

FINAL ENVIRONMENTAL ASSESSMENT



*Zanni Lateral of the Crawford Clipper Ditch
Pipeline Project
Delta & Montrose Counties, Colorado*

Prepared For

**U.S. Bureau of Reclamation
Colorado River Basin Salinity Control Program
and
The Crawford Clipper Ditch Company**

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Cover Photograph:

Looking south along the existing Zanni Lateral of the
Crawford Clipper Ditch (September 2015).

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LIST OF ACRONYMS AND ABBREVIATIONS

BLM	U.S. Department of the Interior Bureau of Land Management
BMP	Best Management Practice
BSP	Basin States Program
CAA	Clean Air Act
CDOT	Colorado Department of Transportation
CDPHE	Colorado Department of Public Health & Environment
CFR	Code of Federal Regulations
COAHP	Colorado Office of Archaeology and Historic Preservation
Company	Crawford Clipper Ditch Company
CPW	Colorado Department of Natural Resources Division of Parks & Wildlife
CWA	Clean Water Act
CWCB	Colorado Water Conservation Board
EA	Environmental Assessment
EPA	U.S. Environmental Protection Agency
ESA	U.S. Endangered Species Act
FONSI	Finding of No Significant Impact
FWS	U.S. Fish & Wildlife Service
GMU	Game Management Unit
HQS	Habitat Quality Score
HUC	Hydrology Unit Code
LLC	Limited Liability Company
MOA	Memorandum of Agreement
mi	Mile
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
NRCS	U.S. Department of Agriculture Natural Resources Conservation Service
PBO	Programmatic Biological Opinion
PIP	Plastic irrigation pipe
PL	Public Law
PM	Particulate matter
Reclamation	U.S. Department of the Interior Bureau of Reclamation
SHPO	State Historic Preservation Office
SMPW	Selenium Management Program Workgroup
THV	Total Habitat Value
TMDL	Total Maximum Daily Load
UFO	Uncompahgre Field Office
U.S.	United States of America
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey

1 INTRODUCTION

This Final Environmental Assessment (EA) has been prepared in compliance with the National Environmental Policy Act (NEPA) to disclose and evaluate the potential environmental effects of Crawford Clipper Ditch Company's (the "Company's" or "Applicant's") proposed Zanni Lateral of the Crawford Clipper Ditch Pipeline Project (hereinafter, "Zanni Lateral Pipeline Project," "Project" or "Proposed Action"). The Proposed Action is located in southeastern Delta County and northeastern Montrose County, Colorado, near the Town of Crawford (see Figures 1 and 2 following the main text of this document).

Rare Earth Science, LLC prepared this EA on behalf of the U.S. Department of the Interior Bureau of Reclamation (hereinafter "Reclamation"), which is authorized by the Colorado River Basin Salinity Control Act to provide funding assistance for the Proposed Action.

This EA has been prepared to enable Reclamation decision makers to determine if the Proposed Action represents a significant impact on the human environment. If the EA shows no significant impacts associated with implementation of the Project, then a Finding of No Significant Impact will be issued by Reclamation. Otherwise, an Environmental Impact Statement will be necessary prior to implementation of the Proposed Action.

1.1 Background

The Colorado River and its tributaries provide municipal and industrial water to about 27 million people and irrigation water to nearly four million acres of land in the United States. The river also serves about 2.3 million people and 500,000 acres in Mexico. The threat of salinity loading in the Colorado River basin is a major concern in both the United States and Mexico. Salinity affects water quality, which in turn affects downstream users, by threatening the productivity of crops, degrading wildlife habitat, and corroding residential and municipal plumbing. An estimated 8.7 million tons of salt flow into the Colorado River annually, and by the year 2025, 1.8 million tons of salt will need to be diverted from the system in order to meet water quality standards in the basin (Reclamation 2005). Irrigated agriculture is a major contributor of salinity in the system. Irrigation increases salinity in the system both by depleting in-stream flows, and by mobilizing salts found in underlying geologic formations into the system, especially during flood irrigation practices.

In June 1974, Congress enacted the Colorado River Basin Salinity Control Act, Public Law (PL) 93-320, which directed the Secretary of the Interior to proceed with a program to enhance and protect the quality of water available in the Colorado River for use in the United States and Republic of Mexico. PL 104-20 of July 28, 1995 authorized the Secretary of the Interior, acting through the Bureau of Reclamation, to implement the Colorado River Basinwide Salinity Control Program. The Secretary may carry out the purposes of this legislation directly, or make grants, enter into contracts, memoranda of agreement, commitments for grants, cooperative agreements, or advances of funds to non-federal entities under such terms and conditions as the Secretary may require. PL 110-246 of June 18, 2008 amended the Salinity Control Act, establishing the Basin States Program, and authorizing Reclamation to take advantage of new, cost-effective opportunities to control salinity anywhere in the basin.

Both the Basinwide Salinity Control Program and the Basin States Program fund salinity control projects with a one-time grant that is limited to an applicant's competitive bid. Once constructed,

the facilities are owned, operated, maintained, and replaced by the applicant at their own expense.

The Proposed Action is being administered by the Colorado Department of Agriculture via the Delta Conservation District, and funded by Reclamation through the Basin States Program. Because Reclamation is providing the funds for the Project, Reclamation is the NEPA lead for the Proposed Action. The targeted Project completion date is Spring 2016.

1.2 Purpose & Need for the Proposed Action

The Proposed Action focuses on an unlined ditch system located in the lower Gunnison River watershed of the upper Colorado River basin, in soils derived from Mancos Shale. The Mancos Shale is a Cretaceous-age saline marine deposit, which contributes salts to irrigation water.

The purpose and need of the Proposed Action is to replace the existing irrigation ditch with a buried pipe delivery system, eliminating seepage and reducing salinity in the Colorado River basin by an estimated 551 tons of salt per year. An additional beneficial effect of the Proposed Action is the potential reduction of selenium in the Colorado River basin (SMPW 2011); however, the amount of selenium reduction has not been quantified.

The Proposed Action is consistent with the Colorado River Basin Salinity Control Act and helps fulfill the goals of the Basin States Program. Salinity reduction in the Colorado River basin will provide benefits for a broad spectrum of downstream water users, as explained in Section 1.1, above.

1.3 Overview of Proposed Action & Alternatives

The Proposed Action will replace the existing unlined Zanni Lateral irrigation ditch of the Crawford Clipper Ditch System with a buried pipe delivery system, improving the system's efficiency and eliminating ditch seepage in saline soils. The Proposed Action also involves construction of a habitat replacement (i.e., mitigation) site.

The pipeline component of the Proposed Action will be located in southeastern Delta County, Colorado, just west and northwest of the Town of Crawford (Figure 1), and the Habitat Replacement Site associated with the Proposed Action will be located in northeastern Montrose County approximately 3.5 miles south-by-southeast of the Town of Crawford (Figure 1). Both components of the Proposed Action lie in the Gunnison River watershed of the upper Colorado River basin.

The pipeline component of the Proposed Action would entail replacement of approximately 8,110 linear feet of the unlined open Zanni Lateral with a total of approximately 14,114 linear feet of buried pipe (Figures 3 and 4). Conceptual maps and construction drawings for the pipeline component of the Proposed Action were prepared by Harward Consulting & Engineering of Springville, Utah. The Company proposes to construct the pipeline between Winter 2015 and Spring 2016.

In accordance with the Colorado River Basin Salinity Control Act, the Proposed Action also includes habitat replacement activities to mitigate for habitat losses which would result from the Project. The Habitat Replacement Site is located in an area of existing man-made ponds in the Alkali Creek drainage on private land near the pipeline component of the Proposed Action (Figures 3 and 4).

In accordance with NEPA and the Council on Environmental Quality regulations, a No Action Alternative is presented and analyzed in this EA in order to provide a baseline for comparison to the Proposed Action. Under the No Action Alternative, Reclamation would not provide funding to the Company to pipe the Zanni Lateral. Seepage from this structure would continue to contribute to salt and selenium loading in the Colorado River basin. Riparian and wetland habitats associated with the ditch would likely remain in place and continue to provide benefits to local wildlife.

The Proposed Action is described in more detail in Section 2.2 and Figures included with this EA.

1.4 Alternatives Considered But Not Carried Forward

Several minor pipeline alignment alternatives were considered during the conceptual design process for the Proposed Action, but eliminated from detailed analysis in accordance with 40 CFR 1502.14 because they were determined to be technically challenging, more challenging from a right-of-way perspective, or more expensive than the Proposed Alternative.

1.5 Location & Environmental Setting of the Proposed Action Area

The pipeline component of the Proposed Action will be located in southeastern Delta County, Colorado, just west and northwest of the Town of Crawford (Figures 1 and 2), and a Habitat Replacement Site associated with the Proposed Action will be located in northeastern Montrose County approximately 3.5 miles south-by-southeast of the Town of Crawford (Figures 1 and 2). Both components of the Proposed Action lie in the Gunnison River watershed of the upper Colorado River basin.

The Proposed Action Area is located in the Colorado Plateau physiographic region, and has a semi-arid continental climate characterized by low humidity and moderately low precipitation (averaging about 13 inches annually). The average elevation of both components of the Proposed Action is about 6,500 feet above mean sea level (Figure 3).

The general physical location of the pipeline component of the Proposed Action, including borrow sites and staging areas, is Sections 25, 35, and 36 in Township 15 South, Range 92 West of the 6th Principal Meridian (PM) and Section 31 Township 15 South, Range 91 West of the 6th PM, in Delta County (Figure 3). The general physical location of the Habitat Replacement Site associated with the Proposed Action is Section 30, Township 51 North, Range 6 West of the New Mexico PM, in Montrose County (Figure 3). All components of the Project lie entirely on private land (Figure 3).

The pipeline component of the Project begins in the Town of Crawford (Figures 3 and 4) at a divider headgate ("The Mill") south of Highway 92 near the Dogwood Avenue intersection. The headgate divides the Zanni, West, and Center Laterals of the Crawford Clipper Ditch system. The pipeline component follows Highway 92 northwest through town, crosses under the highway, then turns north and runs generally north and west through irrigated land to its terminus about 1.3 miles west-by-northwest of the Town of Crawford. The pipeline component of the Project lies in the Cottonwood Creek drainage tributary to the North Fork of the Gunnison River (Figure 5). The Zanni Lateral receives water both directly diverted from the Smith Fork River and Smith Fork Project water from Crawford Reservoir, in the Smith Fork of the Gunnison River drainage (Figure 5). Smith Fork Project water is delivered to the Zanni Lateral via Aspen Ditch, which intersects the Zanni Lateral approximately 1 mile northwest of the Town of

Crawford. Drainage from lands irrigated by the Zanni Lateral flows to tributaries of Cottonwood Creek, and eventually northwest to the North Fork of the Gunnison River.

Four borrow/staging sites for the pipeline component of the Project are located on private lands owned by Company shareholders in the vicinity of the pipeline alignment, as shown on Figures 3 and 4. Borrow/Staging Site #1 lies north of J Street between the Zanni Lateral to the west and BLM lands to the east. Borrow/Staging Site #2 is located adjacent to the east side of Crawford Road near the end of the pipeline alignment. Borrow/Staging Site #3 lies on Company-owned land west of the Town of Crawford and alongside Clipper Ditch. Borrow/Staging Site #4 is north of the Zanni Lateral at the edge of an irrigated hayfield.

The habitat replacement component of the Project is located approximately 3.5 miles south-by-southeast of the pipeline component of the Project on private land (Hart Ranch) in the Alkali Creek drainage (Figures 3, 4 and 5). Two separate areas collectively consisting of approximately 7.7 acres—the CDOT Ponds area and the Tower Pond area—make up the Habitat Replacement Site. As required by Reclamation, the Habitat Replacement Site is on land protected by a conservation easement. Alkali Creek is tributary to Crawford Reservoir in the Smith Fork of the Gunnison River drainage (Figure 5).

Landcover in the vicinity of the Proposed Action Area consists primarily of irrigated hay meadows and pastures, pinyon-juniper woodlands, sagebrush or low semi-desert shrublands, or residential landscaping (Figure 6). Current uses on lands in the Proposed Action Area are residential, irrigated hay production, and livestock grazing.

Within the agricultural, woodland, or upland shrub matrix, areas adjacent to ditches and downgradient areas receiving leakage from the ditches have converted to riparian and/or wetland habitats. The existing ditch alignments are vegetated mostly with coyote willow, Russian olive, and occasional cottonwoods, but also support a variety of other riparian shrubs and scattered stands of common ruderal herbaceous weeds.

1.6 Relationship to Other Projects

Other salinity control projects in progress or recently implemented in the general vicinity include the following (Figure 2):

- Cattleman's Ditches Pipeline Project (12 miles south of the Town of Crawford, in the Alkali Creek drainage)
- C Ditch Company's C Ditch/Needle Rock Pipeline Project (3 miles north of the Town of Crawford in the Cottonwood Creek drainage)
- Clipper Irrigation Salinity Control Project 4 (2.5 miles southeast of the Town of Hotchkiss in the Cottonwood Creek drainage)
- Grandview Canal Piping Project (just south of the Town of Hotchkiss in the Smith Fork River drainage)
- Rogers Mesa Water Distribution Association's Slack and Patterson Laterals Piping Project (about 3 miles west of the Town of Hotchkiss)

- Minnesota Canal Phase I and Phase II Piping Projects (near the Town of Paonia in the North Fork of the Gunnison River drainage)
- Lower Stewart Ditch Pipeline Project (near the Town of Paonia in the North Fork of the Gunnison River drainage)
- Bostwick Park Water Conservation District's Siphon Lateral Salinity Control Project (near the City of Montrose)
- Forked Tongue/Holman Ditch Company's Salinity Control Project (near the Town of Eckert in the Tongue Creek drainage)

1.7 Scoping, Coordination, & Public Review

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

- Colorado Office of Archaeology and Historic Preservation, Denver, CO
- Colorado Parks & Wildlife, Gunnison, CO
- U.S. Fish & Wildlife Service, Ecological Services, Grand Junction, CO
- U.S. Army Corps of Engineers, Colorado West Regulatory Branch, Grand Junction, CO
- Colorado Department of Transportation, Grand Junction, CO
- Southern Ute Tribe, Ute Mountain Ute Tribe, and Ute Indian Tribe (Uintah and Ouray Reservation)

Concerns raised during other similar projects (see Section 1.6, above) also helped identify potential concerns for the Proposed Action.

In compliance with NEPA, the Draft EA was available for public comment for at least a 30-day period (see Section 5). The comments are included in Attachment A. The Draft EA was distributed to Company shareholders, private landowners adjacent to the Proposed Action, and the organizations and agencies listed in Attachment B.

Issues determined to be of potential significance, and therefore appropriate for further impacts analysis under this EA, are discussed in Section 3. The following issues were determined to be ***insignificant or not applicable***, and are not analyzed further in this EA:

- Indian Trust Assets and Native American Religious Concerns (not applicable). Indian trust assets may include lands, minerals, hunting and fishing rights, traditional gathering grounds, and water rights. No Indian trust assets have been identified within the Proposed Action Area. The American Indian Religious Freedom Act was enacted to protect and preserve Native American traditional religious rights and cultural practices. These rights include, but are not limited to, access to sacred sites, freedom to worship through ceremonial and traditional rights, and use and possession of objects considered sacred. No Native American sacred sites are known within the Proposed Action Area. Neither the No Action Alternative, nor the Proposed Action, will have an effect on Indian trust assets or Native American sacred sites. To confirm this finding, Reclamation provided the Ute tribes with historic presence in the region with a description of the Proposed Action and a written request for comments regarding any potential effects on

Indian trust assets or Native American sacred sites as a result of the Proposed Action. No comments were received.

- Environmental Justice & Socio-Economic Issues (not applicable). Executive Order 12898 provides that federal agencies analyze programs to assure that they do not disproportionately adversely affect minority or low income populations or Indian Tribes. The Proposed Action Area does not occur on Indian reservation lands or within disproportionately adversely affected minority or low income populations. The Proposed Action would not involve population relocation, health hazards, hazardous waste, property takings, or substantial economic impacts. Therefore, neither the No Action Alternative, nor the Proposed Action, will have an environmental justice effect.
- Jurisdictional Wetlands & Other Waters of the U.S. (not applicable). The Proposed Action would affect surface and shallow subsurface hydrology supplied to wetland and riparian areas along the Proposed Action alignment and would require construction of a Habitat Replacement Site existing potential jurisdictional wetlands. As an agricultural irrigation construction project, the Proposed Action is exempt from requiring a Section 404 Permit pursuant to the Clean Water Act (33 USC 1344). The applicable exemption from Section 404 of the Clean Water Act is for Farm or Stock Pond or Irrigation Ditch Construction or Maintenance. A copy of the Section 404 Exception Summary and written confirmation of the Proposed Action's exemption has been provided by the U.S. Army Corps of Engineers (Attachment C). Construction of the Habitat Replacement Site will not involve placement of fill in any jurisdictional wetlands; therefore, no Section 404 permit for this activity is required.
- Wild & Scenic Rivers, Land with Wilderness Characteristics, or Wilderness Study Areas (not applicable). No Wild and Scenic Rivers, land with wilderness characteristics, or Wilderness Study Areas exist in the Proposed Action Area.

2 PROPOSED ACTION & ALTERNATIVES

As explained in Section 1.3, the alternatives evaluated in this EA include a No Action Alternative and the Proposed Action. The resource analyses contained within this document, along with other pertinent information, will guide Reclamation's decision about whether or not to fund the Proposed Action for implementation. The Proposed Action is analyzed in comparison to a No Action Alternative in order to determine potential effects.

2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not authorize funding to the Company to pipe the Zanni Lateral of the Crawford Clipper Ditch. Irrigation practices and seepage from the Zanni Lateral would continue to contribute to salt and selenium loading in the Colorado River basin. Riparian and wetland habitats associated with the ditches would likely remain in place and continue to provide benefits to local wildlife.

2.2 Proposed Action Alternative

Under the Proposed Action Alternative, the Zanni Lateral of the Crawford Clipper Ditch would be replaced with buried pipe in the alignments, and habitat replacement activities would take place at the locations, shown on Figures 3 and 4.

The pipeline component of the Proposed Action would entail replacement of approximately 8,110 linear feet of the unlined open Zanni Lateral with a total of approximately 14,114 linear feet of buried pipe (Figures 3 and 4), including 8,647 linear feet for irrigation, and 5,467 linear feet for winter stock water delivery. All buried pipe alignments would be installed in or near the existing ditch or ditch prism, with the exception of the last approximately 1,600 feet of pipeline and an approximately 490-foot pipeline spur, which would instead cross irrigated ground and semi-desert shrublands. Approximately 1,660 linear feet of existing irrigation ditch would be abandoned and decommissioned by backfilling (Figure 4). A pre-existing segment of buried pipe already in place in the Town of Crawford for the Zanni Lateral would not be disturbed as part of the Proposed Action (Figure 4). This existing piped segment begins on Company property 115 feet downstream of the Zanni Lateral headgate structure ("The Mill") north of the intersection of Highway 92 and Dogwood Avenue, and follows the west side of Highway 92 for 585 feet, ending northwest of the intersection of Fir Avenue and Highway 92 (Figures 4 and 4a).

Pipe diameters would range from 3 to 24 inches, and pipe materials would be high-density polyethylene (HDPE) and polyvinyl chloride (PVC) irrigation pipe. Various control structures and shareholder outlets would be installed throughout the Project Area, as specified by the construction drawings. No pumping or compressor stations would be associated with the Proposed Action.

Approximately 4,900 cubic yards of imported fill would be required for pipeline installation and to decommission existing ditches. Proposed borrow sites and staging areas totaling approximately 7.6 acres are located on private lands near the proposed pipeline alignment (Figures 3 and 4). Borrow/Staging Site #1 is approximately 6.2 acres in both previously disturbed (currently farm equipment storage) and naturally vegetated badlands. Both staging of materials and equipment and material borrow would occur at Site #1. Material would be borrowed from an existing upland drainage ditch (aka "runoff containment ditch" or "barrow ditch" or "borrow ditch") and an area north of said ditch. The borrow activity would serve to improve the functionality of the drainage ditch, which captures runoff and directs it away from the property owner's residential area. Another borrow area within Site #1 would create a runoff capture/dissipation basin to accept incidental flow from the upland drainage ditch (Figure 4c). Borrow/Staging Site #2 is approximately 0.41-acre previously disturbed area adjacent to Crawford Road, and would be used for staging only. Borrow/Staging Site #3 is approximately 0.36-acre previously disturbed area with a soil stockpile that would be used for borrow material only. Borrow/Staging Site #4 is a small runoff capture basin that would be deepened or enlarged for borrow material only. The need for Borrow/Staging Site #4 to complete the Project is undetermined at this time, but the site is included in this EA so that it can be available during Project construction if needed.

All access ways for construction of the Proposed Action will be on county roads, existing unpaved private roads, and within the pipeline construction corridor. Some minor re-grading of private roads may be necessary following travel with heavy equipment, but no widening of road alignments will occur. A pipeline crossing of Highway 92 and of Crawford Road will be necessary to complete the Project. The Highway 92 crossing will utilize the existing Zanni Lateral culvert under Highway 92. The Crawford Road crossing will be a bored or road cut crossing.

The existing ditch alignments operate in prescriptive easements, all on private lands. All landowners in the footprint of the Proposed Action have agreed to allow the activities of the Proposed Action to be conducted on their lands (see Section 3.3). Construction activities would be limited to approximately 60 or 80-foot-wide construction rights-of-way (or narrower as appropriate in residential areas) throughout the Project alignment. The construction rights-of-

way for the Proposed Action and their specific locations will be clearly marked on the construction drawings. Permanent rights-of-way will be requested for ongoing routine maintenance of the completed pipeline. The permanent rights-of-way would be approximately 20 to 30 feet wide (less in residential locations where space is limited), depending on their location and purpose. Existing access ways to various headgates and valves will be maintained, and no new access ways or new roads will be established along permanent rights-of-way following Project construction.

Pipeline construction would occur incrementally across the Proposed Action Area during March and early April 2016. If the Proposed Action cannot be completed during this timeframe, then it would be postponed until the 2016-2017 irrigation off-season (between late October 2016 and early April 2017). Construction and access footprints would be limited to only those necessary to safely implement the Proposed Action.

Vegetation slash would be hauled off-site to Borrow/Staging Site #1, and chipped or burned at that location. All disturbed areas would be revegetated with appropriate seed mixes and monitored subject to the Delta Conservation District's requirements and agreements between the Company and individual land owners. Best Management Practices (BMPs) would be used to control erosion, and noxious weeds would be controlled in disturbed areas according to right-of-way stipulations and Delta County standards (available at <http://www.deltacounty.com/DocumentCenter/View/1013>).

The habitat replacement component of the Proposed Action would mitigate for long-term loss of wetland and riparian habitat where ditches are proposed for abandonment or for buried pipe installation. The amount of mitigation necessary is based on a habitat evaluation performed in the Project Area (see Section 3.6 and Attachment D). Habitat replacement activities would involve ongoing work at a Habitat Replacement Site located approximately 3.5 miles south-by-southeast of the pipeline component of the Project on Hart Ranch (Figures 3 and 4). Hart Ranch is protected by a perpetual conservation easement and the landowner has entered into agreements with the Company for construction and maintenance of the Habitat Replacement Site. Partial construction of the Habitat Replacement Site has already occurred because the Habitat Replacement Site also provides mitigation for Clipper Irrigation Salinity Control Project 4, an earlier salinity reduction project funded by Reclamation on a different part of the Crawford Clipper Ditch System. The Reclamation-approved Habitat Replacement Plan is included in its entirety as Attachment E. The Final EA and FONSI for the Clipper Irrigation Salinity Control Project 4 are published on Reclamation's website (Reclamation 2014a, 2014b).

Habitat replacement activities that have already occurred at the Habitat Replacement Site (as part of the habitat loss mitigation for Clipper Irrigation Salinity Control Project 4) include clearing of cattails and excavation or deepening of pothole ponds at the "CDOT Ponds" area of the Habitat Replacement Site and installation of water control structures. Habitat improvements for the Proposed Project would include clearing of cattails at the Tower Pond area of the Habitat Mitigation Site and plantings of native woody riparian and mesic vegetation in both the Tower Pond and CDOT Ponds areas to increase species diversity and structural diversity at the Site. Woody plantings would include species such as peachleaf willow, three-leaf sumac, wild rose, chokecherry, native plum, and silver buffaloberry. Woody plantings would be protected with 8-foot-tall big game fencing to exclude deer, elk, and cattle while the plantings are establishing. Wire mesh would also be installed around the bases of woody plantings to protect them from small herbivores, until the plantings become established. A weed treatment program will be implemented to meet standards set by Montrose County (available at <http://www.montrosecounty.net/162/Weed-Mitigation>) and the State of Colorado. Habitat

replacement activities would take place prior to or concurrently with construction of the Project, generally during spring or fall, and would be ongoing as necessary to maintain the Habitat Replacement Site for a duration of 50 years.

3 AFFECTED ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

This section discusses resources that may be affected by the Proposed Action and the No Action Alternative. During preparation of this EA, information on issues and concerns was received from the Company, resource agencies, and other interested parties, as noted in the subsections below.

For each resource, the potentially affected area and/or interests are identified, existing conditions described, and potential impacts and environmental consequences predicted under the No Action and Proposed Action Alternatives. This section is concluded with a summary of impacts and environmental consequences.

3.1 Water Rights & Use

The Gunnison River basin is approximately 7,800 square miles in size. Information on water rights within the Gunnison basin in general can be found in the report entitled "Gunnison River Basin Information, Colorado's Decision Support Systems" (CWCB 2004).

The Crawford Clipper Ditch Company is a privately owned, non-profit, mutually-funded irrigation company incorporated and operating in Delta County since 1885.

According to the Colorado Department of Natural Resource's Division of Water Resources, the Crawford Clipper Ditch Company holds several absolute decreed water rights totaling 164.3 cubic feet per second (cfs), most of which were appropriated between 1884 and 1930. A stock right of 10 cfs was appropriated in 1883 for use during the non-irrigation season. The total average rate of annual diversions of irrigation water through the Crawford Clipper Ditch system (including direct diversion from the Smith Fork River and water called from Crawford Reservoir) is approximately 18,000 acre-feet. The irrigation season is approximately 173 days long, and approximately 3,480 acres of hay crops and pasture are irrigated with the system.

Irrigation is primarily accomplished by flood methods directly from ditch laterals, and to a lesser extent with gated pipe and sprinklers. The system also carries winter stock water during the non-irrigation season for an annual average of 190 days.

The Zanni Lateral is part of the Crawford Clipper Ditch system. The system which originates at a head gate on the Smith Fork River at a location just south of the Town of Crawford, and provides users with irrigation water and winter stock water across Crawford and Spurlin Mesas. Late season water called from Crawford Reservoir is also delivered in the Crawford Clipper Ditch system. The Zanni Lateral is diverted from the system at the Crawford divider headgate (aka "The Mill") in the Town of Crawford, near the intersection of Colorado Highway 92 and Dogwood Avenue.

The Zanni Lateral conveys an average of 5.94 cfs daily for a total average of 2,055 acre-feet during irrigation season. During winter, the Zanni Lateral conveys an average of 1 cfs daily of stock water for a total of approximately 380 acre-feet.

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

Proposed Action: Under the Proposed Action Alternative, the capacity of the Zanni Lateral would be maintained. The Company would have the ability to better manage its water rights with efficiencies gained from eliminating seepage by piping the system. Efficiencies gained may result in more water availability during the irrigation season; however, the proposed action does not include new storage or the irrigation of new lands. Stock water conveyance and distribution through the non-irrigation season would be maintained. There would be no new depletions or water storage associated with the piping project. Therefore, no direct adverse effects on water rights in the Gunnison River Basin are expected to occur due to implementation of the Proposed Action.

3.2 Water Quality

Irrigation practices in the region and in the Proposed Action Area contribute to high downstream salinity levels and create an adverse effect on the water quality of the Colorado River basin (see Section 1.1). Fish habitat in the Gunnison and Colorado Rivers is also threatened by selenium levels. Selenium is an element that occurs in the region's soils in soluble forms such as selenate, which is leached into rivers by runoff and irrigation practices. Though trace amounts of selenium are necessary for cellular functioning of many organisms, it is toxic in lightly elevated amounts. Selenium loading has not been quantified for the Proposed Action Area, but it is potentially contributing to an adverse effect on the water quality of the Colorado River basin.

The Proposed Action Area is located within the North Fork and Smith Fork drainages of the Gunnison River watershed. The Gunnison River is a major tributary of the Colorado River in west-central Colorado.

The water supplying the Company's irrigation system originates from the Smith Fork River in the Middle Smith Fork unit (Hydrologic Unit Code [HUC] 140200021205) to the east, and from the Crawford Reservoir unit (HUC 140200021204) to the south (Figure 5). Both of these HUCs are in the Smith Fork of the Gunnison River drainage.

The pipeline component of the Proposed Action Area lies in the Cottonwood Creek unit (HUC 140200040504) tributary to the North Fork of the Gunnison River (Figure 5). The Habitat Replacement component of the Proposed Action lies in the Iron Creek unit (HUC 140200021203), tributary to Crawford Reservoir and ultimately to the Smith Fork River (Figure 5).

Unnamed tributaries to Cottonwood Creek receive irrigation runoff from farmlands irrigated by the Zanni Lateral. The Habitat Replacement Site is located on Alkali Creek and an unnamed tributary to Alkali Creek, both seasonal drainages ultimately flowing to Crawford Reservoir.

Official designated uses for the Smith Fork River include coldwater aquatic habitat, recreation, water supply, and agriculture. Official designated uses for Crawford Reservoir, Cottonwood Creek, and most Smith Fork tributaries not on the Gunnison National Forest (including Alkali Creek) are warmwater aquatic habitat, recreation, water supply, and agriculture (CDPHE 2009, 2013).

Currently, none of the hydrologic units named above are on the Colorado Department of Public Health and Environment's (CDPHE's) list of water quality impaired waters in the State of Colorado (CDPHE 2012), with the exception of Crawford Reservoir. Crawford Reservoir has dissolved oxygen (temperature) impairment within the reservoir itself, and this impairment is due to the warm season draw-down occurring on the reservoir by its many irrigation users.

The hydrologic units in the Proposed Action Area were previously on the state's list of impaired waters due to their failure to meet selenium standards. In instances where waterbodies fail to support classified uses and/or fall within assigned numeric water quality standards, a Total Maximum Daily Load (TMDL) is used to determine the maximum amount of pollution which can be introduced into a waterbody daily while still keeping that waterbody and downstream waterbodies within the limits of the numeric water quality standard. Selenium TMDLs for the area's waterbodies were assessed in 2011 by the CDPHE (CDPHE 2011), resulting in the removal of the waterbodies from the impaired waters list.

No Action: Under the No Action Alternative, the estimated 551 tons of salt annually contributed to the Colorado River basin from this system would continue. Current selenium loading levels would continue.

Proposed Action: The Proposed Action would eliminate seepage from the ditch system, reducing salt loading to the Colorado River basin at an estimated rate of 551 tons per year, at a cost-effectiveness value of approximately \$86.51 per ton (as per the Funding Application). The Proposed Action is also expected to reduce selenium loading into the Gunnison River basin (a goal of the Gunnison Basin Selenium Management Program [SMPW 2011]); however, these benefits have not been quantified. Improved water quality would likely benefit downstream aquatic species by reducing salt and selenium loading in Cottonwood Creek, and in the North Fork, Gunnison, and Colorado rivers. No change in water quality would occur to the Smith Fork River or Crawford Reservoir (the source of irrigation water upgradient of the pipeline component of the Project, and the location of the Habitat Replacement Site). In the short-term, construction activities in waterbodies have the potential to mobilize sediments. Burial of irrigation pipe in existing ditch alignments will occur during the irrigation off-season (while no water is flowing in the ditches). Water quality construction BMPs and permanent stabilization and revegetation of filled ditches, along with proper sizing of culverts for road crossings, would be environmental commitments for the Proposed Action. Exemptions from Section 404 of the Clean Water Act apply to the Proposed Action, and are verified in writing by the U.S. Army Corps of Engineers (see Attachment C); therefore, no Section 401 Water Quality Certification is required for the Proposed Action.

3.3 Rights-of-Way & Land Use

The Zanni Lateral currently operates under prescriptive (unwritten) easements through private property, which is generally understood to be twice the width of the ditch on either side of the ditch. Land use within the prescriptive operating easement on these properties is agricultural—reserved for the operation and maintenance of the Zanni Lateral. Within the area required for implementation of the Proposed Action, which in most cases would extend outside the prescriptive easement (see Proposed Action analysis below), land use is residential and agricultural.

The open portion of the Zanni Lateral contours through part of the Town of Crawford and through rural lands northwest of the Town of Crawford (Figures 3 and 4). Where the Zanni Lateral is situated downgradient from impervious surfaces such as town streets or Highway 92 or steep surfaces, it intercepts stormwater sheet flow originating from these surfaces, and directs it away from downgradient structures and other improvements in the Town of Crawford and surrounding area. Figures 4a, 4b, and 4c show estimated stormwater flowpaths in the Project Area where stormwater is currently intercepted by the open Zanni Lateral.

No Action: Under the No Action Alternative, the open portion of the Zanni Lateral would remain open, and there would be no construction disturbance to private properties in the footprint of the ditch. If seepage from the open Zanni Lateral currently reaches foundations of nearby downgradient improvements, such seepage would continue. There would be no effect to stormwater distribution in the Proposed Action Area from the No Action Alternative, and stormwater within the Proposed Action Area would continue to be intercepted by the open Zanni Lateral. There is a risk that stormwater flows into the Zanni Lateral could overtop the ditch and flow toward, and potentially damage, downgradient nearby improvements. There is also the risk that the Zanni Lateral could experience a bank failure during a storm event and cause downgradient flooding and damage to nearby improvements. These existing risks would not be mitigated by the No Action Alternative.

Proposed Action: Under the Proposed Action, the areas disturbed by construction would be restored to the extent possible to their former use and condition. In agricultural areas, the pipeline corridor could be put into irrigated hay production or pasture. In residential areas, the pipeline corridor could be blended with the landscaping of the property. In both cases, landowners would be required to keep the immediate pipeline corridor open and unobstructed following construction. Under the Proposed Action Alternative, the Company would execute construction easements with individual landowners prior to construction of the Project. Each construction easement would be unique, and would specify the maximum width of the construction area, and responsibilities of the parties to protect private property and mitigate private property / landscaping damage before, during, and following Project construction. The construction easements, along with maintenance easements, would be recorded in Delta County following construction. In order to address concerns expressed by the Town of Crawford and several landowners, the Company has agreed to construct ditches and catchment basins in several areas to intercept stormwater runoff (Figures 4a, 4b, and 4c). However, neither the Company nor Reclamation is responsible for stormwater management, and will not be responsible for maintenance of any stormwater facilities constructed by the Company. Two potential benefits would occur to landowners with nearby improvements downgradient of the open Zanni Lateral as a result of the Proposed Action: piping of the ditch would eliminate seepage of irrigation water to nearby downgradient foundations, if such seepage is occurring; and piping of the ditch would eliminate the risk of the Zanni Lateral overtopping or experiencing a bank failure during a storm event and flooding nearby downgradient improvements with lateral water in addition to storm water.

