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Colorado Water Conservation Board
Department of Natural Resources

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TO:	Colorado Water Conservation Board Members
FROM:	Chris Sturm, Watershed and Flood Protection Section
DATE:	July 16 & 17, 2025 Board Meeting
AGENDA ITEM:	Agenda Item 18, Project 7 Water Authority, Fish and Wildlife Mitigation Plan

Staff Recommendation

Staff recommends that the Board approve the Project 7 Water Authority's Fish and Wildlife Mitigation Plan for their Regional Water Resiliency Program.

Background:

Colorado Parks and Wildlife staff have been working with the Project 7 Water Authority for several years to develop the Fish and Wildlife Mitigation Plan (Plan) for a water project that includes a new water treatment plant and 5.3 miles of pipeline from Ridgway Reservoir to the plant near the town of Colona. The Colorado Parks and Wildlife Commission approved the Plan on June 12, 2025. The Fish and wildlife resources statute (attached) specifies that the Board will adopt the plan as the official state position on mitigation actions if the applicant subject to the requirements of the statute and commission agrees upon a mitigation plan (C.R.S. § 37-60-122.2(1)(b)).

Discussion:

The Project 7 Water Authority supplies water to approximately 60,000 people in the Uncompahgre River Valley. Project 7 is a partnership of seven entities that include the City of Montrose, City of Delta, Town of Olathe, Tri-County Water Conservancy District, Chipeta Water District, Menoken Water District, and the Uncompahgre Valley Water Users Association (UVWUA). The water supplied by Project 7 comes entirely from the Blue Mesa Reservoir via the Gunnison Tunnel. The proposed project imparts resiliency to the supply by allowing Project 7 direct access to its contract water in Ridgway Reservoir. Project 7 currently exchanges their water in the reservoir one for one with water in the Gunnison Tunnel. The reduction in exchanged water will reduce credits given to the UVWUA, and UVWUA will use the water from the Gunnison basin. The project is further described in the attached Plan. The mitigation actions are primarily related to the construction of the pipeline and water treatment plant. They are outlined in Section 3 of the Plan. Analysis or the project does show slight reductions in flow below Ridgway Reservoir, however minimum streamflow obligations for this section of river will still be met. The Plan states that "the project will have no net impact on exsting wintertime streamflow conditions from November through May, and then in April and May, there would be an average reduction of in streamflows 8.5%

and 3.5% (respectively). However, the project still maintains streamflow conditions well above the 1976 EIS recommendations and above CPW's 2024 recommendations." Because of this, CPW is not recommending any additional water releases to mitigate potential impacts to the fishery.

37-60-122.2. Fish and wildlife resources - legislative declaration - fish and wildlife resources fund - authorization.

(1) (a) The general assembly hereby recognizes the responsibility of the state for fish and wildlife resources found in and around state waters which are affected by the construction, operation, or maintenance of water diversion, delivery, or storage facilities. The general assembly hereby declares that such fish and wildlife resources are a matter of statewide concern and that impacts on such resources should be mitigated by the project applicants in a reasonable manner. It is the intent of the general assembly that fish and wildlife resources that are affected by the construction, operation, or maintenance of water diversion, delivery, or storage facilities should be mitigated to the extent, and in a manner, that is economically reasonable and maintains a balance between the development of the state's water resources and the protection of the state's fish and wildlife resources.

(b) Except as provided in this paragraph (b), the applicant for any water diversion, delivery, or storage facility which requires an application for a permit, license, or other approval from the United States shall inform the Colorado water conservation board, wildlife commission, and division of wildlife of its application and submit a mitigation proposal pursuant to this section. Exempted from such requirement are the Animas-La Plata project, the Two Forks dam and reservoir project, and the Homestake water project for which definite plan reports and final environmental impact statements have been approved or which are awaiting approval of the same, applicants for site specific dredge and fill permits for operations not requiring construction of a reservoir, and applicants for section 404 federal nationwide permits. If an applicant that is subject to the provisions of this section and the commission agree upon a mitigation plan for the facility, the commission shall forward such agreement to the Colorado water conservation board, and the board shall adopt such agreement at its next meeting as the official state position on the mitigation actions required of the applicant. In all cases the commission shall proceed expeditiously and, no later than sixty days from the applicant's notice, unless extended in writing by the applicant, make its evaluation regarding the probable impact of the proposed facility on fish and wildlife resources and their habitat and to make its recommendation regarding such reasonable mitigation actions as may be needed.

(c) The commission's evaluation and proposed mitigation recommendation shall be transmitted to the Colorado water conservation board. The board within sixty days, unless extended in writing by the applicant, shall either affirm the mitigation recommendation of the commission as the official state position or shall make modifications or additions thereto supported by a memorandum that sets out the basis for any changes made. Whenever modifications or additions are made by the board in the commission's mitigation recommendation, the governor, within sixty days, shall affirm or modify the mitigation recommendation which shall then be the official state position with respect to mitigation. The official state position, established pursuant to this subsection (1) shall be communicated to each federal, state, or other governmental agency from which the applicant must obtain a permit, license, or other approval.

(2) (a) Moneys transferred to the fish and wildlife resources fund pursuant to the provisions of section 37-60-121 (6) are hereby continuously appropriated to the Colorado water conservation board for the purpose of making grants pursuant to this subsection (2) and for offsetting the direct and indirect costs of the board for administering the grants. The interest earned from the investment of the moneys in the fund shall be credited to the fund.

(b) To the extent that the cost of implementing the mitigation recommendation made pursuant to subsection (1) of this section exceeds five percent of the costs of a water diversion, delivery, or storage facility, the board shall, upon the application of the applicant, make a mitigation grant to the applicant. The amount of the grant shall be sufficient to pay for the mitigation recommendation as determined by this section to the extent required above the applicant's five percent share. Any additional enhancement shall be at the discretion and within the means of the board. Under no circumstance shall the total amount of the grant exceed five percent of the construction costs of the project, or be disbursed in installments that exceed seventy percent of the amount of the grant during any fiscal year. Any mitigation cost in excess of ten percent of the construction costs of a project shall be borne by the applicant.

(c) An applicant may apply for an enhancement grant by submitting to the commission and the board an enhancement proposal for enhancing fish and wildlife resources over and above the levels existing without such facilities. The commission shall submit its recommendations on the proposal to the board for its consideration. The board, with the concurrence of the commission, may award a grant for fish and wildlife enhancement. Any such enhancement grant will be shared equally by the Colorado water conservation board's fish and wildlife resources fund and the division of wildlife's wildlife cash funds and other funds available to the division.

(d) For the purpose of this subsection (2), construction costs means the best estimate of the physical construction costs as fixed by the Colorado water conservation board as of the date of the grant application. Costs should be limited to design, engineering and physical construction and will not include the costs of planning, financing, and environmental documentation, mitigation costs, legal expenses, site acquisition or water rights.

(e) Species recovery grants from the fish and wildlife resources fund may be made for the purpose of responding to needs of declining native species and to those species protected under the federal "Endangered Species Act of 1973", 16 U.S.C. sec. 1531, et seq., as amended, in a manner that will carry out the state water policy.

(f) (Deleted by amendment, L. 2001, p. 692, § 28, effective May 30, 2001.)

(3) Decisions relating to the official state mitigation position made pursuant to paragraph (c) of subsection (1) of this section shall not be subject to judicial review.

(4) The board shall distribute mitigation and enhancement grants reasonably and equitably among water basins toward the end that those projects sponsored by beneficiaries east of the continental divide receive fifty percent of the money granted and those projects sponsored by beneficiaries west of the continental divide receive fifty percent of the money granted under this section.

(5) The general assembly hereby recognizes the role instream flows and river restoration projects play in mitigating the effects of the construction, operation, and maintenance of water diversion, delivery, and storage facilities. Therefore, the Colorado water conservation board and the operators of existing water diversion, delivery, or storage facilities projects are hereby authorized to apply directly to the board for moneys for projects to carry out the purposes of this section. The board is authorized to grant such moneys if it finds that such projects will further the purposes of this section.

Source: L. 87: Entire section added, p. 1297, § 5, effective July 13. **L. 97:** (1)(a) and (2)(a) amended and (2)(e) added, p. 1600, § 1, effective June 4. **L. 98:** (2)(f) added, p. 1004, § 5, effective May 27. **L. 99:** (2)(a) amended, p. 628, § 36, effective August 4. **L. 2001:** (2)(a), (2)(c), (2)(e), and (2)(f) amended, p. 692, § 28, effective May 30. **L. 2002:** (5) added, p. 456, § 28, effective May 23.

Project 7 Water Authority
Regional Water Resiliency Program

Fish and Wildlife Mitigation Plan

Prepared on behalf of:

Project 7 Water Authority

for

Colorado Parks and Wildlife

and

Colorado Department of Health and Environment

Ouray and Montrose Counties, Colorado

Prepared by:

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April 23, 2025

Garver Project No.: 22W23750

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1. Summary and Introduction

This Fish and Wildlife Mitigation Plan pertains to the Project 7 Regional Water Supply Program (project), which will develop a raw water pipeline to access Ridgway Reservoir waters contracted to Project 7, a new water treatment plant (WTP) to treat the new water supply and a finished water pipeline to distribute drinking water to the Uncompahgre River Valley.

Project 7 Water Authority (Project 7) is a cooperative body composed of seven entities, including the City of Montrose, City of Delta, Town of Olathe, Tri-County Water Conservancy District, Chipeta Water District, Menoken Water District, and the Uncompahgre Valley Water Users Association (UVWUA), which collectively provide potable water to nearly 60,000 individuals in the Uncompahgre River Valley. Project 7 is a wholesale water provider operating from a single water treatment plant (WTP) in Montrose, CO, supplied by a single water supply (Blue Mesa Reservoir via the 116-year-old Gunnison tunnel). It is uncommon for such a large population to rely on one water supply and treatment plant without backup. This will reduce the risk of being dependent on a single drinking water source and a single treatment facility (in this case, waters from the Gunnison River, Gunnison Tunnel, current Project 7 Water Treatment Plant, and current Project 7 infrastructure; **Figure 1. Service Area Risks**).

Project 7 has developed the proposed action, the Regional Water Supply Program ("project"), to mitigate future supply issues proactively. This project entails the construction of a raw water pipeline, approximately 30,746 linear feet (5.82-mile), 24-inch nominal diameter, which would start at the Bureau of Reclamation's (Reclamation) Ridgway Reservoir dam and follow the west side of U.S. Highway 550 (US-550) corridor to a point south of the town of Colona. There, a new water treatment plant (WTP, called "Project 7 South WTP") would be built on lands owned by Project 7; the new WTP would be able to utilize up to approximately 13,442 acre feet (AF; or 12 million gallons per day "MGD") annually of Project 7's existing contract waters directly from Ridgway Reservoir. Following treatment, finished water (aka potable water) will be routed north along the west side of US-550 in a 24-inch nominal diameter pipeline of approximately 30,252 linear feet (5.73 miles), where it would tie into the existing Tri-County Water Conservancy District (TCW) distribution system. The total length of the two water pipelines would be 11.5 miles.

Waters received from Blue Mesa via the Gunnison Tunnel to Project 7 are available through an exchange agreement between TCW and UVWUA. The exchange is a one-to-one trade. Water provided to Project 7 via the Gunnison River is then credited to UVWUA for using Ridgway Reservoir waters. Case No. 08CW150, filled in the District Water Court, Water Division No. 4 Colorado, states that this exchange agreement approves the municipal use of 200 cubic feet per second (cfs). The project will provide infrastructure for Project 7 to access water directly from Ridgway Reservoir, reducing reliance on water traded through the exchange agreement. Project 7's reduced use of exchanged Gunnison water will proportionately reduce the credit to UVWUA in Ridgway offered through the exchange agreement. The same quantity of water will be used to serve the Uncompahgre Valley; UVWUA will shift to using Gunnison waters.

The project would allow Project 7 to shift up to 43 percent of its existing water supply from the Gunnison River to Ridgway Reservoir, where Project 7 holds contract water from TCW (and has held these contract waters for the past 50+ years). The planned use of water from Ridgway Reservoir would occur in a series of phases to suffice minimum monthly demands based on population growth projections. Initial maximum diversions to the raw water pipeline would be 6,721 AF/year (or 9.28 cubic feet per second (cfs)) until approximately 2035. In 2035, anticipated water diversions would increase to 10,081 AF/year (or 13.93 cfs). There would be no additional water depletions to the Gunnison River or Colorado River associated with this project, but rather a shift in the diversion point of approximately 43 percent of Project 7's water supply from

the Gunnison River to Ridgway Reservoir. To further explain, the exchange agreement would directly be reduced on a one-to-one basis; that is, if Project 7 uses 6k af/yr from Ridgway, UVWUA would use 6k af/yr from the Gunnison River instead of Ridgway Reservoir.

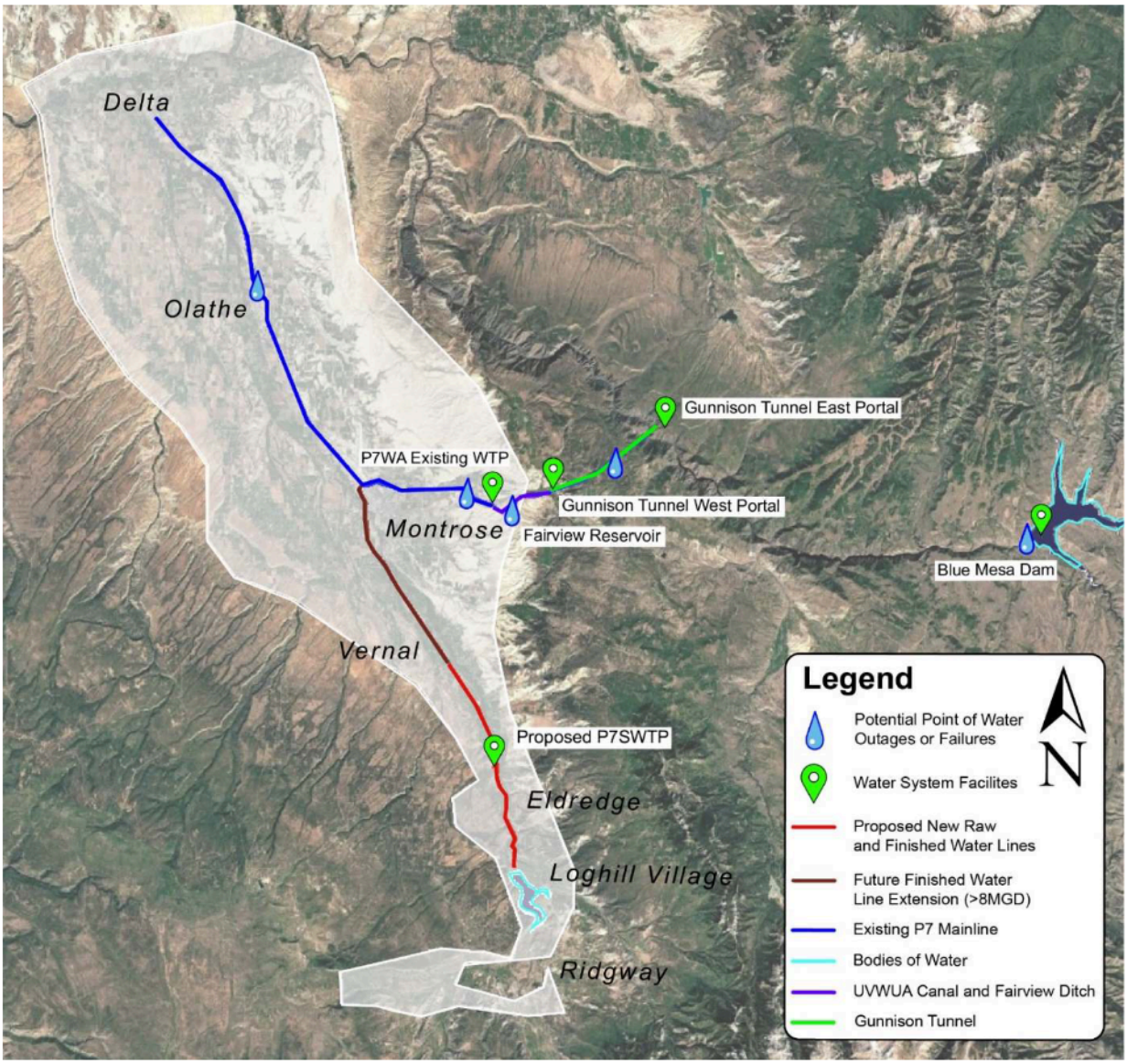


Figure 1: Service Area Risks

Project 7 has been approved for a State Revolving Fund (SRF) loan from the Colorado Water Resources and Power Development Authority (CWRPDA) and a Water Infrastructure Finance and Innovation Act (WIFIA) loan from the Environmental Protection Agency (EPA). Project 7 has also applied for Title XVI Water Reclamation and Reuse Program from the Bureau of Reclamation (Reclamation).

