

FINAL ENVIRONMENTAL ASSESSMENT



*Clipper Irrigation Salinity Control Project 4
Smith Fork Project
Delta County, Colorado*

Prepared For

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

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1 INTRODUCTION

This Environmental Assessment (EA) has been prepared in compliance with the National Environmental Policy Act (NEPA) to evaluate the environmental effects of Crawford Clipper Ditch's proposed Clipper Irrigation Salinity Control Project 4 (hereinafter, "Project" or "Proposed Action"). Rare Earth Science, LLC prepared this EA on behalf of the U.S. Department of the Interior's Bureau of Reclamation (hereinafter "Reclamation"), which is authorized by the Colorado River Basin Salinity Control Act to provide funding assistance for the Proposed Action. Reclamation awarded a funding agreement to Crawford Clipper Ditch for the Project in August 2012 (Agreement Number R12AC40033, hereinafter, "Funding Agreement").

This EA represents a coordinated screening and analysis of the environmental effects of the Proposed Action and a "No Action" Alternative. If Reclamation's review of this EA results in a Finding of No Significant Impact for the Proposed Action, preparation of an Environmental Impact Statement would not be required before the Proposed Action could be implemented.

1.1 Proposed Action

The Proposed Action (described in more detail in Section 2.1) entails replacing a total of approximately 18,709 lineal feet (approximately 3.5 miles) of open irrigation ditch with buried pipe, both to improve the efficiency of water delivery to ditch users, and to reduce salinity loading in the Colorado River Basin. Most of the buried pipe alignment will be located within existing ditch alignments, and about 1.4 miles of existing ditch alignment will be abandoned. A total of about 4.9 miles of existing ditch and proposed pipe alignments were considered under this assessment.

The Proposed Action will be located in Delta County, Colorado, about 2.5 miles southeast of the Town of Hotchkiss, in the Cottonwood Creek drainage (Figure 1). Cottonwood Creek is a tributary of the North Fork of the Gunnison River in the lower Gunnison River watershed of the Upper Colorado River Basin. All of the land involved in the Proposed Action is privately owned (Figures 1 and 2).

The Proposed Action Area is situated in soils derived from Mancos Shale, a saline marine deposit, which contributes salts to irrigation water that leaks from unlined irrigation ditches. According to Reclamation, the estimated salt load reduction in the Colorado River Basin resulting from the Proposed Action will be 1,038 tons per year. Conceptual and project plans were developed by Crawford Clipper Ditch with assistance from Harward Irrigation Systems.

1.2 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 agricultural, municipal, and industrial water users.

In June 1974, Congress enacted the Colorado River Basin Salinity Control Act, Public Law 93-320, which directed the Secretary of the Interior to proceed with a program to enhance and protect the quality of water available in the Colorado River for use in the United States and

Republic of Mexico. In October 1984, Congress amended the original act by passing Public Law 98-569.

Public Law 104-20 of July 28, 1995, authorizes the Secretary of the Interior, acting through the Bureau of Reclamation, to implement a basinwide salinity control program. The Secretary may carry out the purposes of this legislation directly, or make grants, enter into contracts, memoranda of agreement, commitments for grants, cooperative agreements, or advances of funds to non-federal entities under such terms and conditions as the Secretary may require.

Reclamation's Basinwide Salinity Control Program funds 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. Crawford Clipper Ditch signed a cooperative funding agreement with Reclamation in August 2012 (Agreement Number R12AC40033), with a targeted project completion date of September 30, 2015.

1.3 Need For & Purpose of Proposed Action

Seepage from unlined leaking irrigation ditches in the region is a significant source of ground water which mobilizes naturally-occurring salts in the Mancos Shale-derived soils and underlying shale formations. Construction of the Proposed Action will provide a buried pipe delivery system to replace existing unlined ditches, which will eliminate seepage and reduce salinity in the Colorado River basin by an estimated 1,038 tons of salt per year. This will provide benefits for a broad spectrum of interests, including downstream water users, environmental interests, and local, state, and federal government agencies.

1.4 Scoping & Coordination

Scoping for this Environmental Assessment was completed by Reclamation during the initial planning stages of the project to 1) determine the alternative action(s) to be evaluated; 2) to determine the significant issues of analysis triggered by the Proposed Action; and 3) to guide consultation and coordination with other agencies to ensure compliance with NEPA.

During scoping, Reclamation and Crawford Clipper Ditch limited the project alternatives to the "Proposed Action" and "No Action" alternatives (discussed in Section 2). Additionally, Reclamation identified the potential environmental and human environment issues and concerns associated with implementation of the Proposed Action. The following issues were determined to be insignificant or not applicable, and are not analyzed further in this EA:

- Indian trust assets (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 project area. Therefore, neither the No Action nor the Proposed Action alternative will have an effect on Indian trust assets.
- Environmental justice issues (not applicable). Executive Order 12898 provides that federal agencies analyze programs to assure that they do not disproportionately adversely affected minority or low income populations or Indian Tribes. The project area does not occur on Indian reservation lands or within disproportionately adversely affected minority or low income populations. Therefore, neither the No Action nor the Proposed Action alternative will have an environmental justice effect.

- Jurisdictional wetlands (not applicable). The Proposed Action will affect surface and subsurface hydrology supplied to wetland areas along the project alignment. As an irrigation maintenance project, the Proposed Action is exempt from requiring a Section 404 Permit pursuant to the Clean Water Act (33 USC 1344). The applicable U.S. Army Corps of Engineers exemptions are for 1) Farm or Stock Pond or Irrigation Ditch Construction or Maintenance, and 2) Maintenance of Existing Structures. The exemptions have been confirmed by Nathan Green in the Grand Junction Regulatory Office of the U.S. Army Corps of Engineers. Copies of the Exemption Summaries are provided as Attachment B.

Issues determined to be of potential significance, and therefore appropriate for analysis under this EA, are outlined below and discussed in greater detail in Section 3:

- Water Rights. The ditches involved in the Proposed Action provide water for irrigation. Piping of these ditches is not expected to interfere with operations or adversely affect the ability to use water for irrigation.
- Water Quality. Piping existing ditches is expected to benefit water quality by reducing salinity and selenium loading in the Colorado River basin. There are additional water quality benefits beyond salinity reduction.
- Access & Land Use. The project lies entirely on private lands. Crawford Clipper Ditch is responsible for obtaining all needed right-of-ways and landowner consent prior to construction of the project.
- Fish & Wildlife Resources. 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 the development of a program that “shall provide for the mitigation of incidental fish and wildlife values that are lost as a result of the measures and associated works and the replacement of fish and wildlife values foregone.”
- Threatened & Endangered Species. The Endangered Species Act (ESA) requires federal agencies to consult with the U.S. Fish & Wildlife Service to ensure any actions they authorize or fund do not cause jeopardy to threatened or endangered species. No new adverse effects to species listed under the Endangered Species Act are expected as a result of implementation of the Proposed Action. Reclamation previously consulted with the U.S. Fish & Wildlife Service regarding historic water depletions in the Gunnison basin resulting from the operation of Crawford Clipper Ditch facilities, and water quality improvements resulting from the Proposed Action. This consultation is documented in the Gunnison Basin Programmatic Biological Opinion USFWS 2009).
- Cultural Resources. Federal agencies are responsible for ensuring that they take into account the effects of their actions on cultural resources and for complying with the National Historic Preservation Act (36 CFR Part 800) and other historic preservation requirements.
- Agricultural Resources. The U.S. Department of Agriculture’s Natural Resources Conservation Service maps farmlands of national and statewide importance (prime and unique farmlands) as defined by the Farmland Protection Policy Act. Designations of prime and unique farmlands are based on soil types and irrigation water resources (7 USC 4201 Section 2 (c) (A) and (B)). Temporary disturbance to prime farmland will

occur during construction, and these lands will be returned to production immediately following the project.