3.4 Air Quality

The National Ambient Air Quality Standards (NAAQS) established by the U.S. Environmental Protection Agency (EPA) under the Clean Air Act (CAA) specify limits for criteria air pollutants. Criteria pollutants include carbon monoxide, particulate matter (PM 10 and PM 2.5), ozone, sulfur dioxide, lead, and nitrogen. If the levels of a criteria pollutant in an area are higher than the NAAQS, the airshed is designated as a nonattainment area. Areas that meet the NAAQS for criteria pollutants are designated as attainment areas. Both Delta and Montrose counties are in attainment for all criteria pollutants.

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

Proposed Action: There would be no long-term impacts to air quality from the Proposed Action. Dust and vehicle exhaust from construction activities would have a temporary, short-term effect on the air quality in the immediate Project area. Dust would be generated by excavation activities and the movement of construction equipment on unpaved roads. BMPs would be implemented to minimize dust, and would include measures such as watering the construction site and access roads, as appropriate. Impacts on air quality would be temporary and would cease once construction is complete. Following construction, impacts to air quality from routine maintenance and operation activities along the pipeline corridor would be similar in magnitude or less than those currently occurring for the existing ditch alignment. Impacts to air quality from routine maintenance include dust and vehicle exhaust from occasional travel in light vehicles along the Project corridor.

3.5 Access, Transportation, & Public Safety

The major public transportation resource in the Proposed Action Area is Colorado State Highway 92 (Figures 3 and 4), which roughly parallels the pipeline component of the Proposed Action in and northwest of the Town of Crawford in Delta County. Crawford Road, a paved Delta County Road off Highway 92, runs north-south through the west part of the Proposed Action Area (Figure 4). J Street, a gravel Delta County road, leads to Borrow/Staging Site #1 (Figure 4). Borrow/Staging Site #2 is accessed directly from Crawford Road (Figure 4). Borrow/Staging Site #2 is on Company land, and accessed via a private dirt road off Dogwood Avenue in Crawford (Figure 4). A private spur road off J Street leads to Borrow/Staging Site #4. Several local private driveways off Highway 92 exist along the pipeline route. The Habitat Replacement Site is accessed via private roads on Hart Ranch. These roads provide access and mobility for residents traveling in and out of the area. The Delta County Sheriff, Montrose County Sheriff, the North Fork Ambulance Service, and the North Fork Volunteer Fire Department cover the Proposed Action Area.

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

Proposed Action: The Proposed Action Area would be accessed using existing public roads (namely Highway 92, Crawford Road, J Street, and Dogwood Avenue) connecting directly to the Project area or to existing private roads on private lands. All landowners with private roads that will be used to access the Project have given permission to the Company to access the Proposed Action Area. There would be no need for construction of new access roads for the Proposed Action, as construction access would be on existing roads and within the construction right-of-way. There are no known bridges with weight restrictions that would be used by construction vehicles. Implementation of the Proposed Action may cause limited delays along public roadways and private driveways adjacent to the Project area from construction vehicles entering and exiting the local roadways. One buried pipeline crossing of Colorado Highway 92 and one buried crossing of Crawford Road are proposed for the Project. The Highway 92 crossing will be a slip culvert crossing (in an existing culvert) through a highway right-of-way administered by the Colorado Department of Transportation (CDOT). The Crawford Road crossing will be a bored pipeline crossing through a right-of-way administered by Delta County. Permits and traffic control for the road crossings are being coordinated with CDOT and Delta County. Road closures are not anticipated to be necessary, but would be coordinated with CDOT, Delta County, and local law enforcement and emergency services to ensure public safety.

3.6 Vegetative Resources / Habitat

The Proposed Action would result in the permanent loss of riparian and wetland vegetation associated with open ditches that are to be replaced with buried pipe, and ditch alignments to be decommissioned by backfilling. Temporary, reclaimable disturbances of upland vegetation or irrigated lands would occur along the construction alignment and at borrow and staging areas. These vegetation resources support or contribute to the support of aquatic wildlife, terrestrial wildlife, and migratory birds. Public Laws 98-569 and 104-20 require that the Secretary of the Interior “shall implement measures to replace incidental fish and wildlife values foregone” and develop a program that “shall provide for the mitigation of incidental fish and wildlife values that are lost.”

Figure 6 shows the general landcover types in the Proposed Action Area. These include irrigated agricultural (hayfields and/or pastures), Colorado Plateau pinyon pine-Utah juniper woodlands, Intermountain basins big sagebrush shrublands, mixed salt-desert scrub, and shale badlands. Proposed staging and borrow areas are all existing disturbed areas, except for a portion of Borrow/Staging Sites # 1 and 4, which are mostly in salt-desert shrub vegetation (primarily shadscale shrublands with a very sparse understory).

Within the matrix of the general landcover types (Figure 6), the existing ditch alignments are vegetated mostly with coyote willow, cattails, and occasional mature narrowleaf cottonwoods, but also include three-leaf sumac, wild rose, Russian olive, and isolated pockets of sedges. Stands of common ruderal and noxious weeds along the ditch include Canada thistle, milkweeds, chicory, and lambsquarters. These weeds are common and widespread in the region.

The landcover types described above provide habitat for an array of wildlife (described in Section 3.7).

A habitat evaluation was performed for the Proposed Action Area by Wildlife & Natural Resource Concepts & Solutions, LLC to quantify potential wetland and riparian habitat values that would be lost in the Proposed Action Area due to Project implementation (Attachment D). The evaluation followed methodology outlined in Reclamation’s March 2013 “Basinwide Salinity Control Program: Procedures for Habitat Replacement.” Table 1 summarizes the results of the habitat evaluation. Study segments are mapped in Attachment D.

Table 1. Predicted Wetland & Riparian Habitat Loss from the Proposed Action

Study Segment	Habitat Type	Segment Length (ft)	Segment Width (ft)	Acres Affected	Habitat Quality Score (HQS)	Total Habitat Value (THV) (Acres x HQS)
H1	Forest/Shrub-over pipe	904	20	0.42	0.10	0.04
H2	Forest/Shrub	1008	20	0.46	0.80	0.37
H3	Grass/Shrub	990	40	0.91	0.50	0.45
H4	Grass/Shrub	427	25	0.25	0.30	0.07
H5	Grass/Shrub	--	--	1.46	1.40	2.04
H6	Forest/Shrub	827	30	0.57	0.90	0.51
H7	Shrub/Grass	1519	20	0.70	0.40	0.28
H8	Shrub/Grass	1041	20	0.48	0.70	0.33
H9	Forest/Shrub	655	20	0.30	0.60	0.18
H10	Forest/Shrub	530	20	0.24	0.50	0.12
H11	Grass/Shrub	507	40	0.47	0.00	0.00
H12	Grass/Shrub	1034	40	0.95	0.00	0.00
H13	Grass Pasture	448	40	0.41	0.00	0.00
BSS#1	Arid Grass/Forb	--	--	6.23	0.30	1.87
BSS#2	Arid Grass/Shrub	--	--	0.41	0.00	0.00
BSS#3	Grass/Shrub	--	--	0.36	-0.20	-0.07
BSS#4	Grass/Shrub	--	--	0.59	0.30	0.18
Totals				15.20		6.39

In accordance with the evaluation method, Total Habitat Value (THV) is calculated for each affected wetland or riparian habitat area by multiplying its acreage by its habitat quality score (HQS), which is assigned based on a series of criteria. The HQS criteria include vegetative diversity, degree of stratification, presence of native vs. non-native vegetation, presence of noxious weeds, overall health/condition, degree of interspersions of vegetation with open water, connectivity with other habitat types, uniqueness, water supply, and degree of human alteration. The predicted total of THV units affected due to Project implementation is the sum of the THVs across the Proposed Action Area. A total of approximately 15.2 acres of wetland or riparian habitat (equating to a total wetland and riparian habitat value of 6.39 units based on Habitat Quality Scoring) were identified adjacent to or associated with the existing structures involved in the Proposed Action (Attachment D).

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

Proposed Action: Construction activities would temporarily disturb vegetation in the Proposed Action Area. Implementation of the Proposed Action would result in permanent loss of wetland and riparian habitat as ditches and ditch seepage would be eliminated and would no longer provide flowing surface water or wetland hydrology to adjacent areas. Following surface disturbance of the wetland and riparian habitat, appropriate reclamation procedures would be followed in order to revegetate disturbed areas as uplands while controlling noxious weed infestations. Proposed buried pipe alignments

through upland vegetation communities would temporarily affect those communities until they are reseeded to appropriate grasses and forbs and eventually recolonize as shrublands or woodlands. Irrigated areas would be returned to production immediately following construction.

The total amount of riparian and wetland habitat anticipated to be permanently affected in the Proposed Action Area is estimated at 15.2 acres, with a total estimated habitat value of 6.39 units (see Attachment D). A Reclamation-approved Habitat Replacement Site to mitigate these losses has been established on private property on Hart Ranch about 3.5 miles southeast of the Proposed Action Area (see Attachment E and Section 4.6 for details). The habitat replacement project is predicted to create 16.38 habitat units. Of the 16.38 habitat units, 9.99 habitat units would be used to offset habitat loss occurring from the Clipper Irrigation Salinity Control Project 4, and 6.39 habitat units would be used to offset habitat loss occurring from the Proposed Action

Construction of the Proposed Action and the Habitat Replacement Site (see Attachment E) would follow BMPs to minimize the construction footprint, protect water quality, and minimize soil erosion. Revegetation would be implemented according to right-of-way agreements with landowners, using an appropriate Reclamation-approved seed mix. Noxious weed control would be implemented according to County standards (Delta and Montrose County Weed Management Plans are available at <http://www.deltacounty.com/466/Weed-Program> and <http://www.montrosecounty.net/162/Weed-Mitigation>, respectively).

The Company consulted with the U.S. Army Corps of Engineers regarding both the pipeline component and habitat replacement component of the Proposed Action and received written concurrence that the Proposed Action meets Clean Water Act agricultural exemption requirements (Attachment C).

3.7 Wildlife Resources

In the Proposed Action Area, ditches provide riparian and wetland habitat within a matrix of native upland vegetation and irrigated hay meadows (Section 3.6). Vegetation and water resources supported by the ditches, in association with adjacent irrigated land and natural upland woodlands and shrublands, provide nesting, breeding, foraging, cover, and movement corridors for an array of wildlife.

Colorado Parks & Wildlife (CPW) describes the Proposed Action Area (mostly irrigated lands) as elk severe winter range (Figure 7). A mule deer resident population area and severe winter range is mapped across the entire Proposed Action Area, and general concentration area is mapped across the pipeline component of the Proposed Action Area (Figure 8). CPW also describes the Proposed Action Area as winter foraging range for bald eagle (Figure 9), and within overall range of black bear and mountain lion (CPW 2014).

Migratory birds of conservation concern protected under the Migratory Bird Treaty Act (FWS 2015) potentially occur in the Proposed Action Area and the immediate vicinity. These include bald eagle (winter foraging range), Brewer's sparrow (breeding), brown-capped rosy finch (year-round), Cassin's finch (year-round), ferruginous hawk (wintering), fox sparrow (breeding), golden eagle (year-round), juniper titmouse (year-round), Lewis's woodpecker (year-round), loggerhead shrike (breeding), olive-sided flycatcher (breeding), Peregrine falcon (breeding), pinyon jay (year-round), prairie falcon (year-round), sage thrasher (breeding), short-eared owl

(wintering), Swainson's hawk (breeding), veery (breeding), and willow flycatcher (breeding). No raptor nests were identified in the Proposed Action Area during a September 2015 field visit.

No Action: Under the No Action Alternative, terrestrial wildlife habitat would remain in its current condition, and no displacement of wildlife would occur. Salinity and selenium loading of the Colorado River drainage would continue at current rates, which will continue to affect water quality within the drainage, potentially affecting the wildlife using the area.

Proposed Action: Upland wildlife habitat impacted by the Proposed Action would result in minor temporary impacts to wildlife species within the Project Area. Impacts to big game would include short-term disturbances and periodic displacement during the winter through early spring while construction is underway. Big game wintering habitat in the vicinity of the Proposed Action Area is extensive, and big game species have the ability to move away from disturbances to other suitable areas.

Direct impacts to migratory bird species of concern would include minor short-term disturbance and displacement during construction. Construction would occur during the irrigation off-season between March and early April 2016, outside the typical nesting season (after approximately April 15). Wintering birds are not expected to be affected because wintering habitat in the vicinity of the Proposed Action Area is extensive, and is not exceptional in the Proposed Action Area compared to surrounding areas. Wintering birds have the flexibility to move away from disturbances to other suitable areas.

Direct impacts to small animals, especially burrowing amphibians, reptiles, and small mammals, could include direct mortality and displacement during construction activities. Small animal species may experience reduced populations in direct proportion to the amount of disturbed habitat. These species and habitats are relatively common throughout the area and the loss would be minor. During construction, pipeline trenches left open overnight would be kept to a minimum and covered to reduce potential entrainment of animals and public safety problems. Covers would be secured in place and strong enough to prevent livestock or wildlife from falling through. Where trench covers would not be practical, wildlife escape ramps would be utilized.

Bird and amphibian species dependent on wetland and riparian habitats would experience a long-term (greater than five years) loss of habitat as described in Section 3.7. The total habitat value that would be lost long-term would be mitigated through the establishment of the Reclamation-approved Habitat Replacement Site (Attachment E). Development of replacement habitat would mitigate impacts to wildlife and comply with the requirement of the Colorado River Basin Salinity Control Act to replace fish and wildlife values foregone (see Section 2.2 for more detail). Improved water quality would likely benefit downstream aquatic species (amphibians and fish) by reducing salt and selenium loading in the North Fork, Gunnison, and Colorado rivers.

3.8 Threatened & Endangered Species

The Endangered Species Act (ESA) of 1973 protects federally listed endangered, threatened and candidate plant and animal species and their critical habitats. Table 2 summarizes the federally-listed species that may occur within or near the Proposed Action area (FWS 2015), and explains habitat requirements and potential effects of the Proposed Action on each species.

Species with potential habitat in the Proposed Action Area, or otherwise potentially affected by the Proposed Action, are discussed following the table.

Greenback cutthroat trout is not considered further in this analysis because of the lack of suitable habitat onsite or downstream of the Proposed Action. Colorado hookless cactus is not considered further in this analysis because although its documented range is in western and central Delta County, the Proposed Action area vicinity has no documented occurrences of Colorado hookless cactus. No Colorado hookless cacti were observed in potentially suitable habitat (semi-desert saltbush shrublands) within the Proposed Action Area during a site visit. The nearest known population of Colorado hookless cactus to the Proposed Action Area is approximately 18 miles away, on the south slope of Redlands Mesa, northwest of the Town of Hotchkiss in Delta County (observed by the preparer of this EA).

Unless otherwise specified, all information related to the species below was obtained from resources available on FWS' Environmental Conservation Online System (ecos.fws.gov).

Table 2. Federally-Listed Species Potentially Occurring in or Near the Proposed Action Area

Common Name	Status	Habitat Requirement Summary	Range in Project Area?	Habitat in Project Area?
BIRDS				
Gunnison sage-grouse <i>Centrocercus minimus</i>	Threatened	Requires large contiguous patches of sagebrush (>200 acres) with an abundant/tall herbaceous understory, interspersed with wet swales. The Proposed Action Area contains elements of suitable habitat for sage-grouse, but current documented occupied range is not within the Proposed Action Area. The Habitat Replacement Site lies in critical habitat but is excluded from the designation under the rule because it is on land that was encumbered by a conservation easement prior to August 28, 2013.	Historic range only	Habitat Replacement Site lies in unoccupied overall range
Mexican spotted owl <i>Strix occidentalis lucida</i>	Threatened	Generally nests in older mature conifer stands, and on walls of shady wooded canyons. Confirmed nest records in Colorado from Mesa Verde in Montezuma County and around Pikes Peak and the Wet Mountains east of the Great Divide.	Potential	Peripheral only
Yellow-billed cuckoo <i>Coccyzus americanus</i>	Threatened	Breeds in low elevation river corridors with fairly extensive mature cottonwood galleries; breeding birds have been detected in the North Fork River valley (currently proposed critical habitat) 8 miles north and northwest of the Project area almost annually since 2003. Habitat in the Project area is not suitable for nesting.	Yes	Peripheral only

Common Name	Status	Habitat Requirement Summary	Range in Project Area?	Habitat in Project Area?
FISHES				
Greenback cutthroat trout <i>Oncorhynchus clarkia stomias</i>	Threatened	High elevation cold water streams and cold water lakes with adequate stream spawning habitat present during Spring. No spawning habitat or perennial water exists in the Project area. The nearest known populations are in the Minnesota Creek and Terror Creek drainages near Paonia (Dare et al., 2011).	Yes	No, (there are no perennial coldwater streams in project area)
Bonytail <i>Gila elegans</i>	Endangered	Although no habitat is present within the project area for these four species, downstream designated critical habitat on the Colorado & Gunnison Rivers is affected by consumptive use of water for agricultural irrigation.	No	No, but critical habitat is down-stream
Colorado pikeminnow <i>Ptychocheilus lucius</i>				
Humpback chub <i>Gila cypha</i>				
Razorback sucker <i>Xyrauchen texanus</i>				
PLANTS				
Colorado hookless cactus <i>Sclerocactus glaucus</i>	Threatened	Known range limited to alluvial river terraces and Mancos Shale formation of the Gunnison River valley from near Delta, Colorado, to southern Mesa County, Colorado; and alluvial river terraces of the Colorado River and in the Plateau and Roan Creek drainages in the vicinity of DeBeque, Colorado. Plant associations include semi-desert shrublands, big sagebrush shrublands, and sagebrush-juniper woodland transition areas. None observed during inspection of project area.	No	--

The Gunnison sage-grouse was listed as threatened, and critical habitat was designated in 2014. The Gunnison sage-grouse is a sagebrush obligate species endemic to Colorado and Utah south of the Colorado River. Breeding grounds (leks) consist of open areas next to tall sagebrush. For nesting and rearing young, the species requires large contiguous patches of sagebrush (>200 acres) with an abundant and relatively tall herbaceous understory, interspersed with wet swales. Wintering sage-grouse feed exclusively on sagebrush leaves. Rangewide threats to Gunnison sage-grouse include habitat fragmentation and destruction due to exurban residential and oil & gas development. In the Crawford sage-grouse population area, declines are attributed to fragmentation of habitat components, encroachment of pinyon-juniper woodlands into sagebrush, not enough grass and forbs in the sagebrush understory, and low vegetative class diversity in the area's sagebrush (1998 Gunnison Sage-Grouse Conservation Plan for the Crawford Area). The Crawford area sage-grouse population was estimated at 157 birds in 2014 (Nathan Seward, CPW, pers. comm.).

In designating critical habitat for Gunnison sage-grouse, FWS identified physical and biological features of habitat essential to conservation of the species—Primary Constituent Elements (PCEs)—that describe the landscape specific and seasonally specific characteristics necessary to provide for the species' life-history processes (see the critical habitat ruling at 79 FR 69311-69363). All areas designated as occupied critical habitat meet the landscape specific PCE 1, and one or more of the seasonally-specific PCEs (2 through 5), summarized as follows: PCE 1 specifies that suitable patches of sagebrush are part of an extensive sagebrush landscape composed primarily of sagebrush plant communities with at least 25 percent of the land dominated by sagebrush cover within a 0.9-mile radius of any given location. PCE 2 specifies structural requirements for breeding habitat in terms of height and canopy cover of sagebrush and understory vegetation. PCE 3 specifies summer-late fall sagebrush habitat structural requirements, and PCE 4 specifies winter habitat structural requirements. PCE 5 is an alternative mesic habitat component, used primarily in the late summer and early fall seasons for brood rearing, and includes riparian communities, springs, seeps, and mesic meadows (including irrigated hay meadows).

The pipeline component, borrow, and staging areas of the Proposed Action are not within occupied range or designated critical habitat for Gunnison sage-grouse (Figure 10), and lack habitat elements or PCEs necessary to support sage-grouse.

The Habitat Replacement Site associated with the Proposed Action Area is located in designated critical habitat for Gunnison sage-grouse outside of the species' current occupied range (Figure 10). However, the Site is excluded from the critical habitat designation under the critical habitat ruling because the property in which it lies was encumbered by a perpetual conservation easement prior to August 28, 2013 (79 FR 69311-69363). The Habitat Replacement Site is cumulatively about 10 acres within a matrix of irrigated hay meadows in the Alkali Creek drainage. As such, it represents the PCE 5 component of sage-grouse critical habitat. The nearest sagebrush patch of significance is about a quarter to half-mile east of the Habitat Replacement Site (Figure 6), and although it may meet the landscape-scale requirements of PCE 1, it currently only marginally meets any of the seasonally-specific requirements for PCEs 2 through 4, due to lack of sufficient herbaceous understory, pinyon-juniper encroachment, extensive gullying, and inconsistency in sagebrush canopy cover. With only marginally suitable sagebrush habitat nearby, the Habitat Replacement Site is unlikely to provide seasonal alternative mesic habitat (PCE 5) to sage-grouse.

According to CPW (Nathan Seward, pers. comm.), the closest recent confirmed Gunnison sage-grouse occurrence location (a telemetry detection possibly of a bird transplanted from the Gunnison population) is approximately 1 mile west of the Habitat Replacement Site, the nearest mapped occupied habitat lies 2.25 miles southwest, and the closest documented active lek (breeding ground) is approximately 4 miles south-by-southwest of the Habitat Replacement Site, all on Fruitland Mesa. Gunnison sage-grouse make relatively large movements on a seasonal basis and it is moderately feasible that the birds could move into the vicinity of the Habitat Replacement Site at any time. However, given the barriers to crossing between the Site and occupied range such as large blocks of pinyon-juniper woodlands and deep gullies and canyons, and given the unsuitability of nearby sagebrush patches to the seasonal requirements of sage-grouse, it is unlikely the Habitat Replacement Site would become occupied by sage-grouse in the near future.

The Mexican spotted owl was listed as threatened in 1993 and critical habitat was designated in 2004 (FWS 2015). Threats to the spotted owl include removal or fragmentation of mature or old-growth forests mostly of tall mixed conifer species, but also riparian forests in some parts of its

range. Also, human activity in or near nesting or roosting areas can result in the species' abandonment of the area. No designated critical habitat or suitable nesting habitat for spotted owl occurs within the Proposed Action Area (the nearest critical habitat is in documented occupied range in Mesa Verde National Park in Montezuma County). The nearest potentially suitable nesting habitat is within the Black Canyon of the Gunnison, approximately 18 miles southwest of the Proposed Action Area, although no nest records exist in the area. The species is uncommon, non-migratory, and extremely site-specific in Colorado—with known nests only in Mesa Verde National Park and in the Wet Mountains and Pike's Peak area on the Front Range. Ninety-one percent of known owls existing in the United States between 1990 and 1993 occurred on land administered by the U.S. Forest Service, and most have been found within the eleven National Forests of Arizona and New Mexico. An occurrence of a Mexican spotted owl in the Proposed Action Area would be considered an incidental dispersing individual.

The western yellow-billed cuckoo was listed as threatened in 2014. The yellow-billed cuckoo is a migratory songbird that breeds in the United States and winters in South America. The yellow-billed cuckoo has a short nesting season—incubation to fledging can take place in as little as 17 days. Cuckoos arrive on breeding and nesting grounds in Colorado in late May or early June, and depart by early August through early September. Reasons for decline of the yellow-billed cuckoo throughout the western U.S. have been attributed to destruction of its preferred riparian habitat due to agricultural conversions, flood control projects, and urbanization. In some parts of its breeding range, pesticide use may have affected the yellow-billed cuckoo's prey base—injurious pest insects such as tent caterpillars, which tend to occur in cyclic outbreaks. The preferred breeding habitat of the yellow-billed cuckoo is low elevation old-growth cottonwood forests or woodlands with dense, scrubby understories of willows or other riparian shrubs. Studies in California indicate this species may need extensive stands of riparian forest for nesting success of at least 24 acres in size. In western Colorado, the required habitat patch size might be as little as 5 acres. The nearest known nesting habitat is approximately 8 miles from the Proposed Action Area in the cottonwood forested riparian corridor of the North Fork of the Gunnison River, where a few breeding pairs have been detected almost annually since 2003 (Jason Beason, Rocky Mountain Bird Observatory, pers. comm.). A portion of the North Fork river bottom is currently Proposed Critical Habitat for the species (Figure 10). Cuckoos may occur incidentally in the Proposed Action Area during foraging bouts or during migration season, but foraging or migrating habitat is not exceptional in the Proposed Action Area compared to surrounding areas. No suitable nesting habitat for this species is within the Proposed Action Area or the immediate surroundings.

The Colorado River basin has four endangered fishes: the bonytail, the Colorado pikeminnow, the humpback chub, and the razorback sucker. Decline of the four endangered fishes is due at least in part to habitat destruction (diversion and impoundment of rivers) and competition and predation from introduced fish species. In 1994, the FWS designated critical habitat for the four endangered species at Federal Register 56(206):54957-54967, which in Colorado includes the 100-year floodplain of the upper Colorado River from Rifle to Lake Powell, and the Gunnison River from Delta to Grand Junction. None of the four endangered Colorado River fishes occur in or near the Proposed Action Area and the Proposed Action Area does not occur within or adjacent to designated critical habitat. The closest designated critical habitat and the closest potential populations of the Colorado pikeminnow and razorback sucker are in the Gunnison River, approximately 20 miles west-by-northwest of the Proposed Action Area. The bonytail has recently been stocked in the Gunnison River and humpback chubs have been recorded.

Potential impacts to Colorado River endangered fishes would result from continued irrigation water depletion from the Smith Fork River, which drains to the Gunnison River in the greater

Colorado River basin. Water depletion in these basins has the potential to diminish backwater spawning areas and other habitat in downstream designated critical habitat. The total average rate of annual diversions of irrigation water through the Crawford Clipper Ditch system (including direct diversion from the Smith Fork River and water called from Crawford Reservoir) is approximately 18,000 acre-feet, for irrigation of approximately 3,480 acres of hay crops and pasture. This average annual diversion rate, and the resulting water depletions in the greater Colorado River basin as a result of consumptive use, would remain unchanged if the Proposed Action is implemented.

No Action: In the absence of the Proposed Action, historic water depletions would continue, and salt and selenium loading from the Proposed Action Area would continue at current rates.

Proposed Action: A threatened and endangered species inventory (Rare Earth 2016) was completed for the Proposed Action Area in Fall 2015, and used by Reclamation as a background document for a Section 7 ESA consultation with FWS. The results of the consultation are provided in Attachment F. The determination of effects set forth in this EA on listed species and their critical habitats are based on the Section 7 ESA consultation, as follows:

- **Gunnison Sage-Grouse.** The pipeline component of the Proposed Action area lies outside current and historic range of the threatened Gunnison sage-grouse. The Habitat Replacement Site associated with the Proposed Action area lies within unoccupied historic range of the threatened Gunnison sage-grouse. The Habitat Replacement Site could potentially provide late summer/early fall brood rearing habitat for sage-grouse. Given that the habitat for Gunnison sage-grouse in the vicinity of the Habitat Replacement Site is currently unoccupied by the species, and given that the construction and maintenance of the Habitat Replacement Site are not occurring in breeding, nesting, or wintering habitat for the species, and given that similar brood-rearing habitat is extensively available in the immediate area, it is expected that the Proposed Action would have no effect on Gunnison sage-grouse. If construction and planting activities at the Habitat Replacement Site will occur during late Summer or early Fall 2016 or late summer/early fall in following years, it is recommended that Company/Reclamation contact FWS and CPW terrestrial biologists prior to construction to confirm the Proposed Action Area remains unoccupied by the species, and that a documented active lek does not lie within 0.6 mile of the Habitat Replacement Site.
- **Gunnison Sage-Grouse Critical Habitat.** The Habitat Replacement Site associated with the Proposed Action lies generally within mapped Gunnison sage-grouse critical habitat (Figure 10), however the Habitat Replacement Site is excluded from the critical habitat designation under the critical habitat ruling because it lies on land encumbered by a conservation easement prior to August 28, 2013. Therefore, it is expected that the Proposed Action would have no effect on Gunnison sage-grouse critical habitat. Nevertheless, the irrigated hay meadows around the vicinity of the Habitat Replacement Site, together with a large patch of sagebrush shrublands in unoccupied critical habitat about a half mile to the east, meet the landscape Primary Constituent Element 1 (PCE 1) and alternative mesic habitat PCE 5 in the critical habitat ruling. The Habitat Replacement Site, although excluded from designated critical habitat under the ruling, still provides potential late summer/early fall brooding habitat for sage-grouse, given the proximity of the large sagebrush patch to the east.

The Habitat Replacement Site would be temporarily disturbed by the Proposed Action where improvement of Tower Pond and plantings of riparian vegetation at both the CDOT Ponds and Tower Ponds areas would occur. Plantings of riparian woody vegetation could potentially improve sage-grouse brooding habitat at the site, provided that the woody vegetation does not eventually provide perches for predatory raptors. CPW recommends that strawberry clover (*Trifolium fragiferum*), a beneficial plant for sage-grouse, be included in any seed mix for mesic or upland areas of the Habitat Replacement Site, and that woody vegetation plantings be limited to shrubs, since taller species (cottonwoods) could provide perches for predatory raptors (Nathan Seward, pers. comm.).

- **Mexican Spotted Owl.** The Proposed Action Area lies within potential peripheral range of the threatened Mexican spotted owl; however, the Proposed Action Area does not encompass suitable breeding habitat. No breeding habitat loss for this species will occur as a result of the Proposed Action. An occurrence of a Mexican spotted owl in the Proposed Action Area would be considered a rare incidental dispersing individual. Based on these findings, the Proposed Action is expected to have no effect on Mexican spotted owl.
- **Mexican Spotted Owl Critical Habitat.** The Proposed Action does not lie within Mexican spotted owl designated critical habitat. Therefore, it is expected that the Proposed Action would have no effect on Mexican spotted owl critical habitat.
- **Western Yellow-Billed Cuckoo.** The Proposed Action Area lies within seasonal peripheral range of the threatened western yellow-billed cuckoo; however, the Proposed Action Area does not encompass suitable breeding habitat. No breeding habitat loss for this species will occur as a result of the Proposed Action. Foraging or migrating individuals could occur incidentally in the Proposed Action Area; however, foraging or migrating habitat is not exceptional in the Proposed Action Area compared to surrounding areas. Based on these findings, it is expected that the Proposed Action may affect, but is not likely to adversely affect, western yellow-billed cuckoo.
- **Western Yellow-Billed Cuckoo Proposed Critical Habitat.** The Proposed Action Area does not lie within proposed critical habitat (Figure 10). Therefore, it is expected that the Proposed Action would have no effect on western yellow-billed cuckoo proposed critical habitat.
- **Colorado River Basin Endangered Fishes.** The Proposed Action Area does not lie within the ranges of the endangered Colorado pikeminnow, razorback sucker, humpback chub, and bonytail. Based on previously issued biological opinions that all depletions within the Upper Colorado River Basin may adversely affect the four fishes, it is expected that the Proposed Action may affect, and is likely to adversely affect, the Colorado pikeminnow, razorback sucker, humpback chub, and bonytail.
- **Colorado River Basin Endangered Fishes Critical Habitat.** Consumptive use of water in the Gunnison and Colorado River basins due to agricultural irrigation from the Crawford Clipper Ditch System (including the Zanni Lateral) results in an average annual depletion of approximately 5,776 acre-feet from the upper Gunnison River watershed, which affects downstream critical habitat for the endangered Colorado pikeminnow, razorback sucker, humpback chub, and bonytail. This average annual

depletion results from agricultural irrigation supplied by direct diversions from the Smith Fork and from water drawn from Crawford Reservoir. Reclamation consulted with FWS on the Smith Fork diversion component of this annual depletion, and the results of this consultation (including a Recovery Agreement between FWS and the Company) are included at Attachment F. Depletions originating from Crawford Reservoir for the entire Crawford Clipper Ditch System (including the Zanni Lateral) were previously determined to fall under the 2009 Gunnison Basin Programmatic Biological Opinion (PBO). The annual depletion rates due to operation of the ditch system are not expected to change as a result of the Proposed Action. Therefore, it is expected that the Proposed Action will not destroy or adversely modify the designated critical habitat for the Colorado River endangered fishes. Furthermore, the potential reduction in selenium loading to the Colorado and Gunnison river basins as a result of the cumulative efforts of the Colorado River Basin Salinity Control Basinwide and Basin States Programs improves water quality within designated critical habitat for the Colorado pikeminnow, razorback sucker, humpback chub, and bonytail throughout the Colorado and Gunnison river basins. Potential reductions in selenium loading to the Gunnison basin as a result of the Proposed Action would also contribute to the overall success of the Gunnison Basin Selenium Management Program (SMPW 2011).

3.9 Cultural Resources

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

In the Fall of 2014 and 2015, Alpine Archaeological Consultants, Inc. (Alpine) conducted cultural resource inventories of irrigation features and areas slated for disturbance (Hoose 2015, Horn 2015). All proposed buried pipe alignments (including a 100-foot-wide corridor), proposed construction disturbance areas, access roads, proposed staging areas, and the Habitat Replacement Site were examined.

The inventory resulted in the recordation of the Zanni Lateral (site 5DT1811.3), two isolated finds (sites 5DT1997 and 5DT1998), and a small segment of the Aspen Canal (site 5DT1584.3), which intersects the Zanni Lateral. None of these sites were determined to be eligible for the National Register of Historic Places. No mitigation was recommended by Alpine as a result of the inventory.

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

Proposed Action: Reclamation received concurrence (Attachment G) from the Colorado State Historic Preservation Officer (Colorado SHPO) that the Proposed Action would have no adverse effect under Section 106 of the National Historic Preservation Act on the Zanni Lateral and other finds noted in the cultural resource inventory. No mitigation is warranted since the Zanni Lateral and other found resources are not recommended as eligible for the National Register of Historic Places.

3.10 Agricultural Resources & Soils

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

Four types of farmlands of national or statewide importance occur in the vicinity of the Proposed Action (Figure 11):

Prime Farmland if Irrigated. None of the irrigated lands affected by the Proposed Action are Prime Farmland if Irrigated. According to USDA, Prime Farmland has the best combination of physical and chemical characteristics for producing food, feed, forage fiber and oilseed crops.

Prime Farmland if Irrigated and Drained. Approximately 850 linear feet of the proposed buried pipe alignment, and a small part of the Tower Pond area of the Habitat Replacement Site involves this farmland type. The mapped soil unit is Apishapa silty clay loam, 0 to 5 percent slopes (Map Unit 6). As mentioned above, USDA considers Prime Farmland to have the best combination of physical and chemical characteristics for producing food, feed, forage fiber and oilseed crops. However, none of the irrigated soils of this unit are drained within the Proposed Action Area, and therefore do not meet the definition of Prime Farmland.

Farmland of Unique Importance. A total of approximately 2,900 linear feet of proposed buried pipe alignment, approximately 6 acres of borrow or staging sites, and the entire CDOT ponds area of the Habitat Replacement Site lie within this farmland type. The mapped soil unit is Colona silty clay loam, 6 to 12 percent slopes (Map Unit 27). Unique farmland is land other than prime farmland that is used for the production of specific high-value food and crops, such as citrus, tree nuts, olives, cranberries, and other fruits and vegetables. It has a special combination of soil quality, location, growing season, and moisture supply required to produce sustained high quality crops when properly managed. All the areas of Farmland of Unique Importance crossed by the of proposed buried pipe alignment are in irrigated hay meadows or pastures. The remainder is not in cultivated agricultural production.