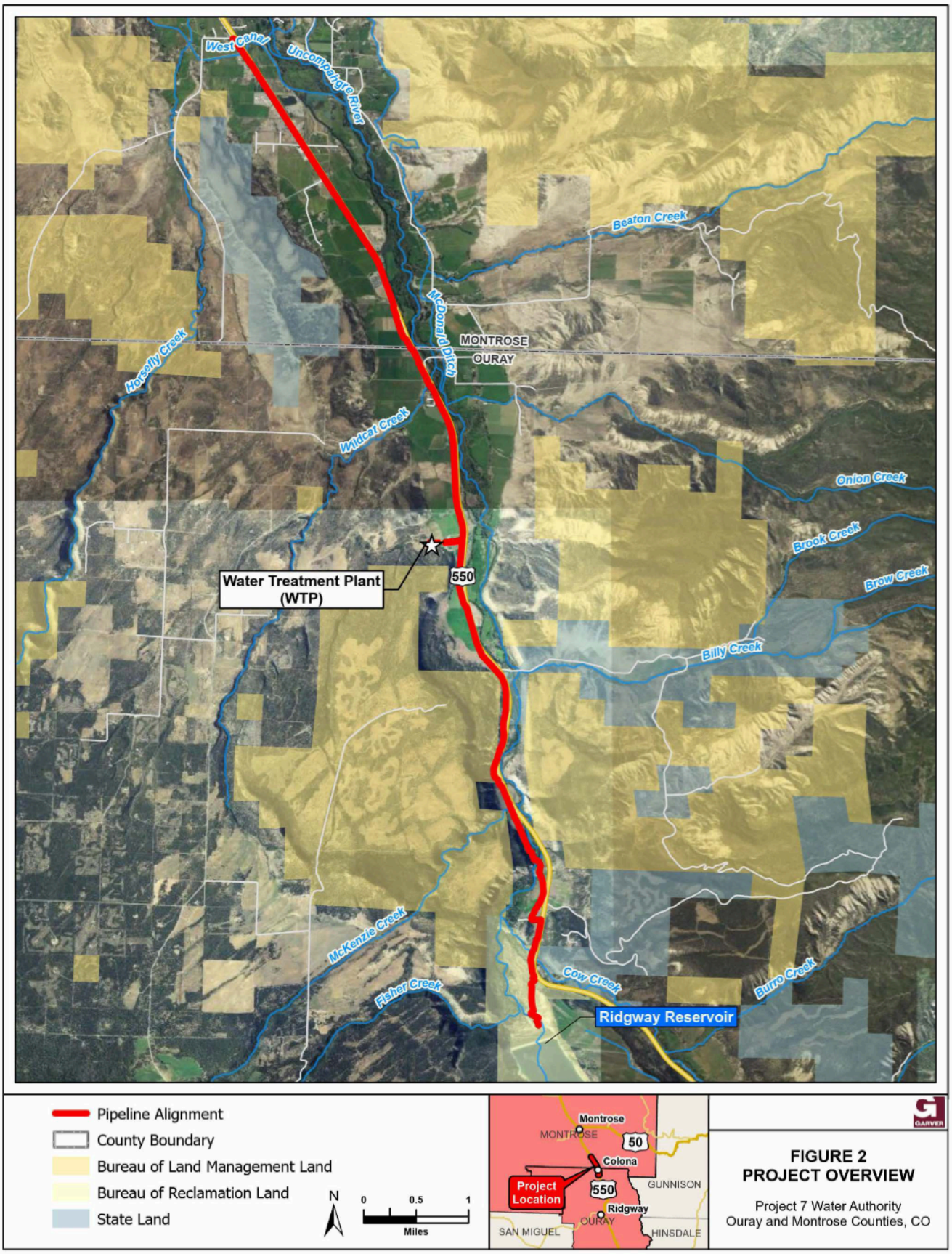
The EPA is the lead federal agency for this project, but through their Drinking Water State Revolving Fund program[1], the EPA has delegated the CDPHE to administer compliance with the National Environmental

[1] Procedures for Implementing Environmental Federal Cross-Cutting Authorities in the CW and DW SRF Programs (epa.gov)

Policy Act (NEPA). The Colorado Department of Public Health and Environment (CDPHE) is required to follow all environmental review regulations, including assessing a project's short and long-term direct, secondary, and cumulative impacts presented in an Environmental Assessment. The CDPHE is also required to review projects for compliance with other applicable environmental laws and regulations, including the Colorado State Environmental Review Process (SERP), which is designed to be consistent with NEPA guidelines and to help consolidate and coordinate the environmental review process. An Environmental Assessment was developed in compliance with EPA, Reclamation, Bureau of Land Management (BLM), Council for Environmental Quality, and SERP guidance for environmental reviews and NEPA compliance.

Components of this project occur on lands managed by Reclamation and BLM. Both Reclamation and the BLM are considered cooperating agencies for the development of the Environmental Assessment. For this project, CDPHE, Reclamation, and the BLM have agreed that CDPHE would draft the Environmental Assessment, and each cooperating agency would produce its own NEPA decision document (e.g., a Finding of No Significant Impact). A license agreement from Reclamation and a Right-of-Way agreement from BLM are required to authorize project components' construction, operation, and maintenance on their respective lands.

Figure 2: Project Overview



1.1 Purpose and Need for Action

The project will provide the Uncompahgre Valley and its 60,000 residents with a sustainable and reliable second water source and supply to build resilience in the face of aging infrastructure and climate change-related pressures. The project will alleviate pressure on the existing infrastructure to allow for necessary maintenance and inspections by providing operational flexibility to provide safe drinking water.

The Ridgway Dam of the Dallas Creek Project was constructed in 1987 to increase water supplies for irrigation and municipal and industrial purposes, and to provide flood control. The project also includes recreational development at the reservoir and measures to enhance fishing opportunities on the Uncompahgre River, improve wildlife habitat, and mitigate wildlife losses caused by the reservoir development. TCW manages the reservoir and releases. Project 7 contracted waters from Ridgway Reservoir in the 1970s, an annual water supply of 28,100 AF for municipal and industrial purposes out of the total active storage capacity of 59,396 AF. Table 1 below defines the Ridgway Reservoir pool allocation; Project 7 contracted waters are shown in blue. Because of the physical location of the current Project 7 WTP east of Montrose (relatively far away from Ridgway Reservoir) and because of the low costs and infrastructure needed to treat waters from the Gunnison River, an exchange of Ridgway Reservoir storage water with water from the Gunnison River was established with the UVWUA. This exchange agreement with UVWUA allows Project 7 to use up to 23,000 AF per year of Gunnison River waters (delivered through the Gunnison Tunnel), but as mentioned, it currently only uses approximately 9,000 to 10,000 AF per year.

Table 1: Summary of Existing Annual Releases from Ridgway Reservoir (acre feet)

Ridgway Reservoir Pool				Acre-Feet/Year
Active	Unallocated			19,996
	Allocated	Irrigation		11,200
		Recreation		100
		Municipal and Industrial	City of Montrose	10,000
			City of Delta	3,700
			Tri-County	12,860
			Town of Olathe	300
			Menoken Water District	640
			Chipeta Water District	600
			Municipal and Industrial Total	**28,100**
Total				59,396

As shown in Figure 1 above, the current Project 7 system has multiple potential points of failure. Should the infrastructure fail, or should a wildfire, drought, or other serious disaster occur that prevents the conveyance or treatment of water, nearly 60,000 residents of the Uncompahgre Valley would have reduced availability of potable water or, at worst, be without potable water.

One such issue, drought, is a familiar topic for both Colorado and this region. On July 1, 2021, Colorado Governor Jared Polis formally declared a drought emergency for western Colorado by Proclamation of the Governor[2] as counties continued to face evolving impacts and water shortages from a multi-year, severe drought episode affecting industries and citizens. In the same year, the water supply at the Blue Mesa Reservoir was depleted to meet Drought Contingency Plans established to keep Lake Powell's water elevation above 3,525 feet – the target level identified to provide a buffer to hydropower generation.

[2] Available at: *Proclamation of the Governor*

Pursuant to the Upper Colorado River Basin 2022 Drought Response Operations Plan[3] (DROA), additional releases from Blue Mesa Reservoir may be required to prevent Lake Powell from depletion below this elevation, further decreasing available water supply for the Project 7 service area. In the Colorado River Basin, the period from 2000 to 2021 was the driest 22-year period recorded in more than 100 years of record keeping.

Based on the project design, there would be no net change in water diversions. If UVWUA's waters were not delivered to Project 7, the waters would flow through UVWUA's South Canal to farmlands, which would then discharge tailwater to the Uncompahgre River. However, as the South Canal does not extend all the way to Ridgway Reservoir; there is an "exchange reach", shown in below, on the Uncompahgre River from the Ridgway Reservoir dam downstream, approximately 11.1 miles to the South Canal's tailwater discharge point on the Uncompahgre River. Along this 11.1-mile exchange reach, there would be an anticipated decrease of average annual streamflows by approximately 0 to 1.1 percent, but on a monthly basis, the reduction in streamflow would be between 0 and up to 11 percent; please see section **4.17 Uncompahgre River Streamflow and Water Quantity** in the **Environmental Assessment** for additional discussion. Below the exchange reach, there would be no meaningful change in streamflows from development of this project, as UVWUA waters would be discharged into the Uncompahgre River from the South Canal.

[3] Available at: *2022 Drought Response Operations Plan*

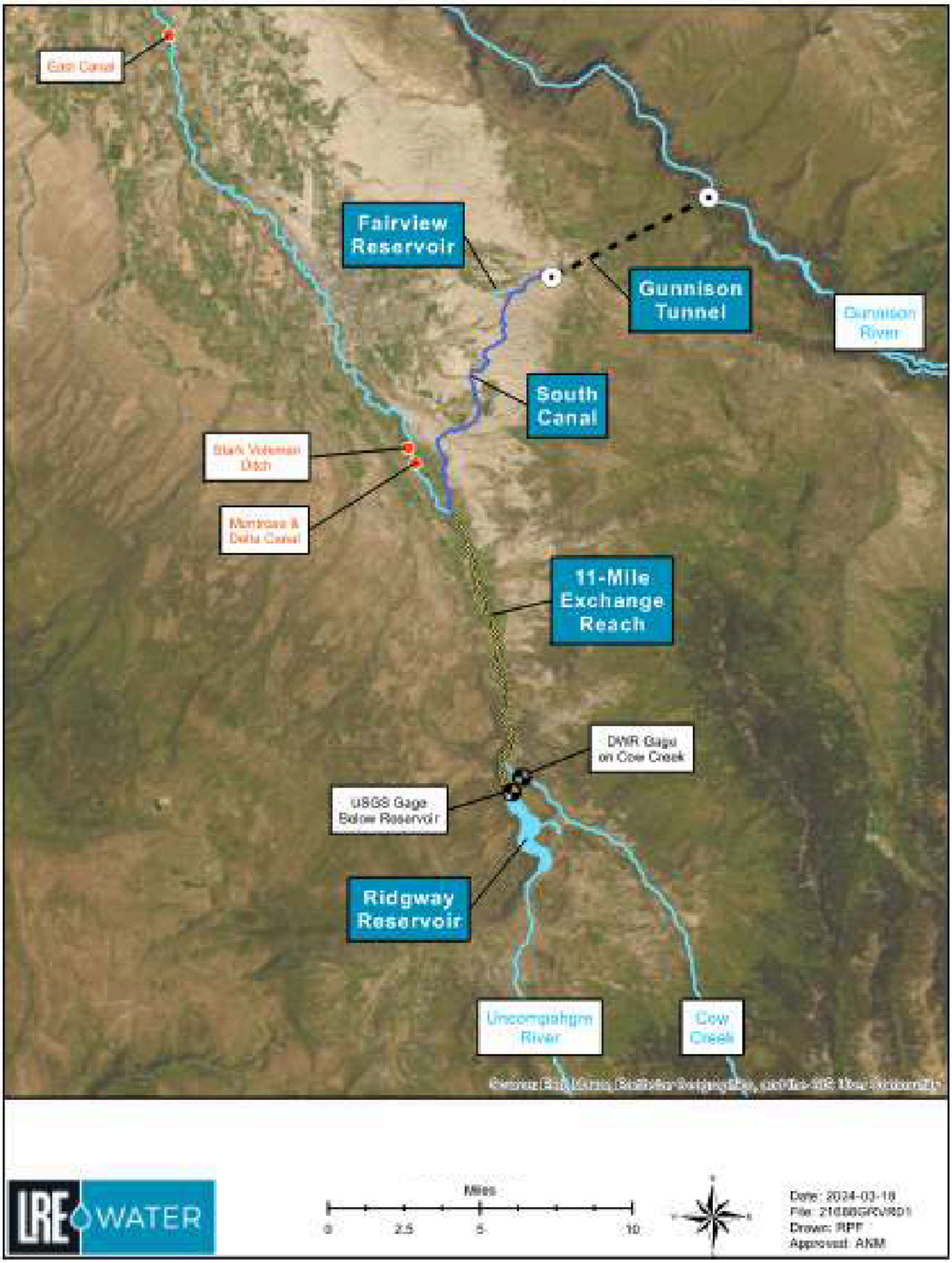


Figure 3: Water Resource Infrastructure in Project area

2 Assessment of Fish and Wildlife Resources Impacted by the Project

2.1 Project Setting

The project area is located in Ouray and Montrose counties. The proposed project area follows the Uncompahgre River valley, and most of the pipeline alignment is located within 100-feet of US-550. The lowest elevation of the route is approximately 6,117 feet above sea level at the northern end of the potable water pipeline, and the upper elevation of the route is towards the southern end, north of Ridgway State Park on private lands, at an elevation of approximately 6,733 feet. The project area is west of the Continental Divide, in the Colorado River Basin. Much of the pipeline alignment follows existing linear features including roads, a historic railroad grade, ditches, and US-550.

The project mostly occurs in irrigated pasturelands on private property. The pipeline would cross a few smaller areas of pinyon pine (*Pinus edulis*) and Utah juniper (*Juniperus osteosperma*) woodlands, which are sometimes integrated with sagebrush (*Artemisia tridentata tridentata* and *A. t. wyomingensis*) vegetation types. The WTP would be located in a dry (non-irrigated) area, previously disturbed and currently dominated by upland grasses and widely scattered sagebrush, on land owned by Project 7.

Many of the irrigated lands the pipeline crosses support agriculturally induced wetlands, or at least lands which are saturated during the irrigation season. The pipeline would cross two large streams: the Uncompahgre River and Cow Creek, both of which are larger perennial features. The project crosses one intermittent stream named McKenzie Creek, one ephemeral stream named Wildcat Creek, and crosses several unnamed ephemeral draws.

2.2 Recreation

Ridgway State Park is one of the only public flat water boating areas in Ouray County and is one of the largest reservoirs in western Colorado, totaling 1,030 surface acres, with 13.2 miles of shoreline at full volume. The Park includes three recreation areas. Short and long-term impacts to Ridgway State Park and reservoir have been analyzed for the proposed action.

The Pa-Co-Chu-Puk Campground is the only recreation area (campground) that would be crossed or directly impacted by construction of the project. This area includes camping and day use facilities, and the Uncompahgre River here is a popular year-round stream fishing destination. Construction of the raw water pipeline would not go through the middle of the Pa-Co-Chu-Puk Campground but is located on the edge of the campground. Please see section **3.4 Recreation**, below, for a discussion on recreation impact mitigation activities.

2.3 Project Reviews

The Environmental Assessment covered Project 7's engineering feasibility studies and the formal alternatives analysis in **Chapters 2 and 3** of the Environmental Assessment. This process resulted in a selection of the Proposed Action (Alternative A), along with Environmental Commitments & Mitigations (see **Chapter 6** of the Environmental Assessment). The Environmental Commitments & Mitigations discusses the environmental commitments developed to protect resources and reduce unavoidable adverse impacts to a non-significant level. The environmental commitments would be implemented by CDPHE, Reclamation, and the BLM. The environmental commitments are also included in contractor bid specifications. Project 7 is required to document compliance with each environmental commitment, as part of their receiving of SRF and WIFIA funding, and as conditions of approval from Reclamation and the BLM for license and ROW agreements.

Natural Resource Protection Laws

Compliance with the following laws and Executive Orders are required prior to and during project implementation:

- 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)
- Executive Order 11988 Floodplain Management
- Executive Order 11990 Protection of Wetlands
- Bald and Golden Eagle Protection Act of 1940 (16 U.S.C. 668- 668c)
- Executive Order 13690, Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input (and see EO 14030)

The following construction permits and plans have also been produced/acquired for this project:

- A stormwater management plan and a CDPHE Construction Stormwater Permit. As such, appropriate erosion and sediment controls would be utilized in accordance with the U.S. Army Corps of Engineers' General Condition #12 to properly stabilize the site and prevent erosion and siltation into other down-gradient waters and wetlands. These appropriate erosion and sediment controls would be installed around the project area prior to beginning earthmoving activities. Other pre-construction requirements, such as additional sensitive species surveys, may also be required (e.g., based on final pipeline alignments and the time of year of construction).
- Stormwater Management Plan, to be submitted to CDPHE by the construction contractor prior to construction disturbance.
- CDOT Stormwater Construction Permit. Permit for phasing requirements and for interim and permanent stabilization in CDOT ROWs.
- Ouray County Special Use Permit.
- Ouray County Floodplain Development Permit.
- Certification under CDPHE Water Quality Division Construction Dewatering Discharges Permit COG070000 (if any dewatering is to take place during construction).
- Spill Response Plan for areas of work where spilled contaminants could flow into water bodies.

As part of the Environmental Assessment, Project 7 completed a Biological Assessment for compliance with Section 7 of the Endangered Species Act, and received a Biological Opinion back from USFWS, completing the Section 7 consultation process. Project 7 has also applied for authorization under Section 404 of the Clean Water Act for Nationwide Permit 58 from the US Army Corps of Engineers for Utility Line Activities for Water and Other Substances, which included a Pre-Construction Notification Submittal Package that also includes the USFWS Biological Opinion, documenting compliance with the Endangered Species Act, and compliance with State Historic Preservation.