1.5 Agency Consultations

In compliance with NEPA and in the interest of addressing environmental issues identified during the scoping process, the following agencies were contacted and consulted in the preparation of this document:

- Colorado Office of Archaeology and Historic Preservation, Denver, CO
- Colorado Water Conservation Board, Denver, CO
- Colorado Division of Water Resources, District 40 (North Fork), CO
- Colorado Parks & Wildlife, Gunnison, CO
- U.S. Fish & Wildlife Service, Ecological Service, Grand Junction, CO
- U.S. Army Corps of Engineers, Regulatory Office, Grand Junction, CO
- Delta County, CO
- Colorado River Water Conservation District, Glenwood Springs, CO
- Hotchkiss Crawford Historical Museum, Hotchkiss, CO

The contact list for agencies consulted during the EA process (also the distribution list for this EA) is included as Attachment A.

2 PROPOSED ACTION & ALTERNATIVES

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

2.1 No Action Alternative

Under this alternative, Reclamation would not provide funding to Crawford Clipper Ditch to pipe the lower Clipper Ditch system. Seepage from these structures 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

Reclamation, through the Colorado River Basin Salinity Control Program (CRBSP) has funded Crawford Clipper Ditch (Agreement Number R12AC40033) to pipe open irrigation ditches to reduce salt loading in the Colorado River basin. Ditches to be piped include the Spurlin Mesa lateral (main line, east branch, and west branch) of Crawford Clipper Ditch (Figure 2). Construction for the Proposed Action would take place between October 1, 2013 and April 15, 2014. Construction details can be found in detailed construction drawings by Harward Irrigation (as summarized below).

The Proposed Action will replace a total of approximately 18,709 lineal feet (3.5 miles) of open irrigation ditch with buried pipe, installed in or next to the exiting ditch prism. Irrigation pipe diameters would range from 27 inches to 15 inches. A screen structure and intake will be built near where the exiting main branch of the Spurlin Mesa lateral intersects Highway 92, south of Baxter Reservoir. Each farm turnout will include a metered outlet. A small-diameter stock water pipeline will be installed alongside the new irrigation pipe, so that winter stock water supplies can be maintained. The stock water pipeline will also collect and re-distribute irrigation tail water

appropriately. Most of the buried pipe alignment will be located within existing ditch alignments, and about 1.4 miles of existing ditch alignment will be abandoned. A total of about 4.9 miles of existing ditch and proposed irrigation pipe alignments were considered under this assessment (Figures 2 and 3).

Two construction staging areas for materials have been identified for the Proposed Action (Figures 2 and 3). All staging will take place on private lands in agricultural areas or on previously disturbed ground. All construction access will utilize county roads or existing private roads.

When construction is complete, the abandoned ditch segments will be in-filled with soil from the berm paralleling the canal, and any abandoned irrigation structures (head gates, drops, etc.) will be removed. In the event that additional material is needed to fill abandoned ditch segments, fill material will be borrowed from the north proposed staging area on private land (Figures 2 and 3).

Vegetation slash will be chopped and deposited along the project alignment as mulch. Revegetation and weed control complying with Delta County standards will be implemented as soon as practicable following construction.

3 AFFECTED ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

This section discusses resources that may be affected by actions taken to pipe and/or abandon approximately 4.9 miles of the Spurlin Mesa lateral of Crawford Clipper Ditch. During preparation of this EA, information on issues and concerns was received from the Ditch 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 impacts predicted under the No Action and Proposed Action Alternatives. This section is concluded with a summary of impacts.

3.1 Description of the Proposed Action Area

The Proposed Action Area lies about 3 miles southeast of the Town of Hotchkiss and about 150 miles southwest of Denver, in Delta County, Colorado, in the North Fork of the Gunnison River watershed (Figure 1). The climate is semi-arid continental, with low humidity and moderately low precipitation, averaging about 10 to 13 inches annually. The average elevation in the Proposed Action Area is about 5,600 feet above mean sea level (Figure 2). Typical crops are irrigated grass pasture and hay crops. The irrigation season is between April and October.

The privately-owned irrigation conveyances subject to Proposed Action (the Spurlin Mesa lateral of the Crawford Clipper Ditch system) are charged by water from two sources: the Smith Fork River at a location approximately 7 direct miles southeast of the Proposed Action Area (near the Town of Crawford), and Crawford Reservoir, which lies southeast of the Town of Crawford. Water from the Smith Fork is delivered to shareholders during approximately May through July. As flows diminish in the Smith Fork, supplemental water is ordered from Crawford Reservoir and delivered to the Proposed Action Area via the Clipper Ditch system. A total of approximately 606 acres are irrigated by the Spurlin Mesa lateral and its branches. The overall Crawford Clipper Ditch system irrigates a total of approximately 3,209 acres of grass, hay, and corn silage

crops on Spurlin and Crawford Mesas. Drainage from the service area flows to Cottonwood Creek which drains to the North Fork River (Figure 3). The Proposed Action area begins near where the Spurlin lateral crosses State Highway 92 south of Baxter Reservoir, and extends north to the end of the Spurlin lateral on Spurlin Mesa Road (Figure 2).

The Proposed Action Area consists of private rural farms and private rural residential subdivision lands with irrigated hay meadows and pastures and areas of relatively natural vegetation (Figure 4), all occurring on Mancos Shale-derived soils. On-farm irrigation is accomplished primarily using gated pipe or sprinkler systems. Prior to conversion to irrigated lands, the irrigated parts of the Proposed Action Area consisted primarily of sagebrush and semi-desert scrublands or pinyon-juniper woodlands. Areas adjacent to ditches and receiving leakage from the ditches have developed riparian and wetland habitats, and some natural wetlands receiving ditch leakage have likely been enhanced.

Figure 4 shows the major landcover types mapped in the area by the Southwest Regional Gap Analysis Project (SWReGAP 2004). The primary landcover types in the Proposed Action Area are irrigated agricultural and Colorado Plateau pinyon pine-Utah juniper woodlands (see Section 3.5). Other landcover types intersecting or existing near the ditches / planned buried pipeline alignments involved in the Proposed Action are minor amounts of Inter-mountain Basins big sagebrush shrubland, Rocky Mountain lower montane riparian woodland and shrubland, and Inter-mountain Basins mixed salt desert shrub, mat saltbush shrubland, and greasewood shrublands. The existing ditch alignments are vegetated mostly with coyote willow and occasional mature cottonwoods, but also support stands of noxious and common weeds (see Section 3.5).

3.2 Water Rights & Use

The Crawford Clipper Ditch system originates at head gate on the Smith Fork 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. Water released from Crawford Reservoir is also delivered in the Crawford Clipper Ditch system. The irrigation season is approximately 173 days long. Total average rate of annual diversions of irrigation water through the Crawford Clipper Ditch system (including direct diversion from the Smith Fork River and Crawford Reservoir) is approximately 18,000 acre-feet.