Farmland of Statewide Importance. Approximately 2,000 linear feet of the proposed buried pipe alignment cross this farmland type. The mapped soil units are Razor silty clay loam, 3 to 12 percent slopes (Map Unit 66) and Cerro loam, 6 to 12 percent slopes (Map Unit 21). Farmlands of statewide importance are lands that nearly meet the requirements for prime farmland and have been identified by state agencies. About 175 linear feet of proposed pipeline alignment cross irrigated hay meadows in this farmland type. The remainder occurs on residential lands or directly adjacent to Highway 92.

Other soil units found in the vicinity of the Proposed Action Area (Figure 11) include Midway-Gaynor silty clay loams, 10 to 40 percent slopes (Map Unit 56), Saraton-Agua Fria complex, 20 to 50 percent slopes (Map Unit 70), Gullied land (Map Unit 44), and Torriorthents-Rock outcrop, sand or shale complex (Map Units 75 and 76). Each soil type in the Proposed Action Area has at moderate or high potential for erosion from water. All of these soil types are derived from Mancos Shale, which formed in a marine environment and now contribute salinity and selenium loading in the Colorado River basin.

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

Proposed Action: Under the Proposed Action Alternative, installation of the buried pipe alignments and backfilling of certain ditches would cause temporary disturbance to agriculturally important lands, including Farmland of Unique Importance and Farmland of Statewide Importance. Some of these lands are in irrigated agricultural production (hay meadows or pastures). No farmlands will be permanently removed from production as a result of the Proposed Action. Livestock grazing on these lands could be disrupted during construction, but could resume immediately afterwards.

In all proposed pipeline alignments, topsoil would be reserved prior to excavation, replaced on the ground surface following pipe installation, then reseeded with hay or pasture cultivars, or appropriate upland seed mixes in non-cultivated areas. Backfilled ditches and other disturbed areas would also be seeded with appropriate dryland cover species. A weed control program meeting Delta and Montrose County criteria would be implemented in all areas of surface disturbance (Delta and Montrose County Weed Management Plans are available at <http://www.deltacounty.com/466/Weed-Program> and <http://www.montrosecounty.net/162/Weed-Mitigation>, respectively).

Overall, the Proposed Action would give the Company the ability to better manage its water rights with efficiencies gained from piping the system. Efficiencies gained may result in a longer irrigation season, and potentially in increased agricultural productivity; no new land will be irrigated as a result of the proposed action. Therefore, no direct adverse effects on agriculturally significant lands are expected to occur due to implementation of the Proposed Action. Water contact with Mancos Shale derived soils would be minimized in the irrigation system as a result of the Proposed Action, which would help reduce salinity loading in the Colorado River basin. Soil erosion from irrigation water conveyance would be significantly reduced where ditches are proposed for decommissioning or replacement with buried pipe.

3.11 Cumulative Impacts

Cumulative impacts are direct and indirect impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Cumulative impacts can also be characterized as additive or interactive. An additive impact emerges from persistent additions from one kind of source, whether through time or space. An interactive—or synergistic—impact results from more than one kind of source.

The analysis of cumulative impacts for the No Action and Proposed Action Alternatives considers both spatial (geographic) boundaries and temporal limits of impacts, on a resource-by-resource basis. Spatial and temporal analysis limits vary by resource, as appropriate (see Table 3). Spatial analysis limits were selected to be commensurate with the impacts on, and realm of influence of, each resource type. The temporal limits of analysis were established as 50 years for each resource type (a standard timeframe for cumulative impacts analysis), except

for resource types perceived to have only temporary impacts (impacts that end following construction of the Project or within a few seasons following construction).

Table 3. Cumulative Impacts Analysis Spatial & Temporal Limits by Resource

Resource Issue	Spatial Limits of Analysis	Temporal Limits of Analysis
Water Rights and Use	Smith Fork River and North Fork River drainages	50 years
Water Quality	Colorado River Basin	50 years
Rights-of-Way & Land Use	Project Area	50 years
Air Quality	Project Area plus 2-mile buffer	Duration of Project
Access, Transportation, & Public Safety	Project Area	Duration of Project
Vegetative Resources / Habitat	Smith Fork River and North Fork River drainages	50 years
Wildlife Resources	Smith Fork River and North Fork River drainages	50 years
Threatened and Endangered Species	Crystal Creek and Smith Fork River drainages, except for Gunnison sage-grouse, where the designated critical habitat is considered the spatial limit of analysis	50 years
Cultural Resources	Smith Fork River and North Fork River drainages	50 years
Agricultural Resources & Soils	Smith Fork River and North Fork River drainages	50 years

Effects of past actions are reflected in the current condition described in the affected environment in each of the resource topics of Section 3. Effects of present, and reasonably foreseeable future actions (planned actions or known proposals for actions in the spatial limits of analysis that would take place within the temporal limits of analysis shown in Table 3), are summarized in Table 4.

Table 4. Cumulative Impacts Scenario

Resource Issue	Existing or Future Activities in the Limits of Analysis and their Contribution to Cumulative Impacts with the Proposed Action
Water Rights and Use	<p>Irrigation water rights in the area will continue to be bought and sold in the future, and used for agricultural purposes. Due to future population growth and increasing subdivisions in the area, agricultural water rights may be converted to municipal or industrial uses. Ongoing and future projects sponsored by NRCS in the Project Area and the area of analysis can be reasonably expected to put irrigation water into sprinkler systems, which could impact irrigation wastewater rights of some downgradient users by reducing or eliminating historic irrigation wastewater runoff. The Proposed Action could indirectly affect wastewater irrigation practices downgradient of the Project Area because piping the ditch system would provide pressurized water that will likely lead to future sprinkler system installations. Sprinkler irrigation systems tend to improve on-property irrigation efficiency and reduce the amount of wastewater returning to ditch systems for downstream users. Lands irrigated solely with irrigation wastewater make up a relatively small proportion of irrigated agricultural lands in the area of analysis. The No Action Alternative would have no impact on water rights and water use in the area of analysis.</p>
Water Quality	<p>Three ongoing federal programs at a basin-wide scale are producing significant cumulative beneficial effects on water quality: the Colorado River Basin Salinity Control and Basin States Program, the Upper Colorado River Endangered Fish Recovery Program, and the Gunnison Basin Selenium Management Program. Collectively and cumulatively, projects funded under the Salinity Control and Basin States Program result in reduced salt loading in the Colorado River basin. The Recovery Program involves federal, state and private organizations and agencies in Colorado, Utah, and Wyoming, and is working for the benefit of four species of endangered fishes in the Colorado River and its tributaries while allowing water use and development to continue meeting human needs. Reclamation is working with entities in the Gunnison Basin to develop the Gunnison Basin Selenium Management Plan to reduce selenium levels in the Gunnison River at Whitewater, as a conservation measure required by the Gunnison Basin Programmatic Biological Opinion (FWS 2009). Under the No Action Alternative, water quality benefits (an estimated 551-ton salt loading reduction per year in the Colorado River basin) would not be realized by the Project.</p>
Rights-of-Way & Land Use	<p>Under the Proposed Action Alternative, current land use in the Project Area would continue following construction, with the exception that the de facto use of parts of Zanni Lateral for stormwater management will no longer occur. Residential landowners in the Town of Crawford who are west of Highway 92 and downgradient of the Zanni Lateral experienced increased flooding of their properties since 2003, when a portion of the Zanni Lateral was piped. Due to the lay of the land, no further increases in flooding to these landowners are anticipated from the Proposed Action. The Project design incorporates runoff containment ditching at properties in the Proposed Action footprint where stormwater has the potential to flow toward improvements following implementation of the Project. Under the No Action Alternative the Zanni Lateral would continue serving as de facto stormwater management for certain properties.</p>

Resource Issue	Existing or Future Activities in the Limits of Analysis and their Contribution to Cumulative Impacts with the Proposed Action
Air Quality	<p>Air quality in the area of analysis is affected by vehicular traffic (exhaust gases and road dust), agricultural practices (exhaust gases from farm equipment, dust and smoke from harrowing and ditch/field burning), and occasional controlled burns, wildfires or dust storm events (either local, or blown in from distant locations with the westerly prevailing winds). Dust and exhaust gases related to construction of the Proposed Action and similar salinity or selenium control projects or NRCS irrigation projects are expected to be temporarily elevated in the Project Area and near the Project Area and east of the Project Area (influenced by the prevailing winds) for the short-term duration of construction. Because salinity and selenium control projects involve piping of open ditches, and buried pipe alignments require less maintenance than open ditch systems (would not require burning, re-digging, etc.), it is expected that the long-term cumulative impact of the Proposed Action and similar projects would be to reduce contributions of dust and exhaust gases to the atmosphere. Under the No Action Alternative, there would be no contribution to the cumulative impact on air quality in the area of analysis.</p>
Access, Transportation, & Public Safety	<p>Existing regional traffic in the Project Area is confined primarily to State Highway 92, a paved two-lane road. Local traffic in the Project Area travels on Town of Crawford paved roads, graveled county roads and private roads/tracks. Existing traffic includes local residents, regional travelers, and very few commercial vehicles. Highway 92 is used by regional travelers and locals to reach National Forest access roads to the south of the Project Area, and the Town of Hotchkiss north of the Project Area. Construction traffic related to the Project would primarily use Highway 92, Crawford Road, and J Street to reach the Project site. Private driveways could be temporarily blocked by construction traffic and other construction activities. Construction traffic could include heavy vehicles, wide loads, and heavy equipment moving at slow speeds. No new roads would be constructed for Project access, and existing roads would be restored to their current condition or better following construction. Traffic control and notification of emergency authorities would be implemented for road closures or as appropriate for wide, slow-moving loads. These effects would be temporary (approximately 6 months in duration) and would not contribute significantly to cumulative impacts on access, transportation, or public safety in the Project Area. Under the No Action Alternative, there would be no contribution to the cumulative impact on access, transportation, & public safety in the area of analysis.</p>

Resource Issue	Existing or Future Activities in the Limits of Analysis and their Contribution to Cumulative Impacts with the Proposed Action
Vegetative Resources / Habitat	<p>Present and future actions within the analysis area (Smith Fork River and North Fork River drainages) include infrastructure development and/or maintenance (including public and private roads, and maintenance of a high-voltage transmission corridor in the area of the Habitat Replacement Site), other salinity reduction and NRCS irrigation projects, timber harvest and vegetation management activities (such as sagebrush treatment projects on Fruitland Mesa by BLM), recreational hunting and outfitting, grazing, motorized recreation, firewood cutting, and subdivision and residential development (on Fruitland Mesa, within the Town of Crawford, and around Crawford Reservoir), and conversion of native shrublands and woodlands to agricultural uses. Drought and wildfire also will continue to affect the regions vegetative resources and natural habitat in the future, possibly with increasing intensity. The primary vegetation/habitat impact of the Project would be to convert approximately 15.2 acres of riparian and wetland habitat associated with the current ditch system to native upland types (shrublands and woodlands). Considering the habitat replacement site that will be implemented and maintained for 50 years to address the loss of riparian and wetland habitat on the Project’s ditch alignments, the overall contribution of the Proposed Action to the cumulative effects on the vegetation and habitat in the analysis area are expected to be negligible. Other similar salinity reduction projects in the region are also required to establish habitat replacement sites to functionally replace riparian and wetland habitats affected by the projects. Under the No Action Alternative, there would be no contribution to the cumulative impact on vegetative resources in the area of analysis.</p>
Wildlife Resources	<p>Present and future activities in the analysis area affecting this resource are similar to those described for vegetative resources / habitat, above. The Project Area lies in elk severe winter range and mule deer concentration areas and year-round range. Movements and forage patterns of elk and deer would be temporarily disrupted during construction of the Project. However, deer and elk are widespread, relatively abundant, and readily disperse across the landscape in response to disturbance. The surrounding landscape is relatively open and natural, with ample opportunities for big game dispersal. Small mammals, herptiles, and migratory birds would be temporarily displaced during construction of the Project until revegetation is accomplished. Individual small burrowing mammals and herptiles could be harmed during construction. Migratory birds / overwintering birds are expected to disperse to other areas during construction; however, if construction activities extend into the nesting season of migratory birds, individual nests with eggs or young could be lost due to abandonment or direct mortality. The negative effects from the Project would be of short duration and magnitude, and would not result in a substantial contribution to cumulative area-wide impacts on population trends of wildlife. Impacts would be mitigated by design features and environmental commitments described elsewhere in this EA. Under the No Action Alternative, there would be no contribution to the cumulative impact on wildlife resources in the area of analysis.</p>

Resource Issue	Existing or Future Activities in the Limits of Analysis and their Contribution to Cumulative Impacts with the Proposed Action
Threatened and Endangered Species & Critical Habitat	<p>Present and future activities in the analysis area affecting this resource are similar to those described for vegetative resources / habitat, above. None of the ongoing or foreseeable future activities in this area, when combined with the Proposed Action, are likely to contribute to substantial negative long-term cumulative impacts to threatened and endangered species. Mexican spotted owl and yellow-billed cuckoo have only peripheral or marginally suitable habitat in the Project Area. Gunnison sage-grouse critical habitat is mapped in the Habitat Replacement Site for the Project Area, but the Site is excluded from the critical habitat definition. Additionally, the habitat is not occupied by sage-grouse. Impacts to habitat for sage-grouse in the Habitat Replacement Site would be short-term and temporary (until vegetation is established following construction). The Project and similar salinity and selenium control projects occurring in the area in the future are not expected to destroy or adversely modify downstream critical habitat for the four species of Colorado River endangered fishes, because the projects will not result in an increase in average annual depletion rates of water from the system. Under the No Action Alternative, there would be no contribution to the cumulative impact on threatened and endangered species or designated critical habitat in the area of analysis.</p>
Cultural Resources	<p>Cultural resources are defined as fragile and nonrenewable remains of prehistoric and historic human activity, occupation, or endeavor, as reflected in districts, sites, structures, buildings, objects, artifacts, ruins, etc. Significant cultural resources are eligible for listing in the National Register of Historic Places, are typically at least 50 years old, and meet other requirements specified at 36 CFR Part 60. The Zanni Lateral is a cultural resource that has been determined to be not eligible for inclusion on the National Register of Historic Places. Other salinity and selenium control projects in the area of analysis also will effect or have the potential to destroy cultural resources such as irrigation ditches and appurtenant structures. For significant resources, these effects are mitigated by Historic Resource Documentation at an appropriate level for the significance of the resource. For Projects with significant cultural resources, a Memorandum of Agreement (MOA) is executed between Reclamation and the State Historic Preservation Office to ensure proper documentation of the resource prior to its destruction. Under the No Action Alternative, there would be no contribution to the cumulative impact on cultural resources in the area of analysis.</p>

Resource Issue	Existing or Future Activities in the Limits of Analysis and their Contribution to Cumulative Impacts with the Proposed Action
Agricultural Resources & Soils	<p>Actions with potential for cumulative effects on soils and agricultural resources in the Smith Fork River and North Fork River drainages include existing and future Colorado River Basin Salinity Control Program projects, Gunnison Basin Selenium Management projects, existing and future NRCS irrigation improvement projects, infrastructure development, livestock grazing, and residential development. Each of these activities can result in soil erosion or degradation of soil health; however, erosion control and reclamation is required for most of these activities to reduce direct, indirect, and cumulative soils effects. Residential development can result in conversion of irrigated agricultural or grazing rangelands. The Project would not result in the direct loss of irrigated agricultural lands or grazing rangelands. An indirect effect of the Project and similar projects in the Salinity Control Program, is the possibility that the quantity of irrigation wastewater could diminish from irrigated areas that are converted to sprinkler irrigation following completion of the Proposed Action (in future unrelated projects), and that areas downgradient of the Proposed Action that are irrigated with wastewater may be converted to dryland agricultural uses or other uses. Lands irrigated solely with irrigation wastewater make up a relatively small proportion of irrigated agricultural lands in the area of analysis. Under the No Action Alternative, there would be no contribution to the cumulative impact on agricultural resources & soils in the area of analysis.</p>

3.12 Summary of Impacts

Table 5 summarizes the predicted impacts/environmental consequences of the No Action and Proposed Action Alternatives analyzed in this EA.

Table 5. Summary of Impacts of the Zanni Lateral Pipeline Project

Resource Issue	Impacts	
	No Action Alternative	Proposed Action Alternative
Water Rights and Use	No Effect	No Effect or possible beneficial effect
Water Quality	Salt and selenium loading from the Project area would continue to affect water quality in the Colorado River Basin	An estimated salt loading reduction of 551 tons per year to the Colorado River Basin will result from implementation of the Proposed Action. The Proposed Action is also expected to reduce selenium loading into the Gunnison River; however, these benefits have not been quantified. Improved water quality would likely benefit downstream aquatic species by reducing salt and selenium loading in the Smith Fork, Gunnison, and Colorado rivers.

Resource Issue	Impacts	
	No Action Alternative	Proposed Action Alternative
Rights-of-Way & Land Use	No Effect.	Minor short-term effects during construction until revegetation is successful and resumption of previous land use is resumed. The open Zanni Lateral would no longer act as de facto stormwater management for certain locations (see Figures 4a, 4b, and 4c). Stormwater management following piping of the Zanni Lateral at these locations is incorporated into the Project design.
Air Quality	No Effect	Minor short-term effects due to dust and exhaust created by construction equipment.
Access, Transportation, & Public Safety	No Effect	Minor temporary disruptions to State Highway 92 and local public roadways from construction traffic entering and existing roadways. No long-term effects.
Vegetative Resources / Habitat	No Effect	Short-term impacts to vegetation where construction would occur in upland areas. Estimated long-term loss of 6.39 total habitat value units, due to elimination of seepage from the involved ditch alignments. A Habitat Replacement Plan would be implemented to mitigate for the habitat value lost because of the Proposed Action.
Wildlife Resources	No Effect	Short-term temporary adverse effect to local wildlife during construction. A Habitat Replacement Plan would be implemented to mitigate for the long-term loss of riparian and wetland habitat due to the Proposed Action.

Resource Issue	Impacts	
	No Action Alternative	Proposed Action Alternative
Threatened and Endangered Species	Selenium loading from the Project area would continue to affect downstream critical habitat for endangered fishes. No effect to Gunnison sage-grouse.	The Habitat Replacement Site for the Proposed Action Area lies within designated critical habitat for Gunnison sage-grouse, but is excluded from the definition under the rule because it lies on land encumbered by a conservation easement. The Habitat Replacement Site does not lie within currently occupied range. Short-term reclaimable impacts would occur to potentially suitable habitat for sage-grouse. Water depletions (irrigation water consumption) would continue at historic levels from the Smith Fork drainage and Crawford Reservoir, and would adversely affect downstream designated critical habitat for the four Colorado River federally endangered fishes. Reclamation is in the process of consulting with FWS on depletions from the entire Crawford Clipper Ditch System (including the Zanni Lateral) originating from the system's diversion structure on the Smith Fork (depletions originating from Crawford Reservoir were previously determined to fall under the 2009 Gunnison Basin Programmatic Biological Opinion (PBO)). The annual depletion rate is not expected to change as a result of the Proposed Action. Therefore, it is expected that the Proposed Action will not destroy or adversely modify the designated critical habitat for the Colorado River endangered fishes. The Proposed Action would improve water quality by contributing to the reduction of selenium loading in the Gunnison and Colorado rivers.
Cultural Resources	No Effect	Adverse effect to sites determined by a professional archaeologist to be not eligible for listing on the National Register of Historic Places. Because the sites are not considered culturally significant, no mitigation is recommended.
Agricultural Resources & Soils	No Effect	Short-term temporary effect during construction, with agricultural production and grazing resuming following restoration of the ground surface, and appropriate reseeding, erosion control, and weed control on disturbed soils in non-irrigated areas.
Cumulative Impacts	No Effect	Beneficial effects related to reduction of salt and selenium loading in the Gunnison and Colorado river basins. Indirect and direct contributions to cumulative effects on other resources are temporary and/or negligible, with consideration of mitigative measures (i.e., the habitat replacement site).

4 ENVIRONMENTAL COMMITMENTS

This section discusses the environmental commitments developed to protect resources and mitigate adverse impacts to a non-significant level. The cooperative agreement between Reclamation and the Company requires that the Company be responsible for "...implementing and/or complying with the environmental commitments contained in the NEPA/Endangered Species Act compliance documents to be developed by Reclamation for the project."

The following environmental commitments would be implemented as an integral part of the Proposed Action, and would be included in the contractor bid specifications. The Company would provide a hard copy of the Final EA, a hard copy of the applicable county weed management plan(s), an environmental briefing to the contractor and any sub-contractors in a pre-construction meeting. The environmental briefing would include, at a minimum, a review of the environmental commitments described in this Section.

Note that any construction activities proposed outside of the inventoried Proposed Action Area would first require additional review by Reclamation to determine if the existing surveys and information are adequate to evaluate additional impacts outside this corridor.

Note that construction work conducted outside the planned timeframes of the Proposed Action may also require evaluation for impacts to wildlife, including threatened or endangered species, or migratory bird species.

An Environmental Checklist is included as Attachment H. The Environmental Checklist would serve as a tool to help Reclamation and the Company comply with the environmental commitments set forth in the EA. The Company would be required to update the Checklist as each environmental commitment is fulfilled, and return the completed Checklist to Reclamation upon the Project's completion.

4.1 Construction Access

All construction activities would be confined to rights-of-way negotiated between the Company and the landowners. Construction staging (for pipe and equipment) would take place in several areas, as shown on Figures 3 and 4.

The Company would execute easement agreements with affected landowners prior to construction, and the construction contractor would obtain the appropriate permissions to work within the State Highway 92 and Delta County roads rights-of-way. Environmental commitments regarding access would be included in CDOT and/or Delta County authorizations, and agreements with landowners. The Environmental Checklist (Attachment H) would require that the Company and construction contractor comply with all such commitments.

4.2 Water Quality

The following standard BMPs and environmental commitments would be implemented to minimize erosion and protect water quality of downstream resources:

- Straw wattles, silt curtains, cofferdams, dikes, straw bales, or other suitable erosion control measures shall be used to prevent erosion from entering water bodies during construction.

- Concrete pours shall occur in forms and/or behind cofferdams to prevent discharge into waterways. Any wastewater from concrete-batching, vehicle wash down, and aggregate processing shall be contained and treated or removed for off-site disposal.
- Fuels, lubricants, hydraulic fluids, and other petrochemicals shall be stored and dispensed in an approved staging area.
- Equipment shall be inspected daily and immediately repaired as necessary to ensure equipment is free of petrochemical leaks.
- Construction equipment shall be parked, stored, and serviced only at an approved staging area.
- A spill response plan shall be prepared in advance of construction by the contractor for areas of work where spilled contaminants could flow into water bodies. All employees and workers, including those under separate contract, shall be briefed and made familiar with this plan.
- A spill response kit, which includes appropriate-sized spill blankets, shall be easily accessible and onsite at all times.
- Onsite supervisors and equipment operators shall be trained and knowledgeable in the use of spill containment equipment.
- Appropriate federal and Colorado authorities shall be immediately notified in the event of any contaminant spill.

4.3 Abandoned Irrigation Facilities & Structures

Pursuant to the Cooperative Agreement between the Company and Reclamation, the Company would permanently dewater, remove from irrigation service, and render incapable of irrigation water delivery those open ditches abandoned as part of the Proposed Action.

The Company would be responsible for removing all decommissioned irrigation structures (head gates, drops, etc.) by methods described in the construction specifications provided to the contractor.

4.4 Ground Disturbances

The following BMPs and environmental commitments would be implemented to minimize and mitigate ground disturbances:

- Ground disturbances shall be limited to only those areas necessary to safely implement the Proposed Action.
- Vegetation removal shall be confined to the smallest portion of the Proposed Action Area (including any borrow areas) necessary for completion of the work.
- Construction limits shall be clearly flagged onsite to avoid unnecessary plant loss or ground disturbance. The boundary between BLM land and Borrow/Staging Site #1 shall be clearly flagged so that Project activities do not encroach on adjoining BLM land.

- Prior to construction, vegetative material shall be removed by mowing or chopping, and either hauled to a proposed staging area to be burned or chipped, or chipped and mulched onsite. Stumps shall be grubbed and hauled to a proposed staging area to be burned.
- Topsoil shall be stockpiled and then redistributed after completion of construction activities.
- Straw wattles, silt curtains, cofferdams, dikes, straw bales, or other suitable erosion control measures shall be used at the edges of ground disturbance to minimize soil erosion and prevent soil erosion from entering water bodies during construction.
- Following construction, all disturbed areas shall be smoothed, shaped, contoured and reseeded to as near to their pre-project conditions as practicable.
- Seeding shall occur at appropriate times within six months following construction completion with weed-free seed mixes per Reclamation specifications.
- Weed control shall be implemented by the Company or the Company's contractor(s) in accordance with current County weed control standards (Delta and Montrose County Weed Management Plans are available at <http://www.deltacounty.com/466/Weed-Program> and <http://www.montrosecounty.net/162/Weed-Mitigation>, respectively).
- All construction easement/right-of-way agreements shall be executed by all parties prior to construction.

4.5 Wildlife Resources

The following BMPs and environmental commitments would be implemented to minimize and mitigate disturbances to wildlife:

- Construction areas shall be confined to the smallest feasible area and within approved construction limits/rights-of-way to minimize disturbance to wildlife within the Proposed Action Area.
- Pipeline trenches left open overnight shall be kept to a minimum and covered to reduce potential for hazards to the public and to wildlife. Covers shall be secured in place and strong enough to prevent livestock or wildlife from falling through. Where trench covers would not be practical, wildlife escape ramps shall be utilized.
- Vegetation disturbing activities are currently not planned for implementation during the nesting season of migratory birds protected under the Migratory Bird Treaty Act. Nesting season is typically April 15 through August 1. However, if the schedule for the Proposed Action shifts (Section 4.11), and vegetation disturbing activities would occur during the typical nesting season of migratory birds, further conservation measures may be necessary to protect these species, such as pre-construction nest surveys. If an occupied raptor nest is discovered during construction, regardless of construction timing, the Company would stop construction activities until Reclamation has consulted with FWS and/or CPW on appropriate protective measures to avoid or reduce impacts to nesting raptors.

4.6 Habitat Disturbance & Loss

The Salinity Control Act requires that no net loss of wildlife values result from projects under its authorization. With the assistance of Wildlife and Natural Resource Concepts & Solutions, LLC, the Company has developed a Reclamation-approved wildlife Habitat Replacement Plan to mitigate fish and wildlife values that would be foregone as a result of the Proposed Action (Attachment E). The Habitat Replacement Site location is on Hart Ranch, about 3.5 miles south-by-southeast of the pipeline component of the Proposed Action (Figures 3 and 4). Habitat replacement activities to be performed as part of the Proposed Action are described in Section 2.2 and Attachment E of this EA. The Company is responsible for the design and construction of the Habitat Replacement Site, as well as preservation and maintenance for a period of 50 years.

The Habitat Replacement Plan (Attachment E) meets the objectives of the Basin States Program because it is near the Proposed Action Area and provides compensation for directly affected wildlife to the greatest extent possible, it is an in-kind replacement (replaces particular values lost), it is contiguous with other habitats with wildlife value, it can be successfully managed by the Company, and has characteristics (a water source) that will assure its viability for at least 50 years. The Habitat Replacement Plan involves enhancing (improving the functions and values of) existing wetland areas on Hart Ranch. Habitat improvement activities do not involve placing fill in potentially jurisdictional wetlands; therefore no Section 404 permit from the U.S. Army Corps of Engineers would be required. The Company will be responsible for ensuring the objectives of the Habitat Replacement Plan are met. Failure to implement concurrent habitat replacement may result in delays in funding.

For all ground areas disturbed by the Proposed Action, a weed treatment program will be implemented to meet standards set by Delta or Montrose County, as appropriate, and the State of Colorado. Delta and Montrose County Weed Management Plans are available at <http://www.deltacounty.com/466/Weed-Program> and <http://www.montrosecounty.net/162/Weed-Mitigation>, respectively

4.7 Federally-Listed Species

The Habitat Replacement Site component of the Proposed Action is located in currently unoccupied range of the federally-listed Gunnison sage-grouse. If ground or vegetation-disturbing activities are to take place at the Habitat Replacement Site during the breeding, nesting, or brood-rearing periods of sage-grouse (March through September), the Company will contact FWS and CPW terrestrial biologists prior to construction to confirm the Proposed Action Area remains unoccupied by the species, and that a documented active lek does not lie within 0.6 mile of the Proposed Action. Because the Habitat Replacement Site is in potential Gunnison sage-grouse habitat that could become occupied in the future, the planned plantings for the site do not include tall trees, which could serve as perches for raptors that prey on sage-grouse.

Reclamation consulted on Colorado River Basin water depletions caused by the Crawford Clipper Ditch System from direct diversions from the Smith Fork River, which affect downstream critical habitat for Colorado River Endangered fishes (see Section 3.8). The results of this consultation (a Recovery Agreement executed by FWS and the Company) are provided in Attachment F. Depletions caused by withdrawals from Crawford Reservoir were previously determined to be covered under the Gunnison Basin PBO.

No further Endangered Species Act consultation would be required for the Proposed Action, unless other listed species are encountered during construction. In the event that other listed species are encountered during construction, the Company would stop construction activities until Reclamation has consulted with FWS to ensure that adequate measures are in place to avoid or reduce impacts to the species.

4.8 Cultural Resources

Reclamation received concurrence (Attachment G) from the Colorado State Historic Preservation Officer (Colorado SHPO) that the Proposed Action would have no adverse effect under Section 106 of the National Historic Preservation Act on the Zanni Lateral and other finds noted in the cultural resource inventory. No mitigation is warranted since the Zanni Lateral and other found resources are not recommended as eligible for the National Register of Historic Places.

In the event of discovery of evidence of possible cultural or paleontological resources, all ground disturbing activities in the area shall immediately cease, and Reclamation shall be notified. Work shall not be resumed until authorized by Reclamation.

4.9 Agricultural Resources & Soils

The following BMPs and environmental commitments would be implemented to minimize and mitigate impacts to agricultural resources and soils:

- During construction, topsoil shall be saved and then redistributed after completion of construction activities.
- Straw wattles, silt curtains, cofferdams, dikes, straw bales, or other suitable erosion control measures shall be used to minimize soil erosion and prevent soil erosion from entering water bodies during construction.
- All disturbed areas shall be smoothed, shaped, contoured and reseeded to as near their pre-project conditions as practicable.
- Lands previously in agricultural production shall be returned to agricultural production following construction.

4.10 Hazardous Materials, Waste Management & Pollution Prevention

Environmental impacts from hazardous materials or waste related to the Proposed Action involve potential spills or leaks of motor fuels and lubricants. Fuel and lubricant spills have the potential to impact soil and water resources, but because of the relatively small amounts of such materials that would be used in the Proposed Action Area (i.e., a 55-gallon drum), impacts from accidental spills or leaks are expected to be minimal.

During construction, the use, storage and disposal of hazardous materials and wastes within the Proposed Action Area would be managed in accordance with all federal, state, and local standards, including the Toxic Substances Control Act of 1976, as amended (15 USC 2601, et seq., 40 CFR Part 702-799, and 40 CFR 761.1-761.193). Any trash or solid wastes generated during the Proposed Action would be properly disposed offsite.

The following BMPs and environmental commitments would be implemented with regard to hazardous materials, waste management, and pollution prevention:

- The construction contractor shall transport, handle, and store any fuels, lubricants, or other hazardous substances involved with the Proposed Action in an appropriate manner that prevents them from contaminating soil and water resources.
- Portable secondary containment shall be provided for any fuel or lubricant containers staged within the Proposed Action Area. Any staging of fuel or lubricants, or fueling or maintenance of vehicles or equipment, will not be conducted within 100 feet of any live water or drainage.
- The construction contractor shall prepare, prior to initiation of construction, a spill response plan for areas of work where spilled contaminants could flow into water bodies. All employees and workers, including those under separate contract, will be briefed and made familiar with this plan.
- A spill response kit, which includes appropriate-sized spill blankets, shall be easily accessible and onsite at all times.
- Onsite supervisors and equipment operators shall be trained and knowledgeable in the use of spill containment equipment.
- All spills, regardless of size, shall be cleaned up promptly and contaminated soil shall be disposed of at an approved facility.
- Appropriate federal and Colorado authorities shall be immediately notified in the event of any contaminant spill. Any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, Section 102b.

4.11 Sequence and Timing of the Proposed Action

The Proposed Action would take place during March and early April 2016 (during the irrigation off-season). If the Proposed Action cannot be completed during this timeframe, then it would be postponed until the 2016-2017 irrigation off-season (between late October 2016 and early April 2017).

Vegetation-disturbing activities occurring during the nesting season of migratory birds (mid-April through July) would require further conservation measures prior to initiation (i.e., nest surveys for migratory bird species of concern). Vegetation-disturbing activities occurring at the Habitat Replacement Site during breeding (March through May), nesting (April through June), or brood rearing (June through September) seasons for Gunnison sage-grouse, would require CPW confirmation of sage-grouse non-occupancy prior to commencement of work.

The pipeline component of the Proposed Action would follow this approximate sequence:

- Perform vegetation removal prior to migratory bird nesting season (prior to mid-April, and as early as possible)

- Construct buried pipe alignments outside the existing ditch prism (i.e., “overland” pipe alignments) prior to the irrigation season.
- Construct buried pipe alignments in or near the existing the existing ditch prism, to begin as soon as possible in the irrigation off-season, prior to the irrigation season.
- Decommission and backfill abandoned ditch and irrigation control structures and conduct final mop-up, prior to the irrigation season.

4.12 Permits, Licenses and Approvals Needed to Implement the Proposal

The following permits, licenses, or approvals (and their statuses) would be needed to implement the Proposed Action:

- Right-of-Way approvals from private landowners with land involved in the Proposed Action, obtained by the Company.
- Stormwater Management Plan, to be submitted to the Colorado Department of Public Health and Environment (CDPHE) by the construction contractor prior to construction disturbance.
- CWA Section 402 Storm Water Discharge Permit compliant with the National Pollutant Discharge Elimination System (NPDES), to be obtained from CDPHE by the construction contractor prior to construction disturbance (regardless of whether dewatering would take place during construction).
- CDOT Highway Right-of-Way Permit, if necessary, to be obtained by the construction contractor prior to working in the Colorado Highway 92 right-of-way.
- Traffic control measures, to be coordinated by the construction contractor with CDOT, Delta County Sheriff, and emergency services, prior to working in the Colorado Highway 92 right-of-way.
- Utility clearances, to be obtained by the construction contractor prior to construction activities from Delta Montrose Electric Association, TDS Telecom, local water companies, and any other utility in the area.
- Delta County clearance, to be obtained by the Company / construction contractor prior to crossing county roads with buried pipeline or installing buried pipeline in the county road corridor.
- CWA Section 401/404: Because the Proposed Action is exempted from CWA Section 404, no Clean Water Act Section 401 Water Quality Certification would be required; however, water quality BMPs (as outlined above) would be implemented to protect water resources.