A list of protected species with the potential to occur within the project area was developed by reviewing the USFWS Information for Planning and Consultation (IPaC) system list and CPW threatened and

endangered species lists. Desktop-derived land cover and other relevant datasets were used along with field assessment observations to characterize land cover types in the project area that may provide habitat for protected species, and to evaluate the likelihood of the species presence within the project area.

Table 2: Threatened and Endangered Species Assessed

Species and Status	Species Range or Habitat Present?	Impact Determination	Rationale
MAMMALS			
Gray wolf *(Canis lupus)* Experimental, non-essential population	Yes	No Effect	No population in area; habitats are ineffective.
BIRDS			
Gunnison sage-grouse *(Centrocercus minimus)* Threatened	No	No Effect	Project outside of occupied range; habitats are unsuitable.
Mexican spotted Owl (*Strix occidentalis lucida*) Threatened	No	No Effect	Project outside of occupied range; habitats are unsuitable.
Yellow-billed cuckoo *(Coccyzus americanus)* Threatened	Yes	May Affect, Not Likely to Adversely Affect	Project is adjacent to potential habitat; habitat is unoccupied based on surveys.
FISHES			
Bonytail (*Gila elegans*) Endangered	Yes	May Affect, Likely to Adversely Affect	Project outside of occupied range; no net water depletions.
Colorado pikeminnow *(Ptychocheilus lucius)* Endangered	Yes	May Affect, Likely to Adversely Affect	Project outside of occupied range; no net water depletions.
Humpback chub (*Gila cypha*) Threatened	Yes	May Affect, Likely to Adversely Affect	Project outside of occupied range; no net water depletions.
Razorback sucker *(Xyrauchen texanus)* Endangered	Yes	May Affect, Likely to Adversely Affect	Project outside of occupied range; no net water depletions.
INSECTS			
Monarch butterfly (*Danaus plexippus*) Proposed Threatened	Yes	May Affect. Not Likely to Adversely Affect	Individuals may be impacted.
Silverspot (*Speyeria nokomis nokomis*) Threatened	Yes	No Effect	Project outside of known occupied habitats, no host plants present.
Suckley's cuckoo bumble bee (*Bombus suckleyi*) Proposed Endangered	Yes	Not Likely to Jeopardize	Individuals may be impacted, but unlikely

It is worth noting that mitigation and avoidance for aquatic and terrestrial wildlife have been evaluated with the support of CPW staff. The project area is classified as a critical winter range habitat for big game species, both elk and mule deer; because of this, construction along the pipeline corridor will be avoided during the avoidance window of December 1 through April 30. Additionally, the Uncompahgre River is a CPW-managed sport fishery. CPW identified Rainbow Trout and Bluehead Sucker most critical avoidance and sediment minimization windows of March 1-June 15 and May 1-July 15, respectively. To construct the pipeline river crossing safely, this must occur at low flows during the December 1- April 30 avoidance window. CPW confirmed that in-channel work during this time avoids/reduces impacts to rainbow trout and bluehead sucker spawning.

For additional information, please refer to the Biological Assessment, Biological Opinion, pre-construction biological survey reports, the wetland delineation report, and Environmental Assessment for additional information. The Environmental Assessment contains significant review and assessment of fish, wildlife, and habitats that may be impacted in the affected area. In particular, please see the following sections in the Environmental Assessment.

- 4.4 Agricultural Resources and Soils
- 4.7 Invasive Species and Noxious Weeds
- 4.10 Vegetation
- 4.15 Wetlands & Surface Waters
- 4.17 Ridgway Reservoir Uncompahgre River Impacts & Water Quantity
- 4.18 Water Quality
- 4.20 Wildlife – Aquatic and Terrestrial
- 4.21 Threatened and Endangered Species & USFWS Trust Resources

The federal agencies recommended conservation measures, which were incorporated into the Proposed Action. These measures will mitigate losses to fish and wildlife resources and were determined adequate by the CDPHE, Reclamation, and BLM in their Finding(s) of No Significant Impact.

Project 7 has agreed to produce this Fish and Wildlife Mitigation Plan (FWMP) at the request of CPW to meet the applicable and relevant need to minimize and mitigate the impacts of this project, in accordance with Colorado Revised Statute 37-60-122.2 and 2 CCR 406-16-1604 (Procedures for Arriving at an Official State Position on Mitigation).

In response to CPW's comment letters dated September 9, 2023, February 5, 2024, and May 3, 2024, and in response to CPW's request for a Fish and Wildlife Mitigation and Enhancement Plan, Project 7 presents the following activities.

3 Specific Mitigation Activities

3.1 Fish and Wildlife Mitigation Plan Compliance

Estimated costs and schedule for the mitigation components of this FWMP follow in section **3.2 Estimated Project Costs**. This FWMP includes a comprehensive description of all of Project 7's planned mitigation measures that are related to fish and wildlife. This plan presents Project 7's total estimated mitigation costs for all measures which are assumed to be attributable pursuant to CRS Section 37-60-122.2.

3.2 Estimated Project Costs

The project's construction costs are approximately $153,543,922. The mitigation value matrix for wildlife impact assessment and recommendations for mitigating losses outlines the estimated cost and assignment of development, operation, and maintenance of mitigation measures and monitoring. Total estimated costs from the mitigation value matrix are $2,995,860, please see Appendix A for a detailed breakdown.

3.3 Wetlands and Riparian Areas Restoration

This project would adhere to wetland and Water of the U.S. (WoTUS) impact avoidance, minimization, and USACE mitigation standards. A Wetland and Riparian Area Mitigation Plan has been developed by Project 7, outlining specific impacts and mitigation measures for each resource impacted by construction. The plan has been included for reference in Appendix B.

Wetland areas temporarily impacted by pipeline construction would be revegetated using local native wetland plants (both live plants and seeding) per the Wetlands and Riparian Areas Revegetation Plan and Nationwide Permit. Disturbed and revegetated wetlands and riparian areas would be annually monitored, and any deficiencies in revegetation, soil movement (erosion), or noxious weed invasion would be rectified by Project 7 at their sole expense.

3.4 Recreation

The two recreational areas within the project area are Pa-Co-Chu-Puk Campground and Ridgway State Park- Ridgway Reservoir, as seen in Figure 4 below.

Figure 4: Recreation Areas

Construction within the Pa-Co-Chu-Puk Campground will occur during the campground's off-season, which is defined as November to April. Construction will be coordinated with the on-site lessees of the Reclamation property: Tri-County Water Authority (TCW) and CPW. The approximate construction duration is 30 working days to cross the entrance area of the campground. During this time, access to the existing facilities will be maintained. Traffic control will be implemented, including but not limited to signage, installation of road plates to keep the access roads open, and Type 1, 2, and 3 barricades, as appropriate. Perimeter controls such as silt fencing, straw bales, and/or straw waddles will be placed along the perimeter of the work site to minimize sediment migration off-site or into existing drainage ditches. Figure 5 below shows the outlined area identified for construction activities, those activities include access routes and pipeline installation. All disturbed vegetated areas, primarily native grasses, will be restored in-kind by reseeding with the CPW-prescribed seed mix to restore disturbed areas to existing conditions. The blue-shaded area in Figure 5 is where the majority of vegetation disturbance will occur. There will be no tree removal of the trees located at the entrance of the park.

Figure 5: Pa-Co-Chu-Puk Campground Construction Activity Corridor

Ridgway State Park recreation revolves around the Ridgway Reservoir activities. The project will tie into the Ridgway Reservoir penstocks to access Ridgway Reservoir as the source water for the project. A detailed analysis of reservoir impacts indicated the worst-case single-year change in reservoir levels (i.e., drop in water amounts and levels) in Ridgway Reservoir could be as much as 3.9 ft. Worst case average drop in reservoir levels may be up to 2.22 feet. Conversely, based on how TCW "refills" or manages water content, reservoir levels may also be increased by an average of up to 0.82 ft due to the Proposed Action. The worst-case average reservoir surface area reduction could be approximately 19.2 acres during the summer months (or 1.8 percent of the surface area of the reservoir), and a 2,203 AF reduction in total reservoir content (which is approximately 2.7 percent of the 80,000 AF volume of the reservoir). Conversely, based on how TCW "refills" or manages water content, reservoir content may increase by an average of 681 AF, and the reservoir surface area may increase by an average of 5.92 acres.

Based on the size of the reservoir, these amounts are expected to be insignificant. Water level decreases are not anticipated to meaningfully impact boat ramp use or boat slip operations or reduce the reservoir's attractiveness to boaters. With a less than 2 percent drop in reservoir surface area, no loss in user days would be anticipated.

3.5 River Crossing Best Management Practices

The proposed project will cross Cow Creek and the Uncompahgre River twice. Geotechnical investigations were conducted in 2023 to determine the best way to perform these crossings. Based on those investigations (Buckhorn Engineering 2023), open-cutting the river/creek would be the least impactful method due to the underlying geology. Boring the rivers was ruled out given the cobbly substrates, whereby inadvertent return of drilling mud could occur (i.e., drilling mud surfacing in rivers), or drill bit advancing could be halted by large boulders.

General Crossing Method

All water crossings will occur in two phases, where one-half of the in-channel work will be performed at a time to allow natural water flows to be maintained for aquatic species. Cofferdams using super sacks approximately 4'x4'x4' will be implemented to isolate work areas from the water bodies for construction. Cofferdams will consist of clean sand or gravel in heavy-duty polypropylene bags of varying sizes. Wattles or other appropriate BMPs will be placed adjacent to river embankment areas to minimize sediment migration from the embankment area into the river. Additionally, temporary construction fencing will be installed to clearly identify the limits of disturbance. Once isolated from the river, the workspaces will be dewatered. An open trench will be excavated and constructed within the isolated workspace, with trench materials sidecast onto the banks of the river in matted areas with BMPs to prevent soil movement and minimize impacts to wetlands. No excess soil from the trench excavation will be placed within the limits of the ordinary high-water mark. Soil will be stored in upland areas away from this work area and will not be discharged into the river. Trenches will need to be dewatered, and trench waters will be pumped into upland areas (outside of any wetlands) for filtering and discharge per construction permits defined within this section. Casing pipes will be installed within the first half of the crossing. After the casing pipes are installed, the side cast materials stockpiled on the riverbanks will be returned to the trench line, and the trenching area will be recontoured. The super sacks would then be removed before moving to the second half of the crossing and repeating the method described. After all in-channel work is completed, the pipeline will be installed through the casing pipe and anchored into the steep slopes of the riverbanks.

The selected construction contractor will be required to produce a stormwater management plan and obtain a CDPHE Construction Dewatering Permit (COG080000; Discharges from Short-term Construction Dewatering Activities). As such, appropriate erosion and sediment controls would be utilized in accordance with General Condition #12 to properly stabilize the site and prevent erosion and siltation into other down-gradient waters and wetlands. These appropriate erosion and sediment controls would be installed around the project area prior to beginning earthmoving activities.

Uncompahgre River Crossing near Ridgway Dam

The crossing near the dam will be constructed in two phases, such that the cofferdammed area extends from one bank to the intermediate island in the middle of the river, approximately 60 feet in length and 60 feet wide creating an isolated work area. One-half of the casing pipe will be installed; then, the cofferdam will be removed from one side of the island and constructed on the other side of the island. Once the casing pipe installation is completed, a 24" carrier pipe will then be installed through the casing pipe. The cofferdam would be constructed using approximately 34 (thirty-four), 4' x 4' x 4' super sacks (81 cubic yards of material). Crossing the Uncompahgre River at this location is estimated to be 12 days.

Uncompahgre River Crossing downstream of Ridgway Dam

A cofferdam would be constructed on the southern half of the river, extending approximately 25 feet into the river and 60 feet wide creating an isolated work area. The cofferdam would be constructed using approximately 18 super sacks (40 cubic yards of material). Crossing the Uncompahgre River at this location is estimated to be 26 days.

Cow Creek Crossing

The crossing will be constructed in two phases, with a cofferdam installed during phase 2. Phase 1 installation includes the majority of Cow Creek, which is dry during low flow periods. The cofferdam will be installed to divert the low flows into another of the braided channels of Cow Creek. The 36" casing pipe installation will be completed, and a 24" carrier pipe will then be installed through the casing pipe. The

temporary dam would be constructed of super sacks, totaling approximately three super sacks (six cubic yards of material). Crossing Cow Creek is estimated to be 5 days.

As discussed, the construction of river crossings will be conducted during the winter months to minimize impacts on important fish species (such as rainbow trout and bluehead sucker). Critical avoidance windows, specifically for avoidance impacts to rainbow trout and bluehead sucker, are March 1st – June 15th and May 1st – July 15th, respectively. River crossings conducted during low flow and before spring releases from the dam will allow for residual sediment flushing in the spring. Construction methods were modified to use super sacks to reduce the potential for excessive fine sediment mobilization from coffer dams and temporary dams.

3.6 Endangered Species Impact Avoidance and Mitigation

Impact Avoidance. Woody vegetation removal will not occur between April 1 and August 31 to avoid effects on raptors and migratory birds, and pre-construction raptor and migratory bird surveys will occur if any vegetation-clearing activities are required between April 1 and August 31.

Raptors. A nesting raptor survey will be conducted within 0.25 to 0.5 miles of the project area during the year(s) of construction; CPW raptor nest buffer guidelines will be followed with CDOT concurrence.

Yellow-billed cuckoo. Pre-construction yellow-billed cuckoo surveys have already occurred, per USFWS guidance (Red Mountain Environmental 2023). As no yellow-billed cuckoos were detected, and as the project is relatively far from known occupied habitats, the USFWS has indicated that no further survey efforts would be needed. If a yellow-billed cuckoo is detected, the USFWS will be contacted, and consultation would be reinitiated if necessary.

3.7 Migratory Birds and Raptors - Nesting Impact Avoidance

Impact Avoidance. Woody vegetation removal will not occur between April 1 and August 31, to the extent practicable, 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 August 31 due to project contingencies.

Raptors. A nesting raptor survey will be conducted within 0.25 to 0.5 miles of the project area the year(s) of construction; CPW raptor nest buffer guidelines would be followed with CDOT concurrence.

3.8 Local Wildlife Protection

Bear-proof Containers. During construction, the contractors shall be required to use bearproof containers for food and trash storage. After construction is complete, Project 7 shall promote bear proof trash and food storage at the WTP, and any Project 7 owned waste receptacles shall be wildlife and bear-proof.

Dogs. Contractors and Project 7 staff shall not bring pet dogs onto construction sites. At the WTP, dogs are not allowed during the winter months (December 1 – April 30) to avoid harassment of wintering wildlife species.

Nuisance Aquatic Species. All construction equipment previously used in wet areas must be cleaned, disinfected, and completely dried prior to bringing it to the construction area. This is to avoid the spread of aquatic nuisance species and diseases (e.g., invasive animals and plants, whirling disease, chytrid fungus, etc.).

If heavy equipment acquired or used previously worked in another stream, river, lake, pond, or wetland, one of the following disinfection practices will be performed before this equipment is used in another stream,

river, lake, pond, or wetland to prevent the spread of New Zealand mud snails and other aquatic hitchhikers into drainages. The practice is also necessary after project completion:

- Remove all mud and debris from equipment (tracks, turrets, buckets, drags, teeth, etc.) and spray/soak equipment with a 1:15 solution of Super HDQ Neutral institutional cleaner and water. Keep equipment moist for at least 10 minutes

  - Or -

- Remove all mud and debris from equipment (tracks, turrets, buckets, drags, teeth, etc.) and spray/soak equipment with water greater than 140 degrees F for at least 10 minutes. Clean hand tools, boots, and any other equipment that will be used in the water using one of the above options as well. Super HDQ Neutral (Spartan Chemical Company, Inc.) is available in the Denver area from Waxie Denver at (303) 749-8000 or (800) 377-4128, High Country Chemical at (303) 287-6700 and AmSan Colorado Chemical at (303) 388-9331.

CDOT Big Game Fencing. Construction will avoid impacting newly installed big game fencing along US-550. Any inadvertent or necessary impacts to fencing will be replaced by Project 7 in a timely manner, prior to the winter season (starting December 1).

3.9 Winter Timing Stipulations to Protect Big Game Species

During the big game winter period (December 1 through April 30, when both elk and mule deer would be utilizing winter ranges), construction of the pipeline would be halted aside from on Reclamation lands (to avoid the busy recreation season), river crossings, and at the WTP. As the majority of the pipeline construction would not occur in the big game winter season, impacts to wintering big game species would be minor, and generally localized to Reclamation lands and at the WTP. The project is within ½ mile of CPW designated wildlife "pinch points", where wildlife can cross US-550; these pinch points have CPW prescribed year-round no surface occupancy (NSO) requirements. Given the location of the pipeline, adherence to the year round NSO is not possible, and CPW has provided Project 7 with a number of mitigation requirements to minimize impacts, including:

- Construction will only occur at one wildlife crossing structure at a time.
- Time spent with heavy equipment within a half mile of the underpass will be limited to the lowest amount possible to accomplish the project.
- All wildlife exclusion fencing will remain functional during construction to prevent ungulates from entering the road corridor.
- All open trenches will have wildlife escape ramps at a minimum of one ramp per ¼ mile of trench.
- All open trenches within a half mile of a wildlife underpass will be covered when construction is not actively occurring

Project 7's selected contractor will adhere to these mitigation requirements to minimize impacts to wildlife.

