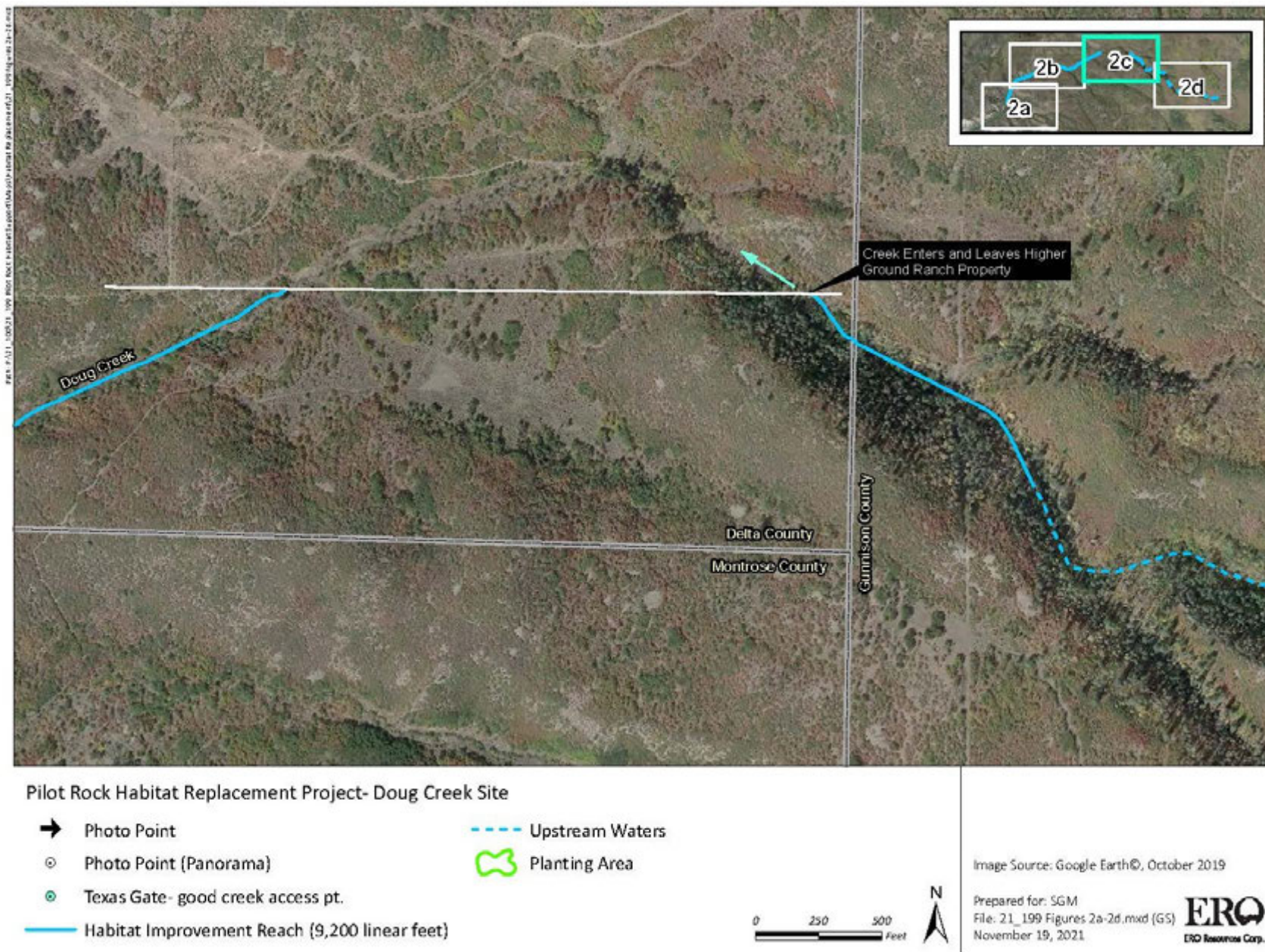
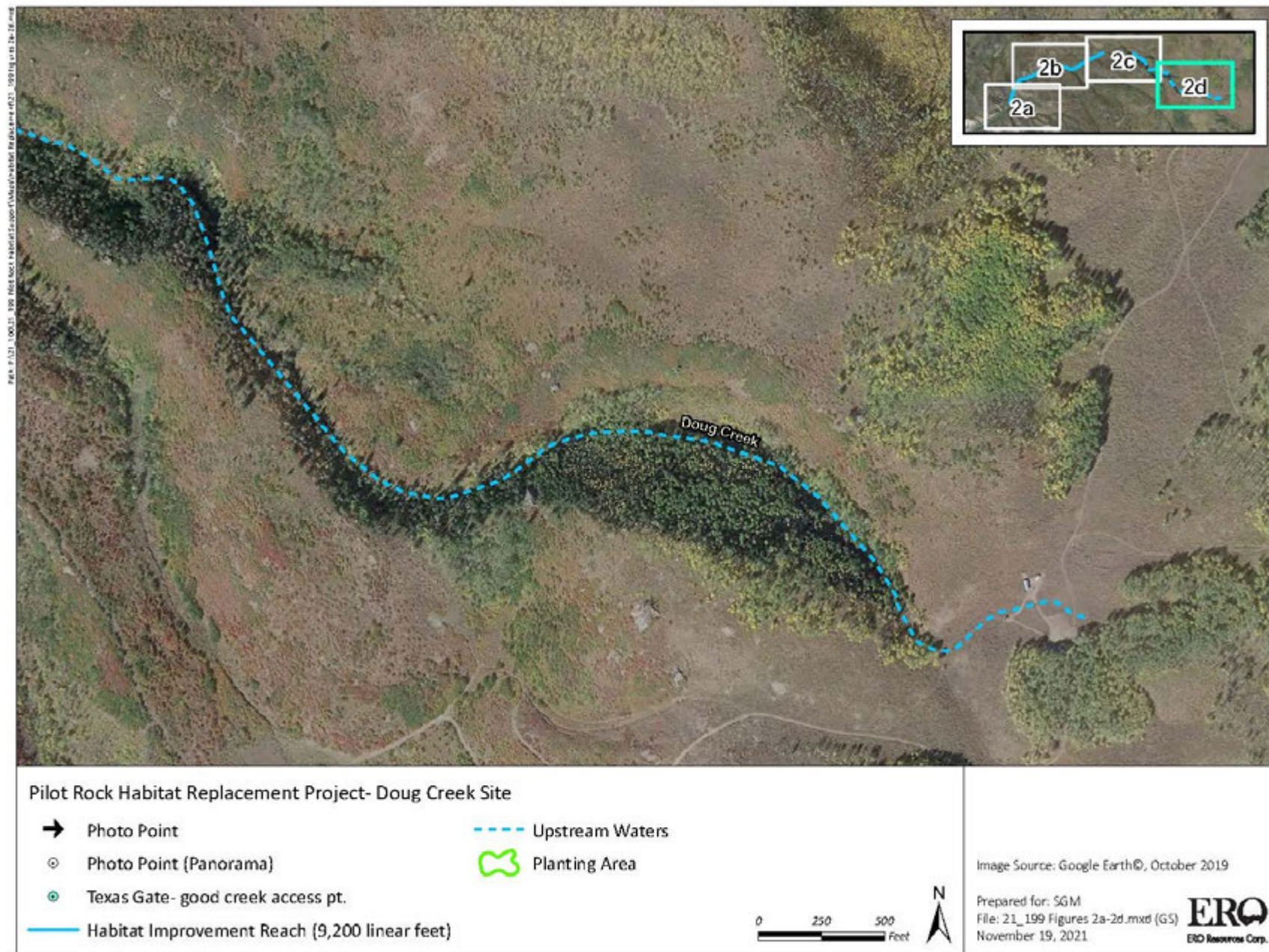


Figure 8: Habitat Replacement Project Detail, Map D



2.4 – Construction

2.4.1 – Manpower and Equipment

Equipment used for the Piping Project would likely include:

- Up to 3 tracked excavators for excavation, backfill and moving pipe
- Two front end loaders for loading dump trucks and moving smaller pipe
- Two tandem dump trucks
- One mobile rock crusher may be used for backfilling
- A small bulldozer for rough grading and maintenance of a portion of the site access road

Approximately 3-6 persons would be on-site during the work season. Work would generally be completed during the work week. Heavy equipment trips would be made daily for 3-4 days to transport concrete to the headgate location. All other heavy equipment will make a single trip to the construction site and remain onsite for the duration. Work truck traffic to site would continue on a daily basis during the work week, for approximately 2 weeks assuming the rate of pipeline construction may be 200 to 400 feet per day. Approximately two persons would be on-site periodically between April and August for two summer seasons after construction completion to accomplish revegetation and restoration work. Work would be completed during the work week, and consist of grading/seed spreading, monitoring, and watering activities.

2.4.2 – Access

During construction, access to the Piping Project Area would be from Cottonwood Creek Road, a graded county road. The staging area would be accessed directly off of Cottonwood Creek Road. As shown in Figure 4, four separate access roads extend from Cottonwood Creek Road to the PRD. No additional access roads are planned, and no upgrades beyond routine maintenance are planned for the existing access roads with one exception:

The longest access road, which extends from Cottonwood Creek Road to the headgate (as shown in Figure 4) has developed an excessively rough and rocky travel surface due to erosion, particularly in the southernmost 1200 linear feet (extending from Cottonwood Creek Road down to the elevation of the PRD). This access road is currently suitable for ATV and 4x4 truck access but would not accommodate concrete trucks. The small bulldozer would be used to blade the road and clear large rocks from the travel surface, restoring it to original conditions. Overhanging and otherwise impinging brush would also be cleared from the travel corridor. There would be no cut or fill other than incidentally due to the blading of the road surface. No culverts or road surfacing material would be installed. No alteration of the alignment or expansion of the road corridor is proposed. The remainder of the access roads, including the road on USFS land, would receive routine maintenance limited to running the blade in the road to remove rocks. No new disturbance areas would be created as a result of the road maintenance.

The canal road along the ditch alignment would provide the access for the pipeline construction, operation, and maintenance. The existing canal road would be excavated to provide necessary fill for the pipeline backfill. The new level of the canal road would be flattened and compacted to create an inspection access road, which would occupy the same area as the current road.

Access to the Habitat Replacement Project Area is provided by the existing private access road for Higher Ground Ranch. No upgrades or changes to this road are proposed.

2.4.3 – Staging and Borrow Areas

A primary staging area for the Piping Project would be established at a location approximately 625 feet west of the western point of the PRD shown in Figure 4 (approximately 2 acres). The staging area is located entirely within the boundaries of an existing irrigated field.

Pipe welding would occur at locations determined by the contractor, within the construction corridor or at the staging area.

The minor staging area needed for the fish barrier work in the Habitat Replacement Project would be located on existing disturbed ground at the point where the access road crosses Doug Creek, adjacent to the Texas Gate and proposed fish barrier location.

No local borrow areas are included as part of the Proposed Action. It is expected that the necessary backfill for the pipeline would be generated by excavating the existing canal road and embankment.

2.4.4 – Construction Timeframe

It is anticipated that contracting, NEPA and engineering processes would be completed in early 2022. Construction would take place during one season, outside of the irrigation season. This is likely to include the last quarter of 2021 and the first and second quarters of 2022. Regrading, reclamation, and monitoring activities would extend into the 2022 irrigation season.

- **Phase I: Winter-Spring (January through April)**
 - Site preparation including flagging construction limits as needed
 - Vegetation clearing (outside the migratory bird nesting season)
 - Pipeline installation, including trenching, welding, and laying all pipe
 - Restoration/replanting of disturbed areas in the Smith Fork Creek drainage
 - Decommissioning of existing siphon and structures
 - Water delivery via Phase I pipeline by April 15
 - Habitat mitigation tasks
- **Phase II: Summer-Fall (May through November)**
 - Grading, restoration and reseeding along new pipeline alignment, including piped corridor, facility areas, and staging area
 - Monitoring and weed management of reseeded areas.
 - Habitat mitigation tasks, continued

2.4.5 – Operation and Maintenance of the Pipeline and Habitat Mitigation

The Piping Project relies on the impermeable pipeline to achieve the salinity control benefits over a 50-year period. Maintenance cost associated with the proposed pipeline is expected to be minimal in comparison to the ongoing work of cleaning and repairing the open channel of the PRD, and would primarily consist of removing any debris from the pipeline headgate. This work would be performed by PRDC as part of routine member duties.

Maintenance associated with the Habitat Replacement Project is minimal, due to the habitat improvements consisting of a passive fish barrier design and passively-irrigated riparian plantings. Maintenance would primarily consist of removing any debris from the headgate. The Higher Ground Ranch has signed the Habitat Mitigation Plan and agreed to allow the PRDC access to the fish barrier on a regular basis for inspection. PRDC has committed to inspecting the fish barrier annually to ensure proper continued function. PRDC is ultimately responsible for the success of the Habitat Replacement Project.