Attachment C contains a "Structure Summary Report" for the Crawford Clipper Ditch headgate (structure #440500) on the Smith Fork. The reports summarize total water rights associated with the structure (including amounts decreed, appropriation dates, priority information, and adjudication type) and were generated using the Colorado Department of Natural Resources Water Conservation Board Decision Support Systems online reporting tools (CWCB 2013).

The Smith Fork River (a Gunnison River tributary), and Crawford Reservoir (a Smith Fork River tributary), lie within the Gunnison River basin. 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).

Proposed Action: Under the Proposed Action Alternative, no changes in water rights would occur. Crawford Clipper Ditch would have the ability to better manage its water rights with efficiencies gained from piping the system. Efficiencies gained may result in more water availability during irrigation season. Therefore, no direct adverse effects on

water rights in the Gunnison River Basin are expected to occur due to implementation of the Proposed Action.

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.

3.3 Water Quality

The Proposed Action is located with the Upper Gunnison River watershed in west-central Colorado. Irrigation water used in the Proposed Action Area is withdrawn from the Smith Fork River (a tributary to the Gunnison River) and Crawford Reservoir (a Smith Fork River tributary). The Proposed Action Area drains to Cottonwood Creek, a North Fork of Gunnison River (North Fork River) tributary. The Smith Fork River flows west through Gunnison and Delta Counties, with its headwaters in the West Elk Mountains east of Crawford. The North Fork River flows through Gunnison and Delta Counties, beginning at the confluence of Muddy Creek and Anthracite Creek downstream of Paonia Dam and flowing southwesterly. Both rivers join the Gunnison River in central Delta County, about 20 miles west of the Proposed Action Area. The North Fork and Smith Fork watersheds drain about 1,200 square miles and include several small communities. Cottonwood Creek enters the North Fork River about a mile upstream of the Town of Hotchkiss. Stream segments and Water Quality Standards for these waters are shown in Table 1, below.

Currently, Smith Fork River, North Fork River, and Cottonwood Creek are not on the Colorado Department of Public Health and Environment's (CDPHE's) list of impaired waters in the State of Colorado (CDPHE 2012). 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, and is not anticipated to significantly affect water quality downstream.

As mentioned in Section 1.3, seepage from unlined leaking irrigation ditches in the region is a significant source of water which mobilizes naturally-occurring salts and selenium in the Mancos Shale-derived soils and underlying shale formations into the local river system. Construction of the Proposed Action will provide a buried pipe delivery system to replace existing unlined ditches, which will eliminate seepage and reduce salinity in the Colorado River basin by an estimated 1,038 tons of salt per year. 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.

The Colorado River basin provides 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. The Proposed Action and other similar projects in the region are contributing significantly to salinity reduction in the Colorado River basin.

Table 1. Stream Segments & Water Quality Standards

Stream Segment	Designated Use	Numeric Standards				
		Physical and Biological	Inorganic (mg/L)		Metals (mg/L)	
COGULG10 Smith Fork, Main Stem	Aq Life Cold 1 Recreation E Water Supply Agriculture	T=TVS(WL) °C D.O.= 6.0 mg/l D.O.(sp)=7.0 mg/l pH=6.5-9.0 E.Coli=126/100ml	NH ₃ =TVS Cl ₂ (a)=0.019 Cl ₂ (c)=0.011 CN=0.005	S=0.002 B=0.75 NO ₂ =0.05 NO ₃ =10 Cl=250 SO ₄ =WS	As(ac)=340 As(ch)= 0.02(Trec) Cd(ac)=TVS(tr) Cd(ch)=TVS CrIII(ac)=50(Trec) CrIII(ch)=TVS CrVI(ac/ch)=TVS Cu(ac/ch)=TVS Fe(ch)=WS(dis) Fe(ch)=1000(Trec) Pb(ac/ch)=TVS	Mn(ac/ch)=TVS Mn(ch)=WS(dis) Hg(ch)=0.01(tot) Mo(ch)=160(Trec) Ni(ac/ch)=TVS Se(ac/ch)=TVS Ag(ac)=TVS Ag(ch)=TVS(tr) Zn(ac/ch)=TVS
COGUNF03 (North Fork, Main Stem, downstream from Black Bridge)	Aquatic Life (Cold 1) Agriculture Water Supply Recreation P (Oct-Mar) Recreation E (Apr-Sept)	D.O.=6.0 mg/l D.O.(sp)=7.0 mg/l pH=6.5-9.0 Oct. 1 to March 31 E.Coli=205/100ml April 1 to Sept. 30 E.Coli=126/100ml	NH ₃ =TVS Cl ₂ (a)=0.019 Cl ₂ (c)=0.011 CN=0.005	S=0.002 B=0.75 NO ₂ =0.05 NO ₃ =10 Cl=250 SO ₄ =WS	As(ac)=340 As(ch)= 0.02(Trec) Cd(ac)=TVS(tr) Cd(ch)=TVS CrIII(ac)=50(Trec) CrIII(ch)=TVS CrVI(ac/ch)=TVS Cu(ac/ch)=TVS Fe(ch)=WS(dis) Fe(ch)=1000(Trec) Pb(ac/ch)=TVS	Mn(ac/ch)=TVS Mn(ch)=WS(dis) Hg(ch)=0.01(tot) Mo(ch)=160(Trec) Ni(ac/ch)=TVS Se(ac/ch)=TVS Ag(ac)=TVS Ag(ch)=TVS(tr) Zn(ac/ch)=TVS
COGUNF06b (includes Cottonwood Creek)	Aquatic Life Warm 2 Recreation P Water Supply Agriculture	T=TVS(WS-III) °C D.O.=5.0 mg/l pH=6.5-9.0 E.Coli=205/100ml	NH ₃ (ac/ch)=TVS Cl ₂ (ac)=0.019 Cl ₂ (ch)=0.011 CN=.005	S=0.002 B=0.75 NO ₂ =0.05 NO ₃ =10 Cl=250 SO ₄ =WS	As(ac)=340 As(ch)=0.02(Trec) Cd(ac/ch)=TVS CrIII(ac)=50(Trec) CrIII(ch)=TVS CrVI(ac/ch)=TVS Cu(ac/ch)=TVS Fe(ch)=WS(dis) Fe(ch)=1000(Trec)	Pb(ac/ch)=TVS Mn(ac/ch)=TVS Mn(ch)=WS(dis) Hg(ch)=0.01(tot) Mo(ch)=160(Trec) Ni(ac/ch)=TVS Se(ac/ch)=TVS Ag(ac)=TVS Ag(ch)=TVS Zn(ac/ch)=TVS
COGULG13 (Crawford Reservoir)	Aq Life Warm 1 Recreation E Agriculture	T=TVS(WL) °C D.O.= 5.0 mg/l pH=6.5-9.0 E.Coli=126/100ml	NH ₃ (ac/ch)=TVS Cl ₂ (ac)=0.019 Cl ₂ (ch)=0.011 CN=.005	S=0.002 B=0.75 NO ₂ =0.05 NO ₃ =100	As(ac)=340 As(ch)=7.6(Trec) Cd(ac/ch)=TVS CrIII(ac/ch)=TVS CrIII(ch)=100(Trec) CrVI(ac/ch)=TVS Cu(ac/ch)=TVS Fe(ch)=1000(Trec)	Pb(ac/ch)=TVS Mn(ac/ch)=TVS Hg(ch)=0.01(Tot) Mo(ch)=160(Trec) Ni(ac/ch)=TVS Se(ac/ch)=TVS Ag(ac/ch)=TVS Zn(ac/ch)=TVS

(a)=Acute; (c)=Chronic; TVS=Table Value Standards; Trec=Total Recoverable Fraction
Data from Water Quality Control Commission Regulations 31 (CDPHE 2009) and Regulation 35 (CDPHE 2013).