5 CONSULTATION & COORDINATION

Reclamation’s consultation and coordination process presents other agencies, interest groups, and the general public with opportunities to obtain information about a given project and allows

interested parties to participate in the project through written comments. The key objective is to facilitate a well-informed, active public that assists decision-makers throughout the process, culminating in the implementation of an alternative. This section explains consultation and coordination undertaken for the Proposed Project.

5.1 Agency Consultation

This EA was prepared by Rare Earth Science, LLC, of Paonia, Colorado, for Reclamation and Crawford Clipper Ditch Company. The following local, state, and federal agencies were contacted and consulted in the preparation of this EA.

- Colorado Office of Archaeology and Historic Preservation, Denver, CO
- Colorado Parks & Wildlife, Gunnison, CO
- U.S. Fish & Wildlife Service, Ecological Services, Grand Junction, CO
- U.S. Army Corps of Engineers, Colorado West Regulatory Branch, Grand Junction, CO
- Colorado Department of Transportation, Grand Junction, CO
- Southern Ute Tribe, Ute Mountain Ute Tribe, and Ute Indian Tribe (Uintah and Ouray Reservation)

5.2 EA Comments

In compliance with NEPA, the Draft EA was released for a 30-day public review period (via Reclamation's website at <http://www.usbr.gov/uc/wcao/envdocs/index.html>) beginning November 12, 2015. During this period, Reclamation received three letters and one telephone call from private individuals. In response to a request from the Town of Crawford, the public review period was extended an additional week beyond the 30-day period, ending on December 18, 2015. An additional comment letter was received on December 21, 2015 from the Town of Crawford.

The following is a summary of Reclamation's responses to comments received on the Draft EA. The original comment letters are provided in Attachment A. All comments and issues were resolved with individual commenters. The Town of Crawford also acknowledged in a follow-up letter that its questions had been successfully answered.

COMMENT LETTER FROM PAGE

Comment 1: The Environmental Assessment fails to address the potential flooding and damage to private property as a result of piping the Zanni Lateral.

Response 1: The Town of Crawford has historically relied on unauthorized use of the Zanni Lateral for storm water management. Although the Company has no responsibility for storm water management, in general, or to ensure that up-gradient storm water is managed appropriately following piping of the Zanni Lateral, the Company met individually with concerned landowners to address flooding concerns and discuss new stormwater paths that could occur after construction of the Project. A Rights-of-Way & Land Use analysis was added to the EA (Section 3.3), which states the following: "Under the Proposed Action Alternative, the Company would execute construction easements with individual landowners prior to construction of the Project. Each construction easement would be unique, and would explain the maximum width of the construction area, and responsibilities of the parties to protect private property and mitigate private property / landscaping damage before, during, and following Project construction. For properties where changes in stormwater patterns due to piping of the ditch are anticipated to

potentially affect nearby downgradient improvements, the individual easement agreements would include installation of appropriate ditching to direct stormwater away from such improvements. The construction easements, along with maintenance easements, would be recorded in Delta County following construction. Neither the Company nor Reclamation is responsible for stormwater management, and will not be responsible for maintenance of any stormwater facilities constructed by the Company. Two potential benefits would occur to landowners with nearby improvements downgradient of the open Zanni Lateral as a result of the Proposed Action: piping of the ditch would eliminate seepage of irrigation water to nearby downgradient foundations, if such seepage is occurring; and piping of the ditch would eliminate the risk of the Zanni Lateral overtopping or experiencing a bank failure during a storm event and flooding nearby downgradient improvements with lateral water in addition to storm water.”

Comment 2: The Environmental Assessment does not offer an alternative.

Response 2: There are two alternatives offered in the EA: The Proposed Action Alternative and the No Action Alternative.

Comment 3: A more in-depth EA should be prepared regarding the flooding damage that will occur when the Zanni Lateral is piped in front of our property.

Response 3: Based on information provided by the Company, the Company has no responsibility to manage the disposition of the Town of Crawford’s stormwater following completion of the Project. Analyzing the Town of Crawford’s stormwater management is outside the scope of the Proposed Project and this EA. However, the Company worked with this commenter and other adjoining landowners to identify potential areas where new stormwater improvements could be constructed. See Response 1 to Comment 1, above.

Comment 4: What is the construction schedule for this project?

Response 4: Construction is anticipated to occur during March and early April 2016.

Comment 5: When will the plans be ready?

Response 5: The plans will be finalized prior to the initiation of construction in March 2016.

Comment 6: Who will be the contractor?

Response 6: The Company will issue a competitive bid request and intends to hire a construction contractor during late February or early March 2016.

Comment 7: Does the Bureau of Reclamation have an established engineering and design standards that will apply to the project, and where can the commenter obtain a copy?

Response 7: There are various local, state and federal design standards and specifications that apply to the Project. For example, the 2012 Funding Opportunity Announcement, from which this project was selected, referenced the NRCS Practice Standards and Specifications, which can be viewed at: http://efotg.sc.egov.usda.gov/efotg_locator.aspx. (From the map of the United States, select the state where the project will be constructed. From the map of the state, select the county where the project will be constructed. Under the heading, FOTG, select “Section IV”. Under Section IV, select the folder variously labeled “Practice Standards and Specifications” or “Conservation Practices”. Within this folder can be found the criteria for each type of conservation practice such as “Irrigation Pipeline” or “Irrigation Water Conveyance”). In

addition, Reclamation requires that the construction drawings be stamped by a Registered Professional Engineer.

Comment 8: What is the contemplated maximum extent of construction activity in the commenter's front yard?

Response 8: The Company is executing construction easements with individual landowners in the Project footprint. See Response 1, above for further explanation.

Comment 9: Why does the EA indicate that the Zanni Lateral's current 11-foot easement will be increased 20 to 30 feet to install 18-inch piping?

Response 9: The EA does not specify the current width of Zanni Lateral's prescriptive (unwritten) easement; however, the prescriptive easement is generally understood to be the equivalent of twice the width of the ditch on either side. A construction easement (typically wider than the prescriptive easement) is necessary in order to safely accommodate equipment and workers during installation of the pipeline. Section 2.2 of the EA states, "Construction activities would be limited to approximately 60- or 80-foot-wide construction rights-of-way (or narrower as appropriate in residential areas) throughout the Project alignment." As explained in Response 1 (above), individual construction easements will be executed with affected landowners prior to construction.

Comment 10: What equipment is anticipated for installation of the pipeline, particularly in the area where the existing 18-inch pipeline would be replaced?

Response 10: There will be no area where the existing piped portion of the Zanni Lateral will be replaced. Only the open portion of the Zanni Lateral will be piped as part of the Proposed Action. Equipment required for the Project will be determined during the pre-construction bid process, and is anticipated to include track hoes with 18-inch and 24-inch buckets, a mine-excavator with a 12 or 18-inch bucket, a conventional loader, a skid steer loader, a tamper, an end dump, and a low-boy hauler. The choice of equipment will be appropriate to the size and limitations of the construction area.

Comment 11: What remediation will occur regarding the commenter's ornamental landscaping that will be incorporated into this Project if the easement is increased 20-30 feet?

Response 11: The width of the commenter's individual construction easement with the Company will be significantly less than 20 to 30 feet, due to proximity of improvements and landscaping to the Zanni Lateral. The commenter's individual construction easement provides for reseeding the construction area with field grasses, for avoidance of trees specifically marked by the commenter, and for setting aside of ornamental shrubs for replanting following construction.

Comment 12: Please provide copies of any contracts between the Bureau of Reclamation and the Crawford Clipper Ditch Company that describe the project or pertain to its financing and construction.

Response 12: Reclamation may be able to provide copies of certain contracts, financial documentation, or detailed construction drawings, upon receipt of a written request under the Freedom of Information Act (FOIA) identifying the specific documents being requested, and based on Reclamation's assessment of information that can be released under the FOIA. Copies may also be requested from and provided by the Company if the Company chooses to

release that information. This Project was selected based on an application submitted to Reclamation for the 2012 Funding Opportunity Announcement (Announcement No. R12SFF40034). This document describes the award process, financial obligations, and salinity program objectives, and can be viewed at <http://www.usbr.gov/uc/progact/salinity/FOA/FOA-Salinity-R12SF40034.pdf>.

Comment 13: Will the Company incur debt as a result of the Project or is it fully financed by the Bureau of Reclamation or other state or federal agencies?

Response 13: The Proposed Action will be fully funded by the federal Basin States Salinity Reduction Program. It is not anticipated that the Company will incur debt as a result of the Proposed Action.

Comment 14: Who else may the commenter contact for construction details and Project information?

Response 14: The commenter may contact Crawford Clipper Ditch Company at P.O. Box 263, Crawford, CO 81415, or by email at crawfordclipperditch@gmail.com.

COMMENT LETTER FROM JOHNSON

Comment 1: The commenter lives "less than 100 yards down from where the current ditch remains open and serves as drainage for the flood waters that cascade down 'I' Street and Colorado Highway 92." The commenter is concerned that if the remainder of the Zanni is piped, her property will suffer "even more flood damage" than it already experiences.

Response 1: The commenter's property lies adjacent to that portion of the Zanni Lateral that is already piped (see Figure 4a). Stormwater drainage patterns are not expected to change in the area of the commenter's property as a result of the Proposed Action.

Comment 2: The commenter contests that the Clipper Ditch Company be given a 20 to 30 foot easement on her property.

Response 2: The commenter's property lies adjacent to that portion of the Zanni Lateral that is already piped (see Figure 4a). The commenter's property is not involved in the Proposed Action and the Company is not requesting a construction easement on the commenter's property.

COMMENT LETTER FROM PETERS

Comment 1: The commenter stated that "Over the years I have experienced multiple flooding issues that run off and over CO Highway 92 and 'I' Street. Approximately 100 feet of the Zanni on my property was piped years ago leaving us no protection from flood water. I fear that if the upper end of the Zanni is piped my property will have even more flooding problems and damage."

Response 1: The commenter's property lies adjacent to that portion of the Zanni Lateral that is already piped (see Figure 4a). Stormwater drainage patterns are not expected to change in the area of the commenter's property as a result of the Proposed Action.

Comment 2: The commenter contests that the Clipper Ditch Company be given a 20 to 30 foot easement on his property.

Response 2: The commenter's property lies adjacent to that portion of the Zanni Lateral that is already piped (see Figure 4a of the EA). The commenter's property is not involved in the Proposed Action and the Company is not requesting a construction easement on the commenter's property.

COMMENT BY TELEPHONE FROM ZEIGLER

Comment 1: The commenter stated he is a homeowner in the area where three drainages put water into the Zanni Lateral. He asked that the Company coordinate with him and the Town and let him know how they will address the drainage, and to include that information in the EA.

Response 1: The commenter's home is upgradient of an existing piped portion of the Zanni Lateral, and therefore would not be affected by stormwater drainage changes potentially caused by the Proposed Action. However, Reclamation acknowledges the commenter's concern for properties downgradient of the Proposed Action. The Company is meeting with individual landowners in the footprint of the Proposed Action to execute individual construction easements and address potential stormwater drainage concerns. The following language has been added to the EA at Section 3.3: "For properties where changes in stormwater patterns due to piping of the ditch are anticipated to potentially affect nearby downgradient improvements, the individual easement agreements would include installation of appropriate ditching to direct stormwater away from such improvements." Conceptual sketches for the locations runoff containment ditching are shown on Figures 4a, 4b, and 4c of the EA. See Section 3.3 of the EA for further analysis.

COMMENT LETTER FROM THE TOWN OF CRAWFORD, DECEMBER 21, 2015

Comment 1: "The Town of Crawford is requesting a flood impact statement in regards to this Project; previous piping upstream of this Project has left runoff nowhere to go but through the properties that before had the ditch as a buffer."

Response 1: The Town of Crawford has historically relied on unauthorized use of the Zanni Lateral for storm water management. Although the Company has no responsibility to ensure the Town of Crawford's storm water is managed appropriately following piping of the Zanni Lateral, the Company met individually with concerned landowners to address flooding concerns and discuss new stormwater paths that could occur after construction of the Project. A Rights-of-Way & Land Use analysis was added to the EA (Section 3.3), which states the following: "Under the Proposed Action Alternative, the Company would execute construction easements with individual landowners prior to construction of the Project. Each construction easement would be unique, and would explain the maximum width of the construction area, and responsibilities of the parties to protect private property and mitigate private property / landscaping damage before, during, and following Project construction. For properties where changes in stormwater patterns due to piping of the ditch are anticipated to potentially affect nearby downgradient improvements, the individual easement agreements would include installation of appropriate ditching to direct stormwater away from such improvements. The construction easements, along with permanent maintenance easements, would be recorded in Delta County following construction. Two potential benefits would occur to landowners with nearby improvements downgradient of the open Zanni Lateral as a result of the Proposed Action: piping of the ditch would eliminate seepage of irrigation water to nearby downgradient foundations, if such seepage is occurring; and piping of the ditch would eliminate the risk of the Zanni Lateral overflowing or experiencing a bank failure during a storm event and flooding nearby

downgradient improvements.” Conceptual sketches for the locations runoff containment ditching are shown on Figures 4a, 4b, and 4c of the EA.

Comment 2: “The Town of Crawford would also like to point out that there was little to no mention of flood/runoff impacts associated with this Project.”

Response 2: Please see Response 1, above.

Comment 3: “The Town of Crawford would like it to be known that if future piping of the Clipper Ditch occurs, serious consideration should be made to established drainages that terminate at the Clipper Ditch that runs through town.”

Response 3: Acknowledged.

COMMENT LETTER FROM THE TOWN OF CRAWFORD, JANUARY 25, 2016

Comment 1: The Town of Crawford confirmed that all questions regarding the Proposed Action “have been answered,” and stated approval of the Project going forward.

Response 1: Acknowledged.

5.3 Distribution

Notice of the public review period and availability of the Draft EA (posted on Reclamation’s website) was mailed to Company shareholders, private landowners adjacent to the Proposed Action Area, and the organizations and agencies listed in Attachment B. This Final EA will also be available on Reclamation’s website. Publicly-available electronic versions of the Draft and Final EA meet the technical standards of Section 508 of the Rehabilitation Act of 1973, so that the documents can be accessed by people with disabilities using accessibility software tools.

6 REFERENCES

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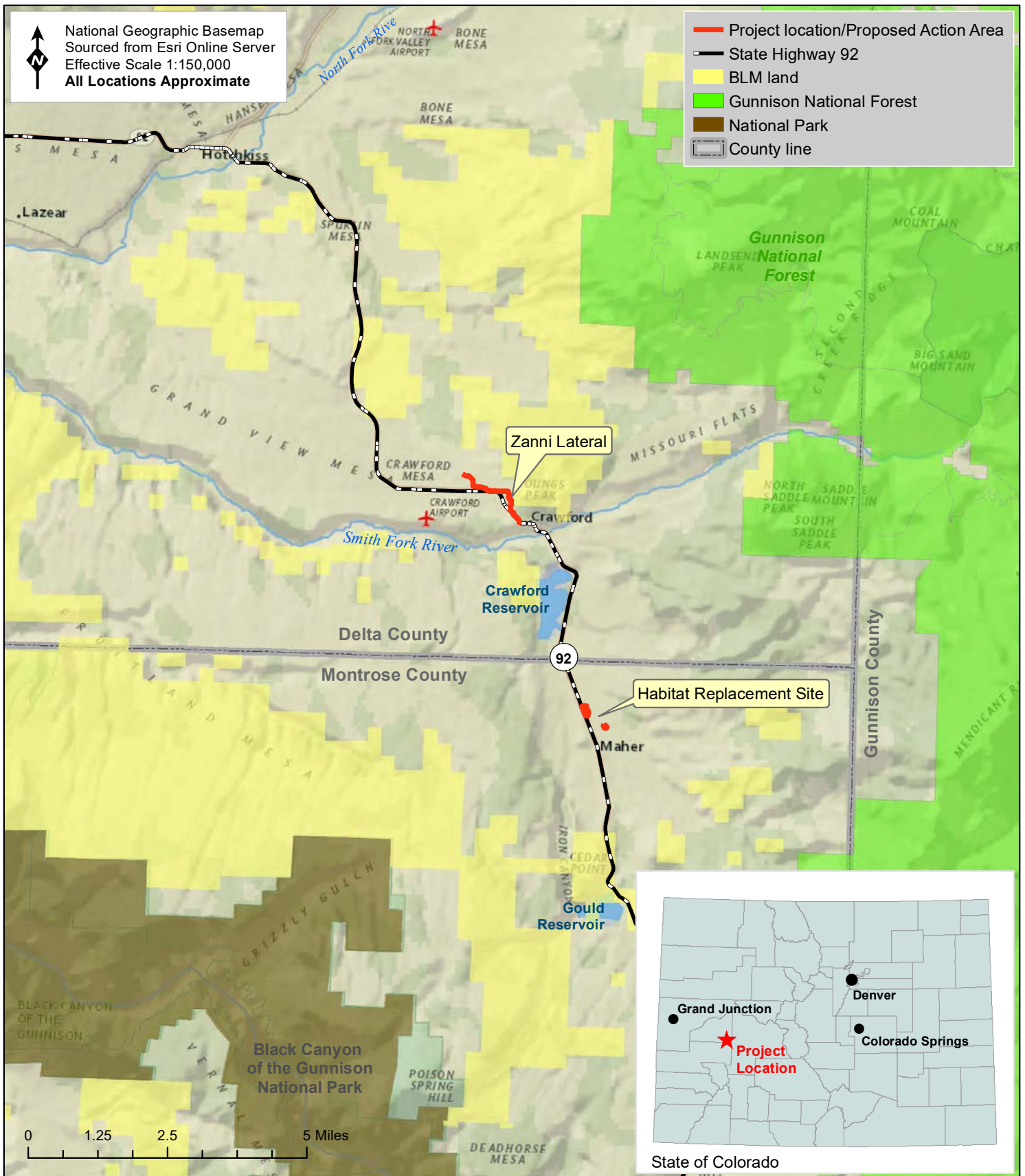
USDA (U.S. Department of Agriculture) Natural Resources Conservation Service. 2007. Soil Survey Geographic (SSURGO) database for Paonia Area, Colorado, Parts of Delta, Gunnison, and Montrose Counties, publication co679.

FIGURES



National Geographic Basemap
Sourced from Esri Online Server
Effective Scale 1:150,000
All Locations Approximate

- Project location/Proposed Action Area
- State Highway 92
- BLM land
- Gunnison National Forest
- National Park
- County line



DATE: October 2015
DRAWN BY: D. Reeder

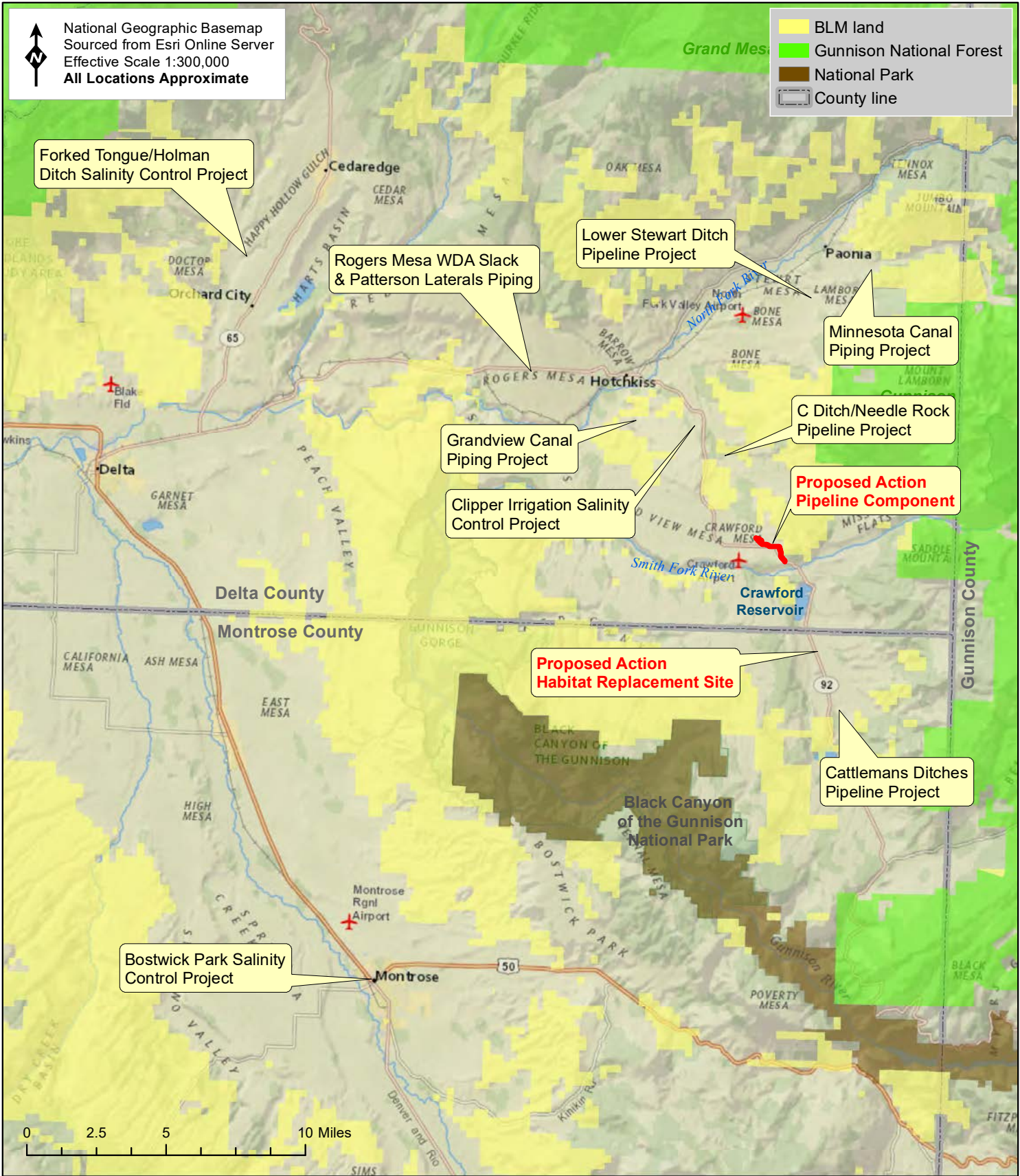


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Paonia, Colorado 81428
(970) 527-8445
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REGIONAL & LOCAL LOCATOR MAPS

**ZANNI LATERAL PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
Delta & Montrose Counties, Colorado**

**FIGURE
1**



National Geographic Basemap
 Sourced from Esri Online Server
 Effective Scale 1:300,000
 All Locations Approximate

- BLM land
- Gunnison National Forest
- National Park
- County line

Forked Tongue/Holman Ditch Salinity Control Project

Rogers Mesa WDA Slack & Patterson Laterals Piping

Lower Stewart Ditch Pipeline Project

Minnesota Canal Piping Project

C Ditch/Needle Rock Pipeline Project

Grandview Canal Piping Project

Clipper Irrigation Salinity Control Project

Proposed Action Pipeline Component

Proposed Action Habitat Replacement Site

Cattlemans Ditches Pipeline Project

Bostwick Park Salinity Control Project

0 2.5 5 10 Miles

DATE: October 2015
 DRAWN BY: D. Reeder

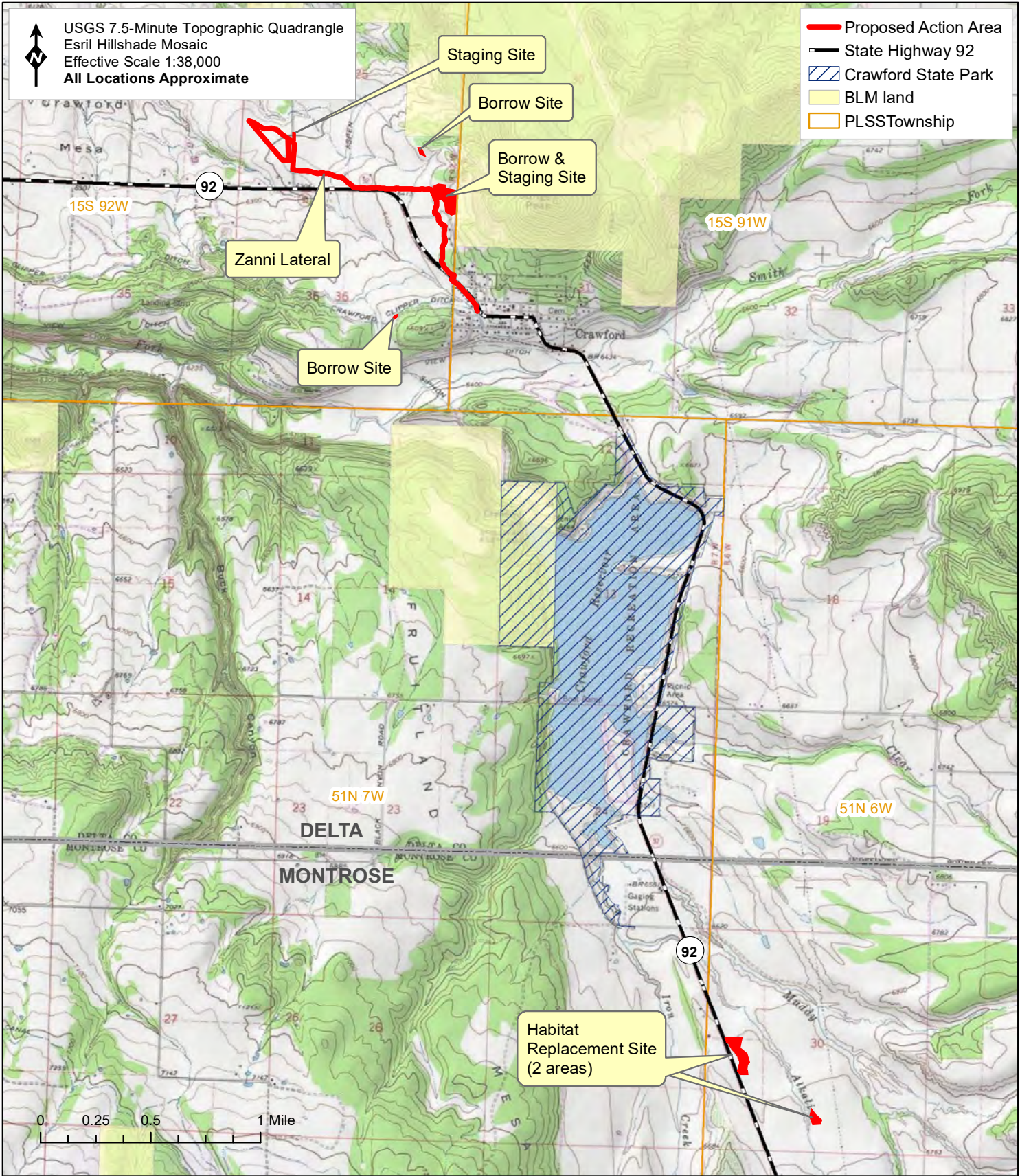


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RELATIONSHIP TO OTHER SALINITY CONTROL PROJECTS

ZANNI LATERAL PIPELINE PROJECT ENVIRONMENTAL ASSESSMENT
 Delta & Montrose Counties, Colorado

FIGURE 2



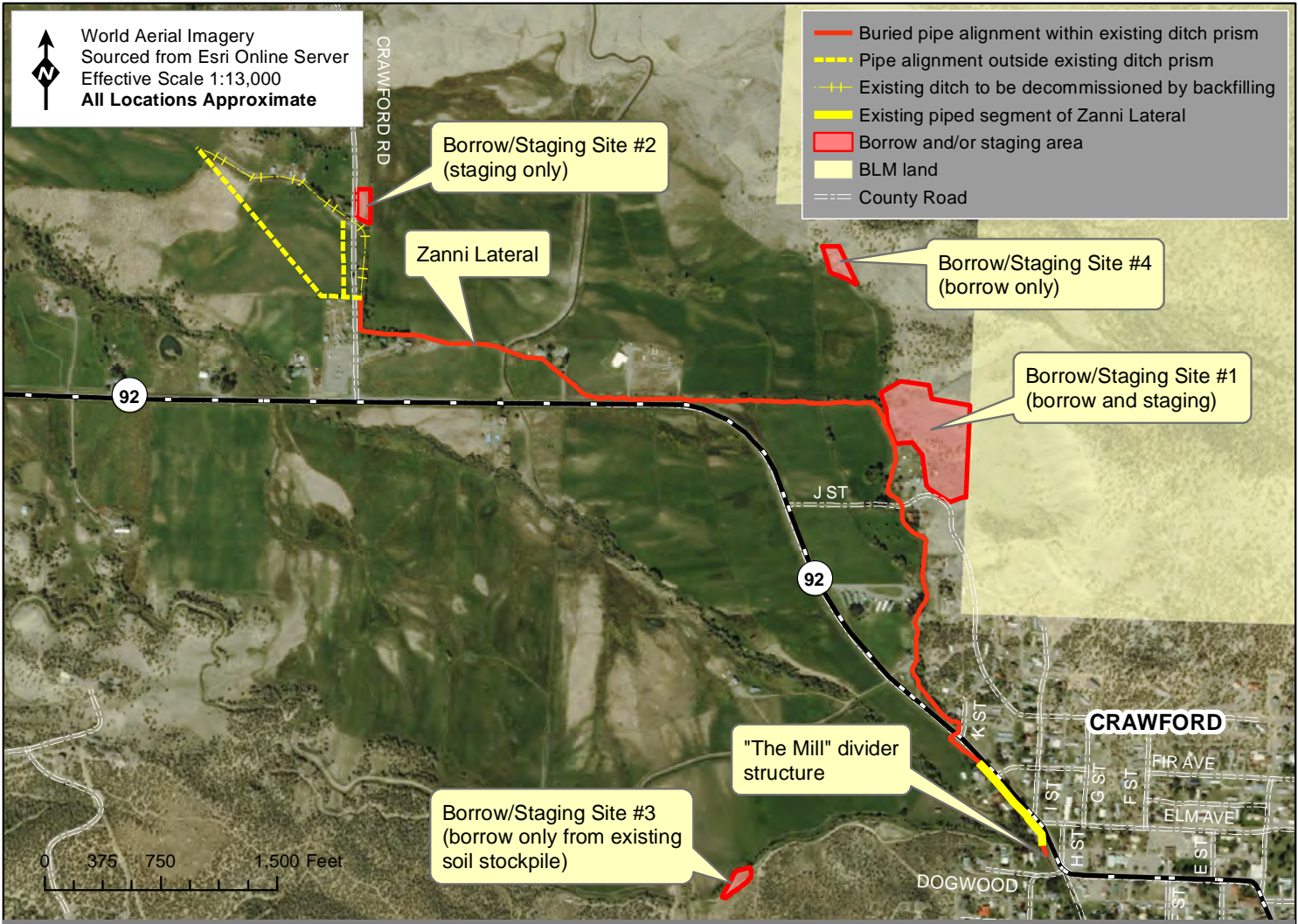
DATE: October 2015
 DRAWN BY: D. Reeder

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**TOPOGRAPHIC MAP WITH
 LAND STATUS & PROJECT AREAS**

**ZANNI LATERAL PIPELINE PROJECT
 ENVIRONMENTAL ASSESSMENT
 Delta & Montrose Counties, Colorado**

**FIGURE
 3**



<p>DATE: October 2015</p> <p>DRAWN BY: D. Reeder</p>	 <p>RARE EARTH SCIENCE</p> <p>PO Box 1245 Paonia, Colorado 81428 (970) 527-8445 www.rareearthscience.com</p>	<p>AERIAL OVERVIEW OF PROPOSED ACTION AREA</p> <p>ZANNI LATERAL PIPELINE PROJECT ENVIRONMENTAL ASSESSMENT Delta & Montrose Counties, Colorado</p>	<p>FIGURE 4</p>
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**STORMWATER FLOWPATH
AFFECTED LOCATION A**

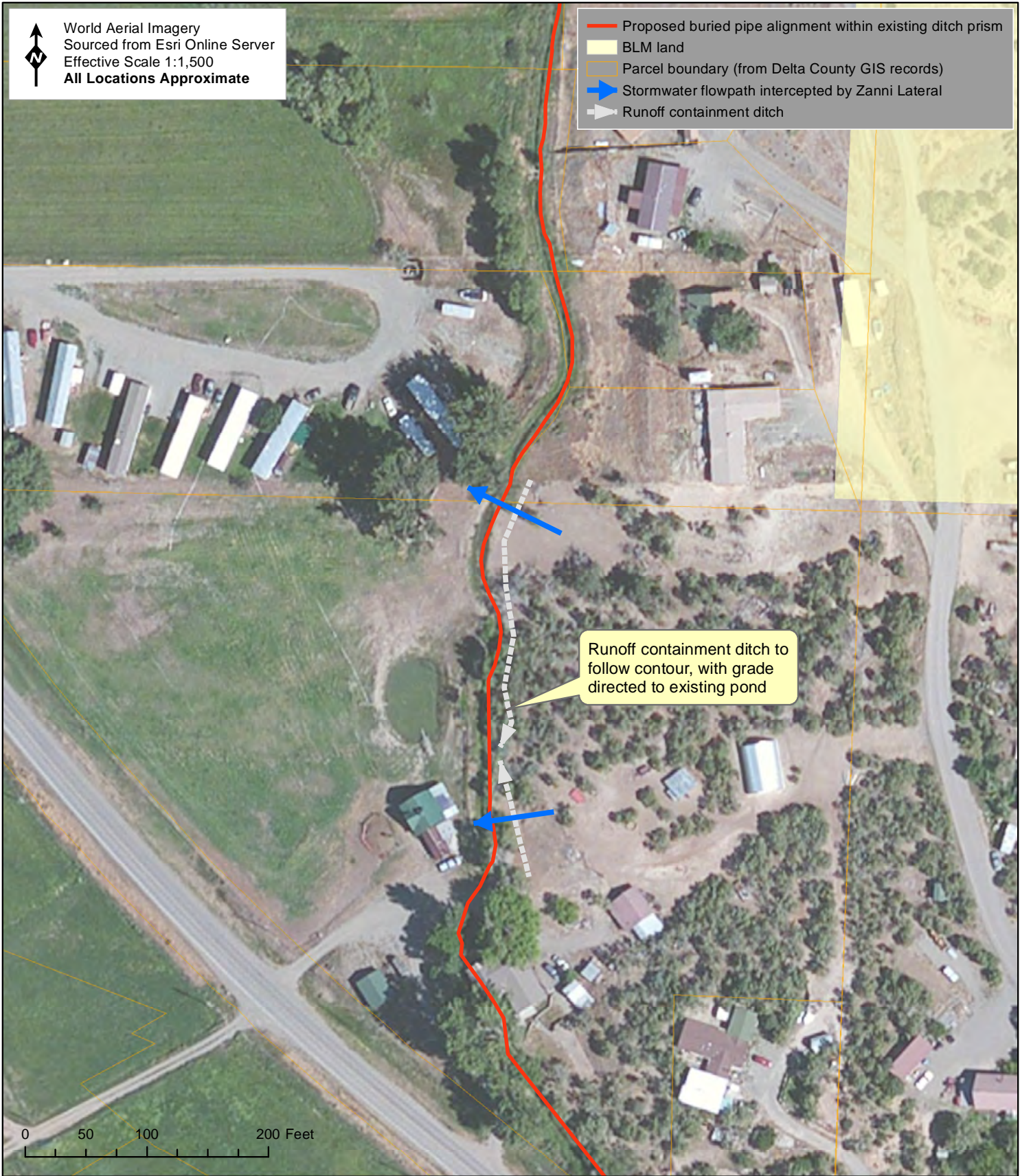
**ZANNI LATERAL PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
Delta & Montrose Counties, Colorado**