The pipeline system would be simple to operate with no special training required on the part of the water users. Water entering the Little Coal Creek pipeline would be measured and controlled using the proposed measuring flume and logger.

2.5 – Permits and Authorizations

2.5.1 – Agreements & Authorizations

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

- Recovery Agreement executed between FWS and PRDC.
- 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.”).

2.5.2 – 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 (if any 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.

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

2.5.3 – 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)

2.5.4 – 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)

2.5.5 – 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 may be affected by the Proposed Action Alternative and the No Action Alternative. For each resource, the potentially affected area and/or interests are identified, existing conditions described, and potential impacts predicted under the No Action and Proposed Action Alternatives. Resources are grouped and addressed sequentially within the following resource categories:

- Physical Resources: Air Quality, Noise, Surface Water, Visual Resources, and Water Quality
- Biological Resources: Agricultural Resources and Soils, Noxious Weeds, Vegetation, Wildlife & Special Status Species
- Social Resources: Cultural Resources, Transportation/Public Safety/Public Access, and Water Rights & Use

This section is concluded with a summary of impacts.

3.2 – Affected Environment and Environmental Consequences

3.2.1 – Environmental Resources Considered but Excluded from Analysis

In order to streamline this EA for the reader, some resources were considered but are not analyzed further due to a lack of foreseeable impacts. Issues determined to be of potential significance, and therefore appropriate for further impact analysis under this EA, are discussed in more detail in this Chapter.

The following issues were determined to be insignificant or not applicable, and are not analyzed in greater detail within this document. The rationale for excluding the resources from further analysis is as follows:

- **Recreation.** There is minor recreational use of the Cottonwood Creek Road, primarily by recreationalists traveling the road to reach public land access points on the Gunnison National Forest. This level of use would not be impacted by the construction process. There is no significant recreation use of the USFS lands in proximity to the ditch easement, due to a lack of nearby public access. The access roads and canal road are not open for public access and use. The Proposed Action is not expected to have a discernible effect on recreation and, therefore, this resource is not carried forward for further analysis.
- **Tribal Concerns.** The Proposed Action contains land that was occupied by the Ute Tribe, which migrated to the area in the 1600s and occupied the region until expulsion to

reservations in 1881 (McDonald 2020). No Indian trust assets have been identified within the Proposed Action Area. No Native American sacred sites are known within the Proposed Action Area. Neither the No Action Alternative, nor the Proposed Action, will have an effect on Indian trust assets or Native American sacred sites. To confirm this finding, Reclamation is in the process of consulting with the Ute tribes with historic presence in the region. Reclamation provided the tribes 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. Results of this consultation will be included in the Final EA.

- **Socioeconomic Effects.** Socioeconomic impact analyses are intended to analyze population-scale, measurable changes in economic assets. The economic asset associated with the Proposed Action is water. Piping the PRD would not result in a change in value of the canal water and, without a measurable change, there are no effects to analyze.
- **Environmental Justice.** The CEQ has provided guidance on addressing environmental justice under NEPA (CEQ 1997) and subsequent interim implementation guidance (OMB 2021). Under the guidance, minority populations are identified where the percentage of minorities in the affected area exceeds 50 percent, or where the minority population percentage of the affected area is meaningfully greater than the minority population percentage of a much broader area. Within the Hotchkiss area, portions of the population are a minority race and/or Hispanic or Latino. The communities, however, would not constitute Executive Order (EO) 12898 populations as the Hispanic or Latino and non-White populations do not exceed 50 percent of the total population and are not meaningfully greater than Colorado's non-White and Hispanic or Latino populations. Non-white minority populations in Hotchkiss are below or comparable to Colorado's and Delta County's non-White minority populations (U.S. Census Bureau 2020). Because there are no environmental justice populations presents within or near the Proposed Action Area, effects on environmental justice populations are not expected as a result of this project. Therefore, this resource is not carried forward for further analysis.

All other resources considered and analyzed are presented in the remainder of this chapter. Environmental commitments necessary to mitigate the effects of the project on the human and natural environment are discussed in Chapter 4.

3.2.2 – Air Quality

According to National Ambient Air Quality Standards (NAAQS) established by the U.S. Environmental Protection Agency, Delta County and Montrose County meet the requirements for an attainment area, meaning all criteria pollutants are at safe levels. Regulated air pollutants in the Counties, including carbon monoxide, particulate matter (PM 10 and 2.5), ozone, sulfur dioxide, lead, and nitrogen, are below specific limits set for criteria air pollutants under the Clean Air Act (EPA 2021). Delta and Montrose County are consistently in attainment although regional air quality is increasingly degraded on a discrete and seasonal basis due to wildfire activity.

No Action Alternative: Under the No Action Alternative, there would be no change in the existing level of air quality at the Piping Project Area or at the Habitat Replacement Site.

Proposed Action: During the construction phase of the Piping Project, trenching, excavation, and dirt work would result in particulate emissions and diesel emissions; however, releases would be minor (two to four pieces of heavy equipment operating at the same time, at most, during the construction phase). This is not significantly different from occasional local air quality impacts associated with ranching activities that require heavy equipment. Once construction is complete, there are no emissions associated with the Piping Project and air quality at the Piping Project Area would return to pre-construction levels.

At the Habitat Replacement Project, there would be negligible air quality impacts during the construction of the fish barrier. The equipment needed to complete the work is limited to ATV and pickup truck traffic, and is not significantly different than current conditions. After construction is complete, the air quality at the Habitat Replacement Project would continue at pre-construction levels.

The Proposed Action would not contribute to a regional trend in air quality, due to the general absence of long-term impacts to the resource.

3.2.3 – Noise

Anthropogenic noise in the Piping Project Area is present at detectable levels due to normal farm activity and machinery operation, traffic on the adjacent Cottonwood Creek Road and the Needle Rock Road, and intermittent heavy machinery operation for road maintenance. These noise levels are relatively consistent year-to-year. The heavy equipment traffic associated with maintenance of the canal occurs throughout the project area during annual maintenance and periodic repairs. Noise levels at the Habitat Replacement Project Area are lower, limited generally to private traffic on the access road and occasional/seasonal maintenance work on the Texas Ditch.

No Action Alternative: Under the No Action Alternative, there would be no change in the existing level of anthropogenic noise at the Piping Project Area or at the Habitat Replacement Project Area.

Proposed Action: Under the Proposed Action, there would be additional noise introduced in the Piping Project Area, primarily due to the operation of heavy equipment during construction. The noise associated with the heavy equipment would be limited to the construction phase and would be largely attenuated and mitigated by the presence of heavy vegetation surrounding the Piping Project Area. The closest residential building is the Linford property at the west end of the Piping Project Area, located approximately 500 feet from the construction area. After construction is complete, the noise level at the Piping Project Area would return to pre-construction levels.

At the Habitat Replacement Project, there would be temporary and minor noise increases during the construction of the fish barrier. The equipment needed to complete the work is limited to ATV and pickup truck traffic, and is not significantly different than current conditions. After construction is complete, the noise level at the Habitat Replacement Project would return to pre-construction levels.

The Proposed Action would not contribute to any regional trend in noise levels, due to the general absence of long-term impacts to the resource.

3.2.4 – Surface Water

Surface water features in the Piping Project Area include the open canal of PRD itself and Little Coal Creek, a perennial drainage at the east end of the project area that PRD diverts from. There are

no other drainages that are shown or named on U.S. Geological Survey (USGS) maps, and no swales or other minor features that exhibit bed and bank channel morphology. Doug Creek is a perennial drainage where the Habitat Replacement Project is proposed.

Water for irrigation conveyed by the PRD is obtained within the Upper Gunnison watershed (HUC 14020002), and then spread onto farms and fields. A portion of the irrigation water is returned to the North Fork Gunnison watershed (HUC 1402004) via irrigation percolation and surface tailwater return flows. However, the Project Area itself is confined to the Upper Gunnison watershed; all potential impacts related to loss of surface water and curtailment of seepage are confined to that watershed. The PRD is decreed up to a 19.8 cfs diversion from Little Coal Creek, although the actual average diversion amount is 17.3 cfs during normal conditions (CDSS 2021).

Water delivery loss along the canal due to evaporation and seepage in the Piping Project Area is estimated to be about 35% for the 1.55 mile stretch of canal included in the Proposed Action (SGM 2021b). Based on this measurement, around 415 acre-feet of water is lost annually from the Project area.

In the surrounding region, open canals such as PRD are common for irrigation water delivery, and there is currently a significant amount of loss due to evaporation and seepage. Reclamation's Salinity Control Program funds ongoing efforts to control seepage by identifying ditch segments that are suitable for piping or lining, and there is a regional trend towards the conversion of open ditches to closed pipe. These piping projects have established a trend to control evaporation losses from earthen ditches, and the Proposed Action would contribute to this trend.

No Action Alternative: Under the No Action alternative, there would be no change to the existing system. Water delivery would continue from the PRD using the existing open ditch. Water loss from evaporation and seepage would continue. Routine maintenance of the canal would continue. There would be no change to other waters in the Piping Project Area, including Little Coal Creek. There would be no change to waters in the Habitat Replacement Project Area, including Doug Creek.

Proposed Action: Under the Proposed Action, 1.55 linear miles of existing open canal would no longer be a surface water feature. Based on review of existing Clean Water Act regulations, a written request was submitted to the USACE, asking for concurrence that the project is eligible for permitting under the Clean Water Act, Section 404 through the use of Regional General Permit 5 – Ditch Related Activities in the State of Colorado (RGP-5). The USACE concurred that RGP-5 can be used to permit the impacts to regulated waters, that habitat replacement activities are also covered by RGP-5, and that no separate pre-construction notification is required. RGP-5 requires a submittal of project documentation to the USACE at least 30 days prior to commencing construction.

Under the Proposed Action, the current open ditch conditions on PRD would be converted to a pipe. This represents the loss of this open water resource. There would be minor impacts to the channel of Little Coal Creek at the location of the PRD headgate associated with the construction of the new headgate structure. These impacts would be within the existing disturbance footprint of the existing gate, would not alter channel morphology or downstream water flow, and would be completed during periods of low flow.

There would be minor impacts to the channel of Doug Creek at the Texas Gate, as a result of the construction of the fish barrier component of the Habitat Replacement Project. These impacts would be within the existing disturbance footprint of the existing gate, and would not alter channel morphology or downstream water flow.

The Proposed Action would contribute to regional ditch piping efforts, which are reducing the extent of open waters but are also reducing the amount of surface water lost to evaporation and seepage.

3.2.5 – Visual Resources

The viewshed along the PRD includes irrigated farm fields interspersed with native woodland vegetation on Missouri Flats, and the viewshed along the steep slopes and within the National Forest boundaries is dominated by native vegetation. Vegetation directly adjacent to the canal is the dominant visual component for the majority of the Piping Project Area, and consists of native woodland and mixed mountain shrub. The portion of the Piping Project on USFS-managed lands is currently managed under the existing 1983 Forest Plan, as amended (USFS, 1983). The 1983 Forest Plan does not contain specific management restrictions for this area to protect visual resources, in recognition of the relatively high level of existing visual impact created by surrounding infrastructure and access roads, including the PRD infrastructure. These impacts are primarily on private lands and there is no trend or reasonably-foreseeable future action that would significantly change the level of visual impact in the area.

The viewshed within the Habitat Replacement Project Area is entirely dominated by native woodland vegetation. Steep hillslopes characterize the Doug Creek drainage, and serve to screen the project area from surrounding accessible viewpoints. Vegetation directly adjacent to the access road is the dominant visual component. The project area includes the existing headgate of the Texas Ditch, a small wooden and sheet metal structure attached to the earthen ditch prism.

No Action Alternative: The No Action Alternative would have no effect on visual resources on private or USFS lands. Visual resources would remain unchanged.

Proposed Action: Under the Proposed Action, the level of change to the visual characteristics of the landscape in and around the Piping Project Area during construction would be moderate, and the level of change after construction would be low.

During the period between trenching and successful reclamation/reseeding, a linear scar along the pipeline could be visible intermittently along Needle Rock Road. Heavy equipment and construction traffic would be present in localized areas over the short term. Construction equipment and construction operations in the Little Coal Creek drainage on USFS ground would be completely hidden from public view by surrounding vegetation and topography.

The short- and long-term visual changes on the USFS-managed lands would be compatible with current management guidance. Generally, the Piping Project would create a moderate visual change during construction, and after construction the PRD would be substantially unnoticeable and not significantly different from current conditions.