Official designated uses for the Smith Fork and North Fork Rivers include domestic potable water supply, livestock and wildlife water supply, aquatic habitat and aquatic harvest, human contact (incidental contact through submersion), and agricultural water supply. Official designated uses for Cottonwood Creek and Crawford Reservoir are warm aquatic habitat, recreation, and agricultural water supply. Maintenance or improvement of water quality in all four of these segments would be of significant importance to users of these water resources.

Proposed Action: Because irrigation ditch construction or maintenance is exempted from requiring a Section 404 permit (see Attachment B) and the construction activities will occur within the dry canal or lateral, no change in water quality during construction is predicted. No federal permit is being issued for this project, and therefore no Section 401 Water Quality Certification is required for the Proposed Action. Improvements to water quality in the North Fork River and Cottonwood Creek (and in turn, the Gunnison River and Colorado River basins) are likely to result from implementation of the Proposed Action. An estimated salt loading reduction of 1,038 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 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 the North Fork, Gunnison, and Colorado rivers. No change in water quality would occur to Crawford Reservoir (which is upgradient of the Proposed Action Area) as a result of the Proposed Action.

No Action: Under the No Action Alternative, no change to existing water quality trends is predicted. The estimated 1,038 tons of salt annually contributed to the Colorado River basin would continue. Current selenium loading levels would continue in the Gunnison basin.

3.4 Access & Temporary Disturbance

During construction of the Proposed Action, an increase in noise and traffic would occur. Access for construction, operations and maintenance would utilize existing roadways. Crawford Clipper Ditch would obtain easements where necessary for improvements and pipeline alignments. Temporary disturbances within the right-of-way and footprint of the pipeline would occur during construction and the existing ditches and laterals would be dewatered and modified so that they no longer transport irrigation water. Pipeline alignments and construction footprints would be revegetated subject to agreements between Crawford Clipper Ditch and individual land owners. To date, all landowners in the footprint of the Proposed Action have agreed to provide access for the proposed buried pipeline alignment as shown on Figures 2 and 3.

Proposed Action: The Proposed Action would cause short-term temporary adverse effects consisting of noise, ground, and vegetation disturbance to property owners in the Proposed Action Area. This disturbance would occur incrementally across the Proposed Action Area during the approximate timeframe of October 1, 2013 through April 15, 2014. Soil will be used to backfill the existing ditch after the pipe is placed. Fill material will be obtained from the existing ditch prisms, and from the north proposed staging area on private land.

No Action: The No Action Alternative would have no effect on existing access easements, current agreements, or current land uses.

3.5 Habitat

As described in Section 3.1, the primary landcover types in the Proposed Action Area are irrigated agricultural and Colorado Plateau pinyon pine-Utah juniper woodlands. Other landcover types intersecting or existing near the ditches / planned buried pipeline alignments involved in the Proposed Action are minor amounts of Inter-mountain Basins big sagebrush

shrubland, Rocky Mountain lower montane riparian woodland and shrubland, and Inter-mountain Basins mixed salt desert shrublands, mat saltbush shrublands, and greasewood shrublands (Figure 4).

The pinyon pine-Utah juniper woodland association, intermixed with mixed montane shrubs, big sagebrush, and mixed salt desert shrublands, exists along the eastern approximately 2,600 lineal feet of the Proposed Action Area (mostly along the east branch of the project alignment). Most of the remainder of the property alignment intersects irrigated agricultural (farmland) ground (Figure 4).

The existing ditch alignment is vegetated mostly with coyote willow, pockets of cattails, and occasional mature cottonwoods and boxelder, but also features common ruderal and noxious weeds. The south part of the west branch alignment (the ditch outside the pipeline route) lies in a natural channel that features mature riparian shrubs such as three-leaf sumac, wild rose, chokecherry, rabbitbrush, and redosier dogwood. Some ditch bank areas are grazed by livestock and others are sprayed with herbicide to kill weeds, willows, trees, and other vegetation growing in or around the ditches. Invasive weed species in the ditch corridor include Canada thistle and other thistles, Russian knapweed, whitetop, houndstongue, tamarisk (salt cedar), and Russian olive.

A wetland and riparian habitat evaluation was performed for the Proposed Action Area by Wildlife & Natural Resource Concepts & Solutions, LLC (Zeman 2012) to quantify potential wetland and riparian habitat values that would be lost in the project area due to project implementation. The evaluation was modeled after methodology outlined in Reclamation's May 2012 "Basinwide Salinity Control Program: Procedures for Habitat Replacement." Table 2 and Figure 5 show the results of the wetland and riparian habitat evaluation.

Table 2. Predicted Wetland & Riparian Habitat Loss from the Proposed Action

Study Point	Habitat Type	Habitat Segment Length (ft)	Habitat Segment Width (ft)	Acres Affected	Habitat Quality Score (HQS)	Total Habitat Value (THV) (=Acres x HQS)
H1	Grass/Scrub	1535	30	0.53	1.06	0.21
H2	Shrub/Grass	1175	30	0.61	0.81	0.61
H3	Shrub/Forested	788	30	0.54	0.54	0.33
H4	Scrub	787	20	0.27	0.36	0.16
H5	Grass/Scrub	223	30	0.12	0.15	0.15
H6	Scrub	473	N/A	0.36	0.48	0.32
H7	Forested/Shrub	752	25	0.22	0.43	0.13
H8	Grass	839	20	0.39	0.39	0
H9	Shrub/Forested	1409	N/A	4.11	4.11	3.7
H10	Shrub/Forested	1979	25	1.14	1.14	0.91
H11	Shrub/Scrub	1252	40	1.15	1.15	0.92
H12	Shrub/Forested	661	30	0.46	0.46	0.36
H13	Shrub/Forested	1329	40	1.22	1.22	1.1
H14	Grass/Shrub	2091	30	1.08	1.44	0.54
H15	Grass/Shrub	632	30	0.22	0.44	-0.13
H16	Shrub/Forested	1096	20	0.5	0.5	0.25

Study Point	Habitat Type	Habitat Segment Length (ft)	Habitat Segment Width (ft)	Acres Affected	Habitat Quality Score (HQS)	Total Habitat Value (THV) (=Acres x HQS)
H17	Forest	507	40	0.47	0.47	0.28
H18	Grass/Shrub	910	30	0.63	0.63	0
H19	Grass/Shrub	1090	30	0.75	0.75	0.15
H20	Grass	1720	30	1.18	1.18	0
Totals				15.95		9.99

According to 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 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 15.95 acres of wetland or riparian habitat (equating to a total wetland and riparian habitat value of 9.99 units based on Habitat Quality Scoring) were identified adjacent to or associated with the existing structures involved in the Proposed Action (Figure 5).