3.10 Noxious Weed Management and Habitat Protection

Timely and consistent weed treatment will occur within the project area. For example, pre-construction treatment (mowing) will be used to minimize weeds spreading from construction. Restoration of the pipeline corridor relegation will be timely to reduce and suppress weeds. Post-construction, weeds will be treated (sprayed) twice a year until infestations are managed. 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.

Project 7 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.

3.11 Maintenance of Streamflows

An analysis was conducted to determine the timing and magnitude of impacts to Ridgway Reservoir content and streamflow in the Uncompahgre River along the 11.1-mile exchange reach between Ridgway Reservoir and the discharge point of the South Canal on the Uncompahgre River. The amount of water released from Ridgway dam varies depending on a number of factors, including (1) inflow to the reservoir, (2) contract obligations associated with municipal demands for Project 7, irrigation demands for the UVWUA, and augmentation requirements for CPW, (3) Bureau of Reclamation uses, (4) hydroelectric power generation, and (5) minimum fishery flows for maintenance of aquatic sportfish habitats (primarily to meet spawning and overwintering needs for a variety of sport-fish species).

Releases from the dam to meet minimum fishery flows and for aquatic species habitat are coordinated based on flows coming from Cow Creek, which flows into the Uncompahgre River approximately 1.25 miles downstream from the dam. Minimum fishery flow obligations in the Uncompahgre River below Cow Creek are 75 cfs during the non-winter months (spring, summer and fall). Minimum wintertime streamflow obligations below the dam but above Cow Creek are 30 cfs , and 45 cfs below the confluence with Cow Creek. If Cow Creek freezes over or cannot supply enough water, dam releases are adjusted to augment a lack of Cow Creek flow contributions to meet the 45 cfs flow obligation below the confluence with Cow Creek (USBR 1976).

TCW controls the water rights for storage in Ridgway Reservoir and is the operator of dam facilities. As such, TCW manages and has discretion regarding the operations to fill the reservoir and meet its contract obligations including releases for contract obligations and flood control, hydropower generation, and the administration of storage contracts.

Unlike TCW and Reclamation, Project 7 does not own water rights in Ridgway Reservoir but instead has contracted for a set volume of water available for release each year from TCW. Project 7 has no direct control over when inflow supplies are stored, when inflow supplies are bypassed, or when storage supplies are released from pools other than the volume contracted by Project 7. As such, beyond the use of its contract supply, Project 7 has no control over the storage levels in Ridgway Reservoir or streamflow conditions in the Uncompahgre River below the reservoir.

In response to an agency review of a draft version of the Proposed Action, CPW conducted a fishery habitat analysis using the R2Cross model, a site-specific procedure driven by actual stream conditions that helps model hydraulic parameters of average depth, wetted perimeter and average velocity for aquatic habitats (CPW 2024). Their results indicated that winter habitat conditions are the primary stressor for fish in the Uncompahgre River below Ridgeway Dam (CPW 2024). CPW further stated that minimum flows in the Uncompahgre River between the outlet of Ridgway Reservoir and the confluence with Cow Creek should be 45 cfs at a minimum to support a viable fishery but recommended 60 cfs as a more protective standard for a healthier fishery and better aquatic habitat maintenance. CPW manages the fishery in the Uncompahgre River from the Ridgway Reservoir dam through the City of Montrose as a sport fishery. The sport fishery is an extremely popular destination for local residents and visitors, which benefits businesses and helps diversify the local economies of Ridgway and Montrose. CPW has been advocating for increased winter flows in the tailwater section of the Uncompahgre River for decades and feels that the current flow conditions are suitable only to maintain a catchable fishery rather than promote a healthy, sustainable wild

fishery (CPW 2023). Changing the minimum streamflow requirements from the 1976 EIS is outside the scope of this project and the project's EA.

Based on requests from CPW fisheries staff for a more detailed daily analysis of impacts to streamflows, daily reservoir operations were analyzed for the past 5 years (2018-2022) using data from the Colorado Division of Water Resources (DWR 2024, LRE 2024a, b). The recent 5-year study period was used to quantify the impacts of the project, as this period reflects recent and relevant demands on the reservoir and includes hydrologic conditions from 2018, 2020, and 2022, which were relatively dry years for the Uncompahgre River basin. During these dry years, the Uncompahgre River downstream of Ridgway Reservoir was "under administration" starting from mid-to-late June, and extending through mid-to-late August, wherein senior water rights placed a "call" on the river that required all upstream junior water rights, such as the storage water rights for Ridgway Reservoir, to either curtail or replace their "out of priority" diversions. Of note, streamflow in the Uncompahgre River below Cow Creek was below the minimum fishery flow obligation/ recommendation in September and October of 2018, and again in October of 2020. Hence, the chosen study period represents a recent period characterized by years in which hydrologic conditions were stressed and demands on storage supplies were greater than normal, and consequently, the study period provides a conservative baseline for evaluation of any potential impacts due to project implementation, including potential conditions in the future due to climate change (whereby more dry years would be anticipated).

Daily operations under existing conditions and diversions from the project were then summarized into monthly and annual totals related to storage content and reservoir releases to provide a more meaningful assessment. Additionally, based on comments from reviewing agencies regarding an earlier version of the Draft Environmental Assessment and LRE's report (CPW 2/5/2024, 5/3/2024), peak demand at the South WTP was increased from 6 MGD to 10 MGD for the analysis. Under the proposed conditions, it was assumed that the total potable demand for Project 7 would be held to the existing total potable demand ratios and distributed between the proposed South WTP and the existing Montrose WTP accordingly.

The daily modeling results were then summarized in a monthly time step in order to estimate the impacts of the project on streamflow conditions in the Uncompahgre River below the reservoir. The existing conditions model was based on DWR's daily accounting of reservoir operations and the potable demand data for the proposed conditions model was based on monthly projections, distributed evenly throughout the month. While the model is based on daily DWR data, evaluating the proposed conditions against existing conditions on a *daily* timestep provides neither an appropriate nor meaningful comparison. However, *monthly* summaries of the daily results accurately capture the net effect of releases, evaporation, changes in storage, and inflows on reservoir levels and streamflow in the Uncompahgre River with sufficient resolution to evaluate the impacts of the project (LRE 2024a, b). **Table 4** summarizes the releases from the reservoir as well as bypass flow amounts (also termed "released inflow" (DWR 2024, LRE 2024a, b).

Of note, DWR records of reservoir releases were based on contemporaneous provisional streamflow measurements collected at the outlet of Ridgway Reservoir (USGS Gage No. 09147025), which is reviewed by USGS staff for accuracy and quality. Through that review process, provisional data may be modified before it is published as accepted and verified data. Therefore, recently downloaded streamflow values from the USGS or DWR website may vary from those used by DWR in the past due to the USGS internal quality assurance and control review process applied to all of their data products (LRE 2024a, b).

Table 3: Summary of Existing Annual Releases from Ridgway Reservoir (acre feet)

Water Year	Project 7 South WTP (percent)	UVWUA (percent)	Others (BOR, CPW, TCW and unallocated) (percent)	Bypass Flows (percent)	Total Outflow
2018	0	21,149 (29%)	1,627 (2%)	50,354 (69%)	73,131
2019	0	17,534 (12%)	5,818 (4%)	128,728 (85%)	152,081
2020	0	26,008 (29%)	1,798 (2%)	62,589 (69%)	90,665
2021	0	7,199 (9%)	10,645 (13%)	61,809 (78%)	79,653
2022	0	17,265 (17%)	2,514 (3%)	79,018 (80%)	98,797

Notes: Numbers in brown designate dry years.

"Others" combines the releases for BOR, CPW, TCW and from unallocated storage,

"Bypass" refers to a portion of outflow that is unstored inflow that is not attributed to a storage pool. DWR describes Bypass as "released inflow." It is a portion of total releases to the Uncompahgre River.

The project's impacts were modeled and compared to existing conditions over a 5-year period from 2018 to 2022, comparing the total outflow from the reservoir and releases from the reservoir to the Uncompahgre River (**Table 4**).

As it relates to streamflow conditions below Ridgway Reservoir, a new demand that delivers water supplies from Project 7's M&I storage pool directly to the proposed South WTP will not meaningfully increase nor decrease releases to the Uncompahgre River. Historically, Project 7 has not released water from its M&I storage pool, and under the proposed project it will deliver storage supplies directly to the treatment plant and not to the Uncompahgre River. However, with less available storage from the book over exchange, UVWUA will release less water under the proposed project, which will reduce flows below Ridgway Reservoir. The magnitude of this reduction then depends on the hydrologic year-type (e.g., wet, dry, or average)3. In dry years, the UVWUA typically releases all of its available storage, which would equate to a reduction equal to the South WTP demand that was not booked over. In average and wet years, the demand for storage is less, and as such, the reduction in streamflow would be less. Furthermore, this impact is limited to the 11-mile reach between Ridgway Reservoir and where the South Canal discharges irrigation supplies to the Uncompahgre River. It is assumed that UVWUA will replace any reduction in available storage with additional irrigation supplies from the Gunnison Tunnel. There will be no change to the Gunnison River since the water used has historically been used by either Project 7 or UVUWA; this project would reduce UVUWA's credits in Ridgway proportionally to the new South WTP usage, but UVUWA would use the Gunnison River to make up for the Ridgway reduction.

The analysis prepared did not address dam operations changes because Project 7 has no authority to authorize operational changes. TCW, who operates the dam, has been made aware of potential reductions in streamflow due to the project pulling from the reservoir directly instead of UVWUA calling for water to be released to the river. TCW has confirmed that they are contractually obligated to fulfill the minimum fishery maintenance flows per Reclamation agreements and intend to fulfill it whether the project is constructed or not.

Table 5 (below) shows the existing (Ex.) flows and proposed (Prop.) flows throughout the year over the modeled 5-year period based on the hydrology model. This table identifies which month the minimum flow

occurred and what the minimum flow was for that month. **Table 6** (at the end of this section) details monthly impacts to streamflows.

Table 4: Change in Minimum Streamflow (cfs) in Uncompahgre River from Project

	November through May					June through October				
WY	**Ex.**	**Prop.**	**% Change**		**Min. Month**	**Ex.**	**Prop.**	**% Change**		**Min. Month**
Below Dam, Above Confluence with Cow Creek										
2018	42.8	42.8	0	0%	Mar	51.8	51.8	0	0%	Oct
2019	39.2	39.2	0	0%	Nov	70.4	70.4	0	0%	Oct
2020	43.3	43.3	0	0%	Jan - Mar	57.9	51.6	-6.3	-11%	Oct
2021	36.2	36.2	0	0%	Feb	66.5	64.7	-1.7	-3%	Oct
2022	45.8	45.8	0	0%	Jan - Feb	67.0	67.0	0	0%	Oct
Below Confluence with Cow Creek [3]										
2018	55.9	55.9	0	0%	Mar	**58.4**	**58.4**	0	0%	Oct
2019	51.2	51.2	0	0%	Nov	80.0	80.0	0	0%	Oct
2020	55.4	55.4	0	0%	Jan - Mar	**62.0**	**55.7**	-6.3	-10%	Oct
2021	46.0	46.0	0	0%	Feb	82.0	80.3	-1.7	-2%	Oct
2022	63.1	63.1	0	0%	Jan - Feb	87.9	87.9	0	0%	Oct

Notes: Numbers in brown designate dry years.
Existing conditions are based on DWR and USGS data from water years 2018-2022.
Proposed conditions are assuming the proposed Project 7 WTP was operating from water years 2018 -
Data highlighted in **red** indicates that the minimum flow did not meet the minimum fishery flow requirement.

The analysis showed that under the proposed conditions, the minimum streamflow conditions below Ridgway Reservoir in the Uncompahgre River could be reduced by as much as 67 cfs in July and August. Still, given baseline flows range from 800 cfs (during average water years) to around 200 cfs (during dry years), these reductions would have minimal impacts given the low percentage of decreased streamflows. Modeled streamflows in October (which is technically still in the "summertime" flow period) averaged 57 cfs during dry years and 68 cfs during average precipitation years (**Tables 5** and **6**). Across all 5-years of the study period, streamflows in October averaged 61 cfs, which, on average, equates to a 1.6 cfs reduction from existing conditions. This equates to a 2.7% reduction from existing conditions. While the analysis shows that the project would result in streamflow reductions, the minimum streamflow requirements that govern this section of the river will still be maintained by TCW, which is contractually obligated to meet the 1976 EIS mitigation requirements. As indicated in **Tables 5** and **6**, in 2018 and 2020, below the confluence of Cow Creek, the minimum flow of 75 cfs was not met in the month of October, and if this project had been in place, the minimum flow would still not have been met. Project implementation would have caused a further flow reduction only in 2020, by an additional 3.7%.

Streamflow in the Uncompahgre River would not change during the winter months, from November through March (**Tables 5** and **6**). The estimated reductions to streamflow during the irrigation season are attributed to the reduced exchange from Project 7 to UVWUA under proposed conditions. This reduced exchange would result in UVWUA having less storage water available for release to the Uncompahgre River during the summer irrigation season.

In summary, the project would have no net impact on existing wintertime streamflow conditions from November through May, and then in April and May, there would be an average reduction of in streamflows 8.5% and 3.5% (respectively). However, the project still maintains streamflow conditions well above the 1976 EIS recommendations and above CPW's 2024 recommendations. In most of the summer months (May 15 through September), streamflow conditions would be reduced, but are still well above the 1976

EIS recommendations, and also above CPW's 2024 recommendations. Only during the month of October would the project reduce streamflows to be (further) below the 75 cfs recommendations set forth in the 1976 EIS. The impacts to streamflows in October would be, on average, a 1.6 cfs reduction, which would be a 2.99% reduction from current conditions. However, it is unlikely that those reductions would have a direct impact on EIS streamflow minimums because TCW will continue to manage and operate the dam as required by Reclamation to maintain flow obligations stated in the 1976 EIS.

Because of these findings, no additional water releases for potential fishery impacts are proposed.

4 Proposed Mitigation

In summary, Project 7 is committed to implementing the following measures to avoid and minimize impacts to fish and wildlife:

- Pre-construction yellow-billed cuckoo surveys will be required if any riparian vegetation clearing activities are required between June 15 and August 15 due to project contingencies.
- Cofferdams will contain sediment during river crossings. The crossing will be performed during low flow ahead of spring flows from the dam, which will provide residual sediment flushing.
- Installation of a positive barrier fish screen at any diversion structures or pumps to prevent entrainment of fish.
- Construction of pipeline crossings of Cow Creek and Uncompahgre River will occur during a period of low water flow.
- Woody vegetation removal will not occur between April 1 and August 31 to avoid effects on 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 August 31 due to project contingencies.
- A nesting raptor survey will be conducted within 0.25 to 0.5 miles of CDOT ROW the year of construction; CPW raptor nest buffer guidelines will be followed with CDOT concurrence.
- Follow CPW-recommended buffer zones and seasonal restrictions within certain distances of nest sites for raptors in accordance with MBTA. Follow MBTA regulations and permits for incidental and unavoidable takes.
- Construction will only occur at one CPW-designated wildlife "pinch point" crossing structure at a time.
- Time spent with heavy equipment within a half mile of a wildlife underpass will be limited to the lowest amount possible to accomplish the project.
- All wildlife exclusion fencing will remain functional during construction to prevent ungulates from entering the road corridor
- When construction is not actively occurring, all open trenches within a half mile of a wildlife underpass will be covered.
- All open trenches will have wildlife escape ramps at a minimum of one ramp per ¼ mile of trench.
- All construction equipment previously used in wet areas must be cleaned, disinfected, and completely dried prior to bringing it to the construction area. This is to avoid the spread of aquatic nuisance species and diseases (e.g., invasive animals and plants, whirling disease, chytrid fungus, etc.).
- 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 CDPHE, Reclamation, CDOT, and BLM.
- Concrete pours at or above ground surface 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.
- Equipment will be inspected daily and repaired as necessary to ensure equipment is free of petrochemical leaks. Construction crews will carry spill kits for emergency use.
- Adhere to all wetland and riparian area restoration requirements in the Wetland and Riparian Areas Mitigation Plan (Appendix B).

- Adhere to CPW reclamation and revegetation requirements on Reclamation property, including using a CPW-recommended and approved seed mix.
- 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.
- Timely and consistent weed treatment will occur within the project area. For example, pre-construction treatment (mowing) will be used to minimize weed spreading during construction.
- Project 7 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.

For further details, including itemized capitalized costs, see the Mitigation Matrix located in Appendix A.

Table 5: Summary of Changes to Streamflow (cfs) Below Ridgway Reservoir Above Cow Creek from Existing Conditions by Water Year.