No portion of the Habitat Replacement Project occurs on public lands or would affect visual resources on public lands. The installation of the fish barrier would be substantially unnoticeable

even from the adjacent road, as it would be incorporated into the existing headgate structure. The reclamation plantings would moderately increase the level of woody vegetation in a portion of the Doug Creek drainage, which is already dominated by woody vegetation and screened from view from all accessible points by intervening topography.

The Proposed Action would not contribute to a regional trend in visual resource impacts, due to the absence of long-term effects.

3.2.6 – Water Quality

Irrigation practices in the project area which result in deep water percolation through Mancos Shale contribute to downstream selenium and salinity levels, adversely affecting the water quality of the Colorado River Basin. Concentrations of selenium in the North Fork of the Gunnison River account for about eight percent of the selenium load in the Lower Gunnison River Basin (CDPHE 2011). Regionally, the extensive irrigation infrastructure contributes incrementally to salinity/selenium loads in downstream waters.

The effects of percolation and selenium loading are felt in downstream waters, not waters directly impacted by the Proposed Action: all streams and waterbodies in the Proposed Action Area are listed as Fully Supporting all uses per CDPHE 305(b) standards.

PRD supports irrigation which results in percolation and tailwater discharges to Cottonwood Creek, below the north side of Missouri Flats. Cottonwood Creek has been classified as impaired waters in accordance with Section 303(d) of the Clean Water Act, due to the effects of selenium on aquatic life (CDPHE 2016). In 2008, 2010, and 2012, Cottonwood Creek was assessed as Impaired for Aquatic Life usage, although the most recent assessment in 2016 upgraded the Aquatic Life status to Good (CDPHE 2021).

However, no portion of the Proposed Action occurs in the portion of the PRD service area that discharges to Cottonwood Creek. The Piping Project Area is located entirely within the Smith Fork drainage, which is not 303(d) impaired and is Fully Supporting for all uses.

The Habitat Site is located entirely within the Doug Creek drainage, which is Fully Supporting all uses per CDPHE 305(b) standards. It is tributary to Muddy Creek and Crawford Reservoir, which is also Fully Supporting all applicable uses.

No Action Alternative: Under the No Action alternative, irrigation practices would continue, with seepage from the canal contributing an estimated 665 tons of salt to the Smith Fork drainage and downstream waters, along with an unquantified amount of selenium.

Proposed Action: Under the Proposed Action, replacing the open ditch with pipe would eliminate seepage from the piped section of the ditch system, and therefore is estimated to remove 655 tons of salt loading into the Smith Fork and the downstream Colorado River basin on an annual basis. In addition, an unquantified amount of selenium would be prevented from entering the Smith Fork and eventually the Colorado River watershed. An unquantifiable reduction in selenium loading would occur as a result of the project.

There would be no change in the salt or selenium loading occurring in the 303(d) impaired water of Cottonwood Creek, since the Proposed Action would not alter the amount or schedule of irrigation that is providing percolation and tailwater flows to this drainage.

The Habitat Replacement Project would not alter water quality in Doug Creek. The proposed fish barrier is a physical structure that would not alter in-stream flows or irrigation diversions, and there would be no impact to Doug Creek's current status of Fully Supporting all uses.

The Piping Project would contribute to the regional ditch piping efforts, which are incrementally reducing the salinity load in the downstream major rivers (see section 1.5 for related projects in the region). The Habitat Replacement Project would have no impact on regional water quality trends.

3.2.7 – Agricultural Resources and Soils

It is the policy of the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) to “maintain and keep current an inventory of the prime farmland and unique farmland of the Nation...the objective of the inventory is to identify the extent and location of important rural lands needed to produce food, feed, fiber, forage, and oilseed crops” (7 CFR 657.2). NRCS identifies categories of farmlands of national and statewide importance in the region, based on soil types and irrigation status. The Project Area contains one type of farmland of national and statewide importance. Appendix A contains a detailed soil map for the Project Area and Habitat Area.

The western end of the Piping Project, including approximately 1,100 linear feet of the total 8,200 linear feet of piping, crosses Cerro Loam soils. Cerro Loam has been classified as Prime farmland if irrigated, however the area is not currently irrigated (USDA 2021).

The major mapped soil units found in the Piping Project Area and traversed by the PRD are cobbly stony outwash alluvium deriving from basalt. These overlay soil types derived from Mancos Shale, which formed in a marine environment that now contribute salinity and selenium loading in the Colorado River basin.

The Habitat Replacement Project is located within the riparian corridor of Doug Creek, and is predominantly underlain by unclassified Flooded Fluvents, consisting of alluvium derived from the surrounding sedimentary rock hillsides. The upper portion of the creek, where some restoration planting would occur, is underlain by native stony loams. None the soil types within the Habitat Replacement Project Area are classified as farmland of national or statewide importance.

No Action Alternative: The No Action Alternative would have no effect on Prime Farmlands, Unique Farmlands, or Farmlands of Statewide Importance. Farmlands in the Project Area would continue to produce as in the past. Salinity loading from irrigation water contact with Mancos Shale-derived soils in the current irrigation ditch system would continue as it has in the past.

Proposed Action: Under the Proposed Action Alternative, installation of the buried pipe would cause temporary disturbance to soils that are not in irrigated agricultural production and not designated as agriculturally significant by NRCS. No farmlands would be permanently removed from production as a result of the Proposed Action. The PRD conveys irrigation water to agriculturally significant lands including irrigated Cerro Loam areas. However, no change in the configuration of PRD-irrigated lands would occur as a result of the Proposed Action and no interruption to agricultural

production would occur. No part of the irrigation season is expected to be lost during implementation of the Proposed Action, and the Proposed Action would not contribute to a regional trend in soil impacts.

To minimize soil erosion during implementation of the Proposed Action, any topsoil would be reserved prior to excavation, replaced on the overburden surface following pipe installation, then reseeded with the USFS-selected drought-tolerant seed mix (see Environmental Commitment 25).

The Habitat Replacement Project would have no effect on the surrounding soils, since the activity is unrelated to irrigation, excavation, or other soil-impacting activities.

3.2.8 – Noxious Weeds

The Colorado Noxious Weed Act designates undesirable plants that are considered a threat to Colorado's natural resources. PRDC is responsible for complying with the Colorado Noxious Weed Act at the Piping Project Area and at the Habitat Replacement Project. Impacts from weed infestations include the loss of forage for wildlife and livestock, decreased availability of habitat for wildlife, and a loss of biodiversity relative to undisturbed areas.

The vicinity of both the Piping Project and the Habitat Replacement Project contains weed species occurring in typical background concentrations. Human activity on private and public lands continues to create disturbed areas that are vulnerable to weed infestation, and human activity provides transport vectors that allow weeds to reach and colonize those areas. However, the Piping Project Area itself was found to contain only two State/County listed weed species (CDA 2021, Delta County 2020) during site evaluations performed in May 2020.

- Musk thistle (*Carduus nutans*) – List B: this species occurs in sporadic patches along the canal road, with a single notable infestation. List B weeds must be managed to stop continued spread.
- Common mullein (*Verbascum thapsus*) – List C: this species occurs in sporadic low densities, primarily on USFS lands near the diversion headgate. List C species are so widespread they are not currently subject to requirements for eradication.

The Habitat Replacement Project was specifically designed to include areas where Canada thistle (*Cirsium arvense*, List B) had degraded the riparian corridor of Doug Creek. These areas have been treated with pesticide, but no restoration seeding or planting has been done.

No Action Alternative: Under the No Action alternative, there would be no change to invasive species in the Piping Project Area or Habitat Replacement Project Area. Weeds would continue to exist at current levels along the canal road and access roads, and along riparian corridors. The existing abundance of musk thistle presents a small potential for infestation along the canal road. The abundance of Canada thistle along Doug Creek would likely re-establish in the absence of the reclamation treatments such as seeding and planting.

Proposed Action: Under the Proposed Action, weeds may be spread to the Piping Project Area during the construction phase from tracked equipment, and existing weeds may be spread within the disturbed construction corridor. No imported fill is proposed, so it is unlikely that new weed species currently absent in the surrounding area would become established.

PRDC would continue to be responsible for complying with the Colorado Noxious Weed Act, including obtaining appropriate pesticide use permits and managing listed weed species within the ditch easement.

Risk of expanded weed presence as a result of the Proposed Action would be mitigated by power-washing construction equipment to be sure it is free of soil and debris prior to entering the construction site, by timely weed treatment, and by re-establishing drought-tolerant, non-invasive vegetation within the portion of the disturbed corridor. These mitigation measures have been incorporated into the Environmental Commitments (Chapter 4, items 11-13, 18, 19).

The Habitat Replacement Project Area is expected to experience beneficial effects over the long term, since restoration seeding and riparian shrub planting is proposed for the area of Canada thistle treatment, in concert with ongoing weed monitoring and treatment.

The Proposed Action has the potential to contribute to the ongoing persistence of weeds in the region, but the control efforts incorporated into the Environmental Commitments would mitigate the impacts, and the Habitat Replacement Project is specifically designed to control weeds in the local area.

3.2.9 – Vegetation

Piping Project Area: The PRD traverses several vegetation community types and carries irrigation water seasonally from mid-April through October. The open water and fringe seepage from the canal supports a narrow and discontinuous riparian fringe habitat along the canal, primarily coyote willow (*Salix exigua*). An access road parallels the canal; this canal road is only occasionally maintained, and supports a patchy vegetation of ruderal herbaceous species.

The portion of the PRD included in the Piping Project Area is predominantly excavated into a steep hillside. The downhill embankment is steep and heavily vegetated, and some portions of the Piping Project Area show minor evidence of seepage through the embankment to support riparian vegetation on the top of the embankment slope. Without exception, riparian vegetation does not extend down the embankment more than 20-30 feet. The uphill embankment is sufficiently steep and elevated above the level of the canal that there is no discernible impact of the canal water on the habitat on the uphill side. In general, the surrounding mesic woodland extends to the edge of the PRD on the uphill side, although short access roads do reach the PRD on the uphill side in two locations.

The PRD is surrounded by woodland and mixed mountain shrub typical of mid-elevation habitats in western Colorado. Vegetation conditions along the PRD in the Piping Project Area can be described as three distinct linear habitat types, which extend in parallel for the length of the Piping Project, and taken as a whole comprise the representative vegetation for the Piping Project Area.

- Within the channel of the PRD itself, the upper 700 linear feet are bare mineral soil. The remainder of the PRD canal supports a coyote willow population, which increases in density with distance from the headgate, but is generally a single line of plants approximately 5 feet wide. Truly aquatic/emergent vegetation is nearly absent from the PRD, due to the seasonal nature of flows which expose the channel bottom for long periods of the year, and is limited to a few small patches of broadleaf cattail (*Typha latifolia*) with minimal habitat value.

- On the top of the downhill embankment, vegetation is dominated by ruderal adventitious herbaceous species and saplings of oakbrush (*Quercus gambelii*) and serviceberry (*Symphoricarpos rotundifolius*). Occasional but repeated disturbance on the top of the embankment occurs through clearing of the inspection trail, and this limits the establishment of more diverse or mature vegetation.
- On the downhill slope of the lower embankment, there is a discontinuous strip of narrowleaf cottonwood (*Populus angustifolia*), predominantly located just below the crest of the embankment on the downhill side. The cottonwood strip intergrades rapidly into native woodland and mountain shrub vegetation on the downhill embankment.

The landscape surrounding the Piping Project Area is undeveloped mid-elevation woodland, transitioning from mixed mountain shrub and oakbrush to pinyon-juniper. There are no reasonably-foreseeable actions planned for the region that would contribute to a changing trend in vegetation characteristics. Ranch activity is ongoing, and the portions of the National Forest within and adjacent to the Piping Project Area do not contain valuable timber that would be likely to be offered in a timber lease.

Reclamation's April 2018 *Basinwide Salinity Control Program: Procedures for Habitat Replacement* were applied in the Piping Project Area to quantify the existing habitat value of the wetland and riparian habitat that has the potential to be lost due to the loss of canal seepage following project construction. The existing wetland and riparian habitat with the potential to be lost has a value of 16.99 habitat units (SGM 2021a).

Habitat Replacement Project Area: Three main vegetation communities were documented during site visits.

- The riparian corridor is variable due to the localization of grazing pressure in some portions of the stream channel. Vegetation is characterized by areas of sparse to non-existing fringe due to overgrazing, and multi-storied, robust vegetation at least 20 feet in width and up to 100 feet in width in areas that have not been impacted by grazing (generally the upper reaches). Dominant species in the riparian fringe include an overstory of narrowleaf cottonwood with an understory of mixed willows (*Salix* spp.) and alder (*Alnus incana*).
- Adjacent upland vegetation, and undisturbed areas in the lower elevations are characterized by an overstory of Rocky Mountain juniper (*Juniperus scopulorum*) and Gambel oak (*Quercus gambelii*), interspersed with chokecherry (*Prunus virginiana*), with an understory of smooth brome (*Bromus inermis*), alfalfa (*Medicago* sp.), Canada thistle (*Cirsium arvense*), and common yarrow (*Achillea millefolium*).
- Weeds, shrubs and grasses, and bare ground are present along degraded wet meadows, ranch access points, and fencelines. Weeds and vegetation were generally scattered and patchy throughout the riparian restoration area upgradient of the fish barrier site, and representative species include Gambel oak and chokecherry interspersed with alfalfa, Canada thistle, and sparse pasture grasses.