**FIGURE
4a**



World Aerial Imagery
 Sourced from Esri Online Server
 Effective Scale 1:1,500
 All Locations Approximate

-  Proposed buried pipe alignment within existing ditch prism
-  BLM land
-  Parcel boundary (from Delta County GIS records)
-  Stormwater flowpath intercepted by Zanni Lateral
-  Runoff containment ditch



0 50 100 200 Feet

DATE: February 2016
 DRAWN BY: D. Reeder



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**STORMWATER FLOWPATH
 AFFECTED LOCATION B**

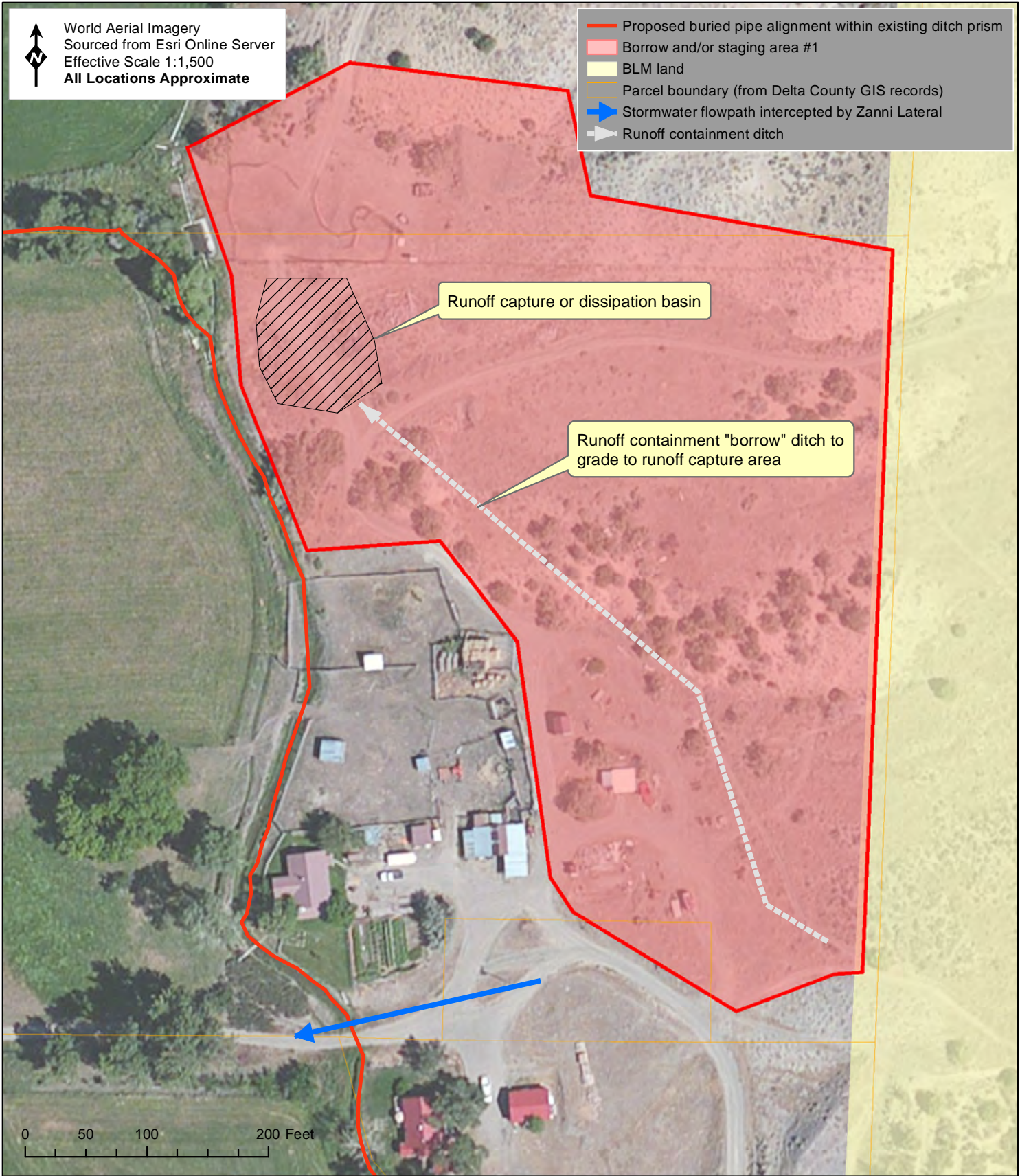
**ZANNI LATERAL PIPELINE PROJECT
 ENVIRONMENTAL ASSESSMENT
 Delta & Montrose Counties, Colorado**

**FIGURE
 4b**



World Aerial Imagery
 Sourced from Esri Online Server
 Effective Scale 1:1,500
 All Locations Approximate

- Proposed buried pipe alignment within existing ditch prism
- Borrow and/or staging area #1
- BLM land
- Parcel boundary (from Delta County GIS records)
- Stormwater flowpath intercepted by Zanni Lateral
- Runoff containment ditch



DATE: February 2016
 DRAWN BY: D. Reeder



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

**STORMWATER FLOWPATH
 AFFECTED LOCATION C**

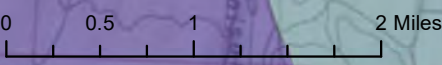
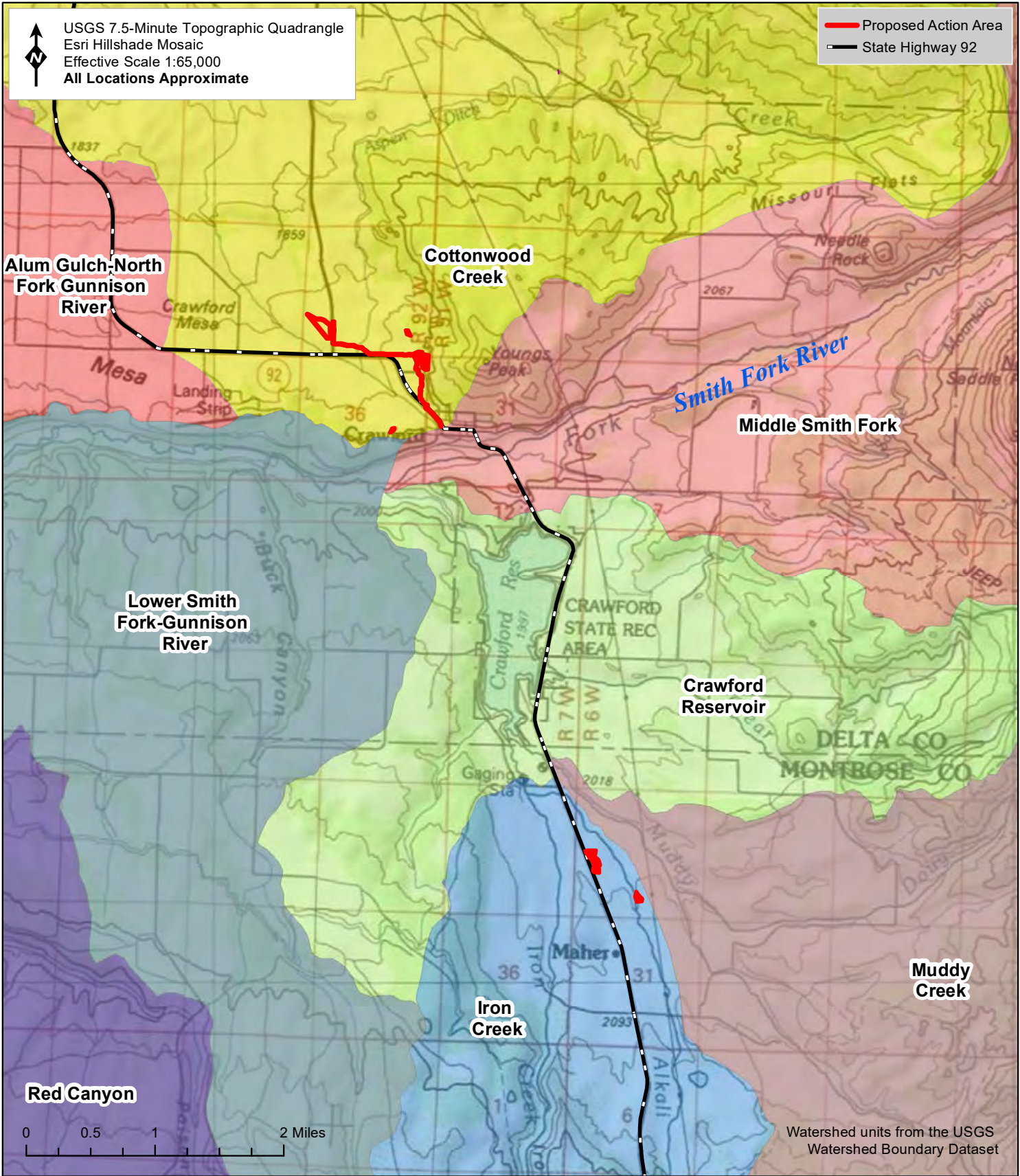
**ZANNI LATERAL PIPELINE PROJECT
 ENVIRONMENTAL ASSESSMENT
 Delta & Montrose Counties, Colorado**

**FIGURE
 4c**



USGS 7.5-Minute Topographic Quadrangle
 Esri Hillshade Mosaic
 Effective Scale 1:65,000
 All Locations Approximate

 Proposed Action Area
 State Highway 92



Watershed units from the USGS
 Watershed Boundary Dataset

DATE: October 2015
 DRAWN BY: D. Reeder

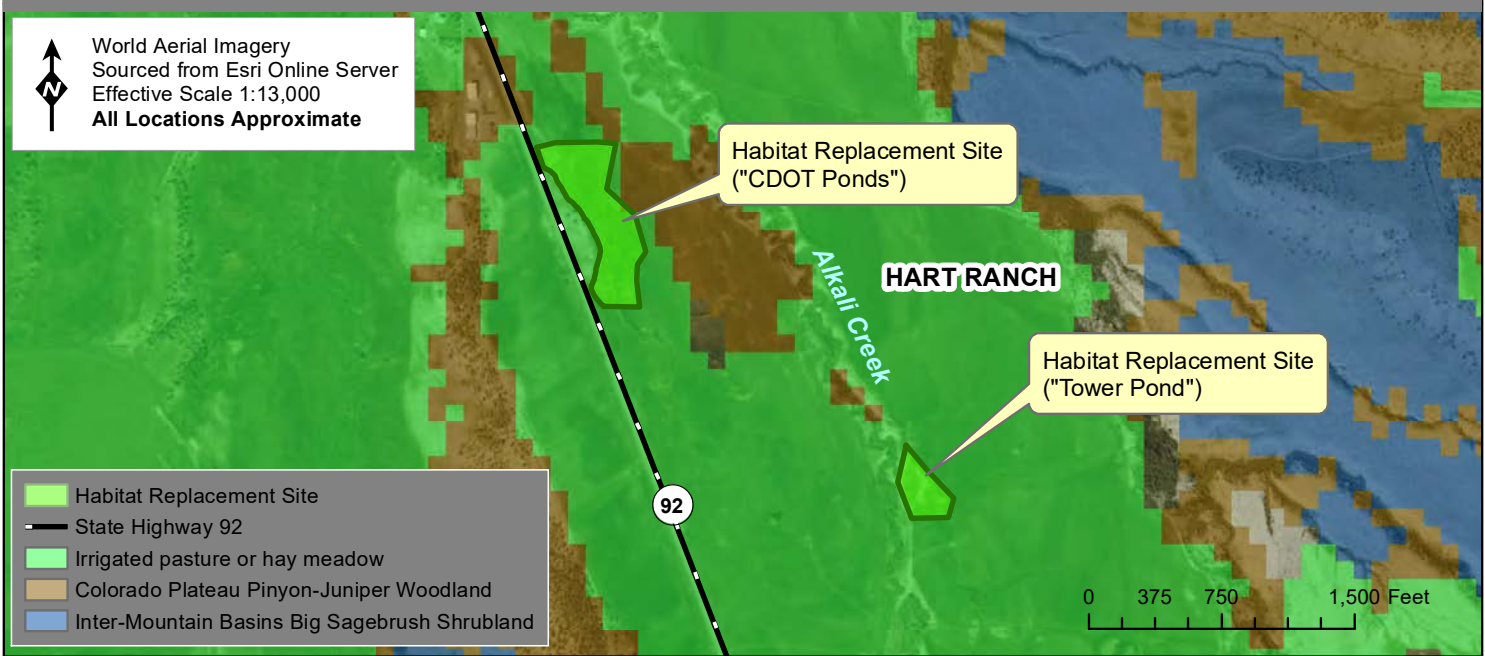
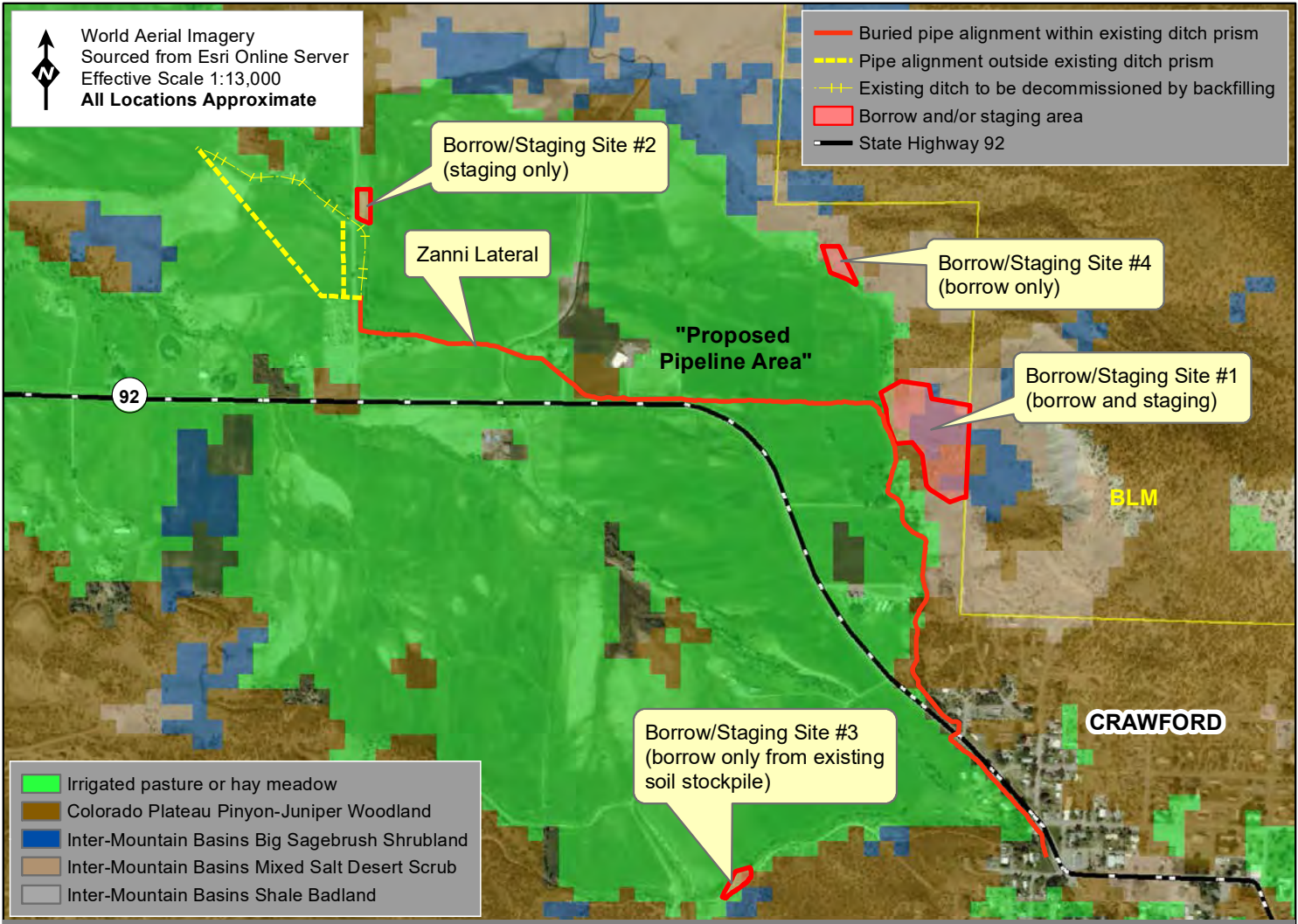


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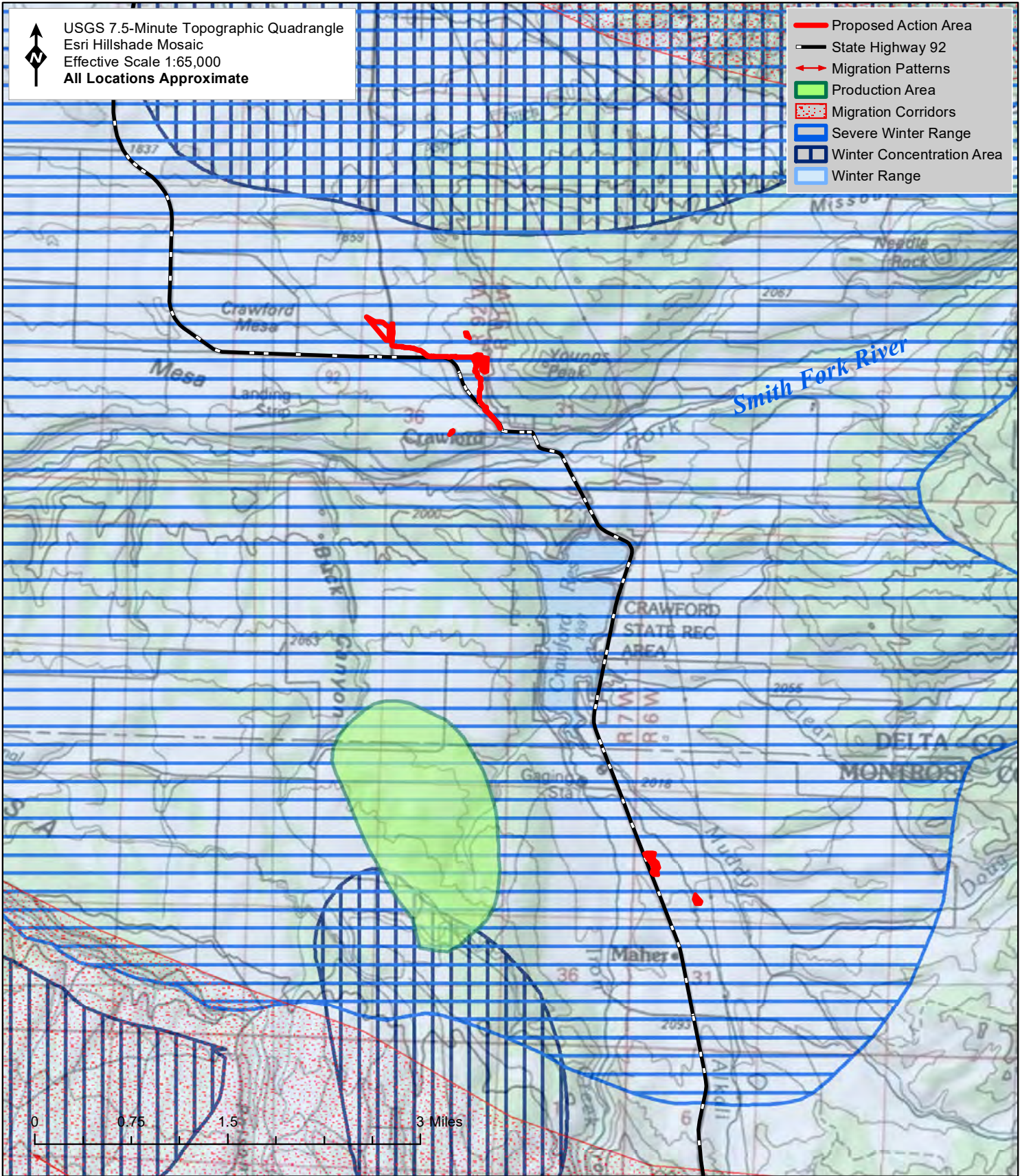
**HYDROLOGIC UNIT MAP
 OF THE PROJECT VICINITY**

ZANNI LATERAL PIPELINE PROJECT
 ENVIRONMENTAL ASSESSMENT
 Delta & Montrose Counties, Colorado

**FIGURE
 5**



<p>DATE: October 2015</p> <p>DRAWN BY: D. Reeder</p>	 <p>RARE EARTH SCIENCE</p> <p>PO Box 1245 Paonia, Colorado 81428 (970) 527-8445 www.rareearthscience.com</p>	<p align="center">LANDCOVER TYPES IN THE PROPOSED ACTION AREA</p> <p align="center">ZANNI LATERAL PIPELINE PROJECT ENVIRONMENTAL ASSESSMENT Delta & Montrose Counties, Colorado</p>	<p align="center">FIGURE 6</p>
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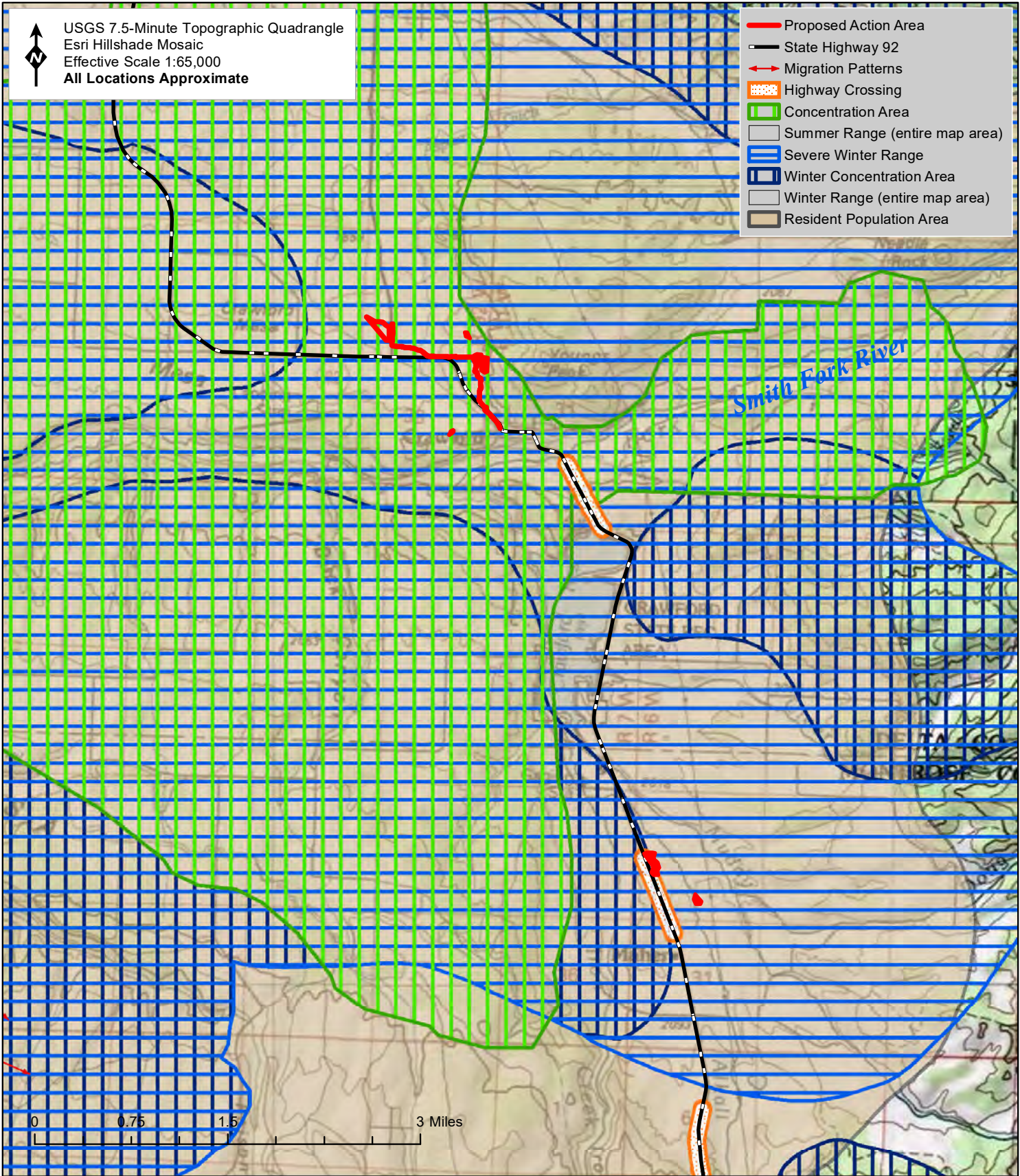


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ELK RANGE
ZANNI LATERAL PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
 Delta & Montrose Counties, Colorado

FIGURE
7



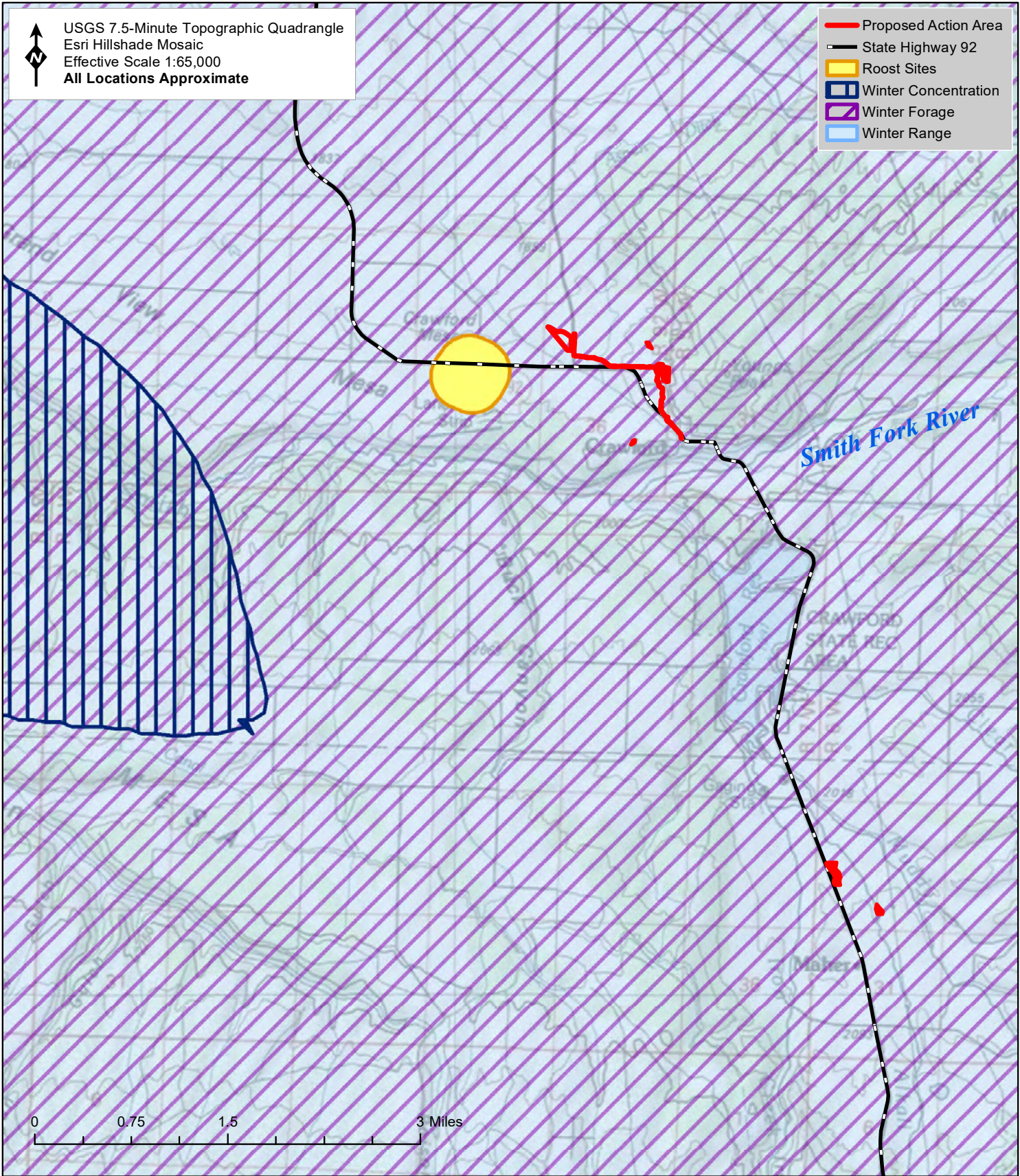
DATE: October 2015
 DRAWN BY: D. Reeder

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MULE DEER RANGE

**ZANNI LATERAL PIPELINE PROJECT
 ENVIRONMENTAL ASSESSMENT
 Delta & Montrose Counties, Colorado**

**FIGURE
 8**

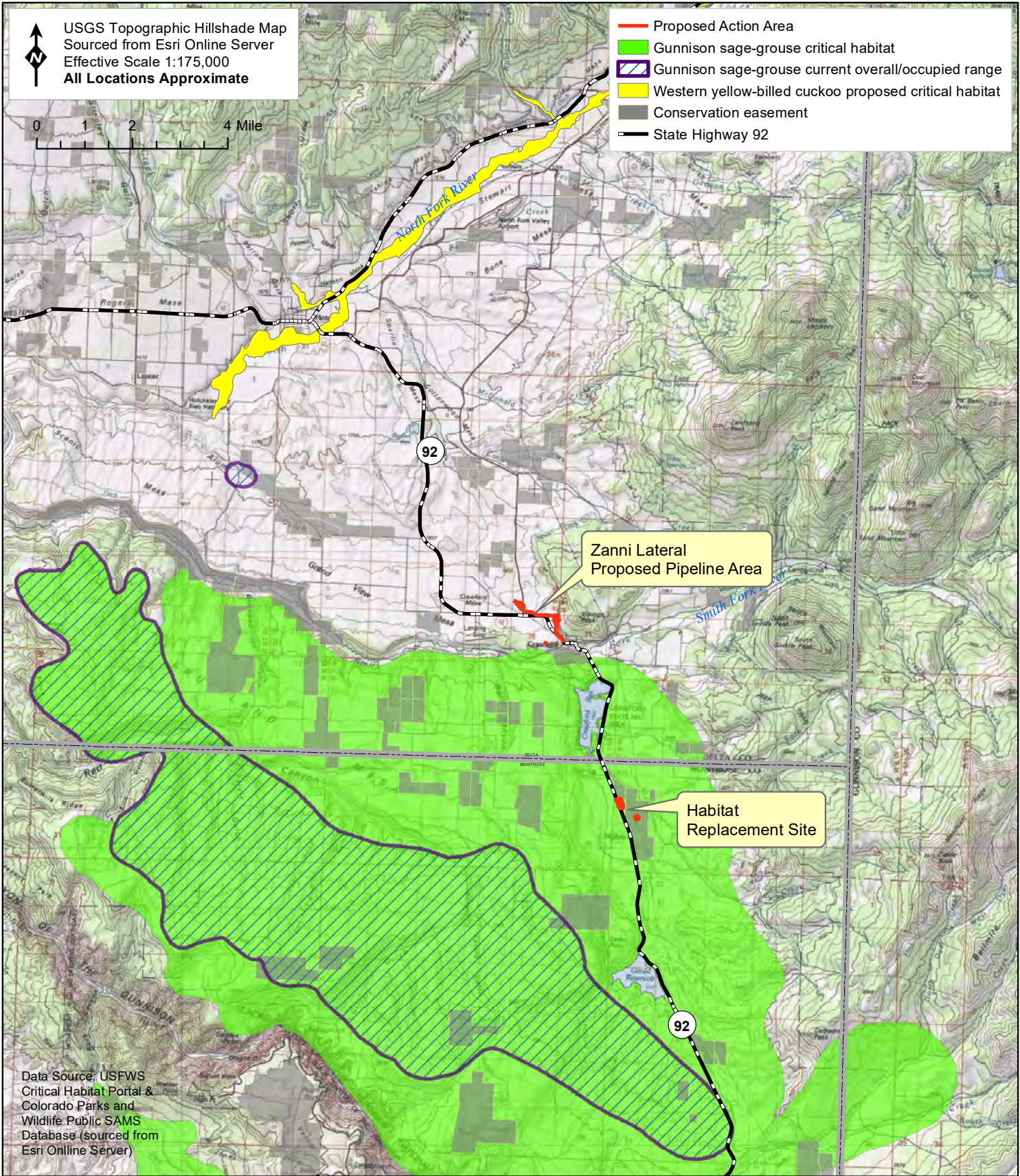


DATE: October 2015
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BALD EAGLE RANGE
 ZANNI LATERAL PIPELINE PROJECT
 ENVIRONMENTAL ASSESSMENT
 Delta & Montrose Counties, Colorado