Water Year		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
2018	Existing	56.93	53.74	46.65	42.79	42.77	57.30	207.74	214.43	234.16	143.35	54.19	51.78
	Proposed	56.93	53.74	46.65	42.79	42.77	56.78	185.71	183.19	167.35	143.35	54.19	51.78
	% change	0.00%	0.00%	0.00%	0.00%	0.00%	-0.92%	-11.86%	-17.06%	-39.92%	0.00%	0.00%	0.00%
2019	Existing	39.25	41.53	42.97	44.18	44.05	83.71	207.03	609.87	601.06	440.42	286.00	70.40
	Proposed	39.25	41.53	42.97	44.18	44.05	83.71	207.03	609.87	601.06	377.59	249.63	70.40
	% change	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	-16.64%	-14.57%	0.00%
2020	Existing	44.72	43.50	43.30	43.30	43.30	90.75	247.10	206.47	293.52	275.32	102.44	57.93
	Proposed	44.72	43.50	43.30	43.30	43.30	72.67	240.56	197.81	256.15	257.25	95.41	51.60
	% change	0.00%	0.00%	0.00%	0.00%	0.00%	-24.88%	-2.72%	-4.38%	-14.59%	-7.03%	-7.37%	-12.27%
2021	Existing	40.15	40.77	39.59	36.23	37.06	47.81	166.45	168.06	227.97	290.68	150.81	66.46
	Proposed	40.15	40.77	39.59	36.23	37.06	47.81	163.25	168.06	200.56	272.21	124.26	64.72
	% change	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	-1.96%	0.00%	-13.67%	-6.78%	-21.37%	-2.68%
2022	Existing	46.41	46.00	45.80	45.80	45.81	211.95	249.88	256.97	255.58	234.39	126.26	67.04
	Proposed	46.41	46.00	45.80	45.80	45.81	182.04	247.24	256.85	223.57	219.31	121.54	67.04
	% change	0.00%	0.00%	0.00%	0.00%	0.00%	-16.43%	-1.07%	-0.05%	-14.32%	-6.87%	-3.88%	0.00%
Average cfs Reductions		0.00	0.00	0.00	0.00	0.00	9.70	6.88	8.01	32.72	22.89	14.93	1.61
Average Percent Reductions[1]		0.00%	0.00%	0.00%	0.00%	0.00%	-8.45%	-3.52%	-4.30%	-16.50%	-7.46%	-9.44%	-2.99%
Average Monthly Reductions[2] (dry years only)		0.00%	0.00%	0.00%	0.00%	0.00%	-14.08%	-5.22%	-7.16%	-22.94%	-4.63%	-3.75%	-4.09%

Notes: Numbers in brown designate dry years. Streamflows obligations are 30 cfs from 1976 FEIS recommendations.
Source: LRE Water 2024. Streamflow is reported below Ridgway Reservoir but above the confluence with Cow Creek.
[1] Average monthly reduction is across all 5 years of modeled time period. [2] Average monthly reduction during dry years averages the reductions during the dry years only.

Appendix A – Mitigation Matrix

Measure No.	Mitigation and/or Enhancement Measure	Mitigation and/or Enhancement Commitment	Resource Considerations	Capitalized Costs	Mitigation			
					Avoidance	Minimization	Compensation	Enhancement
General								
1	Contractor Communication	Environmental commitments will be discussed with the contractor at a pre-construction meeting		--	X	X		
2	Contractor Monitoring	Environmental inspector will be on site for the duration of construction (approximately 33 week duration); Inspector will be on site 6 days per week at 10 hours per day		$388,987.50	X	X		
Special Status Species								
3	Yellow-billed Cuckoo	Pre-construction yellow-billed cuckoo surveys will be required if any riparian vegetation clearing activities are required between June 15 and August 15 due to project contingencies.	Avoidance and minimization of potential impacts to yellow-billed cuckoo	$4,500.00	X	X		
4	Rainbow Trout, Bluehead Sucker	Cofferdams to contain sediment during river crossings. River crossing to be performed during low flow ahead of spring flows from the dam which will provide residual sediment flushing.	Avoidance and minimization of potential impacts to native fish	$255,600.00	X	X		
5	Rainbow Trout, Bluehead Sucker	Water crossings will be phase approach always maintaining at least ⅓ width of waterway flowing	Avoidance and minimization of potential impacts to native fish	N/A				
6	Rainbow Trout, Bluehead Sucker	Installation of a positive barrier fish screen on pumps to prevent entrainment of fish.	Avoidance and minimization of potential impacts to native fish	N/A	X	X		
Terrestrial and Avian Wildlife								
7	Migrating Birds and Raptors - Vegetation Clearing	Woody vegetation removal will not occur between April 1 and August 31 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 August 31 due to project contingencies.	Avoidance and minimization of potential effects to raptors and other migratory birds, and other wildlife	$29,000.00	X	X		
8	Migrating Birds and Raptors - Surveys and No Work Zones	A nesting raptor survey will be conducted within 0.25 to 0.5 miles of CDOT ROW the year of construction; CPW raptor nest buffer guidelines would be followed with CDOT concurrence	Avoidance and minimization of potential effects to raptors	$12,000.00	X	X		
9	Migrating Birds and Raptors - Buffer Zones	Follow CPW recommended buffer zones and seasonal restrictions within certain distances of nest sites for raptors in accordance with MBTA. Follow MBTA regulations and permits for incidental and unavoidable takes	Avoidance and minimization of potential effects to raptors and other migratory birds, and other wildlife	$200,000.00	X	X		
10	Mule Deer, Elk	Construction will only occur at one "pinch point" crossing structure at a time.	Avoidance and minimization of potential effects to terrestrial wildlife	N/A	X	X		
11	Mule Deer, Elk	Time spent with heavy equipment within a half mile of the underpass will be limited to the lowest amount possible to accomplish the project.	Avoidance and minimization of potential effects to terrestrial wildlife	N/A	X	X		
12	Mule Deer, Elk	All wildlife exclusion fencing will remain functional during construction to prevent ungulates from entering the road corridor.	Avoidance and minimization of potential effects to terrestrial wildlife	$40,000.00	X	X		
13	Mule Deer, Elk	All open trenches within a half mile of a wildlife underpass will be covered when construction is not actively occurring.	Avoidance and minimization of potential effects to terrestrial wildlife	--	X	X		
14	Mule Deer, Elk	All open trenches will have wildlife escape ramps at a minimum of one ramp per ¼ mile of trench.	Avoidance and minimization of potential effects to terrestrial wildlife	--	X	X		
Aquatic Nuisance Species								

15	Aquatic Nuisance Species	Project 7 will develop specific measures to ensure that all equipment is cleaned of mud and debris and inspected to confirm they are free of aquatic nuisance species. Decontamination measures. Specific decontamination measures for equipment or materials that were used in any stream, river, lake, pond or wetland within 14 days of the start of the project to prevent the spread of New Zealand mudsnails, zebra and quagga mussels, invasive plant species, and other aquatic nuisance species will follow the most current guidance from CPW. This will include removing all mud and debris from equipment (tracks, turrets, buckets, drags,and teeth) and continuously spray/soak equipment with water that is hotter than 140 degrees Fahrenheit for at least 10 minutes. Hand tools, boots, and any other equipment that will be used in the water will be cleaned as well.	Avoidance of introduction of aquatic nuisance species to Cow Creek and Uncompaghre River	$10,000.00	X	X		
Water Quality and Surface Water								
16	Stormwater - Construction Activities	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 CDPHE, Reclamation, CDOT and BLM.	Surface Water Quality and Pollution Prevention	$354,708.00	X	X		
17	Wastewater - Construction Activities	Concrete pours at or above ground surface 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.	Surface Water Quality and Pollution Prevention	N/A	X	X		
18	Construction Equipment Maintenance	Equipment will be inspected daily and repaired as necessary to ensure equipment is free of petrochemical leaks. Crew will carry spill kits for emergency use.	Surface Water Quality and Pollution Prevention	$2,000.00	X	X		
19	Construct River Crossings at Low Flow	Construction of pipeline crossing of Cow Creek and Uncompahgre River will occur during a period of low water flow (October 15 through February 15), and when no precipitation is anticipated.	Avoidance and minimization of sediment mobilization, avoidance and minimization of impacts on aquatic species	N/A	X	X		
20	Water Rights and Use	The project 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.		N/A	X	X		
Wetlands								
21	Wetland Restoration	Topsoil in wetland and riparian areas will be salvaged to the depth of the A horizon, at a minimum of 6 inches up to 2 feet in depth, and stockpiled separately from subsoil. Topsoil will be re-distributed after construction to facilitate revegetation success.	Minimization and restoration of project-related wetland impacts	$108,000.00		X	X	
22	Wetland Restoration	Construction access or temporary use areas within wetlands will be matted to minimize long-term impacts and rutting.	Minimization and restoration of project-related wetland impacts	$15,000.00	X	X		

23	Wetland Restoration	In delineated natural wetland areas, live containerized plant materials will be installed. Planting of containerized graminoids and shrubs would occur with a spacing of approximately 3 feet between graminoids, and 10 feet between shrubs. Species information and distribution is detailed within the project specific Wetland and Riparian Mitigation Plan.	Minimization and restoration of project-related wetland impacts	$40,009.75		X	X	
24	Wetland Restoration	Post-construction monitoring of wetland restoration areas will be initiated following final reclamation and will continue until Restoration Success Criteria (as detailed in the Wetland and Riparian Mitigation Plan) are achieved, or for a period of 5 years. Monitoring will be conducted by qualified ecologists or wetland scientists. Annual monitoring reports will be prepared and provided to Reclamation, BLM, CDPHE, the USACE, and landowners with wetland and riparian habitats.	Minimization and restoration of project-related wetland impacts	$22,375.00		X	X	
Vegetation and Soils								
25	Agricultural Resources and Soils; Vegetation	All topsoil, up to a depth of 6 inches would be removed from pipeline trench line and stockpiled separately from subsoil. Topsoil will be re-distributed after construction to facilitate revegetation success.	Vegetation reclamation	$108,300.00		X	X	
26	Agricultural Resources and Soils; Vegetation	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.	Vegetation reclamation	Included in costs outlined in line 39		X	X	
27	Agricultural Resources and Soils; Vegetation	Restoration and revegetation will be completed for all temporarily disturbed areas using native plants. Only agency recommended and approved seed mixes will be used.	Vegetation reclamation	$1,246,635.00		X	X	
28	Agricultural Resources and Soils; Vegetation	Monitoring and continued revegetation would occur as soon as practical following project construction, to prevent the establishment and spread of noxious weed populations, and to monitor for potential livestock overgrazing, which could impact revegetation	Vegetation reclamation	Included in costs outlined in line 39		X	X	
29	Agricultural Resources and Soils; Vegetation	Mulching of revegetated areas will be completed using straw mulch and tackifier, or hydromulch and tackifier, to improve changes for revegetation success.	Vegetation reclamation	Included in costs outlined in line 39		X	X	
Riparian Vegetation								
30	Riparian Habitat	In PSS wetland and riparian areas, live containerized plant materials will be installed, spaced on average approximately 15 feet apart. Delineated riparian areas totaled XX acres, therefore approximately XX containerized stock will be replanted for the project across all impacted riparian areas. Species information and distribution is detailed within the project specific Wetland and Riparian Mitigation Plan.	Minimization and restoration of project-related riparian area impacts	$36,370.00		X	X	
31	Riparian Habitat	Post-construction monitoring of riparian restoration areas will be initiated following final reclamation and will continue until Restoration Success Criteria (as detailed in the Wetland and Riparian Mitigation Plan) are achieved, or for a period of 5 years. Monitoring will be conducted by qualified ecologists or wetland scientists. Annual monitoring reports will be prepared and provided to Reclamation, BLM, CDPHE, the USACE, and landowners with wetland and riparian habitats.	Minimization and restoration of project-related riparian area impacts	$22,375.00		X	X	
Noxious Weeds								

32	Noxious and Invasive Weed Control Plan	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	Avoidance and minimization of potential spread of noxious weeds during construction activities.	$5,000.00	X	X		
33	Noxious and Invasive Weed Control Plan	Timely and consistent weed treatment will occur within the project area. For example, pre-construction treatment (mowing) will be used to minimize weed spreading during construction.	Avoidance and minimization of potential spread of noxious weeds during construction activities.	$70,000.00	X	X		
34	Noxious and Invasive Weed Control Plan	Project 7 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.	Avoidance and minimization of potential spread of noxious weeds during construction activities.	$25,000.00	X	X		

Appendix B – Wetlands and Riparian Areas Mitigation Plan

SPA-2023-00248

Wetlands and Riparian Areas Mitigation Plan
Project 7 Water Resiliency Program
Ouray and Montrose Counties, Colorado

January 9, 2025

Prepared for:
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Project 7 Water Authority
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1. BACKGROUND

Project 7 has initiated its Regional Water Resiliency Program, which includes the construction of an approximately 30,746-feet (5.82-mile), 24-inch diameter raw water pipeline which would start at Reclamation's Ridgway Reservoir dam and follow the west side of US-550 corridor to a point south of the village of Colona. There, a new Water Treatment Plant would be built on lands owned by Project 7; the new WTP would be able to utilize up to approximately 13,442 acre feet (af; or 12 million gallons per day) of waters directly from Ridgway Reservoir. Starting at the WTP, a new finished water (aka potable water), 24-inch diameter pipeline would be constructed. It would continue north along the west side of US-550 for approximately 30,252 feet (5.73-miles), where it would tie into the existing Tri-County Water Conservation District (TCW) distribution system. The total length of the water pipelines would be 11.5 miles.

The intent of this proposed project is to develop a new water supply to reduce the risk of being dependent on a single drinking water source and a single treatment facility (in this case, waters from the Gunnison River, Gunnison Tunnel, current Project 7 Water Treatment Plant, and current Project 7 infrastructure).

The proposed Project involves temporary disturbances and fill to jurisdictional waters of the United States (U.S.). Impacts to jurisdictional wetlands and surface waters are being permitted by the U.S. Army Corps of Engineers, under Nationwide Permit 58 (SPA-2023-00248). The Project would result in the permanent loss of approximately 0.02 acres of predominately herbaceous wetlands, temporary impacts to another 0.82 acres of surface waters (Waters of the U.S. [WoUS]), and temporary impacts to 1.76 acres of jurisdictional wetlands. Of note, much of the temporary wetland impacts would be to agriculturally induced wetlands located in hay fields and along irrigation ditches and canals, but which were assumed to be jurisdictional given relatively permanent flows and a direct surface connectivity to the Uncompahgre River.

For every authorized discharge, the adverse impacts to wetlands, streams, and other aquatic resources must be avoided and minimized to the extent practicable. For unavoidable temporary impacts, mitigation is required to replace the loss of aquatic functions within a watershed.

Given the de minimis amount of permanent impacts (0.02-acres), no additional compensatory mitigation is being proposed. However, to minimize and mitigate the temporary impacts of pipeline construction on wetlands, surface waters, and important riparian habitats, mitigation is being proposed to quickly revegetate impacted areas to restore wetland function.

This mitigation plan was prepared to meet the mitigation requirements of the Nationwide Permit 58, as well as meeting Environmental Commitments required by the Colorado Department of Health and Environment (CDPHE), Bureau of Reclamation (Reclamation), and Bureau of Land Management (BLM), as part of these agencies approval and permitting of the Project. This Plan is part of the requirements of the Record(s) of Decision and land use grants associated with the Project, and implementation of this Plan by Project 7 is required by these agencies.