Vegetation conditions at the Habitat Replacement Project Area are expected to improve in the future due to active management on the part of the property owner, Higher Ground Ranch. Adaptive grazing, fence repair, weed treatment, and vegetation treatment are all part of the Ranch's

planned activities, and would be expected to increase the coverage, diversity, and vitality of native vegetation communities while reducing the extent of bare ground and weedy pasture conditions.

No Action Alternative: Under the No Action Alternative, there would be no impact to vegetation. Minor ongoing maintenance, vegetation clearing, and weed treatment would continue along the PRD and along the access road passing through the Habitat Replacement Project.

Proposed Action: At the Piping Project Area, most impacts would be confined to the ditch prism and associated canal road. Fringe riparian habitat would be lost due to disturbance from construction and due to loss of water seepage from the canal. There is no permanent impact or loss of vegetation outside the Piping Project Area, due to the use of existing access roads and the confinement of construction activity to the ditch alignment itself.

Consistent with the Colorado River Basin Salinity Control Act, to compensate for the loss of habitat values that would result from implementation of the Proposed Action, PRDC developed a Habitat Replacement Plan (HRP) (ERO 2021). The HRP details how PRDC will implement the habitat replacement project component of the Proposed Action. The habitat replacement project is anticipated to produce 17.1 habitat credits to offset the 16.99 habitat units lost due to project implementation. In addition to the fish barrier and the protection it confers on native cutthroat in Doug Creek, there would be beneficial changes to Doug Creek's riparian vegetation as a result of the HRP, which includes reseeding and restoration planting of degraded riparian areas.

The Piping Project is not expected to contribute to regional trends in vegetation, given the minor amount of vegetation removal on existing disturbance, and the absence of an identifiable long-term trend in the area. The Habitat Replacement Project is expected to contribute to the efforts of the Higher Ground Ranch to improve native vegetation diversity and abundance through active management.

3.2.10 – Wildlife & Special Status Species

The Little Coal Creek drainage area and the Piping Project Area in general are heavily vegetated, primarily with a dense pinyon-juniper woodland as described in section 3.2.9 Vegetation. Wildlife present in the area likely includes the entire suite of western Colorado mammal fauna, including elk, deer, fox, coyote, mountain lion, bear, and a wide range of small mammals. Migratory birds frequent the area, attracted by the perennial water sources and the diversity of vegetation types. Fish are present in Little Coal Creek (primarily brown trout and brook trout).

The Piping Project Area, especially the western portion located on the steep south-facing slopes and mesa top of Missouri flats, is mapped as mule deer and elk severe winter range (CPW 2021, Appendix A). This is due to its proximity to water sources and favored summer habitats, while offering lower winter snowpack depths and a variety of vegetation types for cover and browse. The landscape is partially fragmented by the public Cottonwood Creek Road and private access roads and driveways. However, the predominant cause of fragmentation is the abundant irrigated and unirrigated pasture lands. In the Piping Project Area vicinity, approximately 50% of the land area has been cleared for agriculture. These pastures offer foraging opportunities for wildlife, but provide minimal cover or vegetative diversity, and the abundant fences create barriers to free dispersal and habitat utilization.

It is likely that deer and elk migrate through the Piping Project Area for foraging in winter, and some amount of bedding occurs in the denser vegetation. However, livestock fences are frequent barriers to natural movement throughout the area. In general, the Piping Project Area itself is subject to a significant level of existing disturbance, due to canal operation and maintenance including routine weed spraying, system monitoring and operation, and annual ditch cleaning with heavy equipment (typically occurring in the late winter). In the larger vicinity of the Piping Project Area on Missouri Flats, farming activity, residential development and roads present a year-round, persistent disturbance to wildlife.

The Habitat Replacement Project Area has conditions similar to the Piping Project Area, and supports a similar suite of wildlife. The perennial drainage of Doug Creek supports a narrow riparian corridor, and transits through mixed mountain shrub in the upper extent to the edge of pinyon-juniper woodlands at the fish barrier location, as described in section 3.2.9 Vegetation. Doug Creek is known to support a reproductive conservation-grade population of native cutthroat trout (CPW 2020, E. Gardunio, pers. comm.).

The Habitat Replacement Project Area is mapped as Winter Range for elk and mule deer (CPW 2021, Appendix A). This is due to the intermediate elevation compared to the surrounding region, and the lower winter snowpack depths and a variety of vegetation types for cover and browse. The landscape surrounding the Habitat Replacement Project is relatively unfragmented by roads or agriculture. It is likely that deer and elk migrate through the area for foraging in winter, and some individuals are likely to be seasonally resident in the area during winter, migrating to lower elevations during severe weather and moving to higher elevations in the summer season.

A Biological Memo Report has been prepared that provides an assessment of Special Status Species, including ESA-listed species, USFS Sensitive Species, and migratory birds including raptors within both the Piping Project Area and the Habitat Replacement Project Area (SGM 2021b). The assessed species were selected based on the USFWS IPaC database (USFWS 2021). The assessment included nine ESA-listed species (Canada lynx, Gunnison sage-grouse, Mexican spotted owl, yellow-billed cuckoo, Colorado pikeminnow, razorback sucker, humpback chub, bonytail, and Monarch butterfly) and one USFS Sensitive Species (northern goshawk). The USFS Sensitive Species was selected from the Region 2 sensitive species list in consultation with USFS staff. Of the nine ESA-listed species and the USFS Sensitive Species, only the candidate Monarch butterfly, the threatened western yellow-billed cuckoo, and the endangered Colorado pikeminnow, razorback sucker, humpback chub, and bonytail are either potentially present in the Proposed Action area or have critical habitat which has the potential to be affected by the Proposed Action.

A nesting raptor survey was completed for the Piping Project Area. No raptor nests were located, and no territorial displays were incited, during the comprehensive call-playback survey (SGM 2021b). The Habitat Replacement Project Area was not formally surveyed for nesting raptors, due to the minimal disruption posed by the nature and extent of the work. No removal of mature trees or other vegetation capable of supporting nesting raptors is proposed as part of the Habitat Replacement Project, and no raptor nests or territorial displays were observed at the fish barrier site during repeated visits to the site.

No Action Alternative: Under the No Action Alternative, there would be no new effects on wildlife or special status species. The PRD would continue to operate as it has historically. Salinity and

selenium discharges to downstream waters would continue to contribute to degradation of aquatic habitat in the Colorado River Basin.

Proposed Action: Under the Proposed Action Alternative, a small amount of vegetation would be removed from the Piping Project Area during the construction phase. A temporary increase in construction noise, dust, emissions, and a general increase in human activity would occur throughout the Piping Project Area over the winter construction season. Wildlife could be displaced by the increased human presence, though not during critical breeding seasons for most wildlife. The area is within severe winter range for elk and deer established by the CPW, but the impacts are located at the edge of the designated habitat zone, and would be limited to the construction phase only. Once construction is complete, the conditions would be substantially similar to existing habitat conditions on a regional landscape scale. The implementation of the Proposed Action would not be expected to significantly degrade the habitat conditions that support winter elk and deer use, nor would the Proposed Action directly limit elk and deer use of the habitat during the winter. The Proposed Action would be expected to limit the utilization of the winter habitat in the Piping Project Area to some degree for a single season during construction. The Proposed Action would temporarily contribute to the regional trend in wildlife habitat disruption due to increased human activity, but would not contribute to the trend after construction is complete.

The Proposed Action would result in the loss of a small amount of riparian habitat along the PRD which is valuable and limited in the local area. As described in section 2.3.5, the Colorado River Basin Salinity Control Act and related amendments require the replacement of fish and wildlife values lost from implementation of salinity control projects, and the Habitat Replacement Project would be implemented to replace these lost values.

The Proposed Action would result in a small improvement in terrestrial habitat conditions in the Habitat Replacement Project Area as a result of the planned woody vegetation planting and soil treatments in degraded riparian areas. The existing native cutthroat trout population in Doug Creek would be protected from invasion by non-native downstream fish populations by the installation of the fish barrier.

The Biological Memo Report (SGM 2021b) provides detailed discussion of potential impacts to Special Status Species associated with implementation of the Proposed Action. In summary, the potential impacts are:

- **Yellow-billed Cuckoo:** Based on informal consultation with USFWS (C. Clayton, Jan 2020), the habitat conditions on Little Coal Creek at the upstream end of the Piping Project are not consistent with the habitat needs of the cuckoo. A conservation measure prohibiting riparian vegetation removal during the cuckoo's breeding season (June 15 – August 15) is sufficient to avoid any potential impact to the species. There would be no effect to the species based on the implementation of this conservation measure (included in Chapter 4).
- **Colorado River Endangered Fish:** The Proposed Action Area does not lie within the ranges of the endangered Colorado pikeminnow, razorback sucker, humpback chub, and bonytail. Based on previously issued programmatic biological opinions that all depletions within the Upper Colorado River Basin may adversely affect the four fishes, it is expected that the Proposed Action may affect, and is likely to adversely affect, the Colorado pikeminnow, razorback sucker, humpback chub, and bonytail. PRDC is requesting to

execute a Recovery Agreement with USFWS to ensure their activities are covered under the Gunnison Basin PBO and in compliance with the ESA. The signed Recovery Agreement will be included in the Final EA in Appendix B.

- **Colorado River Endangered Fishes Critical Habitat:** Consumptive loss of water in the Gunnison River basin due to PRDC's agricultural irrigation practices results in depletions from the Colorado River Basin, affecting downstream critical habitat for the endangered Colorado pikeminnow, razorback sucker, humpback chub, and bonytail. The estimated historic average annual water depletions due to operation of the PRDC system is 426 acre-feet. This amount is not expected to change as a result of the proposed ditch piping. PRDC requests to execute a Recovery Agreement with USFWS to ensure their activities are covered under the Gunnison Basin PBO and in compliance with the ESA. Therefore, in accordance with the Gunnison Basin PBO, it is expected that the Proposed Action would not destroy or adversely modify the designated critical habitat for the Colorado River endangered fishes.
- **Monarch Butterfly:** There are no formal Section 7 consultation requirements for Candidate species. The butterfly has the potential to occur in the vicinity of the Proposed Action, and there is a small likelihood that construction activities could cause direct take of individuals incidentally migrating through the construction areas. There are no highly-suitable habitats within the Proposed Action area, and the Proposed Action would not degrade existing or potential habitat. Based on the small potential for direct take, the Proposed Action may affect, but is not likely to adversely affect Monarch butterfly.

Due to the lack of raptor nests and other indicators of raptor presence, no protective buffers or timing restrictions on construction activities are recommended for the Piping Project Area. Because the Habitat Replacement Project Area was not formally surveyed for nesting raptors, a conservation measure prohibiting vegetation removal in this area during nesting season (April 1 – July 15) would be adhered to in order to avoid any potential impact to migratory birds. There would be no effect to the raptors or other migratory bird species based on the implementation of this conservation measure (included in Chapter 4).

3.2.11 – 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. In May 2020, Flattops Archaeological Consultants conducted a Class III cultural resource inventory of the Piping Project's Area of Potential Effect (APE), (McDonald 2020). The proposed pipe alignments, proposed construction disturbance areas, access roads, and the proposed staging area, were inventoried. In September 2021, Flattops Archaeological Consultants conducted a Class III cultural resource inventory of the Habitat Replacement Project's APE (McDonald 2021).

The inventory of the Piping Project Area resulted in the recordation of a segment of the PRD and a segment of the PRD maintenance road. The PRD and the PRD maintenance road are recommended as not eligible for the National Register of Historic Places (NRHP). The inventory of the Habitat Replacement Area resulted in the recordation of a single segment of the Texas Ditch, located at the diversion point on Doug Creek. The linear resource as a whole was recommended as potentially eligible for the NRHP per SHPO guidelines, pending a documentation of the entire

resource. However, the existing diversion gate is a modern structure and Reclamation recommended that the diversion gate does not contribute to the NRHP eligibility of the Texas Ditch. Reclamation has consulted with the State Historic Preservation Officer (SHPO) on the identified resources' eligibility determinations. SHPO has concurred with Reclamation's recommendation of eligibility, and the results of this consultation are included in Appendix C.

No Action Alternative: Under the No Action Alternative, there would be no changes to existing conditions, and no effect on cultural resources.