Proposed Action: Implementation of the Proposed Action would result in permanent loss of wetland and riparian habitat because ditch seepage would no longer provide wetland hydrology to adjacent areas and ditch channels and banks would no longer provide a riparian-type environment. However, the quality of the wetland and riparian habitat existing due to the ditches is perceived to be relatively low to moderate overall, and the total habitat value to be lost is estimated at 9.88 units. Replacement habitat to mitigate these losses (see Section 4.6) will occur on private property on the Hart Ranch, approximately 1.2 miles south of Crawford Reservoir. The Habitat Replacement Plan includes creating two wetland sites by digging a shallow pothole in one area and removing silt from an existing pond in an adjacent area, removing an abundance of cattails and noxious weeds, and planting a variety of native riparian plant species such as willows, narrow leaf cottonwoods, and native plum. The potholes and additional vegetative plantings will draw waterfowl, song birds, and shore birds as well as provide feed and cover for a number of small mammals. Additionally, construction of the Proposed Action and the replacement habitat would follow Best Management Practices to minimize the construction footprint, protect water quality, and minimize soil erosion. Revegetation and weed control would be implemented according to Delta County standards.

No Action: The No Action Alternative would have no effect on existing vegetation or habitat.

3.6 Wildlife Resources

In the Proposed Action Area, riparian areas and seep areas support wetland and riparian habitat of varying degrees of value, which are subject to disturbance from periodic ditch system maintenance. About 75 percent of all adjacent areas are irrigated farmlands, and about 25 percent are native vegetation types (see Sections 3.1 and 3.5). The riparian and wetland habitat associated with the ditches involved in the Proposed Action Area occurs in narrow strips and small patches. While typically not supporting the numbers of breeding birds and other wildlife that larger blocks of habitat support, they nevertheless provide important habitat. In addition to

nesting birds, these habitats support small mammals, and in association with adjacent irrigated land, provide hunting areas for raptors and forage for other wildlife.

The Colorado Parks & Wildlife (CPW) describes the entire Proposed Action Area as lying within a mule deer resident population area, critical winter range, severe winter range, winter concentration area, and summer range (CPW 2011; Figure 6). CPW describes the entire Proposed Action Area as elk winter range and elk severe winter range, and an elk winter concentration area lies nearby to the east (CPW 2011; Figure 7). The entire Proposed Action Area is also described as a winter forage area for bald eagle (CPW 2011).

Proposed Action: Upland wildlife habitat impacted by the Proposed Action would likely result in minor temporary impacts to wildlife species within the Project Area. Local wildlife may avoid using portions of the Project Area because of temporary disturbances due to pipeline construction. However, these impacts should be short-term in duration. Key wildlife species such as mule deer, elk, and raptors using the Proposed Action Area are also using the adjacent agricultural fields and pastures for forage, and would return to those areas when construction disturbances cease. Estimated impacts to about 15.95 acres of riparian and wetland habitats described in Section 3.5 of this document would directly impact those species dependent on these habitat types. Predicted habitat losses include emergent, shrub/scrub, and woodland wetland and riparian habitats supported by irrigation seepage and the wetted ditch prisms (see Table 3). Habitat evaluations estimate that 9.99 wildlife habitat units would be affected under the Proposed Action. Development of replacement habitat would mitigate impacts to wildlife and comply with requirement of the Colorado River Basin Salinity Control Act to replace fish and wildlife values foregone (see Section 4.6 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.

No Action: Under the No Action Alternative, terrestrial wildlife and habitat would remain in their current condition. Salinity 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.

3.7 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. Rare Earth Science conducted a threatened and endangered species inventory for the Proposed Action Area during November 2012 (Rare Earth 2013). Table 4 summarizes the results of the inventory, itemizing the federally-listed species that may occur within Delta County, Colorado (USFWS 2013), and explaining habitat requirement information and potential effects of the Proposed Action on each species.

The only ESA-listed or candidate species with the potential to be affected by the Proposed Action will be four Colorado River basin endangered fishes: the bonytail, the Colorado pikeminnow, the humpback chub, and the razorback sucker. These species and the effects of the Proposed Action, which is due to water depletions in the Colorado River basin, are discussed following Table 3. Other ESA-listed species in Delta County do not occur in the Proposed Action Area, or do not depend on the habitat types in the Proposed Action Area.

Table 3. Federally-Listed Threatened, Endangered, and Candidate Species in Delta County

Common Name	Status	Habitat Requirement Summary	Range in Project Area?	Habitat in Project Area?
BIRDS				
Gunnison sage-grouse <i>Centrocercus minimus</i>	Candidate for listing	Large contiguous patches of sagebrush (>200 acres) with an abundant herbaceous understory, interspersed with wet swales. Documented range is not within project area; habitat in the project area is not suitable (too fragmented / sagebrush patches are small and discontinuous).	Historic range only	No
Yellow-billed cuckoo <i>Coccyzus americanus</i>	Candidate for listing	Breeds in low elevation river corridors with fairly extensive mature cottonwood galleries; breeding birds have been detected in the nearby North Fork River valley almost annually since 2003. Habitat in the project area is not suitable for nesting. Individuals of this species in the Proposed Action Area would be considered incidental.	Yes	Peripheral only
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. Nearest documented populations in Terror Creek and Hubbard Creek drainages, north of the Town of Paonia. No spawning habitat or perennial water in the Project area.	Yes	No
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 from Cottonwood Creek and Crawford Reservoir.	No, but critical habitat is downstream	No, but critical habitat is downstream
Colorado pikeminnow <i>Ptychocheilus lucius</i>				
Humpback chub <i>Gila cypha</i>				
Razorback sucker <i>Xyrauchen texanus</i>				
MAMMALS				
Black-footed ferret <i>Mustela nigripes</i>	Endangered	Needs large active prairie dog colonies; species is extirpated from the state (only experimental populations exist, but not in Delta County). No large active prairie dog colonies are within or near the Project area.	No	No
Canada lynx <i>Lynx canadensis</i>	Threatened	Spruce/fir/mixed conifer/lodgepole pine forests (primary), or mixed deciduous/conifer (secondary). No habitat in Project area.	No	No

Common Name	Status	Habitat Requirement Summary	Range in Project Area?	Habitat in Project Area?
Wolverine <i>Gulo gulo luscus</i>	Candidate for listing	No specific habitat requirements, but high elevations (alpine) environs preferred; deep, persistent, and reliable spring snow cover (April 15 to May 14) is the best overall predictor of wolverine occurrence. Only one individual recently documented in the State of Colorado, not in Delta County.	No	No
PLANTS				
Clay-loving wild buckwheat <i>Eriogonum pelinophilum</i>	Endangered	Adobe soils (Mancos shale) of the Colorado and Gunnison valleys in semi-desert shrublands. No documented populations exist east of Hotchkiss in Delta County. None observed during inspection of project area.	No	No
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	No

The western yellow-billed cuckoo may occur incidentally in the Proposed Action Area during foraging bouts or during migration season, but no nesting habitat for this species is within the Proposed Action Area or the immediate surroundings. The nearest known nesting habitat is approximately 3 miles from the Proposed Action Area in the cottonwood forested riparian corridor of the North Fork of the Gunnison River (Rare Earth 2013).