Figure 1: Project Vicinity

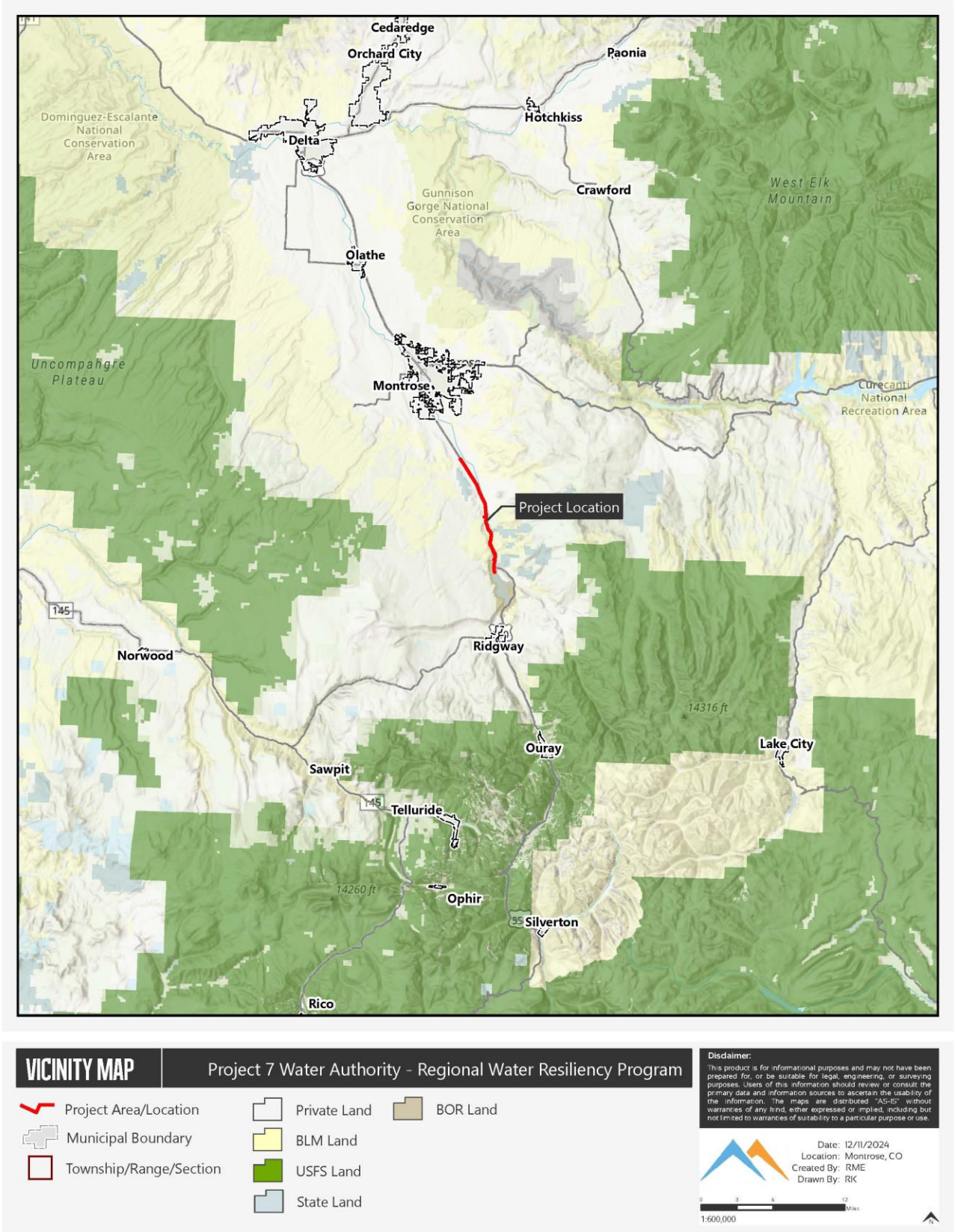
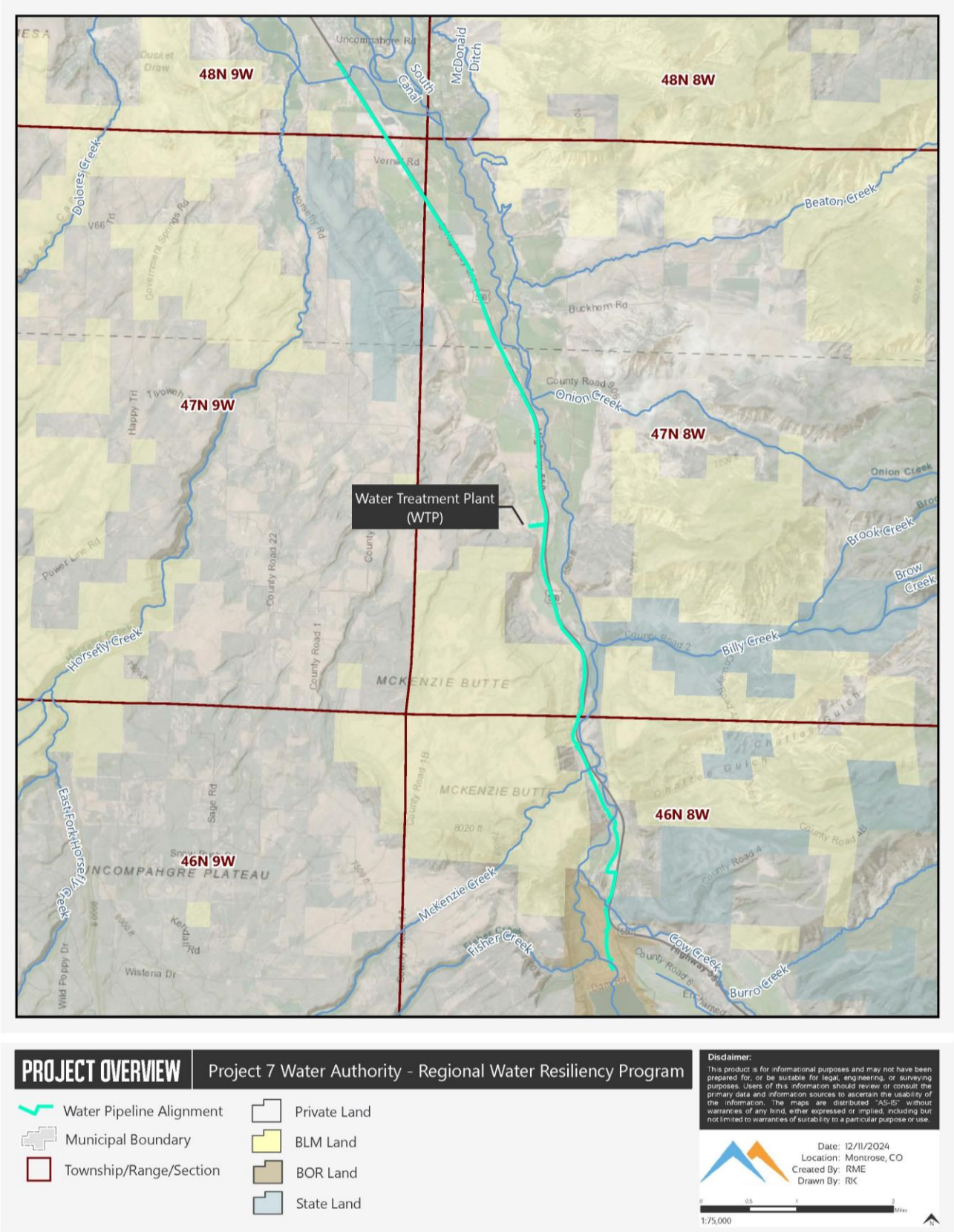


Figure 2: Project Overview



1.1. Mitigation Plan Overview

Wetland and riparian areas temporarily impacted by pipeline construction would see topsoil salvage and replacement, regrading (to match pre-existing conditions), wetland and riparian species reseeding and replanting, and installation of erosion control measures. Areas impacted by pipeline construction may see intermittent temporary seeding with non-persistent (i.e., annual or sterile) grasses, until final wetland and riparian seeding and planting occurs, but in most cases wetland and riparian areas would be revegetated using native species quickly. Revegetation is anticipated to occur starting in the spring of 2026 and continue as appropriate through the fall of 2027.

Wetland and riparian mitigation/revegetation activities will be supervised by a qualified third-party ecologist or wetland scientist, and monitoring would be conducted by a qualified third-party ecologist or wetland scientist for a period of five years following completion of revegetation activities (per USACE guidance). Project 7 will submit an annual report documenting the development of the revegetation areas and will address any recommendations identified in the report to ensure mitigation success.

1.2. Objectives

The primary objective of Project mitigation will be the rapid revegetation of impacted wetlands, open waters, and riparian areas with locally suitable wetland and riparian plant materials, to reduce and minimize the temporal loss of wetland and riparian area function, and to further stabilize soils within impacted areas.

1.3. Impacted Areas

Impacted jurisdictional features include the following Cowardin code systems (Cowardin et. Al. 1979):

- **R3UBH** (Riverine, Upper Perennial, Unconsolidated Bottom, Permanently Flooded). These are open waters associated with Cow Creek and the Uncompahgre River.
- **R3USC** (Riverine, Upper Perennial, Unconsolidated Shore, Seasonally Flooded). These are mapped as riverine systems associated with the riparian corridor adjacent to Cow Creek.
- **R4SBA** (Riverine, Intermittent, Streambed, Temporary Flooded). These are riverine systems associated with McKenzie Creek.
- **R4SBCx** (Riverine, Intermittent, Streambed, Seasonally Flooded, Excavated). These are associated with larger irrigation canals.
- **PEM1Cx** (Palustrine, Emergent, Persistent, Seasonally Flooded, Excavated). These wetlands are associated with agricultural ditches and were not mapped as jurisdictional wetlands.
- **PFOA** (Palustrine, Forested, Temporary Flooded). These wetlands are associated with Wildcat Creek, adjacent to the village of Colona.
- **PEM1E** (Palustrine, Emergent, Persistent, Seasonally Flooded/Saturated). These wetlands are associated with the Uncompahgre River.

- **PSS1E** (Palustrine, Scrub-shrub, Broad-Leaved Deciduous, Seasonally Flooded/Saturated. These willow and shrub-dominated wetlands are associated with the Uncompahgre River, wetlands on BLM lands, and along some irrigation ditches and canals.
- **PEM1K** (Palustrine, Emergent, Persistent, Artificially Flooded). These wetlands are associated with agricultural irrigation, where water commonly accumulates.

	
Emergent Wetlands (PEM)	Scrub-Shrub Wetlands (PSS) with PEM
	
Open waters of Uncompahgre River	Open waters of Cow Creek

2. PROJECT IMPACTS

This section describes the types of construction activities that would impact hydric features. A detailed description of wetlands, surface waters, and riparian areas, is provided in the Aquatic Resources Delineation Report (Red Mountain Environmental 2024).

2.1. Pipeline Construction

The installation of the up-to-24-inch diameter buried pipelines would be constructed using typical open-trenching methods for much of the alignment, apart from the use of horizontal directional drilling (HDD; "boring") to cross larger canals and busier roads. Smaller ditches, infrequently used dirt roads, McKenzie and Wildcat Creeks, and other minor surface features would be crossed using an open trench. The Uncompahgre River would be crossed using an open trench, constructed within a coffer dam (see discussion below). Cow Creek would be crossed using an open trench, using a cofferdam (see discussion below).

The selected construction contractor would be required to produce a stormwater management plan and obtain a CDPHE Construction Stormwater Permit. As such, appropriate erosion and sediment controls would be utilized in accordance with the USACE's General Condition #12 to properly stabilize the site and prevent erosion and siltation into other down-gradient waters and wetlands. These appropriate erosion and sediment controls would be installed around the project area prior to beginning earthmoving activities.

2.1.1. Clearing, Grading and Top Soiling

After vegetation is mowed (as necessary), the construction workspace would be graded to allow safe and efficient operation of construction equipment and vehicles, and to provide space for the storage of subsoil and topsoil. Construction activity and ground disturbance would be limited to approved, staked areas. The temporary access roads and staging areas would utilize timber mats (or equivalent) when crossing delineated wetland and WoUS areas, and it is not anticipated that the staging areas or the access road would need to be graveled.

All topsoil, up to a depth of 6 inches (if present), would be removed from the working side of the workspaces. Topsoil in wetland and riparian areas would be salvaged to deeper depths, depending on the actual depth of the A Horizon, but salvaging would generally not extend beyond 2 feet in depth. Topsoil would be stockpiled separately from subsoil and would not be used to pad the trench or construct trench breakers. Topsoil, rock, cobble and subsoils would not be sidecast into adjacent wetlands or waterways. Gaps would be left at regular intervals in the windrowed topsoil and subsoil to avoid ponding and excess diversion of natural runoff during storm events. Best management practices (BMPs) would be installed around topsoil and subsoil staging areas when they are near wetlands to prevent soils from migrating into nearby wetlands or surface waters.

2.1.2. Pipeline Installation

Pipe sections would be strung along the trench and connected together. Pipe joints would be lined up end-to-end, clamped into position, and connected in accordance with applicable regulations and standards currently required for water pipelines. All fittings and joints would be visually

inspected by a qualified inspector. Any defects discovered during such inspections would be repaired or replaced as required under the applicable regulations and standards.

Before the pipe is lowered into the trench, the pipe would be visually inspected, and any faults discovered through the inspection would be replaced or repaired.

2.1.3. Lowering-in and Padding

Before the pipe is lowered into the trench, an inspection would be conducted to verify that the components are properly fitted, the depth of the trench is correct to provide for minimum cover requirements, and the trench bottom is free of rocks and other debris that could damage the components. Dewatering will be necessary where water has accumulated in the trench and would be permitted through the State. Sifted soil fines from the excavated subsoils would provide rock-free pipeline padding and bedding. Sandbags may be used to pad the bottom of the trench instead of, or in combination with, padding with soil fines. In rocky areas, padding material (sand and gravel) or a rock shield would be used to protect the pipe, if necessary. On either side of creeks or larger ditches and canals, trenchbreakers (e.g., sandbags or expanding foam) will be placed around the pipeline and create a permanent barrier within the trench to prevent shallow ground waters from migrating along the trench.

2.1.4. Backfilling and Grading

After the pipeline is lowered into the trench, subsoils would be replaced into the trench, and then topsoils would be replaced evenly across the workspace. Final grading would occur to match pre-construction topography. In upland areas, a temporary seed mix may be utilized to assist with erosion control prior to final seeding, which is likely to occur in the late fall. Temporary BMPs would be installed where the risk of erosion occurs, and on steeper slopes hydromulch or erosion control blankets (ECB) may be used. If ECBs are used, they would be free of plastic netting to avoid entrapment of wildlife species.

Approximately 15-feet of 3-foot diameter riprap (totaling approximately 4 cubic yards) would be installed over the trench on the north bank of the Uncompahgre River to minimize the risk of the river side-cutting into the trenchline. Voids around the riprap would be filled with local soils to facilitate revegetation. See section 3. Wetland and Riparian Restoration for more details on erosion control, seeding and revegetation.

2.2. Cofferdam Construction

To construct the pipeline within the OHWM of the Uncompahgre River and Cow Creek, a cofferdam will be installed using super sacks, which consist of clean sand or gravel in heavy-duty polypropylene bags. The number of super sacks used will vary depending on the water crossing and water level, but it will range from three to 34 super sacks that are 4 feet by 4 feet by 4 feet. Total material needed for the super sacks range from six to 81 cubic yards (please see NWP-58 application and PCN for additional details). Each crossing will be completed in a two-phased approach by installing a temporary cofferdam on one-half of the crossing no closer than 10 feet from the opposite bank. Once work is completed on the first phase of the crossing, the cofferdam will be removed and reinstalled on the second half of the crossing for phase 2 work. Once the

cofferdam is constructed and excavation for the pipeline has started, dewatering pumps would run 24-hours a day to keep the construction space within the cofferdam mostly dry.

The selected construction contractor will be required to produce a stormwater management plan and obtain a CDPHE Construction Dewatering Permit (COG080000; Discharges from Short-term Construction Dewatering Activities). As such, appropriate erosion and sediment controls would be utilized in accordance with General Condition #12 to properly stabilize the site and prevent erosion and siltation into other down-gradient waters and wetlands. These appropriate erosion and sediment controls would be installed around the project area prior to beginning earthmoving activities.

2.3. Pipeline Installation in Cofferdams

After the cofferdam has been constructed, an excavated area would be dug for the pipeline using an excavator, up to 30 feet wide and 14 feet deep (slopes would need to be laid-back or braced to reduce the risk of collapse). Excavated material would be sidecast into upland areas and stored in the temporary staging area for backfilling after pipeline installation; larger rocks would be sifted out and not used to backfill around the pipeline. No blasting is expected. Crews would utilize rock-saws or hydraulic hammers to excavate where rock formations are encountered during construction. The pipeline trench would be less deep after extending past the riverbanks.

3. IMPACTED SURFACE WATERS, WETLANDS AND RIPARIAN AREAS

3.1. Impacted Surface Water Features

The project would impact three surface waters of notable size: the Uncompahgre River immediately below the Ridgway Dam, Cow Creek, and again the Uncompahgre River, approximately two river miles downstream of the Ridgway Dam. Other smaller surface waters that would be impacted include smaller ditches, with the largest ditches being approximately 10 feet across.

3.1.1. Uncompahgre River

The first Uncompahgre River crossing immediately below Ridgway Dam would impact approximately 0.58-acres of surface waters through the installation of a cofferdam. No wetlands would be impacted at this crossing, as the banks of the Uncompahgre River are covered in riprap rock as part of the outflow area from Ridgway Dam.

At the second crossing of the Uncompahgre River (approximately two miles downstream from the first crossing), the installation of the cofferdam and pipeline would impact 0.15 acres of open waters (R3UBH) of the Uncompahgre River. Wetland impacts are discussed below.

The installation of the cofferdams, excavation for the pipeline, and backfilling/removal of the cofferdam would mobilize fine sediments in the Uncompahgre River. These fine sediments would flow downstream in the river and would likely temporarily fill interstitial spaces in the streambed and could also temporarily cover or infill within downstream wetlands. Even though the workspace would be kept dewatered (and pumped waters would be discharged into uplands and not into the open waters of the river), mobilized sediments would still likely impact surface waters based on realistic estimates from other projects.

3.1.2. Cow Creek

At Cow Creek, the naturally low flows in the creek in the late fall would allow for the use of temporarily diverting flows across half of the active channel, with much of the active channel being dry. Water in the creek would be diverted around half of the channel using existing rocks and gravel in the channel, along with a temporary dam (made from super sacks) to maintain flows, while crews excavate and install the pipeline across half of the channel. Once the pipeline is installed across half of the channel, waters would then be diverted back across the completed area, and the other half of the pipeline would be installed across the remaining half of the channel. The installation of the raw water pipeline within the OHWM of Cow Creek would involve the temporary placement of up to approximately 76 cubic yards of gravel and sands from in-channel materials along with super sacks and sandbags to create a temporary dam, which would temporarily impact a surface area of approximately 0.66 acres.

Placement of this material and excavation of the pipeline trench would disturb the riverbed, mobilizing fine sediments which would flow downstream. Some of the loose rock, gravels, and sands around the temporary dam would be flushed downstream during construction and during redirecting flows within the channel.

After construction, any material used for the temporary dam would be removed from within the OHWM of the creek. The channel would be regraded to match pre-construction topography. The entire process of installing the pipeline is expected to take five days.

Increased temporary sediment loads downstream of the project area would temporarily fill interstitial spaces within the channel during the winter and spring following construction; this may have temporary impacts on aquatic macroinvertebrates. However, spring high water runoff is assumed to result in flushing of sediments from these areas. There are no wetlands at the Cow Creek crossing.

3.1.3. Other Open Water Areas

At Wildcat Creek, approximately 0.003 acres of non-wetland waters (R4SB) would be temporarily impacted by pipeline construction.