Proposed Action: The PRD and PRD maintenance road segments are not eligible for the NRHP and the Texas Ditch gate is noncontributing to the eligibility of the Texas Ditch. No other cultural resources were identified within the project's APE. There would be no adverse effects to historic properties as a result of implementing the Proposed Action. Reclamation has consulted with SHPO on the project's effect determination and the results of this consultation are included in Appendix C.

3.2.12 – Transportation, Public Safety, & Public Access

The major transportation resource in the vicinity of the Proposed Action is Colorado State Highway 92 which runs north-south from the Town of Crawford towards Crawford Reservoir. Local county roads including Dogwood Avenue, Needle Rock Road, and Cottonwood Creek Road would provide access to the Project Area. The Habitat Replacement Project would be accessed from Clear Fork Road off Highway 92.

Private roads and county roads generally provide access and mobility for residents traveling in and out of the Proposed Action area, and county roads provide access to recreationists and other users of USFS lands east of the Piping Project Area. The Delta County Sheriff, the Delta County Ambulance District, and the Delta County Fire Protection District 5 cover the Piping Project Area. For the last five years, the Proposed Action area has been growing in population at a rate of approximately 1% per year, which contributes to a minor increase in traffic volumes on local and county roads.

No Action Alternative: Under the No Action Alternative, there would be no effect on public safety, transportation, or public access.

Proposed Action: Under the Proposed Action, construction traffic would access the Piping Project Area using the existing public Cottonwood Creek Road. There would be no need for construction of new access roads for the Piping Project, as construction access would use existing access roads to reach the PRD, and then the PRD easement would be used as the primary travel corridor. There are no known bridges with weight restrictions that would be used by construction vehicles. Implementation of the Proposed Action may cause brief delays for residents and the public using Cottonwood Creek Road due to construction vehicles entering and exiting the private access roads. Traffic on Cottonwood Creek Road is very light, and is not expected to be significantly impacted as a result of the Piping Project's construction phase. Once construction is complete, traffic and access conditions would return to their current state.

The Habitat Replacement Project is accessed using the existing public Clear Fork Road and the private ranch access road. Implementation of the Habitat Replacement Project is not expected to cause any impacts to public access or transportation since project traffic is limited to standard sized vehicles, and all staging is located on a private road. Once construction is complete, the fish barrier

at the Habitat Site would be inspected annually by PRDC. No other project-derived traffic is expected.

The Proposed Action would not contribute to a regional trend in traffic levels, due to the absence of long-term needs for vehicle travel to either the Piping Project Area or the Habitat Replacement Project.

3.2.13 – Water Rights & Use

PRD is a private facility owned and operated by the PRDC. Currently, 19.8 cfs are decreed to the PRD for irrigation from the Little Coal Creek near Crawford, CO.

PRD's diversion is located on Little Coal Creek, approximately 0.8 miles above its confluence with the Smith Fork of the Gunnison River. The diversion supplies approximately 1.55 miles of earthen ditch to the service area, and another 1.8 miles of earthen lateral ditches deliver water to users via open splitter boxes. Water in the ditches flows generally west.

State records from 1970 through 2018 report that the PRD has a total average annual diversion of 1,282 acre-feet, with a maximum annual diversion of 2,182 acre-feet and a minimum annual diversion of 214 acre-feet. The maximum average monthly diversion flow rate is 17.3 cfs. (CDSS, 2021). The water is used in the vicinity of the Piping Project Area, generally on the elevated tableland above the Smith Fork referred to as Missouri Flats. The full decree is typically not available during drought years and flows are significantly reduced during times of drought (CDSS, 2021).

Water delivery loss along the canal due to evaporation and seepage in the Piping Project Area is estimated to be about 35% for the 1.55 mile stretch of canal included in the Proposed Action (SGM 2021b). Based on this measurement, around 415 acre-feet of water is lost annually from the Project area. There is an ongoing trend in the region towards the improvement of water delivery systems to increase efficiency and minimize losses (see section 1.5).

No Action Alternative: Under the No Action alternative, the existing PRD would continue to operate as it has historically operated. Seepage and water loss due to evaporation would continue. Water would continue to be allocated as it is currently allocated.

Proposed Action: Under the Proposed Action, no changes would occur to existing, decreed water rights. The PRDC would have the ability to better manage its allocation of water through efficiencies gained from piping the delivery system and eliminating seepage. A more reliable water delivery system would be in place for the delivery of existing water rights due to updates to the headgate and measuring flume.

The Habitat Replacement Project would not require any consumptive use of water from Doug Creek. The proposed fish barrier would not alter the function of the existing Texas Gate, and there would be no changes to existing water rights or water usage. The protective restriction incorporated into the HRP (ERO 2021) would not alter the operation of the Texas Gate.

The Proposed Action would contribute to the regional ditch piping efforts, which are incrementally improving the efficiency of delivery of water rights to their holders (see section 1.5 for related projects in the region).

3.3 – Summary

Table 2 provides a summary of environmental consequences for the resources evaluated in this EA. Resource impacts are outlined for both the No Action and the Proposed Action Alternatives. Mitigation, if required, is also described.

Table 2. Summary of Impacts for the No Action Alternative and Proposed Action Alternative.

Resource	Impacts: No Action Alternative	Impacts: Proposed Action Alternative
Agricultural Resources and Soils	No Effect	No impacts to any areas of Prime Farmland. Approximately 1,100 linear feet of the Project Area is within Prime Farmland If Irrigated, but the area is not under irrigation. Not contributory to any trend in the region.
Air Quality	No Effect	Minor local impacts during construction phase. No permanent impacts to air quality. Not contributory to any trend in the region.
Cultural Resources	No Effect	There are no eligible cultural resources in the Piping Project Area or at the Habitat Replacement Project. Environmental commitments would mandate protective measures if undiscovered resources are encountered during construction. Consultation with SHPO has confirmed a finding of No Potential to Affect based on the cultural resource surveys (Appendix C)
Noise	No Effect	Increased noise during construction phase, largely screened by topography and vegetation. No permanent change in noise levels. Not contributory to any trend in the region.
Noxious Weeds	Continued weed pressure in the existing canal corridor due to annual maintenance/ground disturbance.	Weed pressure would increase temporarily due to expanded ground disturbance associated with construction. With revegetation efforts and weed mitigation, effects are expected to be short-term and minor, and would not contribute to regional weed abundance. In addition, weed and invasive species treatment would occur at the Habitat Replacement Project at Doug Creek under the Proposed Action.
Surface Water	No change to surface water	Open water in the existing canal would become uplands. Approximately 1.55 linear miles of existing open canal would no longer be a surface water feature. The Proposed Action would contribute to the reduction of surface water in the region due to piping of open ditches to improve efficiency.
Transportation, Public Safety, & Public Access	No effect	Several daily trips on a public road between the staging area and the Piping Project Area. Effects to access, transportation and public safety have been mitigated by placing staging areas close to the project area. No post-construction traffic changes, and no contribution to long-term trends.
Vegetation	No effect; continued sporadic treatment and clearing of riparian vegetation along ditch	Approximately 6.1 acres of vegetation along the canal would be temporarily impacted during construction. Following construction, all disturbance areas would be revegetated. Loss of riparian vegetation would be offset through Reclamation's Habitat Replacement process.
Visual Resources	No Effect	Temporary disruption to the local viewshed at the Piping Project due to localized heavy equipment use and ground scarring. No permanent impacts. The change is within USFS current visual management objectives.
Water Rights & Use	No effect	More efficient diversion and allocation of decreed water rights. The Proposed Action would contribute to the regional trend of updating and improving water delivery systems.
Water quality	Continued salt and selenium loading into the Colorado River Basin	Reduced salt loading into the Colorado River Basin. Approximately 655 tons of salt would be retained and would not enter the watershed, on an annual basis. An unknown amount of selenium would be retained and would not enter the watershed. The Proposed Action would contribute to regional efforts to reduce salinity loading through water infrastructure improvements.
Wildlife & Special Status Species	No changes to the existing levels of anthropogenic disturbance, including degradation to downstream aquatic habitats from salinity discharges.	Lost habitat values resulting from the Proposed Action would be replaced per the HRP. Temporary disturbance and displacement of wildlife at the Piping Project may occur during a single winter construction season. Timing restrictions would mitigate effects to nesting birds and yellow-billed cuckoo. Historical water depletions have been calculated and Recover Agreement is being executed with USFWS (Appendix B).

CHAPTER 4 – ENVIRONMENTAL COMMITMENTS

This section discusses the environmental commitments developed to protect resources and reduce unavoidable adverse impacts to a non-significant level. The environmental commitments will be implemented by Reclamation if the Proposed Action is implemented. The environmental commitments will be included in the contractor bid specifications. PRDC shall use this checklist to document compliance with each environmental commitment. PRDC shall submit the relevant completed part of the checklist to Reclamation immediately following each phase of the project (i.e., Pre-Construction, During Construction, and Post-Construction).

Table 3. Environmental Commitments

Environmental Commitment	Affected Resource	Authority	Initials and Date of Compliance
1. Environmental commitments will be discussed with the contractor at a pre-construction meeting.	General	National Environmental Policy Act	
2. Environmental commitments will be discussed with new operators and contractors brought into the project during the construction period.	General	National Environmental Policy Act	
3. A Storm Water Discharge application will be submitted for General Permit No. COR-030000 as provided by the Colorado Department of Public Health and Environment at least ten (10) days prior to the commencement of construction activities.	Water Quality and Surface Water	Clean Water Act, Colorado Water Quality Control Act	
4. A Storm Water Management Plan will be developed and filed with the Colorado Department of Public Health and Environment. In accordance with the Storm Water Management Plan, Best Management Practices, including storm water drainage, erosion control, and sediment control will be implemented to prevent or reduce point source pollution during and following construction. A copy of this plan will be provided to Reclamation.	Water Quality and Surface Water	Clean Water Act, Colorado Water Quality Control Act	
5. A Spill Response Plan will be prepared. As part of this plan, fuel storage, equipment, maintenance, and fueling procedures will be developed to minimize the risk of spills and impacts from these incidents, and will be located off of USFS lands. All employees and workers, including those under separate contracts, will be briefed on the plan. A copy of this plan will be provided to Reclamation.	Water Quality and Surface Water	Clean Water Act	

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6.	Concrete pours will occur in forms to prevent discharge into waterways. Any wastewater from concrete batching, vehicle wash down, and aggregate processing will be contained and treated or removed for off-site disposal.	Water Quality and Surface Water	Clean Water Act, Colorado Water Quality Control Act	
7.	Equipment will be inspected daily and repaired as necessary to ensure equipment is free of petrochemical leaks.	Water Quality and Surface Water	Water Quality and Surface Water	
8.	Construction of the headgate in Little Coal Creek will occur during a period of low water flow (September 1 through February 15), and when no precipitation is anticipated.	Water Quality and Surface Water	Clean Water Act	
9.	The pipeline will not interfere with water allocation, including winter stock water allocation, nor create any changes in allocation of water shares. Winter stock water would not be supplied during construction.	Water Rights & Use	Colorado Water Rights Protection Act	
10.	All construction activities will be confined to rights-of-way shown on the construction specifications. Staging will take place in areas shown on Figure 4 and Figure 5	Access and Transportation	National Environmental Policy Act	
11.	All construction equipment will be power-washed and free of soil and debris prior to entering the construction site to reduce the spread of noxious and invasive weeds.	Noxious Weeds	Colorado Noxious Weed Act	
12.	Timely and consistent weed treatment will occur within the Piping Project area. For example, pre-construction treatment (mowing) will be used to minimize weed spreading during construction.	Noxious Weeds	Colorado Noxious Weed Act	
13.	PRDC will continue to be responsible for complying with the Colorado Noxious Weed Act and will obtain appropriate pesticide use permits in accordance with Section 402 of the Clean Water Act.	Noxious Weeds	Colorado Noxious Weed Act, Clean Water Act	
14.	In the event that threatened or endangered species are discovered during construction, construction activities shall halt until consultation is completed with the U.S. Fish and Wildlife Service, and protection measures are implemented.	Wildlife & Special Status Species	Endangered Species Act	
15.	If a change in plans will require work outside of areas inventoried for threatened and endangered species, Reclamation will be consulted to determine if additional surveys are required.	Wildlife & Special Status Species	Endangered Species Act	
16.	Woody vegetation removal will not occur between April 1 and July 15 to avoid effects to raptors and migratory birds. Pre-construction raptor and migratory bird surveys will be required if any vegetation clearing activities are required between April 1 and July 15 due to project contingencies.	Wildlife & Special Status Species	Migratory Bird Treaty Act	