The upper Colorado River Basin is home to 12 native fish species, four of which are listed as endangered: bonytail, Colorado pikeminnow, humpback chub, and razorback sucker (USFWS 2012). Decline of the four endangered species 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 U.S. Fish and Wildlife Service 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 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 southwest 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 water depletion in the Smith Fork River and from Crawford Reservoir (on Iron Creek), both of which

drain 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 estimated average historic annual amount of water diverted from the Gunnison basin tributaries due to operation of the Crawford Clipper Ditch system is approximately 18,000 acre-feet for crop irrigation and winter stock water (see Section 3.2). The resulting water depletion from the Colorado River basin is estimated at 5,776 acre-feet per year. This estimated depletion rate is equivalent to the net annual average total crop consumptive use rate, and was calculated using the Colorado Water Conservation Board's "StateCU" consumptive use modeling software [CWCB 2012] with assistance from the Colorado Division of Water Resources (Division 4) Assistant Division Engineer, Jason Ullman, P.E. This depletion rate is expected to remain unchanged if the Proposed Action is implemented.

Proposed Action: A threatened and endangered species inventory was completed in the Proposed Action Area in 2012 (Rare Earth 2013). No threatened, endangered or candidate species were found in the Proposed Action Area. Suitable habitats for the threatened, endangered, or candidate species itemized in Table 4 (above) do not occur within the Proposed Action Area, or the species' documented ranges lie outside the Proposed Action Area. However, water depletions from the upper Gunnison River basin occurring as a result of Crawford Clipper Ditch system operations have the potential to affect downstream endangered fish habitat. No new depletions would occur as a result of the Proposed Action, and Crawford Clipper Ditch system's historic depletions have been consulted on and were included within the 2009 Gunnison Basin Programmatic Biological Opinion (PBO) (USFWS 2009). The cumulative efforts of the Colorado River Basin Salinity Control Program improve water quality within designated critical habitats for the Colorado pikeminnow, razorback sucker, humpback chub, and bonytail throughout the Colorado River and Gunnison river basins by reducing salt and selenium loads. Additionally, potential reductions in selenium loading to the Gunnison basin as a result of the Proposed Action would contribute to the overall success of the Gunnison Basin Selenium Management Program (SMPW 2011).

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.

3.8 Cultural Resources

In December 2012, Alpine Archaeological Consultants, Inc. conducted a Class III cultural resource inventory of irrigation features and areas slated for disturbance (Alpine Ecological Consultants 2013). A total of approximately 55 acres was inventoried. The inventory resulted in the recordation of the Project Area (approximately 4.9 miles of ditch alignment and planned pipe alignment as shown on Figures 2 and 3 of this EA), documentation of several associated water control features, and recordation of three historic finds (an historic artifact scatter, an isolated agricultural building, and an isolated historic find). No prehistoric sites were found during the inventory. The ditch alignment itself is recommended as eligible for listing in the National Register of Historic Places.

Proposed Action: In consultation with the Colorado State Historic Preservation Officer (Colorado SHPO), Reclamation determined that the Proposed Action would have an adverse effect on the Spurlin Mesa lateral of the Crawford Clipper Ditch system. A Memorandum of Agreement has been developed between Reclamation and the Colorado SHPO to mitigate the adverse effects of the proposed action. A copy of the

MOA is included as Attachment D of this Final EA. Recommended mitigation for the replacement of the Spurlin Mesa lateral with a pipeline is Level I Documentation as described in “Historic Resource Documentation, Standards for Level I, II, and III Documentation” (Office of Archaeology and Historic Preservation Publication 2007). Level I Documentation requires that photographic documentation be conducted to capture the historic landscape characteristics of the ditch prior to its destruction.

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

3.9 Agricultural Resources & Soils

The U.S. Department of Agriculture’s Natural Resources Conservation Service (NRCS) identifies farmlands of national and statewide importance in the region, based on soil types and irrigation status. It is the policy of 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). The Proposed Action crosses approximately 14,800 lineal feet of USDA-designated *Prime Farmland if Irrigated* (Figure 8), consisting of Agua Fria clay loam, 1 to 6 percent slopes – Map Unit 5 or Mesa loam, 3 to 6 percent slopes – Map Unit 54. Some of the designated important farmland areas crossed by the Proposed Project are irrigated by (and will continue to be irrigated by) the Crawford Clipper Ditch system. NRCS identifies prime farmlands and other farmlands of importance as defined by the Farmland Protection Policy Act as follows:

Prime farmland has the best combination of physical and chemical characteristics for producing food, feed, forage fiber and oilseed crops. 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. Farmlands of statewide importance are lands that nearly meet the requirements for prime farmland and have been identified by state agencies.

Other mapped soil units found in the immediate Proposed Action Area are shown on Figure 8. All types in the Proposed Action Area are derived from Mancos Shale, which formed in a marine environment and now contributes salinity loading in the Colorado River basin.

Proposed Action: Under the Proposed Action Alternative, temporary disturbance to agriculturally important prime farmlands and soils will occur during construction. Crawford Clipper Ditch would coordinate construction activities with landowners to minimize disturbance, and these lands will be returned to production immediately following construction and restoration of the ground surface. No farmlands will be permanently removed from production as a result of the Proposed Action. The Proposed Action would give Crawford Clipper Ditch 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. Piping the lateral would also decrease the amount of maintenance work that would be occurring on the prime farmland, which would decrease the amount of disturbance occurring on the prime farmland. In addition, land reclaimed by filling in the existing ditch could potentially increase the amount of prime farmland available to farm in the project area. Therefore, no long-term adverse effects on agriculturally prime or unique farmlands 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.

No Action: The No Action Alternative would have no effect on prime or unique farmlands. 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.

3.10 Cumulative Impacts

Cumulative impacts are impacts on the environment, which result from the incremental impact of the action, when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

At this time, there are no known federal, state, or local projects occurring within the Proposed Action Area or immediate vicinity, with the exception of the Gunnison Basin Selenium Management Program (SMPW 2011), which identifies the vicinity of the Proposed Action Area as a potential contributor to selenium in the basin. Implementation of the Proposed Action will help further the following goals of the Gunnison Basin Selenium Management Program (SMPW 2011): to maintain or improve the existing downward trend in lower Gunnison River selenium concentrations, and to sufficiently improve water quality conditions to assist in the recovery of the endangered Colorado pikeminnow and razorback sucker by reducing selenium concentrations in the lower Gunnison basin. Locally, the Proposed Action Area and duration of disturbance under the Proposed Action are small and short-term, and long term impacts are not expected to raise cumulative negative impacts to a significant level. The Proposed Action will comply with all relevant federal, state and local permits (detailed in the Summary and Environmental Commitments Section of this document).

There are three federal programs (including the Gunnison Basin Selenium Management Program) that include the project area at a basin-wide scale. When the Proposed Action is analyzed with components of these basin-wide programs, the cumulative beneficial effects on water quality are significant. The first program is the Colorado River Basin Salinity Control Program, which provided the funding for implementation of the proposed action. Collectively, projects funded under the Program, result in improved water quality with the goal of reducing salt loading in the Colorado River. The second is the Upper Colorado River Endangered Fish Recovery Program. The Recovery Program involves federal, state and private organizations and agencies in Colorado, Utah, and Wyoming. Partners of the Recovery Program are recovering four species of endangered fish in the Colorado River and its tributaries while water use and development continues to meet human needs in compliance with interstate compacts and applicable federal and state laws. The third program is the development and implementation of the Gunnison Basin Selenium Management Program which is required as a conservation measure by the Gunnison Basin Programmatic Biological Opinion (USFWS 2009). 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.

3.11 Summary of Impacts

Table 4 lists predicted impacts of the No Action and Proposed Action Alternatives analyzed in this EA.