FIGURE
9



DATE: October 2015
 DRAWN BY: D. Reeder

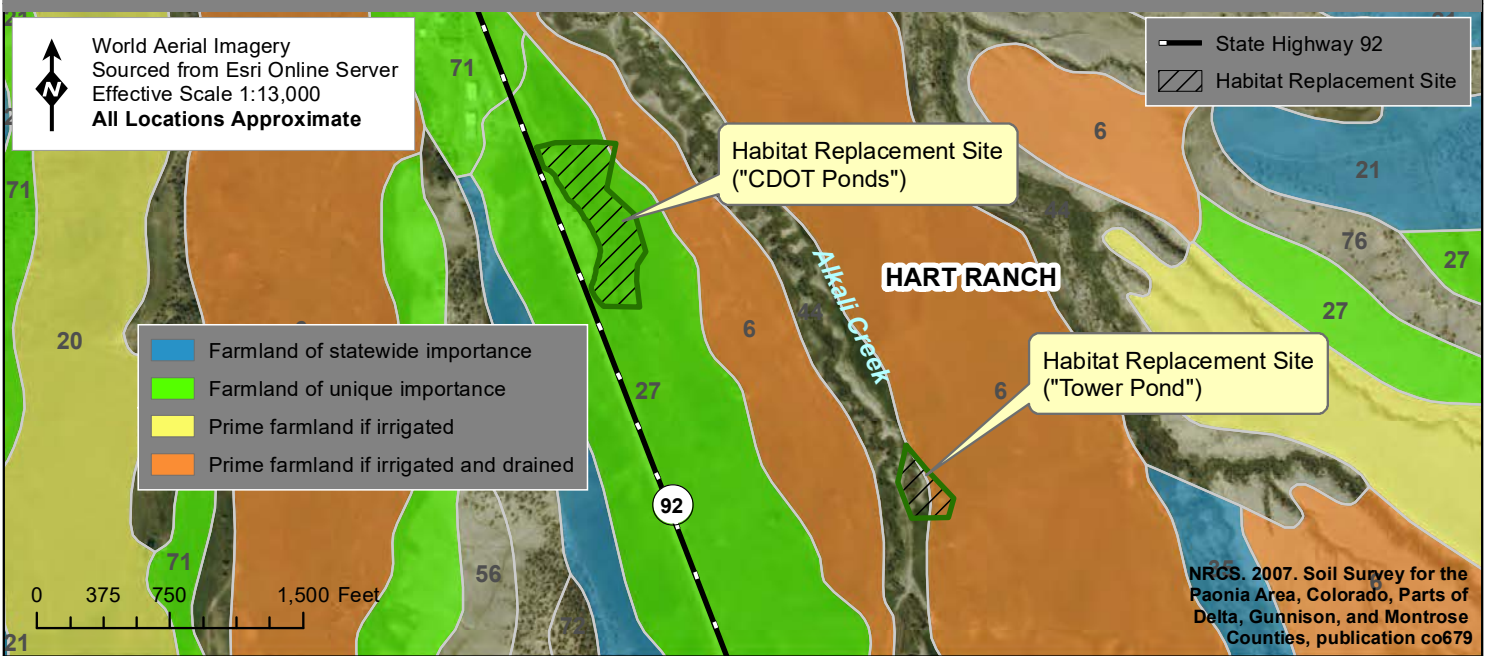
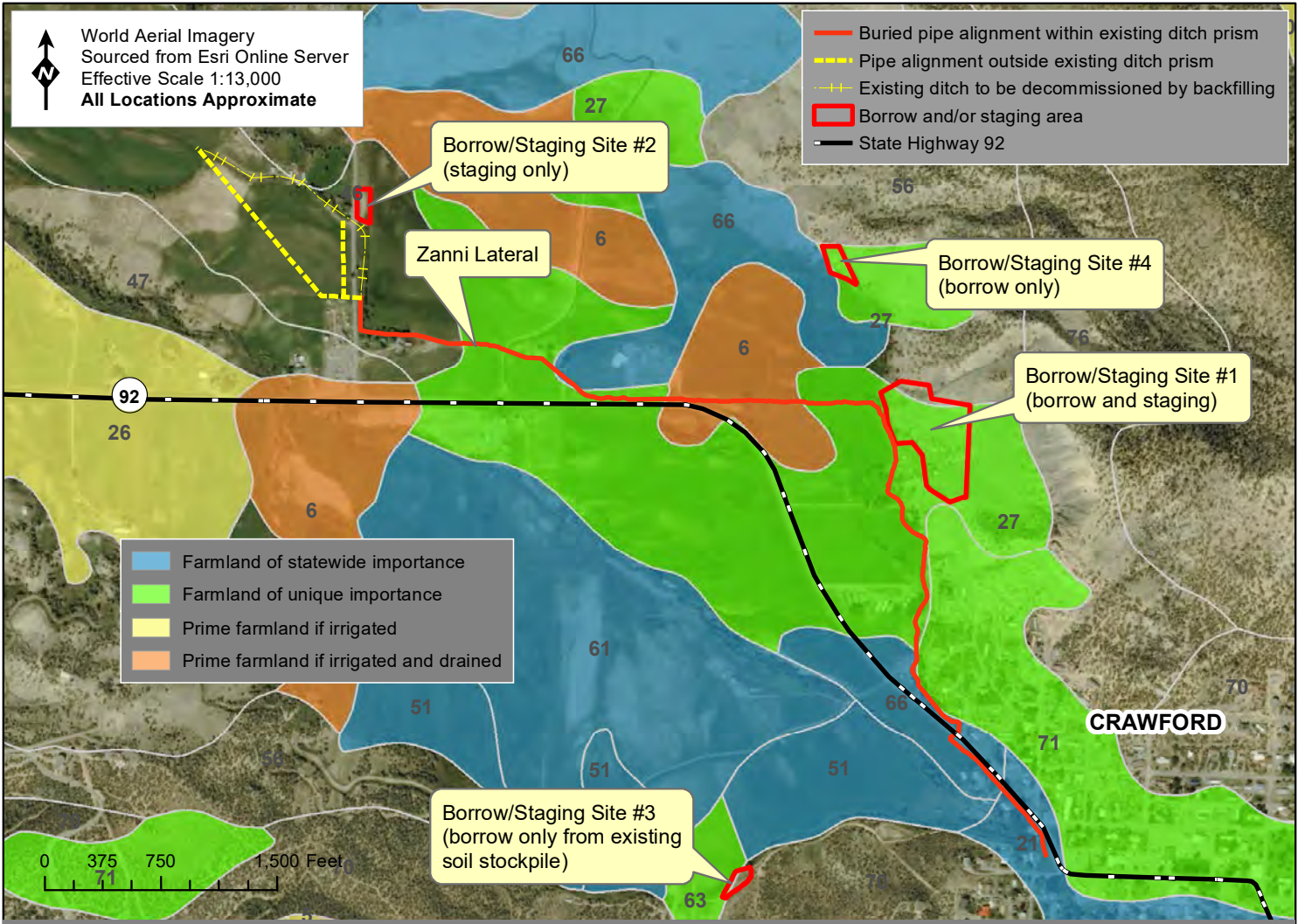


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CRITICAL HABITAT IN THE PROPOSED ACTION VICINITY

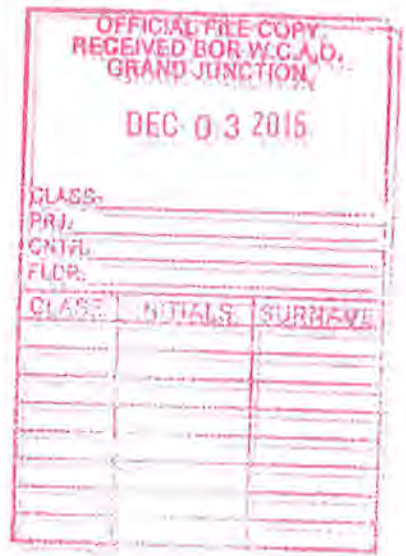
ZANNI LATERAL PIPELINE PROJECT ENVIRONMENTAL ASSESSMENT
 Delta & Montrose Counties, Colorado

FIGURE 10



ATTACHMENT A

Comment Letters Received on the DRAFT EA



December 3, 2015
646 Highway 92
Crawford, Colorado, 81415

Ed Warner, Area Manager
Bureau of Reclamation

Mr. Warner:

This letter is in response for comments re: the Zanni Lateral of the Clipper Ditch Company Pipeline Project. Approximately 500 feet of my property adjacent to Highway 92 is to be incorporated in this project. I also have two deeded shares of irrigation water on the Zanni.

Approximately 10 years ago, Clipper Ditch piped in 200 feet of open ditch along this easement for leakage issues. Since then, what had previously been historic drainage for Fir Ave. directly across from our house and Colorado Highway 92, has caused significant flood damage to our property and threatened and our home.

I've read the Environmental Assessment for the Zanni Project and find it woefully fails to address the potential flooding and damage to private property as a result of piping in the Zanni. Nor, does it offer an alternative.

We have approximately 30 feet of open ditch directly in front of our house left with another 200 feet open parallel to Highway 92. We are very concerned that if the 30 feet of open ditch in front of our house is piped in we will have no protection whatsoever from flood waters that cascade down Fir Ave. and off CO Highway 92.

To date we have spent over \$3000. in an effort to divert this water down our driveway away from our house with at best 50% positive results. We ask that a more in-depth EA be conducted into the flooding damage that will occur when the Zanni Lateral is piped in front of our house before construction begins on our property..

Also, could you please respond to the following questions:

- 1) What is the construction schedule for this project?
- 2) When will the plans be ready?
- 3) Who will be the contractor?
- 4) Does BoR have an established engineering and design standards that will apply to the project, and where can I get a copy?
- 5) What's the contemplated maximum extent of construction activity in my front yard?
- 6) Why does the EA indicate that the current Clipper Ditch 11 foot easement be increased to 20 to 30 feet to install 18 inch piping?
- 7) What equipment is anticipated for installation of the pipeline, particularly on my property?

P/

- 8) What remediation will occur regarding my ornamental landscaping that will be incorporated in this project if the easement is increased to 20-30 feet?
- 9) Please provide me with any contracts between BoR and Clipper Ditch Co. that describe the project or pertain to its financing and construction.
- 10) Will Clipper Ditch Co. incur debt as a result of the project, or is it fully financed by BoR or other state or Federal agencies?
- 11) Who else can I contact for construction details and project information?

We appreciate this opportunity to express our concerns re: this project and your response to our questions. We would be glad to speak with you or any of your staff re: this matter.

We can be contacted at the above address, by phone @ 970-399-7190, or e-mail carlprn@aol.com.

Sincerely,



Carl and Cheryl Page

OFFICIAL FILE COPY
RECEIVED BOR W.C.A.D
GRAND JUNCTION

DEC 11 2015

CLASS _____
PRJ. _____
CNTR. _____
FLDR. _____

CLASS	INITIALS	SIGNATURE
12/15/15	JW	Ward Newhater
12/14/15	EW	Wenke Warner

December 9, 2015
626 Highway 92
Crawford, Colorado 81415

Ed Warner, Bureau of Reclamation

Mr: Warner;

This is in response to your request for comments on the upcoming Zanni Lateral Project in Crawford, Colorado. I am a property and business owner at the above address. The Zanni Lateral is currently piped in on my property.

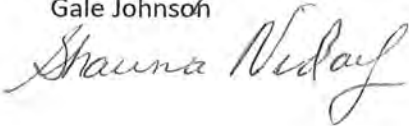
I live less than 100 yards down from where the current ditch remains open and serves as drainage for the flood waters that cascade down "I" Street and Colorado Highway 92. I am concerned that if this portion of the Zanni is piped in my property will suffer even more flood damage than I already experience.

Also, I contest that Clipper Ditch Company be given a 20 to 30 foot easement on my property.

Sincerely,



Gale Johnson



OFFICIAL FILE COPY
RECEIVED BOR W.C.A.O.
GRAND JUNCTION

DEC 31 2015

CLASS _____

PRJ. _____

CNTR. _____

FLDR. _____

CLASS	INITIALS	SURNAME

December 10, 2015
622 Highway 92
Crawford, CO, 81415

Ed Warner, Bureau of Reclamation

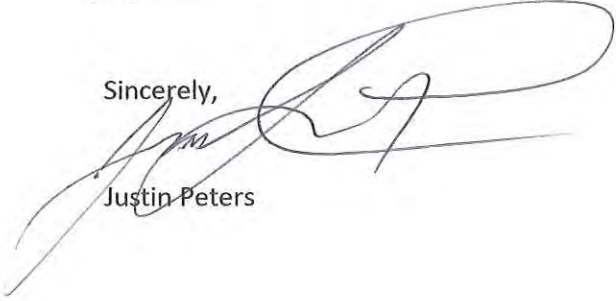
Mr. Warner:

I live on property that will be affected by the Zanni Lateral Project funded by the Bureau of Reclamation. Over the years I have experienced multiple flooding issues from waters that run off and over CO Highway 92 and "I" Street.

Approximately 100 feet of the Zanni on my property was piped in years ago leaving us no protection from flood water. I fear that if the upper end of the Zanni is piped in my property will have even more flooding problems and damage.

Also, I protest that Clipper Ditch Company be given a 20 to 30 easement on my property.

Sincerely,


Justin Peters

OFFICIAL FILE COPY
RECEIVED BOR W.C.A.O.
GRAND JUNCTION

DEC 2 1, 2015

CLASS _____
PRJ. _____
CNTR. _____
FLDR. _____

CLASS	INITIALS	SURNAME

Town of Crawford
P.O. Box 56 • Crawford, CO 81415 • (970) 921-4725

To: United States Department of the Interior Bureau of Reclamation
Western Colorado Area Office
455 West Gunnison Ave, Suite 221
Grand Junction, CO 81501

Regarding: Draft Environmental Assessment, Zanni Lateral of the Crawford Clipper Ditch Pipeline Project, Delta County, Colorado

Dear Bureau of Reclamation:

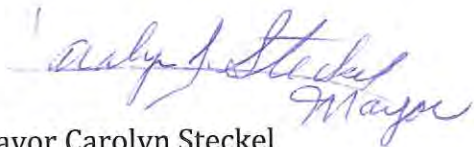
The Town of Crawford is writing this letter in response to the draft Environmental Assessment for the Zanni Lateral of the Crawford Clipper Ditch Pipeline Project, Delta County, Colorado.

After reviewing the Environmental Assessment for this project the Town of Crawford would like to submit the following comments/questions:

- A.) The Town of Crawford is requesting a flood impact statement in regards to this project; previous piping upstream of this project has left runoff water nowhere to go but through properties that before had the ditch as a buffer.
- B.) The Town of Crawford would also like to point out that there was little to no mention of flood/runoff impacts associated with this project.
- C.) Lastly, the Town of Crawford would like it to be known that if future piping of the Clipper Ditch occurs, serious consideration should be made to established drainages that terminate at the Clipper Ditch that runs through town.

The Town of Crawford thanks you for your consideration of this matter. As a small municipality we feel that any impact to residential properties, even if only one or two homes, warrants support of Crawford's Government.

Sincerely,



Carolyn Steckel
Mayor

Mayor Carolyn Steckel
And The Crawford Board of Trustees

Town of Crawford

P.O. Box 56 • Crawford, CO 81415 • (970) 921-4725

2016 JAN 25 AM 11:3

To: United States Department of the Interior Bureau of Reclamation
Western Colorado Area Office
455 West Gunnison Ave, Suite 221
Grand Junction, CO 81501

Regarding: Draft Environmental Assessment, Zanni Lateral of the Crawford Clipper Ditch
Pipeline Project, Delta County, Colorado

Dear Bureau of Reclamation:

The Town of Crawford is writing this letter to inform you that we believe all questions we had regarding the lining of the Zanni Lateral portion of the Crawford Clipper Ditch have been answered. At this point we feel we can go forward with this project.

Thank you for your time.

Sincerely,



Mayor Carolyn Steckel
And The Crawford Board of Trustees

ATTACHMENT B

Distribution List

All shareholders of Zanni Lateral of the Crawford Clipper Ditch
All landowners within adjacent to the Proposed Action Area
Citizens for a Healthy Community
Colorado Department of Transportation
Colorado Historical Society
Colorado Parks and Wildlife
Colorado Parks and Wildlife - Crawford Reservoir
Colorado River Water Conservation District
Colorado Water Conservation Board
Crawford Area Chamber of Commerce
Crawford Clipper Ditch Company
Delta Conservation District
Delta County Independent
Delta County Planning & Development
Delta County Road & Bridge Administration
Delta Montrose Electric Association
Hart Ranch (Don & Jane Hart)
The North Fork Merchant Herald
Town of Crawford
U.S. Army Corps of Engineers
U.S. Bureau of Land Management
U.S. Department of Agriculture Natural Resources Conservation Service
U.S. Fish and Wildlife Service
Western Slope Conservation Center

ATTACHMENT C

Section 404 Clean Water Act Exemptions Documentation



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

November 5, 2015

Regulatory Division SPK-2015-00970

Ms. Patrice Alonzo & Mr. Gary Kraai
Crawford Clipper Ditch Company
445 West Gunnison Avenue, Suite 221
Grand Junction, CO 81501

Dear Ms. Alonzo & Mr. Kraai:

We are writing in regards to your proposed Zanni Lateral Piping project which would convert approximately 1.7 miles of open irrigation ditch to buried irrigation pipe to help reduce salinity. The project site is located northwest of the Town of Crawford, within Sections 25 and 36 of Township 15 South, Range 92 West, Sixth Principal Meridian, centered near Latitude 38.712°, Longitude -107.619°, Delta County, Colorado.

Based on the information provided by Rare Earth Science, LLC and the Bureau of Reclamation, we have demined that the proposed work is exempt from Section 404 of the Clean Water Act. Therefore, a Department of the Army Permit is not required for this work. A Department of Army Permit is required to place fill or dredged material in waters of the United States, including wetlands. If the proposed work at the associated habitat restoration site does not involve placing fill or dredged material into waters of the United States, then no permit would be required. Measures should be taken to prevent construction materials and/or activities from entering any waters of the United States. Appropriate soil erosion and sediment controls should be implemented onsite to achieve this end.

Our disclaimer of jurisdiction is only for this activity as it pertains to Section 404 of the Federal Clean Water Act and does not refer to, nor affect jurisdiction over any waters present on site. Other Federal, State, and local laws may apply to your activities. Therefore, in addition to contacting other Federal and local agencies, you should also contact state regulatory authorities to determine whether your activities may require other authorizations or permits.

Please refer to identification number SPK-2015-00970 in any correspondence concerning this project. If you have any questions, please contact Ben Wilson at the Colorado West Regulatory Branch, 400 Rood Avenue, Room 224, Grand Junction, Colorado 81501, by email at Benjamin.R.Wilson@usace.army.mil, or telephone at 970- 243-1199 #12. We would appreciate your feedback. At your earliest convenience, please tell us how we are doing by completing the customer



survey from the link on our website, listed above. For more information regarding our program, please visit our website at www.spk.usace.army.mil/Missions/Regulatory.aspx.

Sincerely,

Original Signed

Susan Bachini Nall
Chief, Colorado West
Branch Regulatory Division

Cc:

Ms. Dawn Reeder, Rare Earth Science, LLC, Post Office Box 1245, Paonia, Colorado 81428

Ms. Lesley McWhirter, Environmental and Planning Group Chief, Bureau of Reclamation, 445 West Gunnison Avenue, Suite 221, Grand Junction, Colorado 81501

Ms. Janie McCulloch, Delta County Planning and Community Development, 501 Palmer Street, Suite 105, Delta, Colorado 81416



US Army Corps of Engineers

Sacramento District
1325 J Street
Sacramento, CA 95814-2922

Irrigation Exemption Summary

FARM OR STOCK POND OR IRRIGATION DITCH CONSTRUCTION OR MAINTENANCE

Pursuant to Section 404 of the Clean Water Act (33 USC 1344) and Federal Regulations (33 CFR 323.4(a)(3)), certain discharges for the construction or maintenance of farm or stock ponds or irrigation ditches have been exempted from requiring a Section 404 permit. Included in the exemption are the construction or maintenance of farm or stock ponds or irrigation ditches, or the maintenance (but not the construction) of drainage ditches. Discharges associated with siphons, pumps, headgates, wingwalls, weirs, diversion structures, and such other facilities as are appurtenant and functionally related to irrigation ditches are included in this exemption.

A Section 404 permit is required if either of the following occurs:

- (1) Any discharge of dredged or fill material resulting from the above activities which contains any toxic pollutant listed under Section 307 of the Clean Water Act shall be subject to any applicable toxic effluent standard or prohibition, and shall require a permit.
- (2) Any discharge of dredged or fill material into waters of the United States incidental to the above activities must have a permit if it is part of an activity whose purpose is to convert an area of the waters of the United States into a use to which it was not previously subject, where the flow or circulation of waters of the United States may be impaired or the reach of such waters reduced. Where the proposed discharge will result in significant discernible alterations to flow or circulation, the presumption is that flow or circulation may be impaired by such alteration. For example, a permit will be required for the conversion of a wetland from silvicultural to agricultural use when there is a discharge of dredged or fill material into waters of the United States in conjunction with construction of dikes, drainage ditches, or other works or structures used to effect such conversion. A discharge which elevates the bottom of waters of the United States without converting it to dry land does not thereby reduce the reach of, but may alter the flow or circulation of, waters of the United States.

If the proposed discharge satisfies all of the above restrictions, it is automatically exempted and no further permit action from the Corps of Engineers is required. If any of the restrictions of this exemption will not be complied with, a permit is required and should be requested using ENG Form 4345 (Application for a Department of the Army permit). A nationwide permit authorized by the Clean Water Act may be available for the proposed work. State or local approval of the work may also be required.

For general information on the Corps' Regulatory Program please check our web site at www.spk.army.mil/regulatory. For additional information or for a written determination regarding a specific project, please contact the Corps at the following addresses:

Sacramento Main Office-1325 J Street, Room 1480, Sacramento, CA 95814	(916) 557-5250
Redding Field Office-152 Hartnell, Redding, CA 96002	(530) 223-9534
Reno Office-300 Booth Street, Room 2103, Reno, NV 89509	(775) 784-5304
Intermountain Region Main Office-533 West 2600 South, Suite 150, Bountiful, UT 84010	(801) 295-8380
Colorado West Regulatory Branch-400 Rood Ave., Room 224, Grand Junction, CO 81501	(970) 243-1199
Durango Office-1970 E 3rd Ave, #109, Durango, CO 81301	(970) 259-1604
St. George Office-198 E Tabernacle Street Room 30, St. George, UT 84770	(435) 986-3979

ATTACHMENT D
Habitat Impact Evaluation

Habitat Impact Evaluation
Crawford Clipper Ditch Company - Zanni Lateral Piping Project
By Michael Zeman
Wildlife and Natural Resource Concepts & Solutions, LLC
Revised February 21, 2016

The Crawford Clipper Ditch Company is piping two segments of the Crawford Clipper Ditch. The Crawford Clipper Ditch 4 project has been completed already and it included piping approximately 4 miles of the lower portion of the ditch. This project is located about 2.5 miles southeast of Hotchkiss and crosses irrigated farmland and arid, adobe lands. The second project will be piping the Zanni Lateral of the Crawford Clipper Ditch (See Attachment A). This project starts in the town of Crawford and extends 1.6 miles to the northwest. The project will parallel Highway 92 on the west side of the road for a short distance, cross underneath it, and will continue on the other side through the backyards of some houses and irrigated farmland. Habitat has been and will be lost during the piping of these ditch segments, and the Salinity Control Act requires that the habitat is replaced. It was estimated that 9.99 habitat units* were lost in the piping of the Crawford Clipper Ditch 4 Piping Project. The Zanni Lateral piping project will result in the loss of an additional 6.39 habitat units (See Attachment B). This includes four Borrow/Staging areas and two additional segments of piping outside the current ditch. Total expected habitat loss for both habitat projects is 16.38 habitat units. Proposed borrow sites and staging areas totaling approximately 7.6 acres are located on private lands near the proposed pipeline alignment. Borrow/Staging Site #1 is approximately 6.2 acres in both previously disturbed (currently farm equipment storage) and naturally vegetated badlands. Both staging of materials and equipment and material borrow would occur at Site #1. The material would be borrowed from an existing upland drainage ditch and an area north of the ditch. The borrow activity would serve to improve the functionality of the drainage ditch, which captures runoff and directs it away from the property owner's residential area. Another borrow area within Site #1 would create a runoff capture/dissipation basin to accept incidental flow from the upland drainage ditch. Borrow/Staging Site #2 is approximately 0.41-acre previously disturbed area adjacent to Crawford Road, and would be used for staging only. Borrow/Staging Site #3 is approximately 0.36-acre previously disturbed area with a soil stockpile that would be used for borrow material only. Borrow/Staging Site #4 is a small runoff capture basin that would be deepened or enlarged for borrow material only. The need for Borrow/Staging Site #4 to complete the Project is undetermined at this time, but the site is included in this EA so that it can be available during Project construction if needed. The two additional piping segments are located on the lower portion of the Zanni Lateral and will cross an irrigated field.

Habitat loss calculations were based on several assumptions. Areas disturbed by the piping of the ditch would be reseeded with native vegetation and that invasive weed species in the piping corridor would be treated with herbicide. All Borrow/Staging areas would be disturbed minimally and restored to their pre-pipe condition or as specified in the engineering design plans. Borrow/Staging areas will be reseeded as necessary to minimize habitat loss and those areas will be reseeded with the same seed mixture that is used to reclaim the soils placed over the buried pipe.

Most of the ditch is bordered by drier upland vegetation which includes: pinion (*Pinus edulis*), juniper (*Juniperus scopulorum*), sagebrush (*Artemisia*), rabbitbrush (*Ericameria nauseosa*), four-winged saltbush (*Atriplex canescens*), and yellow clover (*Melilotus officinalis*). Plant species found directly along the ditch include narrow-leaf cottonwoods (*Populus angustifolia*), sumac (*Rhus trilobata*), wild rose (*Rosa spp.*), sweet pea (*Lathyrus odoratus*), alfalfa (*Medicago sativa*), isolated pockets of sedges & cattails, and a few forbs and grasses. A small number of invasive weed species were observed along the ditch during the habitat inspection. The prominent species found included: Russian-olive (*Acroptilon*

repens); Canada thistle (*Cirsium arvense*); cheatgrass (*Bromus tectorum*); milkweed (*Asclepias speciosa*); chicory (*Cichorium intybus*); and lambsquarter (*Chenopodium album*).

Portions of the Zanni Lateral are adjacent to irrigated fields or have wastewater ditches flowing alongside them. The proximity of these water sources will help lessen the effect on existing habitat when the open ditch is put into pipe. Many trees along the ditch (such as cottonwoods, willows, and Russian olives) will probably be lost during the construction phase of the project. A few more will die because of lack of water after the piping goes in. The plant diversity and habitat value along the ditch are somewhat limited because of the closeness of the ditch to houses. Soils used to bury the pipeline, will be replanted with grasses & forbs to help prevent weeds from invading the site. Segments of the ditch within irrigated fields will probably see little difference in use because ranchers will continue to irrigate and farm over the top of the pipeline. Some segments are literally in the back yard of local residents. In these areas, the pipe will have to be buried using minimal space and replanted vegetation may receive water when residents water their yards.

A total of 6.39 habitat units (See Attachment C) are expected to be lost due to the piping of the Zanni Lateral. Impacts to habitat along the lateral can be minimized by avoiding the removal of trees as much as possible when installing the pipe; proper choice of replacement seedlings and planting methods when reclaiming the area over the pipeline; and implementing an effective weed control program.

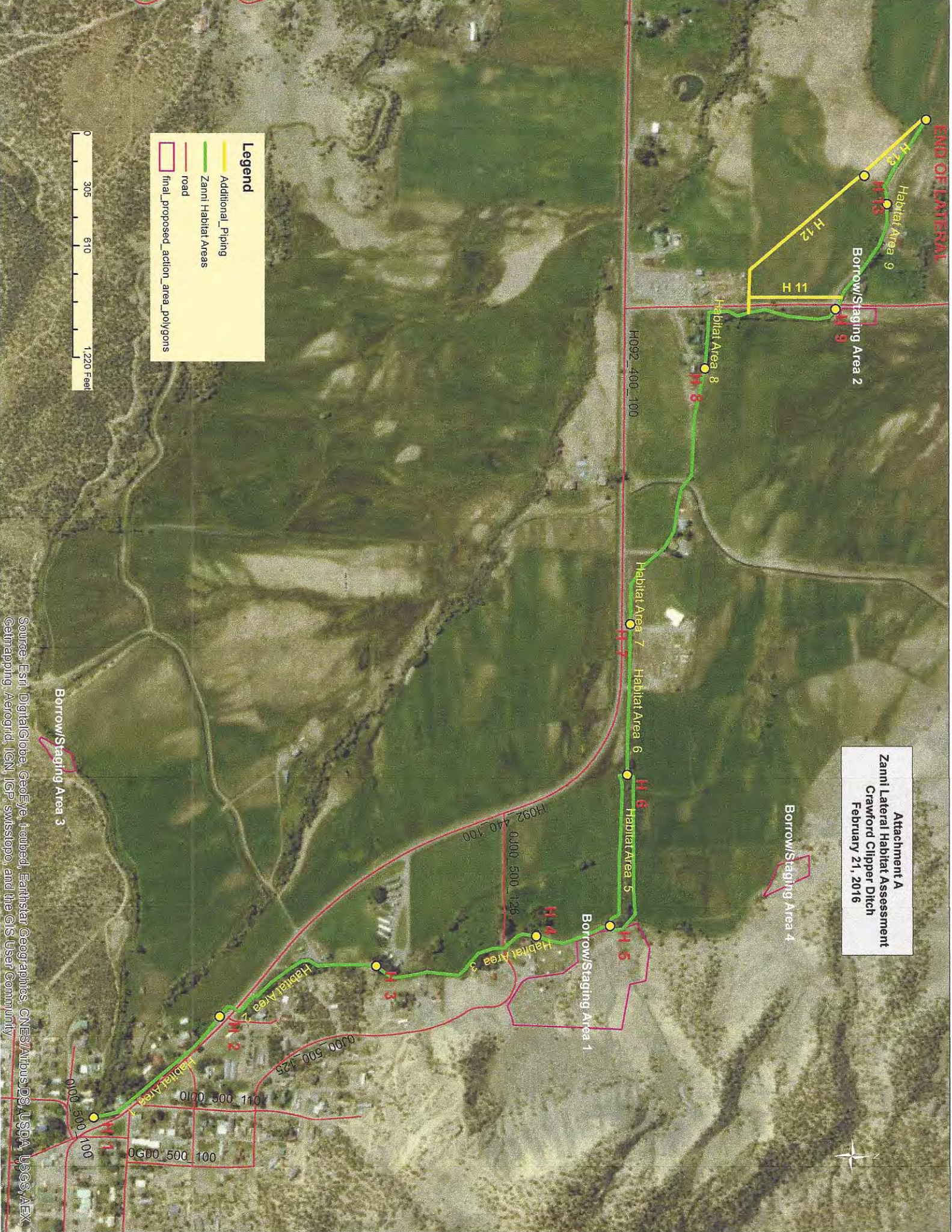
* Predicted using criteria set forth in the *Basinwide Salinity Control Program: Procedures for Habitat Replacement* (A manual developed by the Bureau of Reclamation and U.S. Fish and Wildlife Service).

Attachment A
Zanni Lateral Habitat Assessment
Crawford Clipper Ditch
February 21, 2016



Legend

- Additional Piping
- Zanni Habitat Areas
- road
- final_proposed_action_area_polygons



Source: Esri, DigitalGlobe, GeoEye, iSat, Earthstar Geographics, CNES/Airbus DS, USDA, AeroGRID, IGN, IGP, swisstopo, and the GIS User Community
 Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Attachment B
Habitat Quality Scoring
Zanni Lateral Habitat Work Sheet

Habitat Site Mapped Acres/Adjustment Habitat Type	H 1 0.42 Forest/Shrub-pipe		H 2 0.46 Forest/Shrub		H 3 0.91 Grass/Shrub		H 4 0.25 Grass/Scrub		H 5 1.46 Forest/Shrub		H 6 0.57 Shrub/Grass		H 7 0.70 Shrub/Grass		H 8 0.48 Forest/Shrub		
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After	
Vegetation Diversity	7	7	8	5	6	5	4	3	10	10	5	6	4	6	4	7	4
Stratification	10	10	10	8	10	8	10	10	10	10	8	10	6	6	10	8	8
Native vs. Non-Native species	8	8	8	8	8	8	8	8	9	8	8	8	8	8	8	8	8
Noxious Weeds	8	8	8	8	8	8	8	8	9	8	9	9	9	8	9	8	8
Overall Vegetative Condition	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Disease Additional scoring	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Interspersion of open water	1	1	1	0	1	0	1	0	1	1	1	1	1	1	1	1	1
Connectivity	1	1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Uniqueness or Abundance	3	2	5	3	4	3	3	2	8	3	6	3	4	4	2	6	4
Water Supply	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Alteration	0	0	4	4	4	4	4	4	5	4	3	3	2	2	2	2	2
Raw Scores	51	50	63	55	60	55	57	54	71	57	62	53	54	50	63	56	56
Habitat Quality Score (HQS)	5.1	5	6.3	5.5	6	5.5	5.7	5.4	7.1	5.7	6.2	5.3	5.4	5	6.3	5.6	5.6
Habitat Score Difference	0.1	0.8	0.5	0.5	0.5	0.3	0.3	1.4	1.4	0.9	0.9	0.4	0.4	0.7	0.7	0.7	0.7
Habitat Credits Lost =	0.04	0.37	0.46	0.08	0.08	0.51	0.28	0.34									

Habitat Site Mapped Acres/Adjustment	H 9 0.30 Shrub/Forest		H 10 0.24 Grass/Shrub		H 11 0.47 Grass/Shrub		H 12 0.95 Grass		H 13 0.41 Arid Grass/Forb		Borrow-Stage 1 6.23 Arid Shrub/Grass		Borrow-Stage 2 0.41 Grass/Shrub		Borrow-Stage 3 0.36 Arid Grass/Shrub	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
Vegetation Diversity	8	6	7	3	3	3	3	3	2	2	3	3	4	4	1	1
Stratification	10	8	6	6	2	2	2	2	2	2	10	4	2	2	2	2
Native vs. Non-Native species	8	8	6	6	7	7	7	7	8	8	4	4	8	8	2	2
Noxious Weeds	9	9	8	8	8	8	9	9	9	9	0	4	8	8	0	2
Overall Vegetative Condition	10	10	10	10	10	10	10	10	2	2	10	10	10	10	10	10
Disease Additional scoring	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Interspersion of open water	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Connectivity	5	5	5	5	3	3	5	5	5	5	3	3	3	3	5	5
Uniqueness or Abundance	5	3	4	3	3	3	3	3	2	2	1	1	3	3	1	1
Water Supply	4	4	4	4	4	4	4	4	4	4	0	0	0	0	0	0
Alteration	3	3	3	3	2	2	5	5	3	3	2	1	0	0	0	0
Raw Scores	63	57	54	49	42	42	48	48	33	33	33	30	38	38	21	23
Habitat Quality Score (HQS)	6.3	5.7	5.4	4.9	4.2	4.2	4.8	4.8	3.3	3.3	3.3	3	3.8	3.8	2.1	2.3
Habitat Score Difference	0.6	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	-0.2	-0.2
Habitat Credits Lost =	0.18	0.12	0.00	0.00	0.00	0.00	1.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.07	-0.07

Habitat Site	Borrow-Stage 4		100%		100%		100%		100%		100%		100%		100%	
	Grass/Shrub	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After	
Mappped Acres/Adjustment	0.59		100%													
Vegetation Diversity	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Stratification	10	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Native vs. Non-Native species	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Noxious Weeds	0	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Overall Vegetative Condition	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Disease Additional scoring	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Interspersion of open water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Connectivity	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Uniqueness or Abundance	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Water Supply	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alteration	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Raw Scores	33	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Habitat Quality Score (HQS)	3.3	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Habitat Score Difference	0.3		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Habitat Credits Lost	0.18		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Total Habitat Credits Lost 6.39