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17. Riparian vegetation removal will not occur in the Little Coal Creek drainage between June 15 and August 15 to avoid effects to federally-listed yellow-billed cuckoo. Pre-construction cuckoo surveys will be required if any riparian vegetation clearing activities are required between June 15 and August 15 due to project contingencies.	Wildlife & Special Status Species	Endangered Species Act	
18. Monitoring and continued revegetation would occur as soon as practical following project construction, to prevent the establishment and spread of noxious weed populations.	Vegetation, Noxious Weeds	Colorado Noxious Weed Act	
19. To mitigate wildlife habitat disturbance and loss, a habitat replacement plan will be implemented, enhancing the habitat function and value on 9000 linear feet of stream. Improvements include fish barrier installation and seeding and planting native vegetation.	Wildlife & Special Status Species, Vegetation, Noxious Weeds	Colorado River Basin Salinity Control Act	
20. 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. If the discovery is on USFS lands, USFS must be notified as well. In any event, the SHPO shall be consulted, and work shall not be resumed until consultation has been completed.	Cultural Resources	National Historic Preservation Act	
21. Construction limits will be shown on plans provided to the contractors. Ground disturbance and vegetation removal will be limited to the smallest portion of the Proposed Action area necessary to safely implement the project.	Agricultural Resources and Soils; Vegetation	National Environmental Policy Act	
22. Existing access roads will be used to access construction, staging and stockpile areas. No new roads will be constructed.	Agricultural Resources and Soils; Vegetation	National Environmental Policy Act	
23. Topsoil will be stockpiled and re-distributed after construction, to facilitate revegetation success.	Agricultural Resources and Soils; Vegetation	National Environmental Policy Act	
24. Soil erosion will be minimized by using erosion control measures at the edges of ground disturbances.	Agricultural Resources and Soils; Vegetation	Colorado Water Quality Control Act	
25. A non-invasive, drought-tolerant seed mix has been developed in coordination with USFS. It will be used to revegetate areas disturbed by the project that do not require maintenance in a vegetation-free state (inspection road, etc.). Seed Mix: 25% slender wheatgrass (<i>Elymus trachycaulus</i> ssp. <i>trachycaulus</i>) 25% western wheatgrass (<i>Pascopyrum smithii</i>), 40% Sandberg bluegrass (<i>Poa secunda</i> ssp. <i>sandbergii</i>), 10% muttongrass (<i>Poa fendleriana</i>).	Agricultural Resources and Soils; Vegetation	National Environmental Policy Act	

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26. Seeding application would be uniform across the 1.9 acres of pipe overburden: 40 seeds per square ft. Application timing would be as late in the year as possible, preferably on top of snow.	Agricultural Resources and Soils; Vegetation	National Environmental Policy Act	
26. 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.	Agricultural Resources and Soils; Vegetation	National Environmental Policy Act	

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 below. The Draft EA will be made available for public review on Reclamation's website. Publicly-available electronic versions of the Draft EA meet the technical standards of Section 508 of the Rehabilitation Act of 1973, so that the documents can be accessed by people with disabilities using accessibility software tools.

Name	Agency	Address
Amanda Ewing	Natural Resources Conservation Service	690 Industrial Blvd. Delta, Colorado 81416
Travis Morse	U.S. Army Corps of Engineers	400 Rood Avenue #224 Grand Junction, CO 81501
Jana Moe	U.S. Bureau of Land Management	2465 S. Townsend Avenue Montrose, CO 81404
Creed Clayton	U.S. Fish and Wildlife Service	445 W. Gunnison Ave. Suite 124 Grand Junction, CO 81501
Eric Gardunio	Colorado Parks and Wildlife	2300 S. Townsend Avenue Montrose, CO 81401
Rebecca Mitchell	Colorado Water Conservation Board	1313 Sherman Street, Room 718 Denver, CO 80203
Michael Goolsby	Colorado Department of Transportation	606 S 9th Street Grand Junction, CO 81501
Matthew Marques	Colorado Dept. of Archaeology and Historic Preservation	1200 Broadway Denver, CO 81401
Dave Kanzer	Colorado River Water Conservation District	201 Centennial Drive Glenwood Springs, CO 81601
--	Delta County Planning and Community Development	295 W. 6 th Street Delta, CO 81406

Environmental Assessment
Pilot Rock Ditch Piping Project
Crawford, Delta County, Colorado

Name	Agency	Address
Jodi Wagner	Delta County Road and Bridge	560 Dodge Street Delta, CO 81406
Wendell Koontz	Delta County Commissioner, District 3	560 Dodge Street Delta, CO 81406
Steve White	Montrose County Planning and Development	63160 LaSalle Road Montrose, CO 81401
Susan Byrne	Montrose County Commissioners	317 S. 2 nd Street Montrose, CO 81401
Cary Denison	Trout Unlimited	264 County Road 4 Montrose, CO 81403
--	Citizens for a Healthy Community	211 Grand Avenue Paonia, CO 81428
--	Western Slope Conservation Center	204 Poplar Avenue Paonia, CO 81423
--	Nine Adjacent Private Landowners	--

CHAPTER 6 – PREPARERS

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

Name	Agency	Title
Jennifer Ward	Bureau of Reclamation	Environmental Protection Specialist & Project Manager
Lesley McWhirter	Bureau of Reclamation	Environmental & Planning Group Chief
Niccole Mortenson	U.S. Forest Service	NEPA Specialist, Grand Mesa Gunnison & Uncompahgre National Forests
Alexander Nees	SGM, Inc	Senior Ecologist

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CHAPTER 8 – ABBREVIATIONS AND ACRONYMS

Abbreviation or Acronym	Definition
APE	Area of Potential Effect
ATV	All-Terrain Vehicle
CDPHE	Colorado Department of Public Health and Environment
CDSS	Colorado Decision Support System
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cfs	Cubic feet per second
CPW	Colorado Parks and Wildlife
CWA	Clean Water Act
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
EPA	U.S. Environmental Protection Agency
FONSI	Finding of No Significant Impact
HUC	Hydrologic Unit Code
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
pipe	PVC Plastic Irrigation Pipe
PM	Particulate Matter

Abbreviation or Acronym	Definition
PRD	Pilot Rock Ditch
PRDC	Pilot Rock Ditch Company
Reclamation	U.S. Bureau of Reclamation
RGP-5	Regional General Permit 5 – Ditch Related Activities in the State of Colorado
SHPO	State Historic Preservation Officer
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

APPENDIX A – PROJECT MAPS

ELK HABITAT


Pilot Rock Ditch


LEGEND

 Pilot Ditch to be Piped


 Township/Range

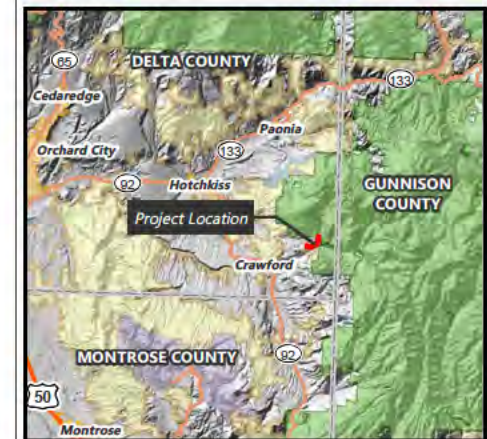
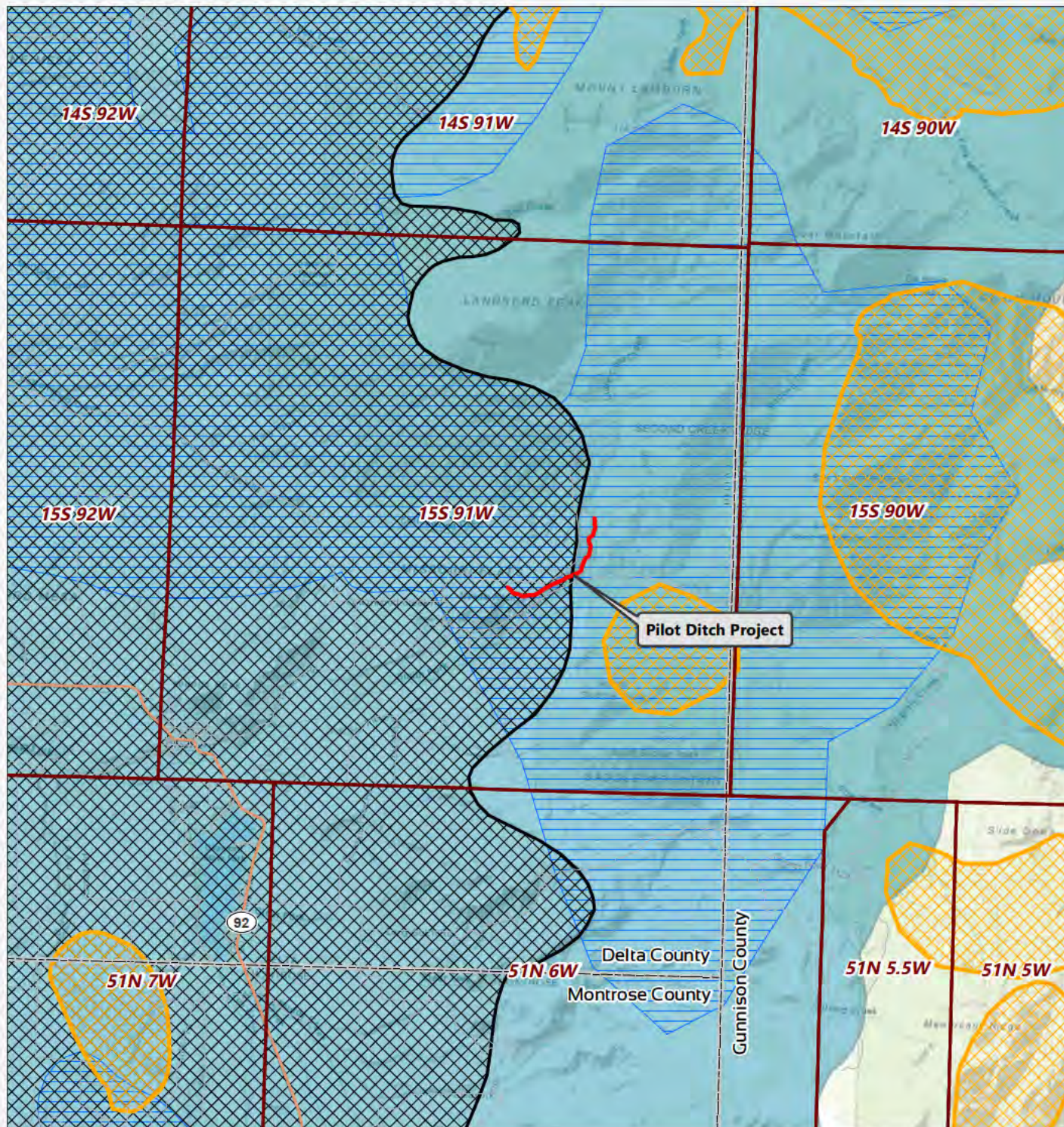
Colorado Parks and Wildlife Activity

 Elk Severe Winter Range

 Elk Production Area

 Elk Winter Concentration Area

 Elk Winter Range



Disclaimer:

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SGM

118 W South St, Suite 200
Glenwood Springs, CO 81601
970.384.9040
www.sgmco.com

Date: 5/5/2020
Location: 38.73177, -107.53148
Created By: SGM
Drawn By: JDF

0 0.75 1.5 3 Miles

SCALE: 1" = 2 miles

ELK HABITAT

Pilot Rock - Doug Creek Habitat Site

LEGEND

-  Doug Creek Habitat Area
-  US or State Highway
-  County Highway
-  Local Road
-  Township/Range

Colorado Parks and Wildlife Activity

-  Elk Severe Winter Range
-  Elk Production Area
-  Elk Winter Concentration Area
-  Elk Winter Range



Disclaimer:

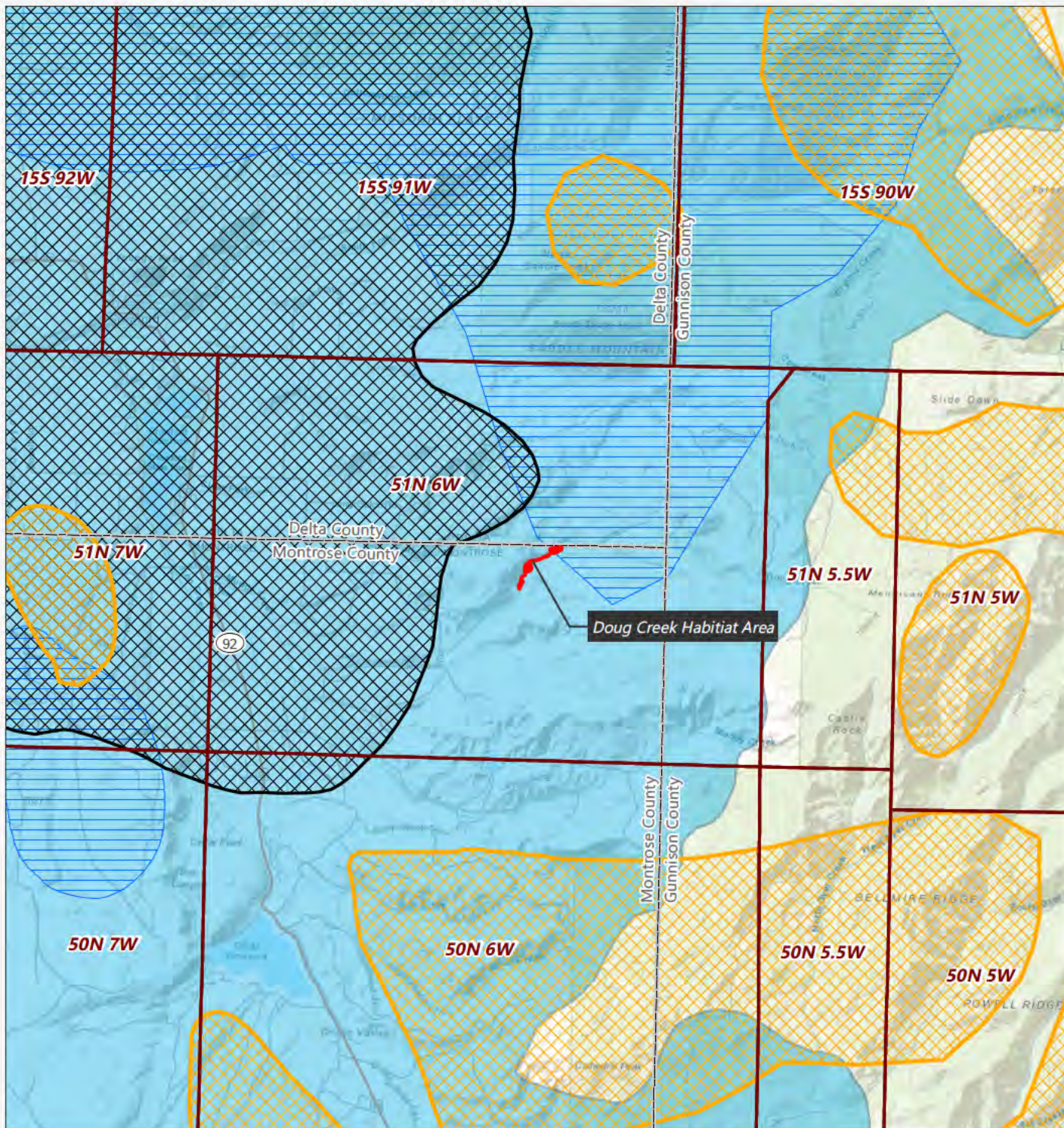
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970.384.9040
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Date: 11/30/2021
Location: Montrose County, CO
Created By: SGM
Drawn By: RKK

0 0.5 1 2 Miles
SCALE: 1 in = 2 miles




MULE DEER HABITAT


Pilot Rock Ditch


LEGEND

 Pilot Ditch to be Piped


 Township/Range

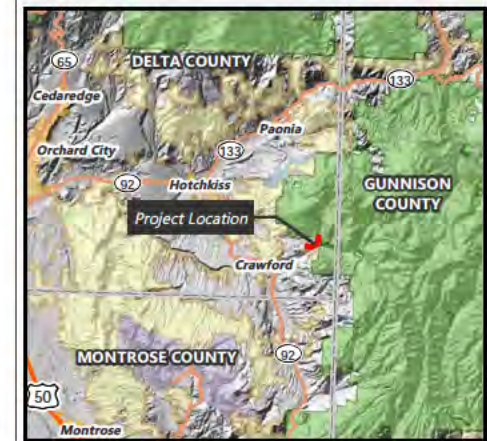
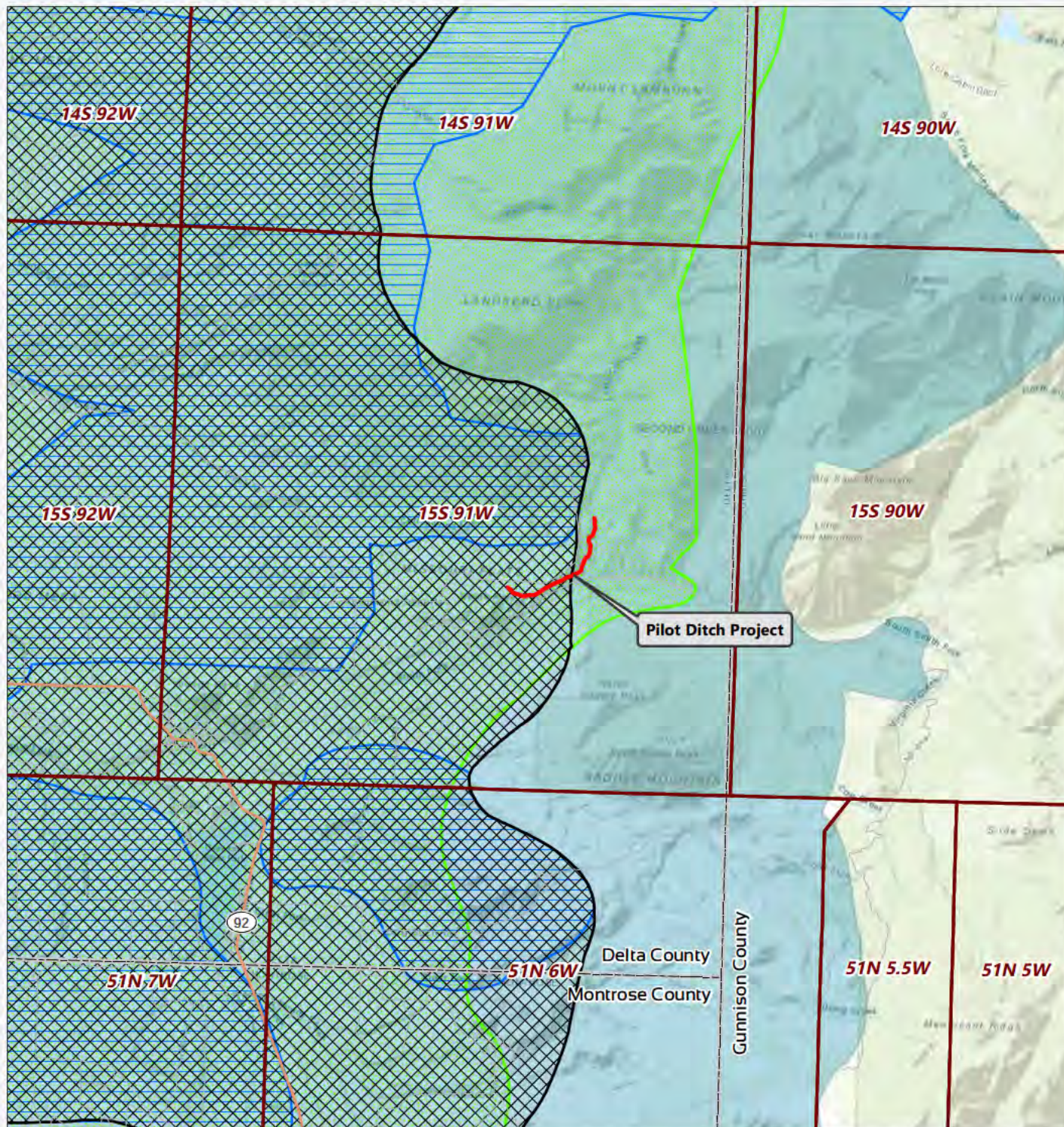
Colorado Parks and Wildlife Activity

 Mule Deer Severe Winter Range

 Mule Deer Resident Population Area

 Mule Deer Winter Concentration Area

 Mule Deer Winter Range



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www.sgmcolorado.com

Date: 5/5/2020
Location: 38.73177, -107.53148
Created By: SGM
Drawn By: JDF

0 0.75 1.5 3 Miles

SCALE: 1" = 2 miles

MULE DEER HABITAT

Pilot Rock - Doug Creek Habitat Site

LEGEND

-  Doug Creek Habitat Area
-  US or State Highway
-  County Highway
-  Local Road
-  Township/Range

Colorado Parks and Wildlife Activity

-  Mule Deer Severe Winter Range
-  Mule Deer Resident Population Area
-  Mule Deer Winter Concentration Area
-  Mule Deer Winter Range



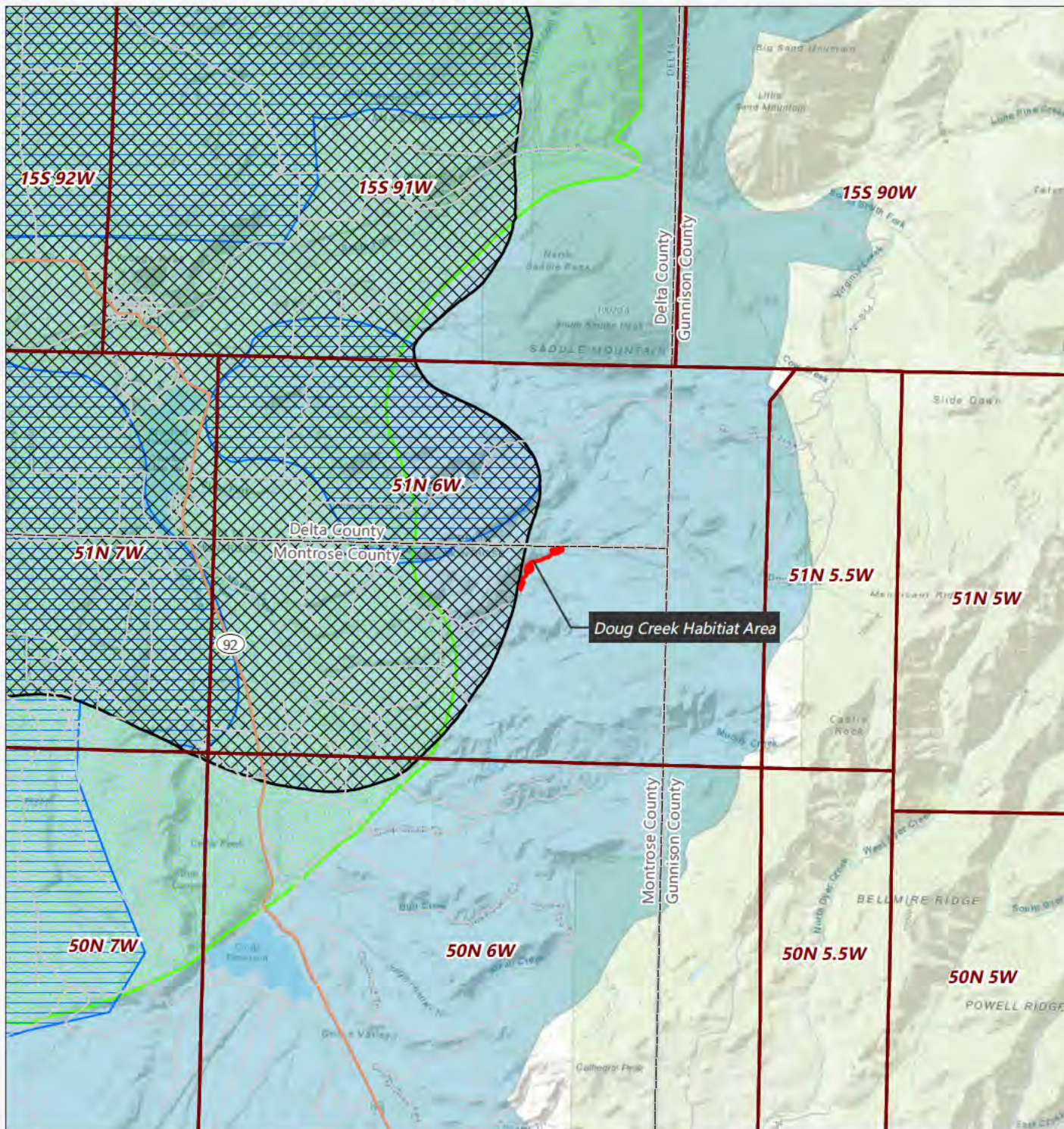
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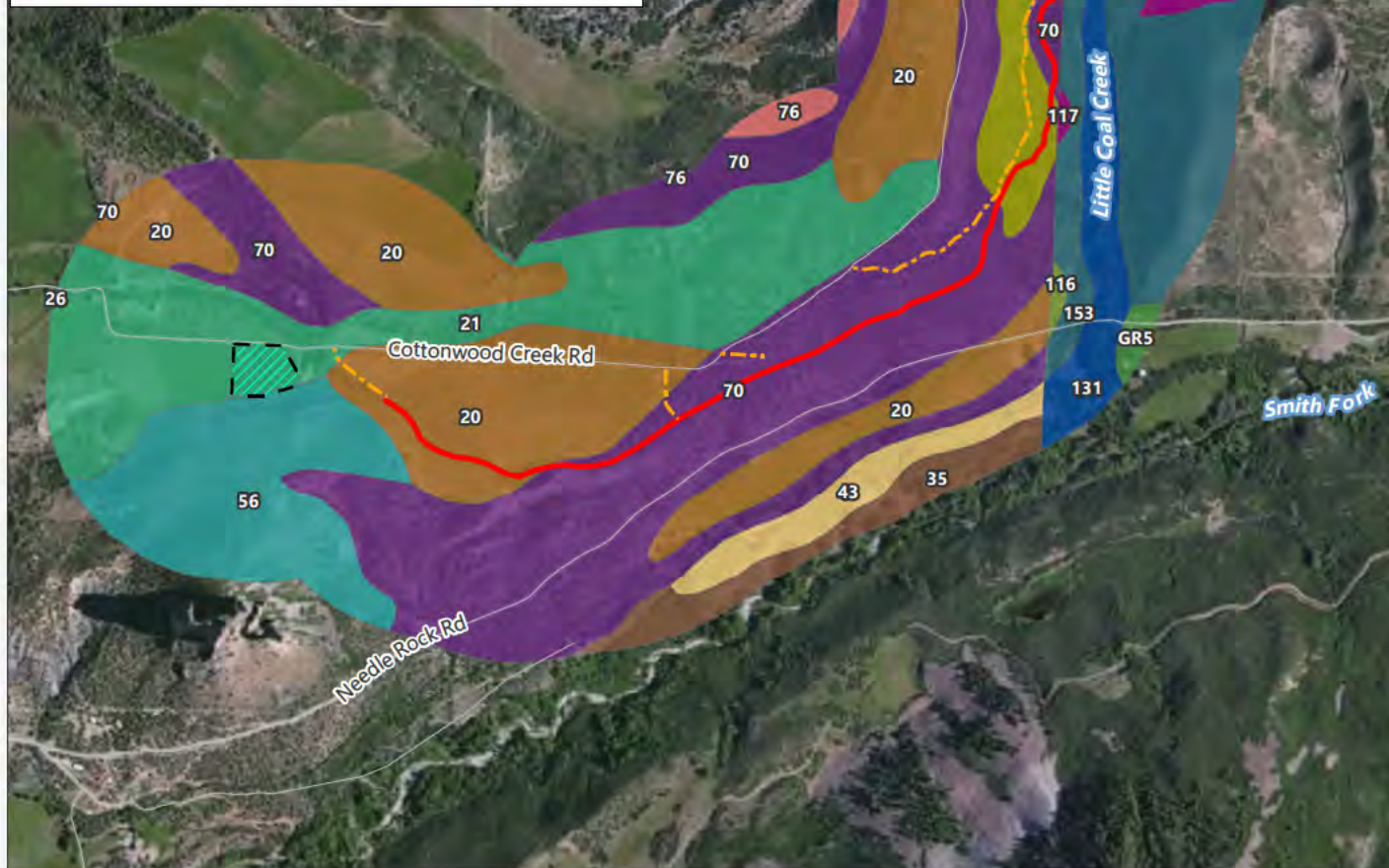
Date: 11/30/2021
Location: Montrose County, CO
Created By: SGM
Drawn By: RKK