Table 4. Summary of Impacts of the Clipper Irrigation Salinity Control Project 4

Resource Issue	Impacts	
	No Action Alternative	Proposed Action Alternative
Water Rights and Use	No Effect	No 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 1,038 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 North Fork, Gunnison, and Colorado rivers.
Access & Temporary Disturbance	No Effect	Short-term temporary adverse effects consisting of noise, ground, and vegetation disturbance to property owners in the Proposed Action Area.
Habitat	No Effect	Estimated loss of 15.95 acres of Clean Water Act-exempt wetland and riparian habitat (see Attachment B) and 9.99 total habitat value units, to be replaced/mitigated at a site upstream of the Proposed Action Area.
Fish and Wildlife Resources	No Effect	Short-term temporary adverse effect to local wildlife during construction.
Threatened and Endangered Species	Salt and selenium loading from the project area would continue to affect aquatic dependent species	Depletions (irrigation water consumption) would continue at historic levels, and would adversely affect the four Colorado River federally endangered fishes. However the Upper Colorado River Endangered Fish Recovery Program serves as mitigation for these impacts. The Proposed Action would to improve water quality by contributing to reduction of salt and selenium loading in the Gunnison and Colorado rivers.
Cultural Resources	No Effect	Adverse effect to NRHP eligible site, the Spurlin Mesa lateral of the Crawford Clipper Ditch System (see Attachment D). The adverse effect would be mitigated with actions taken under a Memorandum of Understanding between Reclamation and the Colorado SHPO.
Agricultural Resources & Soils	No Effect	Short-term temporary effect on prime farmland during construction, with agricultural production resuming following restoration of the ground surface.
Indian Trust Assets	No Effect	No Effect
Environmental Justice	No Effect	No Effect

The Proposed Action will result in no change or have no effect on Indian trust assets, environmental justice, recreation resources, or livestock grazing. Water rights and uses, water

quality and endangered species would all benefit from the proposed action. Temporary impacts to vegetation, fish and wildlife, prime farmland, and visual resources would not be significant with implementation of the mitigation measures described in Section 4, the Environmental Commitments and Mitigation Section of this document.

4 ENVIRONMENTAL COMMITMENTS & MITIGATION MEASURES

This section discusses the environmental commitments and related mitigation developed to protect resources and mitigate adverse impacts to a non-significant level. The cooperative agreement between Reclamation and Crawford Clipper Ditch requires that 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 will be implemented as an integral part of the Proposed Action.

4.1 Construction Access

All construction activities would be confined to rights-of-way negotiated between Crawford Clipper Ditch and the landowners. Construction staging (for pipe and equipment) will take place in two staging areas, as shown on the Project Plan drawings and on Figures 2 and 3 of this report. The north staging area may also serve as materials borrow area if additional material is needed to fill abandoned ditch alignments. Environmental commitments will be included in agreements with private landowners. Any construction activities outside of the inventoried Proposed Action Area would require additional review by Reclamation to determine if the existing surveys and information are adequate to evaluate additional impacts outside this corridor. Additional NEPA or Endangered Species Act compliance activities may be required if determined necessary by Reclamation.

4.2 Water Quality

The following Best Management Practices (BMPs) and environmental commitments would be implemented to minimize erosion and protect water quality of downstream resources:

- The contractor would obtain a CWA Section 402 Storm Water Discharge Permit (NPDES) from the Colorado Department of Public Health and Environment for dewatering the construction area if dewatering is needed. (Dewatering will not be necessary, as construction will take place when water conveyances are empty.)
- Silt curtains, cofferdams, dikes, straw bales, or other suitable erosion control measures will be used to prevent erosion from entering water bodies during construction.
- Concrete pours will occur in forms and/or behind cofferdams to prevent discharge into waterways. Any wastewater from concrete-batching, vehicle wash down, and aggregate processing will be contained and treated or removed for off-site disposal.
- Fuels, lubricants, hydraulic fluids, and other petrochemicals will be stored and dispensed in an approved staging area. Equipment will be inspected daily for petrochemical leaks.

Construction equipment will be parked, stored, and serviced only at an approved staging area.

- A spill response plan will be prepared for area of work where spilled contaminants could flow into water bodies. All employee and workers, including those under separate contract, will be briefed and made familiar with this plan. The plan will be developed prior to initiation of construction. A spill response kit, which includes appropriate-sized spill blankets, shall be easily accessible and onsite at all times.
- Onsite supervisors and equipment operators will be trained and knowledgeable in the use of spill containment equipment.
- Appropriate federal and Colorado authorities will be immediately notified in the event of any contaminant spill.
- Because no federal permit is being issued for the Proposed Action, no Section 401 Water Quality Certification is required; however, BMPs would be implemented to protect all water resources. In the event that during construction, temporary dewatering of a portion of the construction site is needed, the construction contractor may need to obtain a Construction dewatering permit for the Colorado Department of Public Health and Environment. More information can be found at <http://www.colorado.gov/cs/Satellite/CDPHE-WQ/CBON/1251596875260>.

4.3 Irrigation Facilities & Structures

Pursuant to the Cooperative Agreement between Crawford Clipper Ditch and Reclamation, Crawford Clipper Ditch will permanently dewater, remove from irrigation service, and render incapable of irrigation water delivery those open ditches abandoned as part of the Proposed Action. Crawford Clipper Ditch will be responsible for removing all irrigation structures (head gates, drops, etc.) and refilling the abandoned ditch prism with soil.

4.4 Ground Disturbances

Ground disturbances would be limited to only those necessary to safely implement the Proposed Action. Best Management Practices to reduce disturbances to vegetation resources reduces the amount of planting or reseeding needed. Planting and reseeding disturbed areas, per landowner specifications; monitoring plantings to ensure establishment, control noxious weeds in disturbed areas, and the use of accepted erosion control measures during construction are all incorporated as environmental commitments for the Proposed Action.

During construction, topsoil would be saved and then redistributed after completion of construction activities. All disturbed areas would be smoothed, shaped, contoured and reseeded to as near their pre-project conditions as practicable. Seeding would occur at appropriate times with appropriate seed mixes per landowner specifications. Weed control will be implemented in accordance with current Delta County weed control standards.

4.5 Fish & Wildlife Resources

Construction areas would be confined to the smallest feasible area to limit disturbance to wildlife within the Proposed Action Area. Pipeline trenches left open overnight would be kept to a minimum to reduce potential entrainment of small animals and public safety problems.

4.6 Habitat Replacement

Habitat development and/or enhancement to replace the predicted 9.99 fish and wildlife habitat units affected under the Proposed Action are required under the Colorado River Salinity Control Act. Crawford Clipper Ditch is responsible for developing and implementing a Reclamation-approved wildlife habitat replacement plan to replace fish and wildlife values foregone as a result of project implementation.

Habitat replacement will be implemented concurrently with implementation of the Proposed Action. Crawford Clipper Ditch and Reclamation worked with Natural Resource Concepts & Solutions, LLC to develop a Habitat Replacement Plan which will be implemented on the Hart Ranch, and will create enough habitat value units to replace the 9.99 total habitat value units affected due to project implementation. Hart Ranch is located approximately 1.2 miles south of the Crawford Reservoir in the Smith Fork drainage basin.