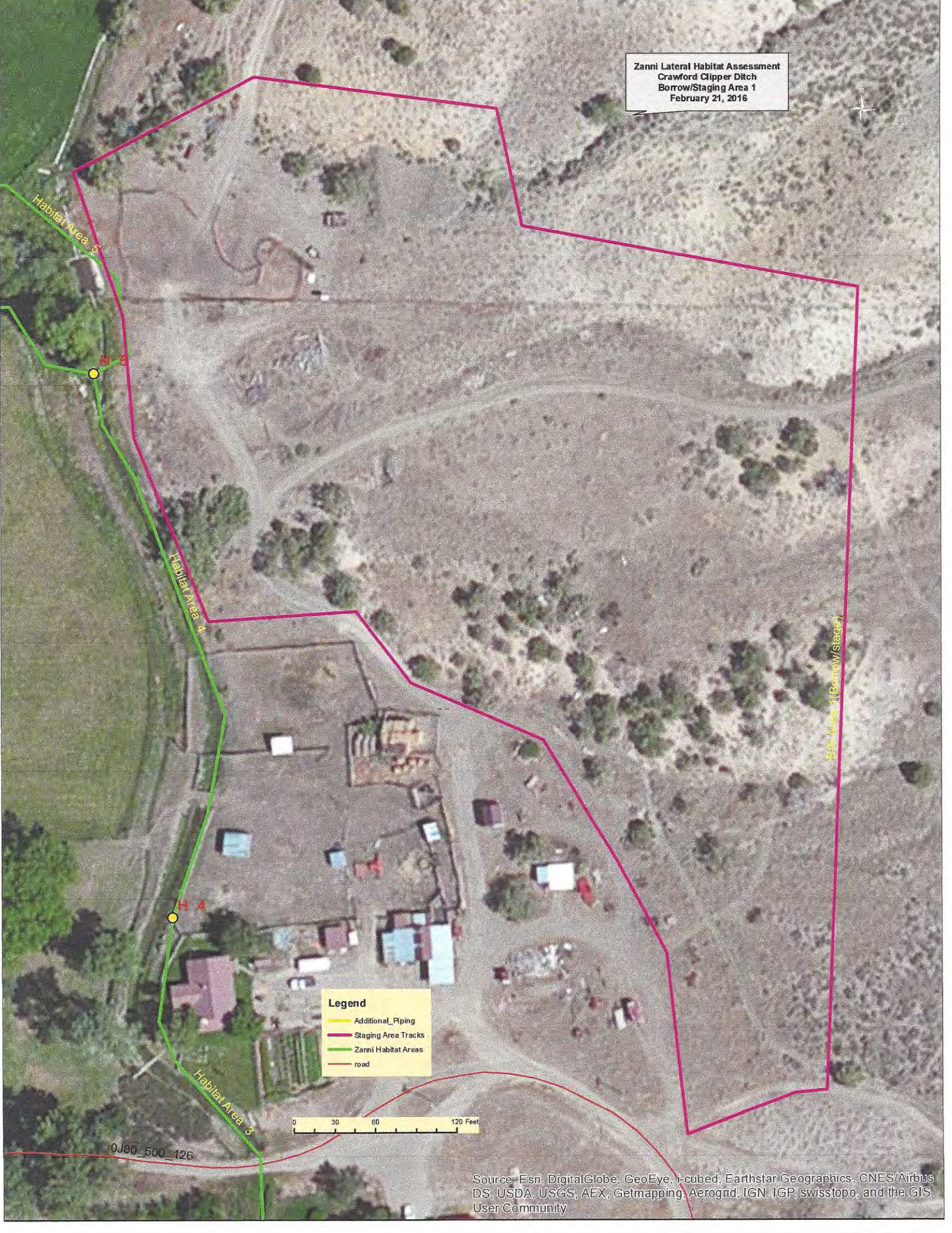
ATTACHMENT C

Zanni Lateral Piping Project - Habitat Areas Affected

Revised 2/21/16

Habitat Point	Habitat Type	Feet of Ditch	Width of Impact (Ft.)	Acreage of Impact	Amount of Impact	Habitat Units Lost
H1	Forest/Shrub-over pipe	904	20	0.42	0.10	0.04
H2	Forest/Shrub	1008	20	0.46	0.80	0.37
H3	Grass/Shrub	990	40	0.91	0.50	0.45
H4	Grass/Shrub	427	25	0.25	0.30	0.07
H5	Forest/Shrub			1.46	1.40	2.04
H6	Shrub/Grass	827	30	0.57	0.90	0.51
H7	Shrub/Grass	1519	20	0.70	0.40	0.28
H8	Forest/Shrub	1041	20	0.48	0.70	0.33
H9	Forest/Shrub	655	20	0.30	0.60	0.18
H10	Grass/Shrub	530	20	0.24	0.50	0.12
H11	Grass/Shrub	507	40	0.47	0.00	0.00
H12	Grass Pasture	1034	40	0.95	0.00	0.00
H13	Arid Grass/Forb	448	40	0.41	0.00	0.00
Borrow/Stage 1	Arid Grass/Shrub			6.23	0.30	1.87
Borrow/Stage 2	Grass/Shrub			0.41	0.00	0.00
Borrow/Stage 3	Arid Grass/Forb			0.36	-0.20	-0.07
Borrow/Stage 4	Grass/Shrub			0.59	0.30	0.18
					Habitat Units Lost	6.39

Zanni Lateral Habitat Assessment
Crawford Clipper Ditch
Borrow/Staging Area 1
February 21, 2016

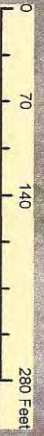


Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGR, swisstopo, and the GIS User Community

Zanni Lateral Habitat Assessment
 Crawford Clipper Ditch
 Borrow/Staging Area 2 &
 Additional Piping Area
 February 21, 2016

Legend

- Additional Piping
- Staging Area Tracks
- Zanni Habitat Areas
- road



Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Zanni Lateral Habitat Assessment
Crawford Clipper Ditch
Borrow/Staging Area 3
February 21, 2016



B/S Area 3 (Borrow)

Legend

- Additional_Piping
- Staging Area Tracks
- Zanni Habitat Areas
- road



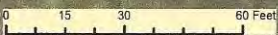
Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, ICP, swisstopo, and the GIS User Community

Zanni Lateral Habitat Assessment
Crawford Clipper Ditch
Borrow/Staging Area 4
February 21, 2016

B/S Area 4 (Borrow)

Legend

- Additional_Piping
- Staging Area Tracks
- Zanni Habitat Areas
- road



Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

ATTACHMENT E
Habitat Replacement Plan

**Habitat Replacement Plan
For Crawford Clipper Ditch Project 4 and Zanni Lateral Piping Projects
By Michael Zeman
Wildlife and Natural Resource Concepts & Solutions, LLC
January 28, 2016**

The Crawford Clipper Ditch Company is piping two segments of the Crawford Clipper Ditch. The Crawford Clipper Ditch Project 4 has been completed already and it included piping approximately 4 miles of the lower portion of the ditch system. Project 4 is located about 2.5 miles southeast of Hotchkiss and crosses irrigated farmland and arid, adobe lands. The second project will be piping the Zanni Lateral of the Crawford Clipper Ditch. The Zanni Lateral starts in the Town of Crawford and extends 1.6 miles to the northwest. The Zanni Lateral Project will parallel Highway 92 on the west side of the road for a short distance, cross underneath it, and will continue on the other side through the backyards of some houses and irrigated farmland. Habitat has been and will be lost during the piping of these ditch segments, and the Salinity Control Act requires that the habitat is replaced. It was estimated that 9.99 habitat units* were lost in the piping of the Crawford Clipper Ditch Project 4 (See Attachment A). The Zanni Lateral piping project will result in the loss of an additional 6.39 habitat units (this includes four Borrow/Staging areas) for a total of 16.38 habitat units (see Attachment B).

Two habitat replacement areas will offset the habitat losses. The areas are located on the Hart Ranch, approximately 1.2 miles south of Crawford Reservoir (see Attachment C). The two habitat replacement areas are called the "CDOT" and "Tower Pond," named after the Hart Ranch pastures in which they are located. In total, the habitat replacement plan will improve approximately 9.5 acres of wetland habitat in these two areas. The habitat replacement areas, as well as much of the Hart Ranch, are held in a conservation easement. The existing habitat at the replacement areas is mostly a monoculture of cattails & reeds with some willows, on the edge of a grass pasture. Irrigation and waste water from irrigated fields above the habitat replacement areas will provide water for the plantings. A number of natural springs are found on the property and several have higher levels of selenium. The water delivery systems for the habitat replacement areas are designed to allow water with higher selenium levels to be routed to the creek while allowing cleaner irrigation water to the habitat replacement areas. When completed, the two habitat replacement areas have the potential to create approximately 16.49 habitat units, satisfying the habitat replacement requirement of 16.38 habitat units (See Attachment D).

The CDOT replacement area improvements include excavating three potholes in an existing cattail monoculture (See Attachment E). This work has been completed. The water in the potholes varies in depth from one foot to six feet. It is important to many species of waterfowl to have open water, so 50% of the surface area of the potholes will be maintained as open water. Cattails can survive in water up to thirty inches in depth, so maintaining a depth greater than 30" will help keep cattails from taking over the area. Hardstem bulrush (*Schoenoplectas acutus*) is an aquatic plant that will be transplanted into some of the shallow sections of the potholes. Four or five groupings will be planted around the edges of each pothole. This plant competes with the cattails, and the bulrush seeds provide a good source of feed for waterfowl. Trees and shrubs will be planted around the potholes to help create more structure and diversity in habitat (See Attachment F for plant species and numbers). Most vegetative plantings will be protected from wildlife and livestock by placing steel t-posts around the plantings and surrounding them with woven wire. Fabric weed barrier will be placed around the plants to reduce competition with noxious weeds for soil nutrients. Plastic tree guards will also be used to protect plants from rodents and small mammals. Woven wire, weed barrier, and tree guards will not be applied to the bulrushes. Tree and shrub species to be planted include sumac (*Rhus trilobata*),

peachleaf willow (*Salix amygdaloides*), golden currant (*Ribes aureum*), and chokecherry (*Prunus virginiana*). Transplanting larger trees and shrubs will speed up the restoration process. If shrubs are bought through the Colorado State Forest Service nursery, the large tubes or extra large pots are the suggested size to transplant. Willows will be planted near the water's edge or in the wetted areas near the potholes. Sumac, golden currant, and chokecherry will be planted on the west side of the wetlands in the area between the saturated soils and drier soils where the rabbitbrush is growing. Planting sites will be flagged by the staff of Wildlife and Natural Resource Concepts & Solutions, LLC. The plantings will probably need supplemental water to get them established. A small irrigation ditch (located on the west side of the potholes) will be used to get water to the plantings. After the trees and shrubs are well established the enclosures could be removed. As requested by Colorado Parks and Wildlife, no tall trees will be planted (for example - cottonwoods and alder) because the area is near potential brooding habitat for Gunnison sage-grouse. Raptors utilize taller trees as perches and may prey upon sage-grouse. Stands of peachleaf willow planted around the wetlands will provide the woody component for the habitat area.

The Tower Pond habitat replacement area is located southwest of the CDOT habitat replacement area (See Attachment G). The Tower Pond area contains an existing manmade, bermed pond that has been filling in with cattails. This wetland has been cleaned out and slightly enlarged. Water control structures have been installed above and below the pond, allowing water to either be diverted into the wetland or to bypass it, allowing the water to flow back into Alkali Creek. This was constructed to help reduce the amount of sedimentation and selenium that might build up in the pond. A shrub planting area was built on the south side of the pond and is enclosed with an 8-foot high game damage fence to exclude livestock and wildlife. The enclosure will be enlarged to provide for more shrub plantings. Species planted there will be similar to those planted on the CDOT site (see Attachment F). The water control structures on the diversion ditch allow irrigation water to be routed to the planting area, but a smaller feeder ditch or water supply line will have to be installed to provide supplemental water for the plantings.

Canada thistle, Russian olive, bull thistle, cocklebur, and knapweed are prevalent weed species found at the Tower Pond and CDOT habitat replacement areas. Noxious weed species (Attachment H) will be removed either by mechanical means or by the use of herbicide in accordance with the most current Montrose County Weed Management Plan (as of the date of this document, the most current Montrose County Weed Management Plan is available at <http://www.montrosecounty.net/162/Weed-Mitigation>). Herbicides will be applied following instructions on the manufacturer label. Milestone is an effective herbicide for Canada thistle and Russian knapweed when used at a rate of 5 to 6 oz./acre and applied with a nonionic surfactant at a rate of 0.25% v/v. The best time to treat them is in the spring just before they put on seed heads and again later in the fall. Knapweeds can be treated right up to freeze up, even though the plants may appear dormant. Follow up treatments will be needed to maintain control of these invasive species and fall treatments are best for the follow-up treatments. Cattails are a native species found on the site, but they are crowding out more beneficial plants. One component of the habitat replacement work is to thin the cattails out. The herbicide Habitat can be used to treat tamarisk, Russian olive, cattails, and phragmites. Control of cattails can be aided by burning of the dry, old growth or livestock grazing for a short period of time early in the year (January - February). This reduces the amount of overstory so the plants can be more effectively sprayed later in the spring. Habitat should be applied at a rate of 4-6 pints/acre (with a surfactant at a rate of 0.25% v/v) after the new growth has produced a seed head and the plant is approximately five foot tall. Habitat and Milestone are both labeled for use around water. Rodeo is another herbicide that can be applied to cattails but is applied in the fall while the plants are still actively growing. Care must be taken when spraying, as the weeds are spread out and mixed with many of the native plants such as fourwing saltbush, rabbit brush, sagebrush, cottonwoods, and willows. It is recommended that all tamarisk and

Russian olive in the habitat replacement areas be cut by hand crews and the stumps painted or sprayed with one of the following: Pathfinder; Garlon IV mixed with MSO; or Habitat and a surfactant. These herbicides work on most woody plant species, so care must be taken to not get it on native trees or shrubs. The slash from these cuttings will be either placed in piles near the wetlands, hauled off site, or burned. If the piles are left near the wetlands they will provide some cover for small mammals and birds. The landowner is willing to do the weed treatment and would be reimbursed for chemicals and supplies needed for the first five years after the habitat replacement site is constructed.

Four photo points have been set up around each habitat replacement area in order to help monitor the vegetation and its response to treatment. Additional photo points will be added to help capture all changes created at the two areas. Crawford Clipper Ditch will be responsible for taking photographs of the habitat replacement areas and having a habitat evaluation completed (by a habitat biologist) every year during the first 5 years and every 3 years after that. Copies of these will be sent to the Bureau of Reclamation. Criteria used are listed in the *Basinwide Salinity Control Program: Procedures for Habitat Replacement - March 2013* (Attachment I). For the first five years, Crawford Clipper Ditch, the Bureau of Reclamation, and Don Hart or his representative will conduct a joint, annual inspection to determine if the habitat improvements have been achieved at an acceptable level. This will be based on how the actual habitat improvement scores compare to the projected levels in the initial evaluation. If these improvements are not at an acceptable level, Crawford Clipper Ditch, Hart Ranch representative and the Bureau of Reclamation will work together to plan a course of action. Crawford Clipper Ditch will replace plantings and/or re-seed areas with desirable vegetation, as necessary to meet the mitigation plan objectives. Plantings will have a survival rate of 66% or more to be deemed successful. Attachment J provides an estimated timeline for the implementation of this habitat replacement plan.

Successful implementation of this habitat replacement plan will fulfill the habitat replacement requirements for the piping of Crawford Clipper Ditch Project 4 and the Zanni Lateral. The open water and additional plantings should draw more waterfowl, songbirds, and shorebirds as well as providing forage and cover for a number of small mammals. The potholes that have been created will be dug out periodically if they start to fill in with sediment or vegetation in order to maintain the desired 50% area of open water. The area is already used by many species of wildlife, but the habitat replacement areas should provide more diversity.

*Calculations were made using criteria set forth in the *Basinwide Salinity Control Program: Procedures for Habitat Replacement - March 2013* (Manual developed by the Bureau of Reclamation and U.S. Fish & Wildlife Service).

ATTACHMENT A
Crawford Clipper Ditch Project 4
Affected Habitat Areas

Revised 1/28/2016

Habitat Point	Feet of Ditch	Width of Impact (Ft.)	Acres of impact	Adjustment	Adjusted Acres	Habitat Score Difference	Habitat Credits Lost
H1	1535	30	1.06	50%	0.53	0.4	0.21
H2	1175	30	0.81	75%	0.61	1.0	0.61
H3	788	30	0.54	100%	0.54	0.6	0.33
H4	787	20	0.36	75%	0.27	0.6	0.16
H5	223	30	0.15	75%	0.12	1.3	0.15
H6	473		0.48	75%	0.36	0.9	0.32
H7	752	25	0.43	50%	0.22	0.6	0.13
H8	839	20	0.39	100%	0.39	0.0	0.00
H9	1409		4.11	100%	4.11	0.9	3.70
H10	1979	25	1.14	100%	1.14	0.8	0.91
H11	1252	40	1.15	100%	1.15	0.8	0.92
H12	661	30	0.46	100%	0.46	0.8	0.36
H13	1329	40	1.22	100%	1.22	0.9	1.10
H14	2091	30	1.44	75%	1.08	0.5	0.54
H15	632	30	0.44	50%	0.22	-0.6	-0.13
H16	1096	20	0.50	100%	0.50	0.5	0.25
H17	507	40	0.47	100%	0.47	0.6	0.28
H18	910	30	0.63	100%	0.63	0.0	0.00
H19	1090	30	0.75	100%	0.75	0.2	0.15
H20	1720	30	1.18	100%	1.18	0.0	0.00

Habitat Credits Lost **9.99**

Attachment B
Habitat Quality Scoring
 Zanni Lateral Habitat Work Sheet

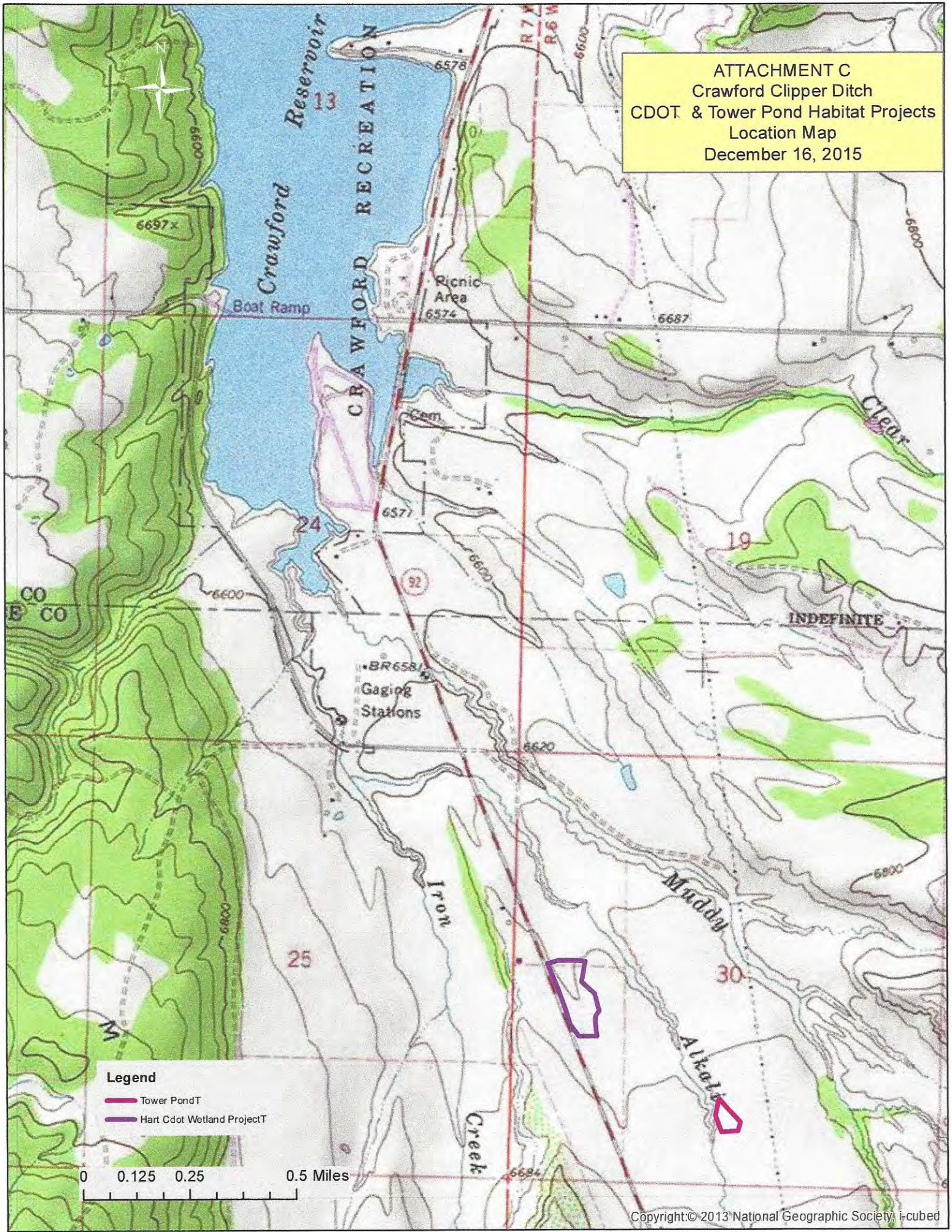
Habitat Site Mapped Acres/Adjustment Habitat Type	H 1 0.42 Forest/Shrub-pipe		H 2 0.46 Forest/Shrub		H 3 0.91 Grass/Shrub		H 4 0.25 Grass/Scrub		H 5 1.46 Forest/Shrub		H 6 0.57 Shrub/Grass		H 7 0.70 Shrub/Grass		H 8 0.48 Forest/Shrub	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
Vegetation Diversity	7	7	8	5	6	5	4	3	10	5	6	4	6	4	7	4
Stratification	10	10	10	8	10	8	10	10	10	8	10	6	6	6	10	8
Native vs. Non-Native species	8	8	8	8	8	8	8	8	9	8	8	8	8	8	8	8
Noxious Weeds	8	8	8	8	8	8	8	8	9	8	9	9	8	9	8	8
Overall Vegetative Condition	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Disease Additional scoring	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Interspersion of open water	1	1	1	0	1	0	1	0	1	1	1	1	1	0	1	1
Connectivity	1	1	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Uniqueness or Abundance	3	2	5	3	4	3	3	2	8	3	6	3	4	2	6	4
Water Supply	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Alteration	0	0	4	4	4	4	4	4	5	4	3	3	2	2	4	4
Raw Scores	51	50	63	55	60	55	57	54	71	57	62	53	54	50	63	56
Habitat Quality Score (HQS)	5.1	5	6.3	5.5	6	5.5	5.7	5.4	7.1	5.7	6.2	5.3	5.4	5	6.3	5.6
Habitat Score Difference	0.1	0.8	0.5	0.5	0.5	0.3	0.3	1.4	1.4	0.9	0.9	0.4	0.4	0.7	0.7	0.7
Habitat Credits Lost =	0.04	0.37	0.46	0.08	2.04	0.51	0.28	0.34								

Habitat Site Mapped Acres/Adjustment	H 9 0.30 Shrub/Forest		H 10 0.24 Grass/Shrub		H 11 0.47 Grass/Shrub		H 12 0.95 Grass		H 13 0.41 Arid Grass/Forb		Borrow-Stage 1 6.23 Arid Shrub/Grass		Borrow-Stage 2 0.41 Grass/Shrub		Borrow-Stage 3 0.36 Arid Grass/Shrub	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
Vegetation Diversity	8	6	7	3	3	3	3	3	2	2	3	3	4	4	1	1
Stratification	10	8	6	6	2	2	2	2	2	2	10	4	2	2	2	2
Native vs. Non-Native species	8	8	6	6	7	7	7	7	8	8	4	4	8	8	2	2
Noxious Weeds	9	9	8	8	8	8	9	9	9	9	0	4	8	8	0	2
Overall Vegetative Condition	10	10	10	10	10	10	10	10	2	2	10	10	10	10	10	10
Disease Additional scoring	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Interspersion of open water	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Connectivity	5	5	5	5	3	3	5	5	5	5	3	3	3	3	5	5
Uniqueness or Abundance	5	3	4	3	3	3	3	3	2	2	1	1	3	3	1	1
Water Supply	4	4	4	4	4	4	4	4	0	0	0	0	0	0	0	0
Alteration	3	3	3	3	2	2	5	5	3	3	2	1	0	0	0	0
Raw Scores	63	57	54	49	42	42	48	48	33	33	33	30	38	38	21	23
Habitat Quality Score (HQS)	6.3	5.7	5.4	4.9	4.2	4.2	4.8	4.8	3.3	3.3	3.3	3	3.8	3.8	2.1	2.3
Habitat Score Difference	0.6	0.5	0.5	4.9	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	-0.2	-0.2
Habitat Credits Lost =	0.18	0.12	0.00	0.00	0.00	0.00	1.87	0.00	-0.07							

Habitat Site	Borrow-Stage 4		100%		100%		100%		100%		100%		100%		100%	
	Grass/Shrub	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After	
Mappped Acres/Adjustment	0.59		100%													
Vegetation Diversity	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Stratification	10	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Native vs. Non-Native species	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Noxious Weeds	0	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Overall Vegetative Condition	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Disease Additional Scoring	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Interspersion of open water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Connectivity	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Uniqueness or Abundance	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Water Supply	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alteration	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Raw Scores	33	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Habitat Quality Score (HQS)	3.3	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Habitat Score Difference	0.3		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Habitat Credits Lost	0.18		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Total Habitat Credits Lost **6.39**

ATTACHMENT C
Crawford Clipper Ditch
CDOT & Tower Pond Habitat Projects
Location Map
December 16, 2015



- Legend**
- Tower Pond T
 - Hart Cdot Wetland Project T

0 0.125 0.25 0.5 Miles

**Attachment D
Habitat Quality Scoring**

Hart Ranch - CDOT & Tower Pond Wetlands Habitat Projects

Revised Jan. 28, 2016

Habitat Site
Mapped Acres/Adjustment

	CDOT Wetland HP		Tower Pond Wetland		100%		100%		
	Before	After	Before	After	Before	After	Before	After	
Vegetation Diversity		4	7	3	8				
Stratification		6	10	6	10				
Native vs. Non-Native species		7	8	6	8				
Noxious Weeds		7	9	6	9				
Overall Vegetative Condition		10	10	10	10				
Disease Additional scoring		0	0	0	0				
Interspersion of open water		1	5	2	4				
Connectivity		10	10	10	10				
Uniqueness or Abundance		4	6	5	8				
Water Supply		6	6	4	8				
Alteration		4	4	8	8				
Raw Scores		59	75	60	83	0	0	0	0
Habitat Quality Score (HQS)		5.9	7.5	6	8.3	0	0	0	0
Habitat Score Difference		1.6		2.3		0		0	

Expected Habitat Credits Produced
Total Expected Habitat Credits

12.62 Credits
16.49 Credits

3.86 Credits

ATTACHMENT E
Crawford Clipper Ditch
CDOT Habitat Project
December 16, 2015



This map depicts general placement
of plantings and photo points.

- Legend**
-  Bulrush
 -  Photo_Pts
 -  Golden Currant
 -  Sumac
 -  Chokecherry
 -  Peachleaf_willows
 -  Hart Cdot Wetland ProjectT
 -  CDOT_Potholes



Source: Esri, DigitalGlobe, GeoEye, I-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

ATTACHMENT F
Plant Species List For Tower Pond and CDOT Potholes Sites
Crawford Clipper Ditch and Zanni Lateral Habitat Project
January 28, 2016

Transplanting larger trees and shrubs will speed up the restoration process. If shrubs are bought through the Colorado State Forest Service nursery, the large tubes or extra large pots are the suggested size to transplant. Plantings should be placed approximately 4 to 5 feet apart. Fabric weed barrier should be placed around the plantings and comes in 6 ft. X 300 ft. rolls. Plantings should also be protected with plastic tree guards to prevent rodents and small mammals from damaging the young plants. A 10 ft. open space should be left inside the 8 ft. game damage fence to allow equipment access. The gate on the enclosure should be at least 10 ft. wide. A ditch or water system will be needed to bring supplemental water from the irrigation ditch to the new plantings in order to get them established.

Tower Pond Site

Species	Approximate Plant Numbers
Sumac	30
Native Plum	30
Golden Currant	60
Chokecherry	30
Buffaloberry	30
Serviceberry	30
Peachleaf willow	12












CDOT Site

Chokecherry	12
Sumac	12
Golden Currant	12
Peachleaf willow	24
Hardstem Bulrush	Approximately 400-600 plants

ATTACHMENT G
Crawford Clipper Ditch
Tower Pond Habitat Project
December 16, 2015



Legend

-  water diversion structure
-  Bulrush
-  Photo_Pts
-  Golden Currant
-  Sumac
-  Chokecherry
-  Peachleaf_willows
-  New Water Pipe
-  Tower Pond Cleaning
-  Tree&Shrub-Enclosure
-  Hart Cdot Wetland Project
-  CDOT_Potholes

This map depicts general placement of plantings and photo points.



Attachment H Colorado Noxious Weed List December 10, 2014

The Colorado Noxious Weed Act

Since 1990 the state's natural and agricultural resources have been protected by the Colorado Noxious Weed Act (35-5.5 CRS). More recent revisions to the Act enable county and city governments to implement management programs aimed at noxious weeds in order to reclaim infested acres and protect weed-free land. These changes included prioritizing the State's noxious weed list into three separate lists, A, B and C.

- List A plants are designated for elimination on all County, State, Federal and Private lands.
- List B includes plants whose continued spread should be stopped.
- List C plants are selected for recommended control methods.

A List

List A species are invasive weeds that are either not known to occur in Colorado or are of very limited distribution and are required to be eradicated (completely eliminated).

African rue (*Peganum harmala*)
Camelthorn (*Alhagi pseudalhagi*)
Common crupina (*Crupina vulgaris*)
Cypress spurge (*Euphorbia cyparissias*)
Dyer's woad (*Isatis tinctoria*)
Elongated mustard (*Brassica elongata*)
Hairy willow-herb (*Epilobium hirsutum*)
Hydrilla (*Hydrilla verticillata*)
Giant reed (*Arundo donax*)
Giant salvinia (*Salvinia molesta*)
Hydrilla (*Hydrilla verticillata*)
Japanese, Giant and Bohemian knotweed (*Polygonum cuspidatum*, *P. sachalinense* and *P. x bohemicum*)
Meadow knapweed (*Centaurea pratensis*)
Mediterranean sage (*Salvia aethiopsis*)
Medusahead (*Taeniatherum caput-medusae*)
Myrtle spurge (*Euphorbia myrsinites*)
Orange hawkweed (*Hieracium aurantiacum*)
Purple loosestrife (*Lythrum salicaria*)
Rush skeletonweed (*Chondrilla juncea*)
Squarrose knapweed (*Centaurea virgata*)
Tansy ragwort (*Senecio jacobaea*)
Yellow starthistle (*Centaurea solstitialis*)

B List

List B species are invasive weeds with populations of varying distribution and densities within the state. The level of mandated control is based on local conditions. These weeds may require eradication within certain areas of the state.

Absinth wormwood (*Artemisia absinthium*)
Black henbane (*Hyoscyamus niger*)
Bouncingbet (*Saponaria officinalis*)
Bull thistle (*Cirsium vulgare*)
Canada thistle (*Cirsium arvense*)
Chinese clematis (*Clematis orientalis*)
Common tansy (*Tanacetum vulgare*)
Common teasel (*Dipsacus fullonum*)
Corn chamomile (*Anthemis arvensis*)
Cutleaf teasel (*Dipsacus laciniatus*)
Dalmatian toadflax, broad-leaved (*Linaria dalmatica*)
Dalmatian toadflax, narrow-leaved (*Linaria genistifolia*)
Dame's rocket (*Hesperis matronalis*)
Diffuse knapweed (*Centaurea diffusa*)
Eurasian watermilfoil (*Myriophyllum spicatum*)
Hoary cress (*Cardaria draba*)
Houndstongue (*Cynoglossum officinale*)
Jointed goatgrass (*Aegilops cylindrica*)

Leafy spurge (*Euphorbia esula*)
Mayweed chamomile (*Anthemis cotula*)
Moth mullein (*Verbascum blattaria*)
Musk thistle (*Carduus nutans*)
Oxeye daisy (*Chrysanthemum leucanthemum*)
Perennial pepperweed (*Lepidium latifolium*)
Plumeless thistle (*Carduus acanthoides*)
Russian knapweed (*Acroptilon repens*)
Russian-olive (*Elaeagnus angustifolia*)
Salt cedar (*Tamarix chinensis, T. parviflora, and T. ramosissima*)
Scentless chamomile (*Matricaria perforata*)
Scotch thistle (*Onopordum acanthium*)
Scotch thistle (*Onopordum tauricum*)
Spotted knapweed (*Centaurea maculosa*)
Spurred anoda (*Anoda cristata*)
Sulfur cinquefoil (*Potentilla recta*)
Venice mallow (*Hibiscus trionum*)
Wild caraway (*Carum carvi*)
Yellow nutsedge (*Cyperus esculentus*)
Yellow toadflax (*Linaria vulgaris*)

C List

List C species are widespread and common within the state. They may pose a risk to agricultural lands and may be required to be controlled.

Bulbous bluegrass (*Poa bulbosa*)
Chicory (*Cichorium intybus*)
Common burdock (*Arctium minus*)
Common mullein (*Verbascum thapsus*)
Common St. Johnswort (*Hypericum perforatum*)
Downy brome (*Bromus tectorum*)
Field bindweed (*Convolvulus arvensis*)
Halogeton (*Halogeton glomeratus*)
Johnsongrass (*Sorghum halepense*)
Perennial sowthistle (*Sonchus arvensis*)
Poison hemlock (*Conium maculatum*)
Puncturevine (*Tribulus terrestris*)
Quackgrass (*Elymus repens*)
Redstem filaree (*Erodium cicutarium*)
Velvetleaf (*Abutilon theophrasti*)
Wild proso millet (*Panicum miliaceum*)

**Attachment I
Habitat Evaluation Criteria
January 28, 2016**

Vegetative Diversity: Evaluate the composition of readily observable native plant species. Examine if a variety of native plant species are present or if 1 or 2 species dominate with little variation.

0	3	5	7	10
Very Low Diversity	Low Diversity	Moderate Diversity	High Diversity	Very High Diversity

Stratification:

0	2	4	6	8	10
More than 2 layers missing	2 layers are absent	1 layer is missing, at least 1 of the other layers is not functioning	1 layer is missing, but others are functioning	All appropriate layers are present, but one is not functioning	All appropriate layers present and functioning

Native species vs. Nonnative species: Evaluate the composition of native flora and fauna species as compared to nonnative species. What is the relative percentage of each?

0	2	4	6	8	10
5% or less native species	20% native 80% nonnative	40% native 60% nonnative	60% native 40% nonnative	80% native 20% nonnative	95% or greater native species

Noxious Weeds: Evaluate the presence of noxious weeds. Are noxious weeds present? How abundant are they? If weeds are present then management activities will be needed to control weeds.

0	2	4	6	8	10
Weeds cover 25% of lands	Weeds cover 20% of lands	Weeds cover 15% of lands	Weeds cover 10% of lands	Weeds cover 5% of lands	Land is weed-free

Overall Vegetative Condition/ Health: Evaluate the overall health and condition of plant species. Are the plants healthy or stressed? Examine leaf color, leaf size, and percent of dead material, evidence or absence of new growth. Are any diseases or insect infestations present? If disease or infestation is present then a score no higher than 5 may be given.

0	2	4	6	8	10
60% of plants are stressed, no disease or infestation	50% or less of plants are stressed, no disease or infestation	40% or less of plants are stressed, no disease or infestation	30% or less of plants are stressed, no disease or infestation	20% or less of plants are stressed, no disease or infestation	No visible signs of disease/infestation, 100% of plants healthy

If disease or infestation is present, additional scoring as follows:

0	2	4	5
25% of plants are diseased or infested	15% of plants are diseased or infested	10% of plants are diseased or infested	5% or less of plants are diseased infested

Interspersion of open water with vegetation: The special arrangement of the Wetland's open water in relation to its vegetation.

10-8 High	7-4 Moderate	3 Low	1 Low	0 Zero

Connectivity: Examine the proximity of other wildlife habitat areas. Is the land isolated or are travel corridors present? Is the adjacent property in an established conservation area, or is no protective agreement in place?