A number of ditches supporting open waters would be crossed by pipeline construction, and these temporary impacts are included in the application. Open waters in these ditches are wholly within the ditch prism, and most ditches only run seasonally but nevertheless may support a downstream nexus to other WoUS. Approximately 0.09 acres of open waters within these ditches would be temporarily impacted by pipeline construction. After the pipeline has been constructed, the ditch prism will be reconstructed to its original size and shape.

3.2. Impacts to Wetlands

3.2.1. Uncompahgre River Wetlands

The excavation and installation of the water pipeline would result in temporary disturbance to wetlands within the construction area at the second (northern) Uncompahgre River crossing. In addition to direct excavation, there may be temporary trampling of wetland vegetation and soil compaction around the project area due to the need for the machinery to operate on timber mats or other temporary matting within the confines of the construction area. Calculations of impact acreage include the entire extent of the construction area to account for this disturbance. As discussed, excavated areas would be backfilled and returned to their original contour, then covered with wetland topsoil that was salvaged and segregated during the initial excavation. In temporarily crushed or trampled areas, wetland plants are anticipated to recover within a few weeks or, at the worst, through regrowth the following season.

Temporary wetland impacts at the second Uncompahgre River are anticipated to include 0.26 acres of PSS wetlands, and 0.1 acres of PEM wetlands (total of 0.36 acres of wetlands (**Table 1**)). After the disturbance, the impacted area would be reseeded and replanted (see discussion below), but temporary impacts may last a few years before seeded and planted materials can establish wetland vegetation in this area.

Construction access (temporary use areas) would be matted in areas of saturated soils or wetlands to minimize long-term impacts and rutting. If the ground in these areas is dry and firm, not all areas may be matted. In these areas, crushing of wetland vegetation would occur, and it may take one to three growing seasons before vegetation can recover.

Permanent Impacts – Permanent wetland impacts from riprap installation on the northern bank of the river are anticipated to impact 0.02 acres of wetlands.

3.2.2. Cow Creek

As mentioned, there would be no impact to wetlands at Cow Creek; the riparian area around the creek does not support vegetation or soils meeting the hydric requirements for jurisdictional wetlands.

3.2.3. BLM Wetlands

Where the raw water pipeline crosses on to BLM lands (Township 46 North, Range 8 West, Section 5), the construction corridor drops down into a historic oxbow area of the Uncompahgre River, which now supports an approximately 6-foot wide irrigation ditch, and a larger area of wetlands and riparian habitats.

This area is dominated by willows (*Salix monticola, S. exigua,* and *S. drummondiana*), with an understory comprised of hydric graminoids, forbs, and shrubby species (RME 2024). East of the delineated wetlands area is a stand of mature cottonwoods (*Populus deltoides*), which was avoided by the project, per BLM guidance, in order to maintain important wooded riparian habitats and maintain the scenic views along the highway.

Wetlands impacted on BLM lands are categorized as PSS/PEM wetlands, and impacts total 1.38 acres of temporary impact. Impacts from pipeline construction would be similar to what is previously described in section **3.2.1 Uncompahgre River**.

3.2.4. Other Area Wetlands

The only other naturally occurring wetlands that would be impacted by construction are at Wildcat Creek. There, approximately 0.01 acres of wetlands (PSS/PEM) would be temporarily impacted by pipeline construction. Agriculturally induced wetlands along the banks of irrigation ditches and canals impacted by the project total 1.73 acres. Impacts to these wetlands would be similar to what is previously described in section **3.2.1 Uncompahgre River**.

3.2.5. Summary Table of Surface Waters and Wetland Impacts

Table 1. Proposed Impacts to Wetlands and Other Waters of the U.S.

Name	Delineated Size (acres)	Acres of Temp. Impact	Acres of Permanent Impact
Jurisdictional Open Waters of the US Impacts			
R3UBH waters (Uncompahgre River & Cow Creek)	5.36	0.74	0
R3USC (Cow Creek)	0.49	0.07	0
R4SB (Wildcat Creek)	0.06	0.005	0
Total Waters Impacts	***5.91***	***0.815***	***0***
Jurisdictional Wetland Impacts			
PEM Wetland Impacts	0.3	0.11	0.02
PSS Wetland Impacts	4.06	1.65	0
Total Wetland Impacts	***4.36***	***1.76***	***0.02***
Jurisdictional Ditch Wetland Impacts			
PEM Wetlands (Ditches)	5.21	1.66	0
PSS Wetlands (Ditches)	1.29	1.09	0
Total Jurisdictional Ditch Impacts	***6.5***	***2.75***	***0***

3.3. Impacts to Riparian Areas

On Reclamation lands, private lands (on either side of northern crossing of Uncompahgre River), and partially on BLM lands, non-wetland riparian habitats would be impacted by pipeline construction. While these habitats are not regulated by section 404 of the Clean Water Act, and no permitting by the USACE is required, the riparian habitats are an important habitat component and an important resource for regulatory agencies and the area. Approximately 2.32 acres of riparian habitats (which are not wetlands) would be temporarily disturbed. Per regulatory agency guidance, these areas are to be revegetated to quickly restore habitat function.

4. WETLAND AND RIPARIAN RESTORATION

As previously described, the entirety of the A Horizon, to a depth of no more than two feet, would be salvaged and segregated from subsoils. After pipeline installation, topsoils would be replaced and regraded to match pre-construction conditions in wetland and riparian areas.

4.1. Seedbed Preparation and Soil Tillage

Subsoils (or topsoils) that have been over-compacted by traffic or equipment, such as in staging areas, access roads, and along the working side of the trench, should be tilled or ripped to break up rooting restrictive layers. Acceptable methods of soil tillage consist of disking, chisel plowing, ripping, or harrowing to a depth of 4 to 12 inches. After subsoils have been ripped, topsoil may be redistributed.

Photo of riparian habitats on Reclamation lands, adjacent to Cow Creek.

No more than 10 percent of the wetland or riparian reclaimed area should contain rocks greater than 8 inches in diameter. The only exception to this condition will be in-situ soils that naturally contain greater amounts of rock material. Additionally, no more than 35 percent of coarse fragments of any size should be allowed on the soil surface to reduce the risk of revegetation issues. Larger volumes of coarse fragments could either be screened or picked prior to seeding operations. Rock material could be buried in cut slope areas a minimum of three feet below the final soil surface to not interfere with the rooting depth of desirable vegetation species. Some larger fragments may be left on the surface to mimic surrounding rock occurrences.

A firm seedbed is essential for the successful establishment of plants. A firm seedbed is one that allows a person's foot to sink no deeper than one-half inch. This ensures close contact between the seed and soil particles and will help retain soil moisture near the surface. Final seedbed preparation shall consist of scarifying (raking or harrowing) the spread topsoil prior to seeding to create the required firm seedbed. Scarifying should occur no more than 24 hours before seeding is to occur. Soils should not be worked when wet to avoid compaction. Areas that would be broadcast seeded should be left with a slightly roughened surface.

4.2. Seeding Methods

Riparian and wetland areas occur on Reclamation, BLM, and private lands. Each landowner may have different seed mix requirements, but the following conditions would be used for all seed mixes. It is assumed that in riparian and wetland areas, broadcast seeding would be used. Broadcast seeding rates should be around 150 pure live seeds (PLS) per square foot.

1. Use the following minimum PLS (Pure Live Seed) tolerances:

PLS tested %	Tolerance % points
81–100	-7
61–80	-6
41–60	-5
21–40	-4
0–20	-3

2. All seed must comply with BLM and Colorado weed seed guidelines. There should be no prohibited species seed (such as noxious weeds), and no more than allowable levels of restricted species seed (such as aggressive cultivars). In addition, there should be no more that 0.5% total weed seed, less than 2% other seed, and no trash larger than ¼" in length.
3. The BLM requires additional seed tests on seeding projects that are greater than 20 acres and/or require over 200 pounds of seed. For these seeding projects, the project proponent will have the seed supply company store the purchased seed prior to mixing and pull samples to be sent to a certified laboratory, such as Colorado State Laboratory at the following address, or another lab selected by the BLM. Seed test results must comply with the criteria listed above before seed is mixed, shipped, and applied to the project area:

   Colorado State Laboratory
   Colorado State University
   Department of Soil and Crop Sciences
   Fort Collins, CO 80523

4. Copies of seed tags and test results for all seed applied, regardless of project size, must be submitted to the BLM.

Temporary (or final) seeding shall be conducted no more than 24 hours following completion of final seedbed preparation, and no more than 15 days following the establishment of final grade and topsoil replacement.

Broadcast seeding is assumed to be employed in wetland and riparian areas. Seed would be uniformly applied over the disturbed areas with manually operated cyclone-bucket spreaders or mechanical spreaders. Following broadcast seeding, the area will be raked or harrowed to provide 0.25 to 0.5 inch of soil cover (where slope and avoidance of any planted shrubs is possible).

If revegetation is unsuccessful, Project 7 or their contractors shall implement subsequent reseedings until reclamation standards are met, per the direction of USACE, BLM, Reclamation and CDPHE.

4.3. Riparian Area Planting and Seeding

As wetland and riparian areas provide more soil moisture for revegetation, use of temporary seed mixes is not anticipated. Therefore, after topsoil redistribution, final seeding and planting would likely take place within two weeks of seedbed preparation, if plant materials are available.

In wetland and riparian areas, live containerized plant materials would be installed. In riparian areas, the following shrubs and tree species would be installed, spaced on average approximately

15 feet apart, but installed to provide a natural appearance (i.e., planted in groups of 3 to 5 individuals). Mapped riparian areas totaled 1.48-acres, and based on average spacing of 15-feet, **Table 2** details the approximate number of containerized stock needed for planting across all riparian areas.

Table 2. Containerized Shrubby Species and Tree Species for Riparian Area Revegetation

Common Name	Scientific Name	Count
Narrowleaf cottonwood	*Populus angustifolia*	50
Skunkbush sumac	*Rhus trilobata*	80
Wood's rose and/or Nootka rose	*Rosa woodsia/ R. nutkana*	60
Red osier	*Cornus stolonifera*	180
Chokecherry	*Prunus virginiana*	50
Rocky Mountain maple	*Acer glabrum*	90
Silverleaf buffaloberry	*Shepherdia argentea*	85
	Total	**595**

Containerized shrubs and trees would be in 1-gallon containers. Some stock may be unavailable, and other species may be substituted, or additional numbers from other species may be used.

4.3.1. Riparian Area Seed Mix

The following seed mix is proposed for use in riparian areas on Reclamation, BLM, and private lands. These percentages of PLS are based on a total of 150 seeds per square foot (and not on pounds of seed, given the large differences in seed size).

Table 3. Riparian Areas Seed Mix

Common Name	Scientific Name	Percentage
Western wheatgrass	*Pascopyrum smithii*	15
Arctic rush	*Juncus arcticus*	20
Blue wildrye	*Elymus glaucus*	25
Nodding brome	*Bromus anomalus*	20
Streambank wheatgrass	*Elymus lanceolatus*	15
Basin wildrye	*Leymus cinereus*	5

The final seed mix composition may be changed prior to seeding at the discretion of the landowner/land management agency.

Figure 3: Riparian Revegetation Areas – BOR Lands

Figure 4: Riparian Revegetation Areas – Uncompahgre River

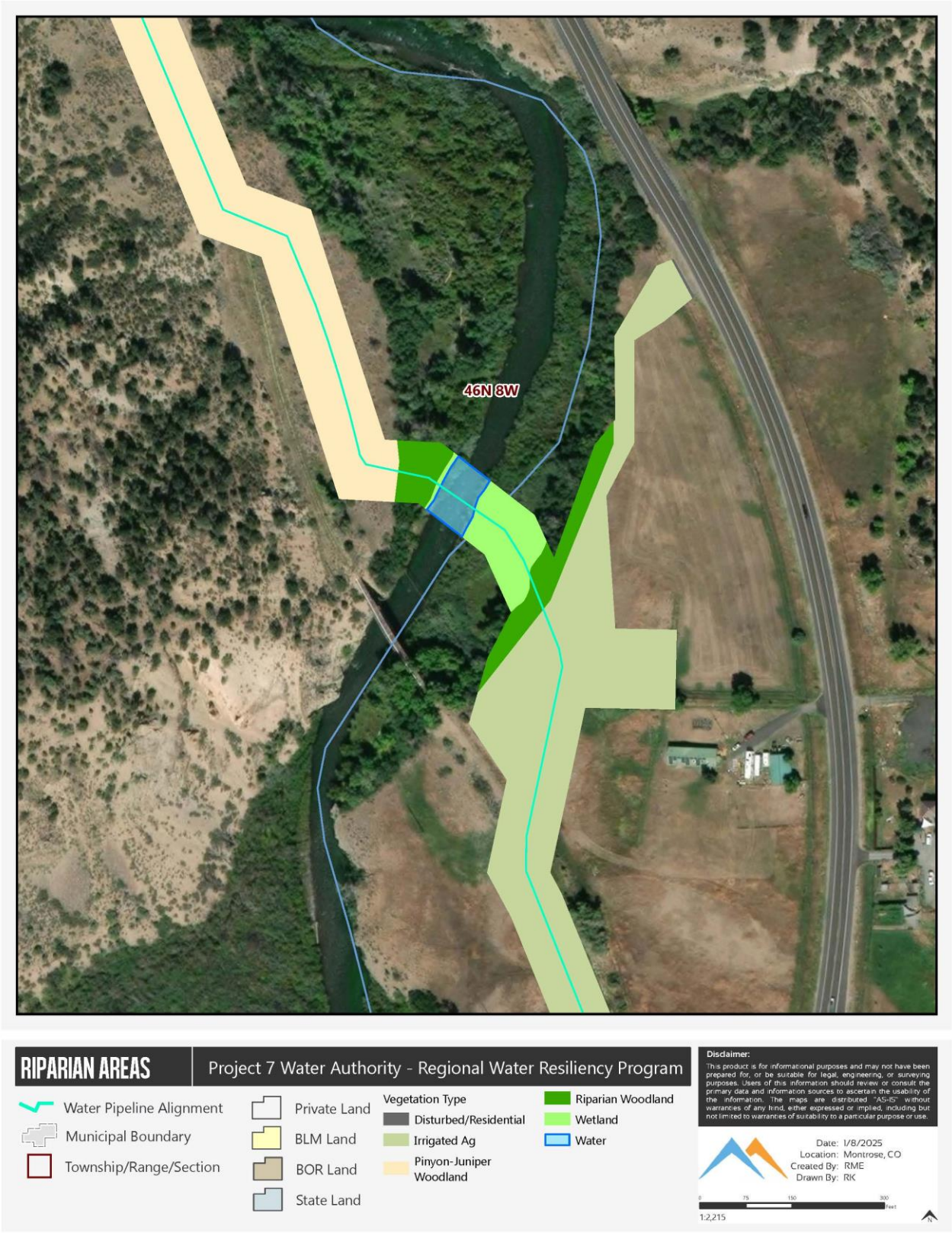
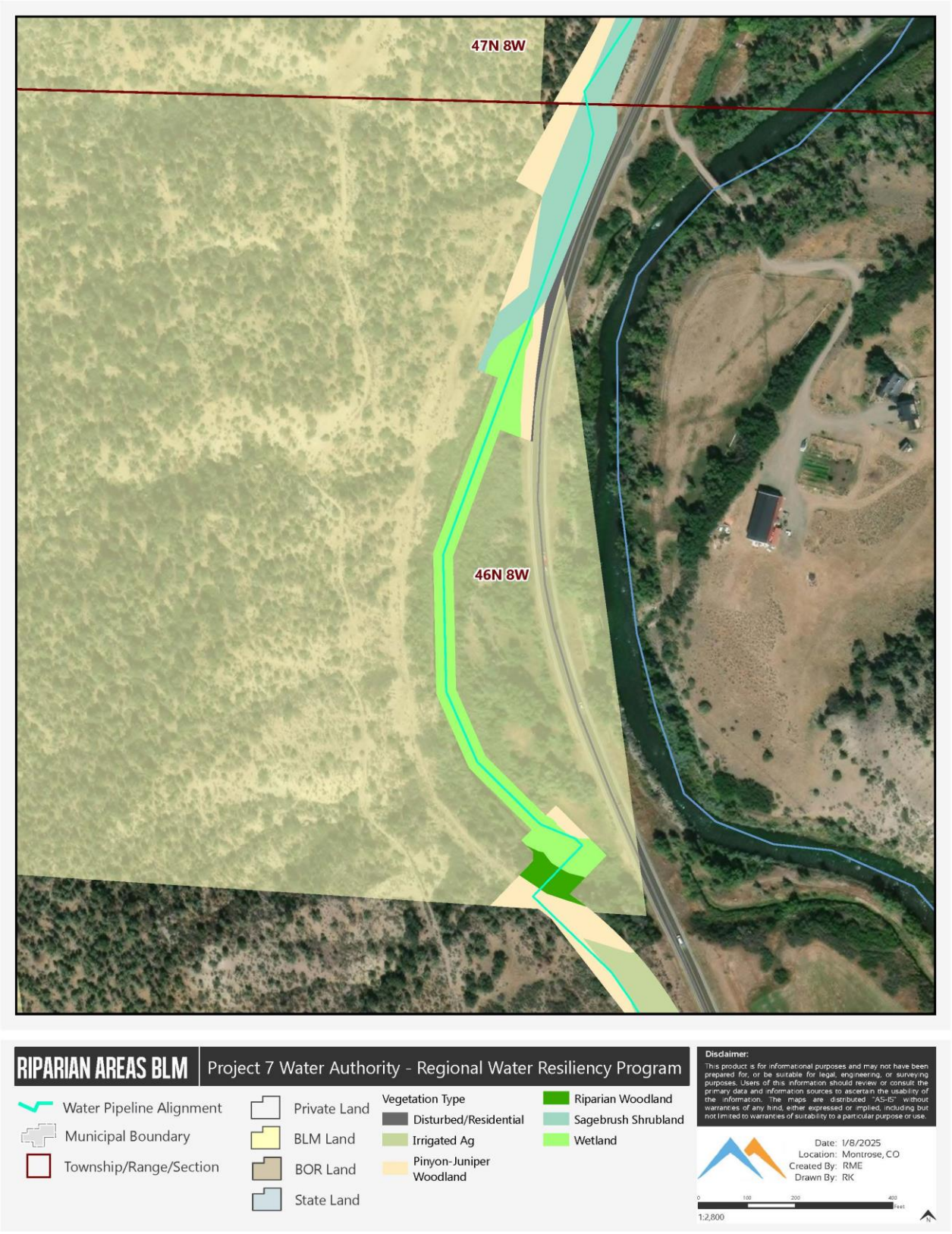


Figure 5: Riparian Revegetation Areas – BLM Lands



4.4. Wetland Areas Seeding and Planting

In delineated natural wetland areas (as opposed to agriculturally-induced wetland areas), both seeding and planting would occur to hasten site stabilization and reduce the temporal loss of wetland function. In agriculturally induced wetland areas, only seeding would occur, but other erosion control measures (such as mulching, use of erosion control blankets, hydromulching, etc.) would still be employed.