0 0.5 1 2 Miles
SCALE: 1 in = 2 miles



Soil Type

- 116 - Cerro-Herm complex, 0-15% slopes
- 117 - Cerro-Herm complex, 15-40% slopes
- 131 - Cumulic Haploborolls, 1-3% slopes
- 153 - Haploborolls-Ustochrepts Rock outcrop complex, 40-99% slopes
- 192 - Torriorthents, cool-Rock outcrop, 35-90% slopes
- 20 - Cerro loam, 1-6% slopes
- 21 - Cerro loam, 6-12% slopes
- 22 - Cerro stony loam, 10-35% slopes
- 26 - Colona silty clay loam, 1-6% slopes
- 35 - Fluvaquents, flooded
- 43 - Glenton loam, 3-6% slopes
- 56 - Midway-Gaynor silty clay loams, 10-40% slopes
- 70 - Saraton-Agua Fria complex, 20-50% slopes
- 76 - Torriorthents-Rock outcrop, shale, complex
- GR5 - Fughes-Fughes, very stony complex, cool, 5-25% slopes

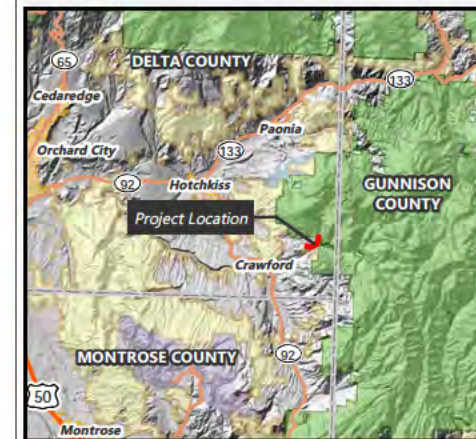


SSURGO SOILS

Pilot Rock Ditch

LEGEND

- Pilot Ditch to be Piped
- Staging Area
- Proposed Access Roads
- Stream
- Section Line



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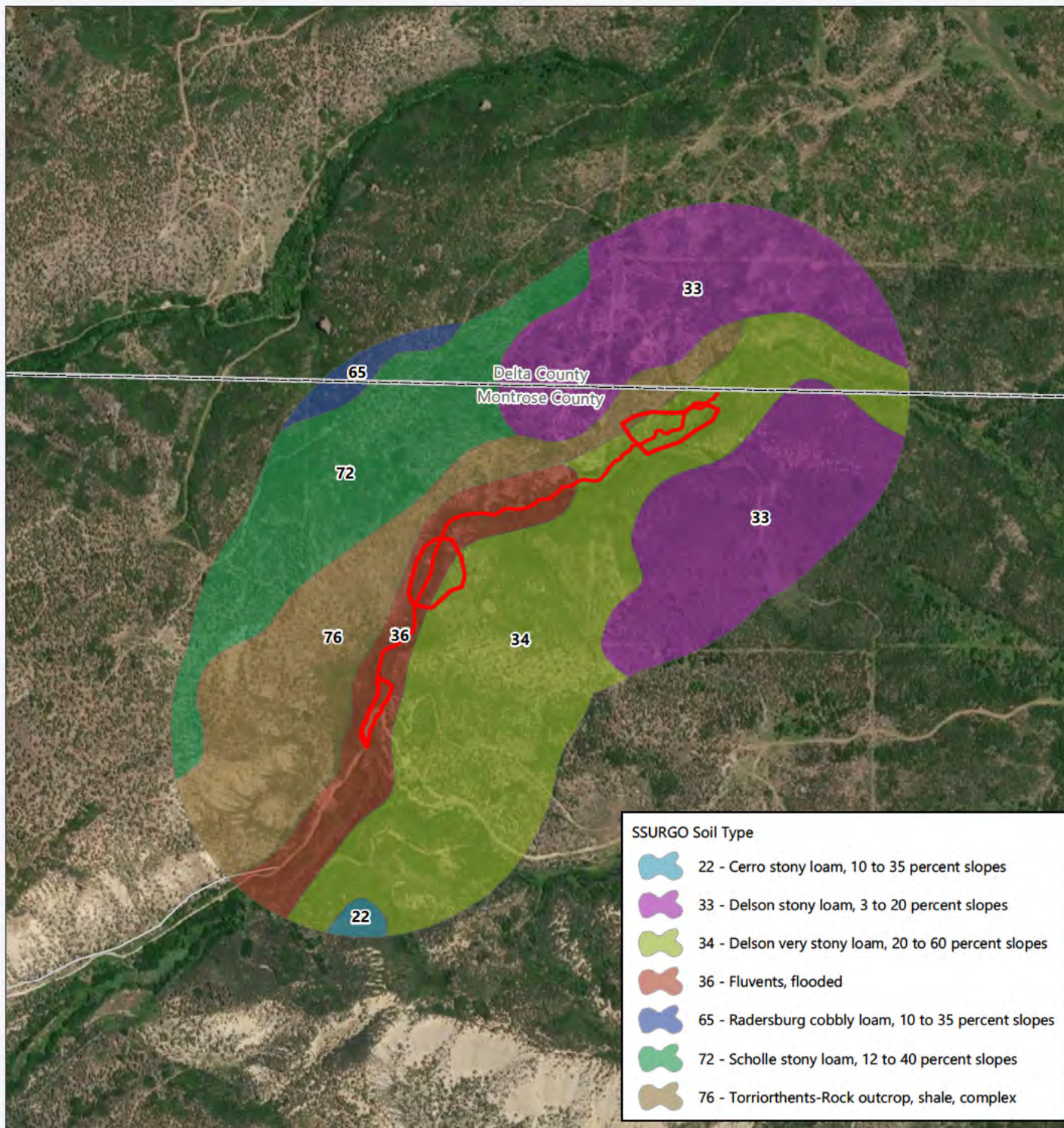
SGM

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970.384.9040
www.sgmco.com

Date: 5/6/2020
Location: 38.73177, -107.53148
Created By: SGM
Drawn By: JDF

0 650 1,300 2,600 Feet

SCALE: 1" = 1,350 feet

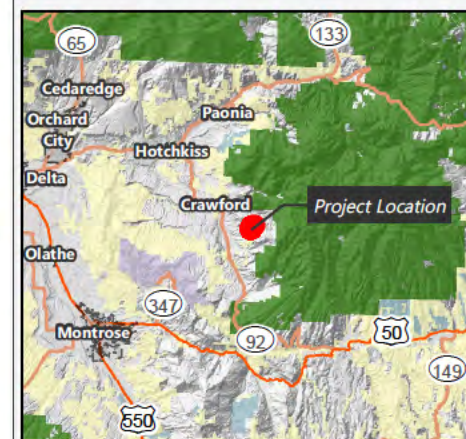


SSURGO SOILS

Pilot Rock - Doug Creek Habitat Site

LEGEND

- Doug Creek Habitat Area(s)
- US or State Highway
- County Highway
- Local Road
- Township/Range



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SGM
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970.384.9040
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Date: 11/30/2021
Location: Montrose County, CO
Created By: SGM
Drawn By: RKK

0 450 900 1,800 Feet
SCALE: 1 inch = 1,000 feet



APPENDIX B – ENDANGERED SPECIES ACT COMPLIANCE

APPENDIX C – CULTURAL COMPLIANCE



Ed Warner
Area Manager
Western Colorado Area Office
Bureau of Reclamation
445 West Gunnison Avenue, Suite 221
Grand Junction, CO 81501

RE: Determination of Eligibility and Effect; Pilot Rock Ditch Piping Project, Colorado River Basin Salinity Control Program (R20AC00015), Colorado (HC# 80612)

Dear Mr. Warner,

Thank you for your correspondence dated and received by our office on November 5, 2021 requesting review of the above referenced undertaking under Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations 36 CFR 800.

After review of the provided documentation, we agree that 5DT.2443.1, 5DT.2444.1, and 5MN.12925.1 are not eligible for the National Register of Historic Places. Based on the documentation provided, we agree that your finding of no adverse effect [36 CFR 800.5(d)(1)] to historic properties is appropriate for the subject undertaking.

Should unidentified archaeological resources be discovered in the course of the project, work must be interrupted until the resources have been evaluated in terms of the National Register eligibility criteria (36 CFR 60.4) in consultation with our office pursuant to 36 CFR 800.13. Also, should the consulted-upon scope of the work change, please contact our office for continued consultation under Section 106 of the NHPA.

We request being involved in the consultation process with the local government, which as stipulated in 36 CFR 800.3 is required to be notified of the undertaking, and with other consulting parties. Additional information provided by the local government or consulting parties might cause our office to re-evaluate our eligibility and potential effect findings. Please note that our compliance letter does not end the 30-day review period provided to other consulting parties.

Thank you for the opportunity to comment. If you have any questions, please contact Matthew Marques, Section 106 Compliance Manager, at (303) 866-4678, or matthew.marques@state.co.us.

Sincerely,

Dawn DiPrince
State Historic Preservation Officer

Note: On Tuesday, October 19, 2021, Governor Jared Polis appointed Dawn DiPrince as the new Colorado State Historic Preservation Officer. The State Historic Preservation Officer has the delegated authority to represent the State of Colorado in carrying out the responsibilities specified in the National Historic Preservation Act, and in the regulations and administrative requirements established for implementation of the NHPA. Please join us in welcoming Ms. DiPrince to this new capacity.