0	3	5	7	10
Land is isolated	Adjacent to wildlife habitat with no agreement	Within wildlife habitat property with no agreement	Adjacent to an established conservation area	Within an established conservation area

Uniqueness or Abundance: Examine the overall value of habitat to wildlife and its abundance or scarcity. Is the land especially unique or valuable to wildlife? Does it provide special or critical habitat? Is this habitat type common or unusual?

0	2	4	6	8	10
Exhibits very low wildlife value regardless of abundance or scarcity	Exhibits medium to low value for wildlife and is relatively abundant	Exhibits medium value for wildlife and is relatively abundant	Exhibits medium value for wildlife and is relatively scarce Seasonal use	Highly valuable for wildlife but is relatively scarce or becoming scarce Year Round use by wildlife	Highly valuable for wildlife and is very uncommon Nesting or fawning or calving present

Water Supply: Examine the water supply for the area. Examine if the water is from a natural flowing stream or river, or dependent on irrigation flows or delivery systems. Examine the nature of the stream- is water present year round or only seasonally? If the habitat is dependent on water from non-natural sources to maintain its HQS, then what are the terms surrounding the water supply? Is an agreement in place?

0	2	4	6	8	10
No water supply	Water supply is uncertain	Non-natural flows are seasonal or year round flows are uncertain	Non-natural seasonal flows are guaranteed; Seasonal natural flows are uncertain	Non-natural year round flows are guaranteed or seasonal natural flows guaranteed	Perennial, unregulated stream

Alteration: Examine the evidence of human alteration on the land. Look for roads, mining, railroad tracks, urban and suburban encroachment. The more disturbance that has occurred on the land the lower the score.

0	2	4	6	8	10
80% or more of land has been heavily developed/ altered	70% has been developed/ altered	50% has been developed/ altered	30% of land has been developed/ altered	10% or less of project or adjacent land	No alteration/ development observed

Attachment J
Crawford Clipper Ditch - CDOT & Tower Pond Habitat Project
Estimated Timeline

Revised Jan. 28, 2016

Dates	Activity Description
2015-2016	
Mid December 2015	Photos of habitat site taken
November 1, 2015 - February 24, 2016	Shrub Enclosure at Tower Pond Rebuilt
February 25, 2016 - April 15, 2016	Tamarisk and Russian olives in habitat area removed and treated.
February 1, 2016 - May 15, 2016	Transplant Peachleaf willows
May 1, 2016 - June 30, 2016	Transplanting Hardstem bulrush
April 1, 2016 - June 15, 2016	Transplant Sumac, Golden Currant, Chokecherry and Native Plums
April 15, 2016 - June 30, 2016	Cattail herbicide treatment
April 15, 2016 - June 30, 2016	Other non-native invasive weed treatment
July 1, 2016 - July 31, 2016	Photos of habitat site taken and joint evaluation with BOR, CCD, & Hart Ranch
July 1, 2016 - July 31, 2016	Photos & copy of habitat evaluation provided to BOR
August 1, 2016 - October 15, 2016	Follow up treatment on invasive weeds (Canada thistle, Russian knapweed, tamarisk, etc.)
August 1, 2016 - October 15, 2016	CCD & Hart Ranch Evaluate tree and shrub plantings
2017	
February 25, 2017 - April 15, 2017	Tamarisk and Russian olives in habitat area removed and treated as needed.
February 1, 2017 - May 15, 2017	Transplant Peachleaf willows as needed
May 1, 2017 - June 30, 2017	Transplanting Hardstem bulrush as needed
April 1, 2017 - June 15, 2017	Transplant Sumac, Golden Currant, Chokecherry and Native Plums as needed
April 15, 2017 - June 30, 2017	Cattail herbicide treatment
April 15, 2017 - June 30, 2017	Other non-native invasive weed treatment
July 1, 2017 - July 31, 2017	Photos of habitat site taken and joint evaluation with BOR, CCD, & Hart Ranch
July 1, 2017 - July 31, 2018	Photos & copy of habitat evaluation provided to BOR
August 1, 2017 - October 15, 2017	Follow up treatment on invasive weeds (Canada thistle, Russian knapweed, tamarisk, etc.)
August 1, 2017 - October 15, 2017	CCD & Hart Ranch Evaluate tree and shrub plantings
2018	
February 25, 2018 - April 15, 2018	Tamarisk and Russian olives in habitat area removed and treated as needed.
February 1, 2018 - May 15, 2018	Transplant Peachleaf willows as needed
May 1, 2018 - June 30, 2018	Transplanting Hardstem bulrush as needed
April 1, 2018 - June 15, 2018	Transplant Sumac, Golden Currant, Chokecherry and Native Plums as needed
April 15, 2018 - June 30, 2018	Cattail herbicide treatment
April 15, 2018 - June 30, 2018	Other non-native invasive weed treatment
July 1, 2018 - July 31, 2018	Photos of habitat site taken and joint evaluation with BOR, CCD, & Hart Ranch
July 1, 2018 - July 31, 2019	Photos & copy of habitat evaluation provided to BOR
August 1, 2018 - October 15, 2018	Follow up treatment on invasive weeds (Canada thistle, Russian knapweed, tamarisk, etc.)
August 1, 2018 - October 15, 2018	CCD & Hart Ranch Evaluate tree and shrub plantings
2019	
February 25, 2019 - April 15, 2019	Tamarisk and Russian olives in habitat area removed and treated as needed.
February 1, 2019 - May 15, 2019	Transplant Peachleaf willows as needed
May 1, 2019 - June 30, 2019	Transplanting Hardstem bulrush as needed
April 1, 2019 - June 15, 2019	Transplant Sumac, Golden Currant, Chokecherry and Native Plums as needed
April 15, 2019 - June 30, 2019	Cattail herbicide treatment
April 15, 2019 - June 30, 2019	Other non-native invasive weed treatment
July 1, 2019 - July 31, 2019	Photos of habitat site taken and joint evaluation with BOR, CCD, & Hart Ranch
July 1, 2019 - July 31, 2020	Photos & copy of habitat evaluation provided to BOR
August 1, 2019 - October 15, 2019	Follow up treatment on invasive weeds (Canada thistle, Russian knapweed, tamarisk, etc.)
August 1, 2019 - October 15, 2019	CCD & Hart Ranch Evaluate tree and shrub plantings

ATTACHMENT F

Endangered Species Act Compliance Documents



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Ecological Services
445 West Gunnison, Suite 240
Grand Junction, Colorado 81501-5711

IN REPLY REFER TO:


ES/GJ-6-CO-09-F-001-GP029

TAILS 06E24100-2016-F-0022

February 17, 2016

Memorandum

To: Area Manager, Bureau of Reclamation, Upper Colorado Region, Western Colorado Area Office

From: *Acting* Western Colorado Supervisor, Ecological Services, U.S. Fish and Wildlife Service, Grand Junction, Colorado 

Subject: Consultation under Section 7 of the Endangered Species Act for the Zanni Lateral Pipeline Project for Gunnison Basin Programmatic Biological Opinion (PBO)

In accordance with section 7 of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 et seq.), and the Interagency Cooperation Regulations (50 CFR 402), the Fish and Wildlife Service (Service) transmits this correspondence to serve as the final biological opinion (BO) for the Zanni Lateral Pipeline Project and associated Historic Depletions for Gunnison Basin PBO.

Under the Colorado River Salinity Control Act Basin States Program, Bureau of Reclamation (Reclamation) will provide funding assistance for the proposed Zanni Lateral Pipeline Project (project) in order to reduce salt loading into the Colorado River. Contracts and funding for this Basin States-funded project pass through the State of Colorado to the Crawford Clipper Ditch Company (Company). The pipeline component of the proposed action is located immediately southeast of the Town of Crawford in southeastern Delta County. The proposed action includes all activities associated with the piping project, including borrow and staging areas, and the habitat replacement site. The proposed piping project will replace approximately 8,885 linear feet of unlined open irrigation ditch with approximately 14,114 linear feet of buried pipe, including 8,647 linear feet for irrigation, and 5,647 linear feet for winter stock water delivery. All buried pipe will be installed in the existing ditch or ditch prism, with the exception of the last 1,600 feet of pipeline and a 490-foot pipeline spur, which will cross irrigated ground and semi-desert shrub lands. Approximately 1,575 feet of the existing irrigation ditch would be decommissioned by backfilling. Construction activities would be limited to 30-foot-wide construction rights-of-way (or narrower in residential areas). Proposed borrow sites and staging areas totaling approximately 7.6 acres are located on private lands near the proposed project. The proposed action will result in no change to the Company's historic depletions to the

Colorado River Basin of approximately 5,776 acre-feet per year (AF/yr), and there are no new depletions.

In accordance with Basin States Program requirements, the replacement of wildlife values foregone as the result of impacts from salinity control activities is a component of this salinity control project. The Reclamation-approved Habitat Replacement Site is located in northeastern Montrose County approximately 3.5 miles south-by-southeast of the Town of Crawford. The Habitat Replacement site is located in an area of existing man-made ponds in the Alkali Creek drainage on nearby private land protected by a conservation easement (Hart Ranch). Access to the pipeline alignment and the Habitat Replacement Site is on existing roads, so no new roads will be constructed as a result of the proposed action. Habitat replacement activities will include cleaning and enlargement of existing pothole ponds, installation of a water control structure/s, plantings of native riparian woody vegetation, and weed management.

A Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin was initiated on January 22, 1988. The Recovery Program was intended to be the reasonable and prudent alternative for individual projects to avoid the likelihood of jeopardy to the endangered fishes from impacts of depletions to the Upper Colorado River Basin. In order to further define and clarify the process in the Recovery Program, a section 7 agreement was implemented on October 15, 1993, by the Recovery Program participants. Incorporated into this agreement is a Recovery Implementation Program Recovery Action Plan (RIPRAP) which identifies actions currently believed to be required to recover the endangered fishes in the most expeditious manner.

On December 4, 2009, the Service issued a final Gunnison River Basin Programmatic Biological Opinion (PBO) (this document is available for viewing at the following internet address: <http://www.coloradoriverrecovery.org/documents-publications/section-7-consultation/GUPBO.pdf>). The Service has determined that projects that fit under the umbrella of the Gunnison River PBO would avoid the likelihood of jeopardy and/or adverse modification of critical habitat for depletion impacts. The Gunnison River PBO states that in order for actions to fall within the umbrella of the PBO and rely on the RIPRAP to offset its depletion, the following criteria must be met.

1. A Recovery Agreement must be offered and signed prior to conclusion of section 7 consultation.
2. A fee to fund recovery actions will be submitted as described in the proposed action for new depletion projects greater than 100 AF/yr. The 2016 fee is \$20.87 per AF and is adjusted each year for inflation.
3. Reinitiation stipulations will be included in all individual consultations under the umbrella of this programmatic.
4. The Service and project proponents will request that discretionary Federal control be retained for all consultations under this programmatic.

The Recovery Agreement was signed by the Service and the Water User. The depletions associated with this project are historic depletions which do not make contributions to fund recovery actions. The Reclamation has agreed to condition its approval documents to retain jurisdiction should section 7 consultation need to be reinitiated. Therefore, the Service concludes that the subject project meets the criteria to rely on the Gunnison PBO to offset depletion impacts and is not likely to jeopardize the continued existence of the species and is not likely to destroy or adversely modify designated critical habitat.

The reinitiation criteria for the Gunnison PBO apply to all projects under the umbrella of the PBO. For your information the reinitiation notice from the Gunnison River PBO is presented below.

REINITIATION NOTICE

This concludes formal consultation on the subject action. The proposed action includes adaptive management because additional information, changing priorities, and the development of the States' entitlement may require modification of the Recovery Action Plan. Therefore, the Recovery Action Plan is reviewed annually and updated and changed when necessary and the required time frames include changes in timing approved by means of the normal procedures of the Recovery Program, as explained in the description of the proposed action. Every 2 years, for the life of the Recovery Program, the Service and Recovery Program will review implementation of the Recovery Action Plan actions that are included in this BO to determine timely compliance with applicable schedules. As provided in 50 CFR sec. 402.16, reinitiation of formal consultation is required for new projects where discretionary Federal Agency involvement or control over the action has been retained (or is authorized by law) and under the following conditions:

1. **The amount or extent of take specified in the incidental take statement for this opinion is exceeded.** The terms and conditions outlined in the incidental take statement are not implemented. The implementation of the proposed reoperation of Aspinall and the Selenium Management Program will further decrease the likelihood of take caused by water depletion impacts.
2. **New information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion,** such as impacts due to climate change. In preparing this opinion, the Service describes the positive and negative effects of the action it anticipates and considered in the section of the opinion entitled "EFFECTS OF THE ACTION."
3. **The identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the BO.** It would be considered a change in the action subject to consultation if the reoperation of Aspinall and the Selenium Management Program described in this opinion are not implemented within the required timeframes. If a draft Selenium Management Program document is not completed within 18 months of the final PBO and a final document within 24 months, reinitiation of consultation will be required. Reinitiating consultation could consist of an

exchange of memoranda examining the progress made on the plan and evaluating the consequences of extending the timeframe. Also, at any time, if funding is not available to implement the Selenium Management Program reinitiation of consultation will be required.

The analysis for this BO assumed implementation of the Colorado River Mainstem Action Plan of the RIPRAP because the Colorado pikeminnow (*Ptychocheilus lucius*) and razorback sucker (*Xyrauchen texanus*) that occur in the Gunnison River use the Colorado River and are considered one population. The essential elements of the Colorado River Plan are as follows: 1) provide and protect instream flows; 2) restore floodplain habitat; 3) reduce impacts of nonnative fishes; 4) augment or restore populations; and 5) monitor populations and conduct research to support recovery actions. The analysis for the non-jeopardy determination of the proposed action that includes about 37,900 AF/yr of new water depletions from the Gunnison River Basin relies on the Recovery Program to provide and protect flows on the Gunnison and Colorado Rivers.

4. **The Service lists new species or designates new or additional critical habitat, where the level or pattern of depletions covered under this opinion may have an adverse impact on the newly listed species or habitat.** If the species or habitat may be adversely affected by depletions, the Service will reinitiate consultation on the PBO as required by its section 7 regulations. The Service will first determine whether the Recovery Program can avoid such impact or can be amended to avoid the likelihood of jeopardy and/or adverse modification of critical habitat for such depletion impacts. If the Recovery Program can avoid the likelihood of jeopardy and/or adverse modification of critical habitat no additional recovery actions for individual projects would be required, if the avoidance actions are included in the Recovery Action Plan. If the Recovery Program can't avoid the likelihood of jeopardy and/or adverse modification of critical habitat then the Service will reinitiate consultation and develop reasonable and prudent alternatives.

If the annual assessment from Reclamation's reports indicates that the operation of the Aspinall Unit to meet flow targets or that the Selenium Management Program, as specified in this opinion has not been implemented as proposed, Reclamation will be required to reinitiate consultation to specify additional measures to be taken by Reclamation or the Recovery Program to avoid the likelihood of jeopardy and/or adverse modification of critical habitat for depletions and water quality. Also, if the status of all four fish species has not sufficiently improved, as determined by the Service in a formal sufficient progress finding under provisions of the Recovery Program, Reclamation will be required to reinitiate consultation. If other measures are determined by the Service or the Recovery Program to be needed for recovery prior to the review, they can be added to the Recovery Action Plan according to standard procedures. If the Recovery Program is unable to complete those actions which the Service has determined to be required, Reclamation will be required to reinitiate consultation in accordance with ESA regulations and this opinion's reinitiation requirements.

All individual consultations conducted under this programmatic opinion will contain language requesting the applicable Federal agency to retain sufficient authority to reinstate consultation should reinstatement become necessary. The recovery agreements to be signed by non-Federal entities who rely on the Recovery Program to avoid the likelihood of jeopardy and/or adverse modification of critical habitat for depletion impacts related to their projects will provide that such non-Federal entities also must request the Federal agency to retain such authority. Non-Federal entities will agree by means of recovery agreements to participate during reinstated consultations in finding solutions to the problem which triggered the reinstatement of consultation.

We concur that the proposed action associated with the Zanni Lateral Pipeline Project may affect but is not likely to adversely affect the Yellow-billed cuckoo (*Coccyzus americanus*). Regarding its proposed critical habitat, we acknowledge your determination of no effect, but neither 7(a) (3) of the Act, nor implementing regulations under section 7(a) (2) of the Act require the Service to review or concur with this determination. However, we do appreciate you informing us of your analysis for western yellow-billed cuckoo critical habitat even if not required to do so under the Act.

If you have any questions regarding this consultation or would like to discuss it in more detail, please contact Barb Osmundson of our Grand Junction Ecological Services Field Office at (970)628-7189.

Attachment

cc: FWS/UCREFRP, Lakewood

GUNNISON RIVER RECOVERY AGREEMENT

This RECOVERY AGREEMENT is entered into this 8th day of January, 2014, by and between the United States Fish and Wildlife Service (Service) and **Crawford Clipper Ditch Company** (Water User).

WHEREAS, in 1988, the Secretary of Interior, the Governors of Wyoming, Colorado and Utah, and the Administrator of the Western Area Power Administration signed a Cooperative Agreement to implement the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (Recovery Program); and

WHEREAS, the Recovery Program is intended to recover the endangered fish while providing for water development in the Upper Basin to proceed in compliance with state law, interstate compacts and the Endangered Species Act; and

WHEREAS, the Colorado Water Congress has passed a resolution supporting the Recovery Program; and

WHEREAS, on December 4, 2009, the Service issued a programmatic biological opinion (2009 Opinion) for the Gunnison River Basin and the operation of the Wayne N. Aspinall Unit concluding that implementation of specific operation of the Aspinall Unit, implementation of a Selenium Management Plan and specified elements of the Recovery Action Plan (Recovery Elements), along with existing and a specified amount of new depletions, are not likely to jeopardize the continued existence of the endangered fish or adversely modify their critical habitat in the Gunnison River subbasin and Colorado River subbasin downstream of the Gunnison River confluence; and

WHEREAS, Water User is the **Crawford Clipper Ditch Company**, which causes or will cause depletions to the Gunnison River subbasin from its **Crawford Clipper Ditch System diversion on the Smith Fork of the Gunnison River** with the implementation of **Salinity Control Projects** (Water Projects); and

WHEREAS, Water User desires certainty that its depletions can occur consistent with section 7 and section 9 of the Endangered Species Act (ESA); and

WHEREAS, the Service desires a commitment from Water User to the Recovery Program so that the Program can actually be implemented to recover the endangered fish and to carry out the Recovery Elements.

NOW THEREFORE, Water User and the Service agree as follows:

1. The Service agrees that implementation of the Recovery Elements specified in the 2009 Opinion will avoid the likelihood of jeopardy and adverse modification under section 7 of the ESA, for depletion impacts caused by Water User's Water Project. Any consultations under

section 7 regarding Water Project's depletions are to be governed by the provisions of the 2009 Opinion. The Service agrees that, except as provided in the 2009 Opinion, no other measure or action shall be required or imposed on Water Project to comply with section 7 or section 9 of the ESA with regard to Water Project's depletion impacts or other impacts covered by the 2009 Opinion. Water User is entitled to rely on this Agreement in making the commitment described in paragraph 2.

2. Water User agrees not to take any action which would probably prevent the implementation of the Recovery Elements. To the extent implementing the Recovery Elements requires active cooperation by Water User, Water User agrees to take reasonable actions required to implement those Recovery Elements. Water User will not be required to take any action that would violate its decrees or the statutory authorization for Water Project, or any applicable limits on Water User's legal authority. Water User will not be precluded from undertaking good faith negotiations over terms and conditions applicable to implementation of the Recovery Elements.

3. If the Service believes that Water User has violated paragraph 2 of this Recovery Agreement, the Service shall notify both Water User and the Management Committee of the Recovery Program. Water User and the Management Committee shall have a reasonable opportunity to comment to the Service regarding the existence of a violation and to recommend remedies, if appropriate. The Service will consider the comments of Water User and the comments and recommendations of the Management Committee, but retains the authority to determine the existence of a violation. If the Service reasonably determines that a violation has occurred and will not be remedied by Water User despite an opportunity to do so, the Service may request reinitiation of consultation on Water Project without reinitiating other consultations as would otherwise be required by the Reinitiation Notice section of the 2009 Opinion. In that event, the Water Project's depletions would be excluded from the depletions covered by 2009 Opinion and the protection provided by the Incidental Take Statement.

4. Nothing in this Recovery Agreement shall be deemed to affect the authorized purposes of Water User's Water Project or The Service statutory authority.

5. This Recovery Agreement shall be in effect until one of the following occurs:

- a. The Service removes the listed species in the Upper Colorado River Basin from the endangered or threatened species list and determines that the Recovery Elements are no longer needed to prevent the species from being relisted under the ESA; or
- b. The Service determines that the Recovery Elements are no longer needed to recover or offset the likelihood of jeopardy to the listed species in the Upper Colorado River Basin; or
- c. The Service declares that the endangered fish in the Upper Colorado River Basin are extinct; or
- d. Federal legislation is passed or federal regulatory action is taken that negates the need for [or eliminates] the Recovery Program.

6. Water User may withdraw from this Recovery Agreement upon written notice to the Service. If Water User withdraws, the Service may request reinitiation of consultation on Water Project without reinitiating other consultations as would otherwise be required by the Reinitiation Notice section of the 2009 Opinion.

ATTACHMENT G

Cultural Resources Compliance Documents



October 13, 2015

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

OFFICIAL FILE COPY
RECEIVED BOR W.C.A.O.
GRAND JUNCTION

OCT 19 2015

CLASS _____
PRJ. _____
CNTR. _____
FLDR. _____

CLASS	INITIALS	SURNAME
10/19/15	JLW	Ward
		McWhorter
		Wernice

Re: Zanni Lateral of the Crawford Clipper Ditch Piping Project, Delta County, Colorado (CHS # 69087)

Dear Mr. Warner:

Thank you for your correspondence dated October 7, 2015 and received by our office on October 8, 2015 regarding the above referenced project under Section 106 of the National Historic Preservation Act (Section 106). We have received and reviewed Alpine Archaeological Consultants, Inc.'s report titled, *Cultural Resource Inventory of the Zanni Lateral of the Crawford Clipper Ditch And Six Block Areas for Staging or Borrows: Delta County, Colorado* (Document # DT.R.R23) and associated site forms.

After review of the provided documentation, we do not object with the proposed Area of Potential Effect (APE) encompassing a 100-ft-wide corridor centered on 1.9 miles of the ditch and proposed pipeline route, as well as six block areas to be used for staging or soil borrowing during construction.

We concur that 5DT.1811.3 is a non-supporting segment to National Register of Historic Places (NRHP) eligible resource 5DT.1811. We concur that 5DT.1584.3 is a non-supporting segment to NRHP ineligible resource 5DT.1584. We concur that the project will result in a finding of no adverse effect under Section 106.

Should unidentified archaeological resources be discovered in the course of the project, work must be interrupted until the resources have been evaluated in terms of the NRHP eligibility criteria (36 CFR 60.4) in consultation with our office.

We request being involved in the consultation process with the local government, which as stipulated in 36 CFR 800.3 is required to be notified of the undertaking, and with other consulting parties. Additional information provided by the local government or consulting parties might cause our office to re-evaluate our eligibility and potential effect findings.

If we may be of further assistance, please do not hesitate to contact Katie Arntzen, our Section 106 Compliance Manager, at (303) 866-4608 or katie.arntzen@state.co.us.

Sincerely,

Steve Turner
State Historic Preservation Officer



OFFICIAL FILE COPY
RECEIVED BOR W.C.A.O.
GRAND JUNCTION

OCT 30 2015

CLASS _____
DRI _____
CONTR. _____
FLOR. _____

CLASS	INITIALS	SURNAME
11/3/15	JKW	iWard McWhirter

October 26, 2015

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

Re: Zanni Lateral of the Crawford Clipper Ditch Piping Project, Montrose and Delta County, Colorado (CHS # 69087)

Dear Mr. Warner:

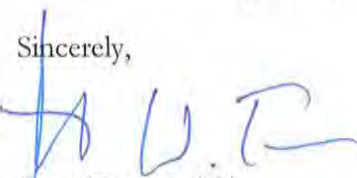
Thank you for your correspondence dated October 20, 2015 and received by our office on October 22, 2015 regarding the addendum to the above referenced project under Section 106 of the National Historic Preservation Act (Section 106). We have received and reviewed Alpine Archaeological Consultants, Inc.'s limited-results report titled, *Addendum Cultural Resource Report for the Zanni Lateral of the Crawford Clipper Ditch Piping Project, Montrose and Delta Counties, Colorado*.

After review of the provided documentation, we do not object with the proposed Area of Potential Effect (APE) encompassing a 100-ft-wide corridor centered on two ditch reroute centerlines, three block areas to be used for staging or soil borrowing during construction and a habitat replacement site. We concur that the project will result in a finding of no adverse effect under Section 106.

Should unidentified archaeological resources be discovered in the course of the project, work must be interrupted until the resources have been evaluated in terms of the National Register of Historic Places eligibility criteria (36 CFR 60.4) in consultation with our office.

We request being involved in the consultation process with the local government, which as stipulated in 36 CFR 800.3 is required to be notified of the undertaking, and with other consulting parties. Additional information provided by the local government or consulting parties might cause our office to re-evaluate our eligibility and potential effect findings.

If we may be of further assistance, please do not hesitate to contact Katie Arntzen, our Section 106 Compliance Manager, at (303) 866-4608 or katie.arntzen@state.co.us.

Sincerely,


Steve Turner, AIA
State Historic Preservation Officer

ATTACHMENT H

Environmental Checklist

Zanni Lateral of the Crawford Clipper Ditch Pipeline Project Environmental Checklist

This Environmental Checklist (Checklist) has been prepared to ensure that the environmental commitments are met, as set forth in the Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) completed for the Zanni Lateral of the Crawford Clipper Ditch Pipeline Project (“Project”) pursuant to the National Environmental Policy Act (NEPA). The Bureau of Reclamation is the lead federal agency with primary responsibility for complying with the NEPA on the Project, and the Crawford Clipper Ditch Company (“Company”) is responsible for implementing the environmental commitments contained in the EA and FONSI for the Project. The environmental commitments represent mitigation measures to avoid, minimize, rectify, reduce, eliminate or compensate for impacts caused by implementation of the Project. The Company shall utilize this Checklist to document compliance with each commitment, and shall submit the relevant component of the completed Checklist to Reclamation immediately following each phase of the Project, i.e., Pre-Construction, During Construction, and Post-Construction.

Environmental Commitments: <u>Pre-Construction</u>		
#	MITIGATION MEASURE or PROJECT DESIGN FEATURE	DATE OF COMPLIANCE
A.01	Habitat loss shall be mitigated in accordance with the Habitat Replacement Plan prepared for the Project to mitigate fish and wildlife values that will be foregone as a result of the Project. The Company is responsible for implementing the Habitat Replacement Plan prior to or concurrently with implementation of the Project.	
A.02	The Company shall provide an environmental briefing to the contractor and any sub-contractors in a pre-construction meeting. Such an environmental briefing shall include, at a minimum, a review of the environmental commitments described in this Checklist.	
A.03	The Company shall provide a hard copy of the Final EA and Finding of No Significant Impact (FONSI) to the construction contractor prior to or during the pre-construction briefing.	
A.04	The Company shall provide a hard copy of the current Delta County Weed Management Plan to the construction contractor prior to or during the pre-construction briefing.	

Environmental Commitments: Pre-Construction

#	MITIGATION MEASURE or PROJECT DESIGN FEATURE	DATE OF COMPLIANCE
A.05	All construction easements/right-of-way agreements shall be executed by all parties prior to construction (including agreements with private landowners, and clearances from Colorado Department of Transportation (CDOT) and/or Delta County).	
A.06	A spill response plan shall be prepared in advance of construction by the contractor for areas of work where spilled contaminants could flow into water bodies. All employees and workers, including those under separate contract, shall be briefed and made familiar with this plan.	
A.07	Onsite supervisors and equipment operators shall be trained and knowledgeable in the use of spill containment equipment.	
A.08	Stormwater Management Plan shall be submitted to the Colorado Department of Public Health and Environment (CDPHE) by the construction contractor prior to construction disturbance.	
A.09	CWA Section 402 Storm Water Discharge Permit compliant with the National Pollutant Discharge Elimination System (NPDES) shall be obtained from CDPHE by the construction contractor prior to construction disturbance (regardless of whether dewatering would take place during construction).	
A.10	Traffic control measures shall be coordinated by the construction contractor with CDOT, Delta County Sheriff, and emergency services, prior to working in the State Highway 92 right-of-way.	
A.11	Utility clearances shall be obtained by the construction contractor prior to construction activities, from Delta Montrose Electric Association, TDS Telecom, local water companies, and any other utility in the area.	
A.12	Construction limits shall be clearly flagged onsite to avoid unnecessary plant loss or ground disturbance. The boundary between U.S. Bureau of Land Management (BLM) land and Borrow/Staging Site #1 shall be clearly flagged so that Project activities do not encroach on adjoining BLM land.	
A.13	Prior to construction, the construction contractor shall remove vegetative material by mowing or chopping. Vegetation material shall be either hauled to a proposed staging area to be burned or chipped, or chipped and mulched onsite. Stumps shall be grubbed and hauled to a proposed staging area to be burned.	

Environmental Commitments: Pre-Construction

#	MITIGATION MEASURE or PROJECT DESIGN FEATURE	DATE OF COMPLIANCE
A.14	Topsoil shall be stockpiled and then redistributed after completion of construction activities.	
A.15	If the schedule for the Project shifts (EA, Section 4.11), and vegetation disturbing activities along the pipeline alignment would occur during the typical nesting season of migratory birds (April 15 – August 1), further conservation measures may be necessary to protect these species, such as pre-construction nest surveys. Reclamation shall be notified as soon as possible if the pipeline component of the Project schedule is expected to shift into migratory bird nesting season.	
A.16	The Habitat Replacement Site component of the Project is located in currently unoccupied range of the federally-listed Gunnison sage-grouse. If ground or vegetation-disturbing activities are to take place at the Habitat Replacement Site during the breeding, nesting, or brood-rearing periods of sage-grouse (March through September), the Company shall contact FWS and Colorado Parks and Wildlife (CPW) terrestrial biologists prior to construction to confirm the Proposed Action area remains unoccupied by the species, and that a documented active lek does not lie within 0.6 mile of the Proposed Action.	

Environmental Commitments: During Construction

#	MITIGATION MEASURE or PROJECT DESIGN FEATURE	DATE OF COMPLIANCE
B.01	Habitat loss shall be mitigated in accordance with the Habitat Replacement Plan prepared for the Project to mitigate fish and wildlife values that will be foregone as a result of the Project. The Company is responsible for implementing the Habitat Replacement Plan prior to or concurrently with implementation of the Project.	
B.02	All construction activities shall be confined to rights-of-way negotiated between the Company and the landowners.	
B.03	Construction staging (for pipe and equipment) shall take place only in staging/borrow areas shown on Figures 3 and 4 in the Final EA.	
B.04	Existing roads shall be used to access the construction, staging, borrow, and habitat replacement areas. No new roads shall be constructed.	
B.05	All environmental commitments included in CDOT and/or Delta County authorizations and agreements with landowners shall be honored.	
B.06	Ground disturbances shall be limited to only those areas necessary to safely implement the Proposed Action.	
B.07	Vegetation removal shall be confined to the smallest portion of the Proposed Action Area necessary for completion of the work.	
B.08	Pipeline trenches left open overnight shall be kept to a minimum and covered to reduce potential for hazards to the public and to wildlife. Covers shall be secured in place and strong enough to prevent livestock or wildlife from falling through. Where trench covers would not be practical, wildlife escape ramps shall be utilized.	
B.09	The construction contractor shall utilize straw wattles, silt curtains, cofferdams, dikes, straw bales, or other suitable erosion control measures to prevent erosion from entering water bodies during construction.	
B.10	The construction contractor shall pour concrete in forms and/or behind cofferdams to prevent discharge into waterways. Any wastewater from concrete-batching, vehicle wash down, and aggregate processing shall be contained and treated or removed for off-site disposal.	

Environmental Commitments: During Construction

#	MITIGATION MEASURE or PROJECT DESIGN FEATURE	DATE OF COMPLIANCE
B.11	The construction contractor shall store and dispense fuels, lubricants, hydraulic fluids, and other petrochemicals in an approved staging area.	
B.12	The construction contractor shall inspect equipment daily and conduct repairs as necessary to ensure equipment is free of petrochemical leaks.	
B.13	Construction equipment shall be parked, stored, and serviced only at an approved staging area.	
B.14	A spill response kit, which includes appropriate-sized spill blankets, shall be easily accessible and onsite at all times.	
B.15	The construction contractor shall transport, handle, and store any fuels, lubricants, or other hazardous substances involved with the Project in an appropriate manner that prevents them from contaminating soil and water resources.	
B.16	Portable secondary containment shall be provided for any fuel or lubricant containers staged within the Project Area. Any staging of fuel or lubricants, or fueling or maintenance of vehicles or equipment, shall not be conducted within 100 feet of any live water or drainage.	
B.17	All spills, regardless of size, shall be cleaned up promptly and contaminated soil shall be disposed of at an approved facility.	
B.18	Appropriate federal and Colorado authorities shall be immediately notified in the event of any contaminant spill. Any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, Section 102b.	
B.19	In the event of discovery of threatened or endangered species, all ground-disturbing activities in the area shall immediately cease, and Reclamation shall be notified. Work shall not be resumed until Reclamation has consulted with U.S. Fish & Wildlife Service to ensure that adequate measures are in place to avoid or reduce impacts to the species.	

Environmental Commitments: During Construction

#	MITIGATION MEASURE or PROJECT DESIGN FEATURE	DATE OF COMPLIANCE
B.20	If an occupied raptor nest is discovered during construction, regardless of construction timing, the Company shall stop construction activities until Reclamation has consulted with the U.S. Fish & Wildlife Service and/or Colorado Parks & Wildlife on appropriate protective measures to avoid or reduce impacts to nesting raptors. As of February 2016, no raptor nests were known within the Project Area or within ¼ mile of the Project Area.	
B.21	In the event of discovery of evidence of possible cultural or paleontological resources, all ground disturbing activities in the area shall immediately cease, and Reclamation shall be notified. Work shall not be resumed until authorized by Reclamation.	
B.22	The Company shall permanently dewater, remove from irrigation service, and render incapable of irrigation water delivery those open ditches abandoned as part of the Project.	
B.23	The Company shall remove any decommissioned irrigation structures (head gates, drops, etc.) by methods described in the construction specifications provided to the contractor.	

Environmental Commitments: Post-Construction

#	MITIGATION MEASURE or PROJECT DESIGN FEATURE	DATE OF COMPLIANCE
C.01	Following construction, all disturbed areas shall be smoothed, shaped, contoured and reseeded to as near to their pre-project conditions as practicable.	
C.02	Seeding shall occur at appropriate times within six months following construction completion with weed-free seed mixes per Reclamation specifications.	
C.03	Weed control shall be implemented by the Company or the Company’s contractor in accordance with current County weed control standards.	
C.04	Lands previously in agricultural production shall be returned to agricultural production following construction.	
C.05	Implementation of the Habitat Replacement Plan shall be complete. The Company ensures that it has the necessary resources to monitor and maintain the Habitat Replacement Site to meet the objectives of the Habitat Replacement Plan for at least 50 years.	