Planting of containerized graminoids and shrubs would occur with a spacing of approximately three feet between graminoids, and 10 feet between shrubs. 10 cubic inch containerized stock would be used for graminoids, and 1-quart containerized shrubs would be used. Based on the area of delineated natural wetlands that would be impacted by construction, approximately 1.76-acres of natural wetlands would see reseeding and replanting. Approximately 2.75-acres of agriculturally induced wetlands would see reseeding only, using the seed mix in **Table 6** (assuming approval of land owners).

Example photo of plants installed through ECB.

Table 4. Containerized Shrubby Species for Wetland Areas

Common Name	Scientific Name	Count
Mountain willow	*Salix monticola*	260
Drummond's willow	*Salix drummondiana*	200
River birch	*Betula occidentalis*	100
River hawthorn	*Crataegus rivularis*	100
Red osier	*Cornus stolonifera*	200
	Total	**860**

Note: To be planted across 1.76 acres of PEM/PSS wetlands.

Table 5. Containerized Graminoids for Wetland Areas

Common Name	Scientific Name	Count
Beaked sedge	*Carex utriculata*	2,500
Water Sedge	*Carex aquatilis*	2,000
Creeping spikerush	*Eleocharis palustris*	1,000
Swordleaf rush	*Juncus ensifolius*	2,300
	Total	**7,800**

Note: To be planted across 1.76 acres of PEM/PSS wetlands.

Table 6. Seed Mix for Wetland Areas

Common Name	Scientific Name	Percentage
Beaked sedge	*Carex utriculata*	10
Water Sedge	*Carex aquatilis*	20
Arctic rush	*Juncus arcticus*	25
Meadow sedge	*Carex praegracilis*	25
Streambank wheatgrass	*Elymus lanceolatus*	20

Note: To be seeded across 1.76 acres of PEM/PSS wetlands. Percentage is based on count of PLS, not pounds, given the large discrepancies in seed size. Seed mixes may be modified based on landowner requirements.

Wetland seeding and planting will be performed as soon as practical after completing construction, allowing for seed and plant material availability and appropriate seasonal conditions. Seeding and planting would not occur on frozen ground surfaces. If conditions are very dry, supplemental watering may be needed to keep shrubs and planted material alive. This would be done by using small pumps drawing water from nearby rivers and sprinklers.

4.5. Mulching

Mulching will be required to maximize moisture retention, reduce wind and water erosion, and improve the chances for revegetation success. Straw mulch and tackifier, or hydromulch and tackifier shall be used in riparian areas but is not likely needed in wetland areas. If wetland areas are ready for planting, but soils or precipitation trends are dry, then some sort of mulch or ECB may be needed to keep the ground moist. Mulch shall be applied to the restoration areas within 24 hours following the completion of seeding and other BMP installation.

Hydromulch (when used) will be applied per manufacturer's specifications with a 100% wood mat-fiber mulch at the rate of 2,000 pounds per acre. Startak 600 by Chemstar, a tackifier, is to be applied in accordance with manufacturer's directions at the rate of 100 pounds per ton of mulch.

Hydromulch and tackifier or straw mulch and tackifier will be applied at these rates to all riparian seeded areas, with the exception of areas covered by an erosion control fabric, as described below. Any exceptions to these requirements must be approved by the BLM, Reclamation, or CDPHE.

4.6. Erosion Control

In addition to straw mulch and hydromulch, biodegradable fiber rolls (straw wattles, coir logs) and erosion control blankets may be utilized to ensure adequate protection from slope erosion and offsite transport of sediments to improve reclamation success.

In areas with 4:1 up to 3:1 slopes and areas near drainageways, biodegradable fiber rolls (straw wattles, coir logs) will be installed to shorten slope length and spread runoff as sheet flow. Fiber rolls will be installed per manufacturer's specifications.

Based on field conditions, biodegradable erosion control blankets (ECB) may also be required to control erosion on steeper slopes and on streambanks. ECBs containing plastic netting (even if netting is supposed to be photo-degradable) are not permitted to avoid wildlife entrainment.

Excelsior ECBs are not approved for use. An example of a suitable ECB would be from North American Green (www.nagreen.com). Qualified stormwater and reclamation staff will work with the contractor to clearly delineate in the field areas requiring erosion control blankets. ECBs shall be installed in accordance with the manufacturer's recommendations.

As mentioned, prior to installation of ECBs, seeding should occur. Plants (shrubs and small trees) can be planted through the ECBs after installation.

To prevent the initiation of sheet and rill erosion under the blanket, it is essential that it maintain close soil contact and that it be installed per the manufacturer's recommendations. The edges of the blanket must be buried to prevent wind or water from lifting it from the soil surface. If the blanket is perched above the soil, erosion will occur beneath the blanket.

All erosion control BMPs must be periodically inspected to ensure they are functioning properly. Qualified stormwater professionals will inspect BMPs during monitoring periods and will notify Project 7 if any BMP is not functioning properly. Please refer to the BLM Gold Book for additional BMPs. Project 7 is responsible for implementing all necessary BMPs needed to accomplish restoration objectives and protect water quality in the area adjacent to the disturbance.

If straw mulch is used, only State-certified weed-free mulch shall be used. A starch-based tackifier may be used to secure the seed and straw mulch in place. Use of a temporary seed mix may occur if stabilization is needed through the summer months.

5. MONITORING

During the reclamation process, a qualified ecologist or wetland scientist shall be on-site to ensure construction crews properly plant in the appropriate moisture zones. If plants are not planted in the correct area, they could die, and additional planting would then be necessary. Environmental inspectors shall document that topsoil stripping and storage, topsoil replacement, seedbed preparation, seeding, and other procedures, as well as BMP placement, are employed correctly.

5.1. As-Built Assessment

A qualified ecologist or wetland scientist shall submit a brief as-built assessment to document wetland and riparian revegetation completed after construction and revegetation. The report will identify any changes to the original plan, document final seed mixes and plant materials, and will include graphics to illustrate the final limits of disturbance. Graphics will be provided to regulatory agencies as map products and as GIS shapefiles, in accordance with the following:

- Within 30 days of completing construction, Project 7 shall submit to the regulatory agencies a digital as-built file that documents the actual boundaries of disturbance for the project within wetland and riparian areas and any other deviations from the proposed plan (i.e., location of installed pipeline if different from the proposed plan).
- Mapping shall include all disturbances related to pipeline installation and surface appurtenances.
- Digital files shall be in ArcGIS-compatible format (shapefiles or geodatabase) in NAD 1983, UTM Zone 13N, meters).

5.2. Post-construction Monitoring and Maintenance

Post-construction monitoring of the wetland and riparian restoration areas would be initiated following final reclamation and would continue until the Restoration Success Criteria are achieved. During the monitoring period, qualified ecologists or wetland scientists will periodically visit the wetland and riparian restoration areas to observe vegetation establishment, locate populations of noxious or undesirable weeds, identify any areas of detrimental erosion, and provide recommendations for corrective actions.

5.3. Seed Germination and Vegetation Establishment

Environmental Inspectors, qualified ecologists or wetland scientists will evaluate the revegetated areas to determine if the seed mixes are germinating adequately and producing a uniform cover, and if plants are establishing. Any areas with inadequate seed germination and cover, or dead plants, will be identified. Recommendations will be provided to adequately revegetate these areas, which may include reseeding, overseeding, or replanting. In addition, plant species lists will be compiled during monitoring visits to more thoroughly document the species diversity of the restoration area. These species lists will be used to augment the species richness data gathered during quantitative vegetation monitoring and will be included in the evaluation of Restoration Success Criteria described below in section **7 Success Criteria**.

5.4. Weed Management

Qualified Environmental Inspectors, ecologists or wetland scientists will identify and map any populations of introduced plants, including Colorado noxious weeds and other undesirable plants within the wetland and riparian restoration areas. Appropriate control procedures will be recommended based on the ecology of the problematic species. Control procedures may include hand pulling or eradication with hand tools, mowing, or the use of herbicides. The landowners and regulatory agencies will coordinate and oversee herbicide application in the restoration area, but Project 7 would be responsible for providing weed management contractors.

5.5. Erosion

Wind and water erosion have the potential to alter the success of the pipeline restoration, and the erosion control blankets may need repair. Therefore, Environmental Inspectors, or qualified ecologists or wetland scientists will thoroughly inspect the restoration to identify any areas of erosion and present a plan to regulatory agencies to repair any damage. Hand tools would be used to restore small areas of erosion and to repair the erosion control blankets. Any erosion damage beyond the scope of hand tools will be coordinated with the landowners and regulatory agencies and could require re-contouring and reseeding. Project 7 would be responsible for completing any repairs at the direction of the agencies and environmental consultants.

5.6. Damage from Human or Wildlife Use

Environmental Inspectors, or qualified ecologists or wetland scientists will determine if human or animal use is negatively impacting the restoration. If impacts are occurring, recommendations will be provided for procedures to eliminate or mitigate these impacts. Such procedures could include signage to keep pedestrians, mountain bikers, and vehicles out of the restoration, and/or temporary fencing. Wildlife fencing is not practicable for this restoration, and heavy wildlife damage may require reseeding of impacted areas. Project 7 would be responsible for completing any repairs at the direction of the regulatory agencies.

5.7. Annual Monitoring Reports

At the end of each growing season, until the Restoration Success Criteria are achieved, qualified ecologists or wetland scientists will prepare a Restoration Monitoring Report to document conditions in the wetland and riparian restoration areas with regard to erosion and slope stability, vegetation establishment, the presence of noxious weeds and other undesirable species. In addition, the report will evaluate the progress of the restoration toward achieving the Restoration Success Criteria. It will identify whether corrective actions are necessary and will provide recommendations. The report will be provided to Reclamation, the BLM, CDPHE, the USACE, and the landowners with wetland and riparian habitats. Monitoring will be in accordance with the methods described below.

5.7.1. Erosion and Slope Stability

Soil surface stability will be determined by the absence or limited degree of surface erosion and plant pedestals. The wetland and riparian restoration areas will be visually inspected to locate rills,

slumping, or other erosional features, and silt fences, wattles, and other erosion control measures will be inspected to ensure they are functioning properly and do not need repair.

5.7.2. Quantitative Vegetation Monitoring

Quantitative vegetation monitoring data will be collected annually to document the progress of the restoration in the wetland and riparian areas. Vegetation data will be collected in the late summer or early fall of each year and will be incorporated into the annual monitoring reports.

Permanent vegetation monitoring transects will be established for the collection of quantitative vegetation cover, species richness, and shrub count data in the restoration areas. One permanent transect will be established on the Reclamation lands, one transect on private lands along the northern crossing of the Uncompahgre River, and two transects on BLM lands. Transects will be 50 meters long, with 2-meter-wide quadrats centered on the transect for collection of species richness and shrub count data. For details on the methods of quantitative vegetation cover data collection, please refer to **Appendix A**.

Species richness is the total number of species observed in a given area. Species richness data will be collected for each transect area by recording all vascular plant species present within a 2-meter-wide band centered on the 50-meter-long transect. Thus, the total area inventoried for species richness is 100 square meters per transect. Finally, all shrubs present within the 2-meter by 50-meter quadrat will be inventoried, and the average height will be measured.

5.7.3. Photo Points

A series of fixed photo points will be established for visual comparison of revegetation success. Photos will be taken from each photo point on an annual basis and will be included in the annual monitoring reports.

6. WEED CONTROL

Careful weed control will be essential to the success of restoration. Environmental Inspectors, or qualified ecologists or wetland scientists will visit the project area, and specifically the wetland and riparian restoration sites several times during the growing season to determine if noxious or undesirable weeds are becoming problematic, and will provide recommendations for weed control, focusing on Integrated Weed Management. Control measures may include mowing, cutting, hand eradication, or spraying with herbicide. Spot herbicide treatments will be used to promote diverse communities of forbs and to protect populations of restoration species and native volunteer species that could be present. Project 7 will coordinate and oversee all weed management activities in the restoration area but must coordinate with landowners (including Reclamation and BLM).

7. SUCCESS CRITERIA

The goal of the following reclamation standards and Success Criteria is to mitigate anticipated impacts to vegetation, soil, and water resources from ground-disturbing activities by re-establishing a self-sustaining, diverse vegetation community composed of species native to the region in sufficient density and diversity to approximate a natural, undisturbed community type. Achievement of these Success Criteria will be required for the release of the Restoration Performance Bond to be held by the BLM, as applicable, and to fulfill the requirement of the USACE nationwide permit.

The wetland and riparian area restoration will be considered successful when the following criteria are achieved:

1. The site has been re-graded to the approximate pre-disturbance topography and blends with the adjacent landscape.
2. The disturbed soil surface has been stabilized to reduce erosion and runoff to natural background levels. Flow pattern development will not have resulted in rills deeper than three inches or spaced closer than on adjacent undisturbed hillsides.
3. No slumping or subsidence has occurred along the backfilled trench or fill slopes.
4. The site is dominated by plants of the seed mix and/or by desirable native colonizers common to wetland and riparian habitats in this area.
5. The plant species diversity includes at least 10 desirable native plants common to wetlands and riparian areas along the Uncompahgre River. Species richness will include plant inventories compiled during regular monitoring visits, and data collected during year-end quantitative vegetation monitoring. This method will more accurately capture the species diversity of the site, since many early-blooming forbs are not evident late in the growing season.
6. The plant species diversity shall include at least 2 species of shrubs, 4 desirable native grasses, and 4 desirable native forbs.
7. The absolute vegetation cover totals at least 50%.
8. At least 50 live, native shrubs are present within a 200 square meter quadrat. Shrubs must be established such that they would be expected to continue to grow in the area without active management.
9. The combined absolute cover of all State of Colorado A, B, or C listed noxious weeds and the undesirable plant species (such as kochia or Russian-thistle) shall be less than 5%, with no areas larger than 25 square feet in which noxious weeds are the dominant plants. If cheatgrass (*Anisantha tectorum*), Japanese brome (*Bromus japonicus*), or bulbous bluegrass (*Poa bulbosa*) is present adjacent to the disturbed area in overall concentrations of less than 50% absolute vegetative cover, the absolute cover of annual grasses on the reclaimed site will not exceed 5%. In areas where adjacent lands have greater than 50% absolute cover of non-native annual grasses, the absolute cover on reclaimed lands will not exceed 20%.

APPENDIX A: METHODS FOR QUANTITATIVE VEGETATION COVER DATA COLLECTION

Cover will be estimated using a point-intercept method (Mueller-Dombois and Ellenberg, 1974) by viewing vegetation through a tripod-mounted sighting device with fine cross hairs or a laser. A fixed laser on the sighting device allows vegetation sampling in the canopy above as well as the understory layers below the scope.

Data will be recorded on both sides of the 50-meter-long transects at one-meter intervals, for a total of 100 data points per transect. The sampling points will be located approximately ½ meter from the centerline of the transect, at 90-degree angles.

During cover data collection, the sighting laser is directed straight down to record the first species sighted in the cross hairs, or first "hit." If the laser does not intercept a plant, then rock, litter, standing dead, soil, or water is recorded for the first "hit." When a tree or shrub is first intercepted, a second data point is recorded in the next layer of vegetation below, and possibly also a third data point below that, until the herbaceous understory vegetation appears in the laser. These subsequent data points will be separately recorded as "second hits." All vegetation hits will be recorded by species.

The absolute percent cover of each species and the cover of litter, rock, soil, and standing dead will be calculated using first hits. The relative cover of each species will be calculated using both first and second vegetation hits. Specifically, the percent absolute cover of a species is the number of first hits recorded divided by 100, the total number of first hits for each transect. The percentage relative cover for a species is the sum of first and second hits recorded for that species divided by the total number of first and second vegetation hits for the transect. Litter, soil, rock, and standing dead hits are only used in the calculations of absolute cover.