The Habitat Replacement Plan involves riparian plantings and removal of invasive species at sites along Alkali Creek and Alkali Creek tributaries. One wetland pond will be constructed, and a small existing pond will be de-silted and maintained for waterfowl. Non-native shrubs will be removed and native riparian species will be planted, including willows, alders, three-leaf sumac, wild rose, chokecherry, native plum, silver buffaloberry, and possibly cottonwoods. The site will be fenced from cattle while the plantings are established, and certain plantings may be selectively fenced to protect them from big game damage. A weed treatment program will be implemented to meet standards set by the County and the State of Colorado.

The Habitat Replacement Area will provide habitat for a diversity of local wildlife, including big game, songbirds, raptors, waterfowl, and a variety of small mammals, reptiles, and amphibians.

Crawford Clipper Ditch will be responsible for maintaining the Habitat Replacement Area for 50 years following its construction. Failure to develop and implement concurrent habitat replacement may result in delays in obligating funding under the Cooperative Agreement.

4.7 Federally-Listed Species

Reclamation previously consulted with the U.S. Fish & Wildlife Service regarding historic water depletions in the Gunnison basin resulting from the operation of Crawford Clipper Ditch facilities, and water quality improvements resulting from the Proposed Action. This consultation is documented in the Gunnison Basin Programmatic Biological Opinion (USFWS 2009). In the event that threatened or endangered species (see Table 4) are encountered during construction, Crawford Clipper Ditch shall stop construction activities until Reclamation has completed consultation with the U.S. Fish & Wildlife Service to ensure that adequate measures are in place to avoid or reduce impacts to the species.

4.8 Cultural Resources

Reclamation and the Colorado State Historic Preservation Office (SHPO) will enter into a Memorandum of Agreement (MOA) to mitigate the Proposed Action's adverse effects to cultural resources. The MOA will likely commit Reclamation to complete historic resource documentation of the existing ditch and structures prior to construction activities in accordance with the guidance for Level 1 documentation found in "Historic Resource Documentation, Standards for Level I, II and III Documentation" (COAHP 2007). Crawford Clipper Ditch would likely participate and sign as a consulting party in the MOA. In the event that cultural and/or

paleontological resources are discovered during construction, Crawford Clipper Ditch shall stop construction activities until Reclamation has completed consultation with the SHPO and appropriate measures are implemented to protect or mitigate the discovered resource.

4.9 Agricultural Resources & Soils

During construction, topsoil would be saved and then redistributed after completion of construction activities. Silt curtains, cofferdams, dikes, straw bales, or other suitable erosion control measures will be used to minimize soil erosion and prevent soil erosion from entering water bodies during construction. All disturbed areas would be smoothed, shaped, contoured and reseeded to as near their pre-project conditions as practicable. Lands previously in agricultural production will 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 will be managed in accordance with all federal, state, and local standards, including the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 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 will be properly disposed offsite.

The following Best Management Practices (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.
- A spill response plan will be prepared for area of work where spilled contaminants could flow into water bodies. All employee and workers, including those under separate contract, will be briefed and made familiar with this plan. The plan will be developed prior to initiation of construction.
- A spill response kit, which includes appropriate-sized spill blankets, shall be easily accessible and onsite at all times.
- Onsite supervisors and equipment operators will 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 will 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

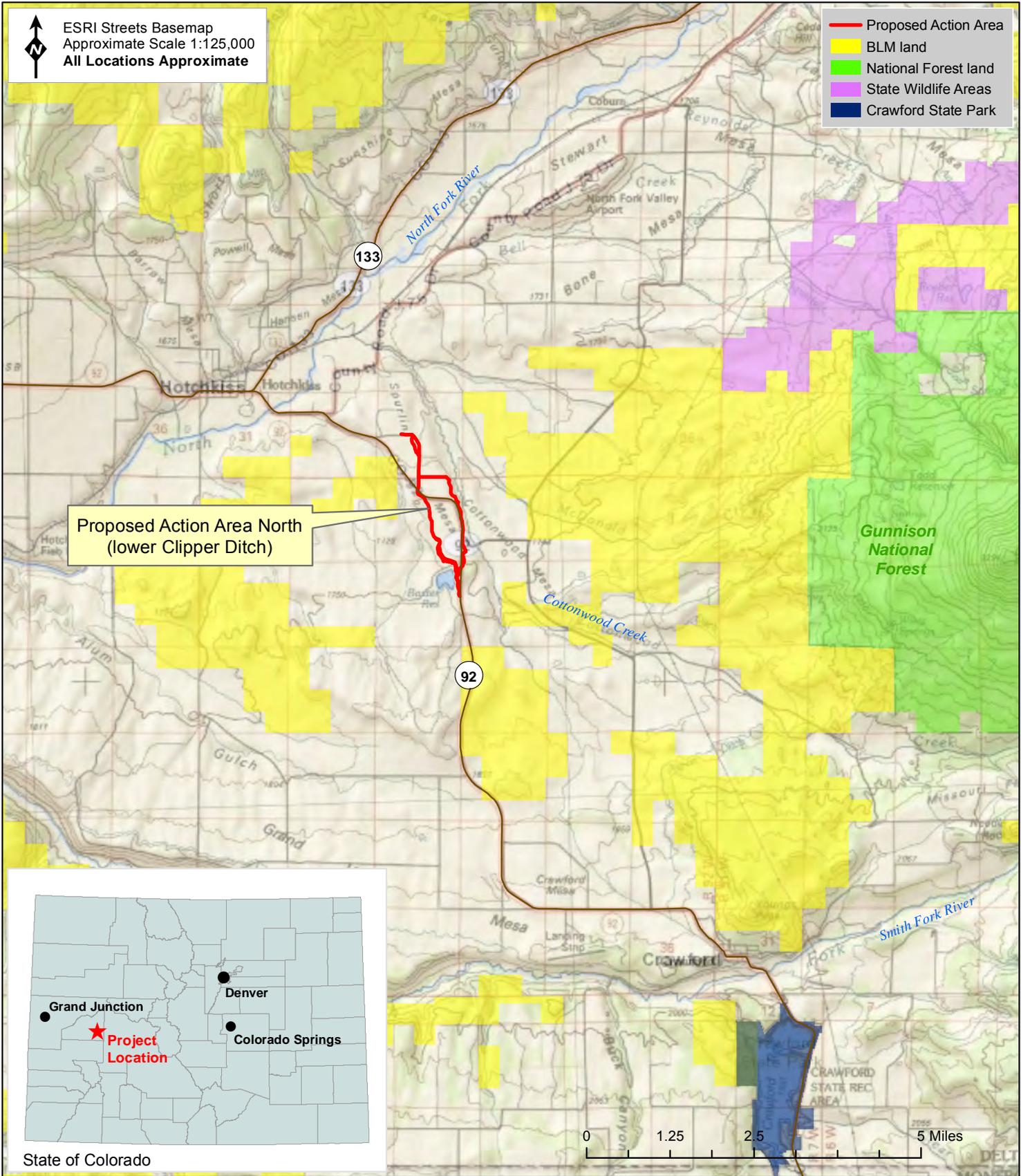
the Comprehensive Environmental Response, Compensation and Liability Act of 1980, section 102b.

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FIGURES



DATE: August 2013
DRAWN BY: D. Reeder

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**REGIONAL & LOCAL
LOCATOR MAPS**

**CLIPPER IRRIGATION SALINITY CONTROL PROJECT 4
ENVIRONMENTAL ASSESSMENT
Delta County, Colorado**

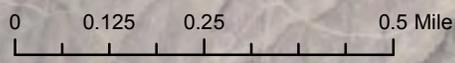
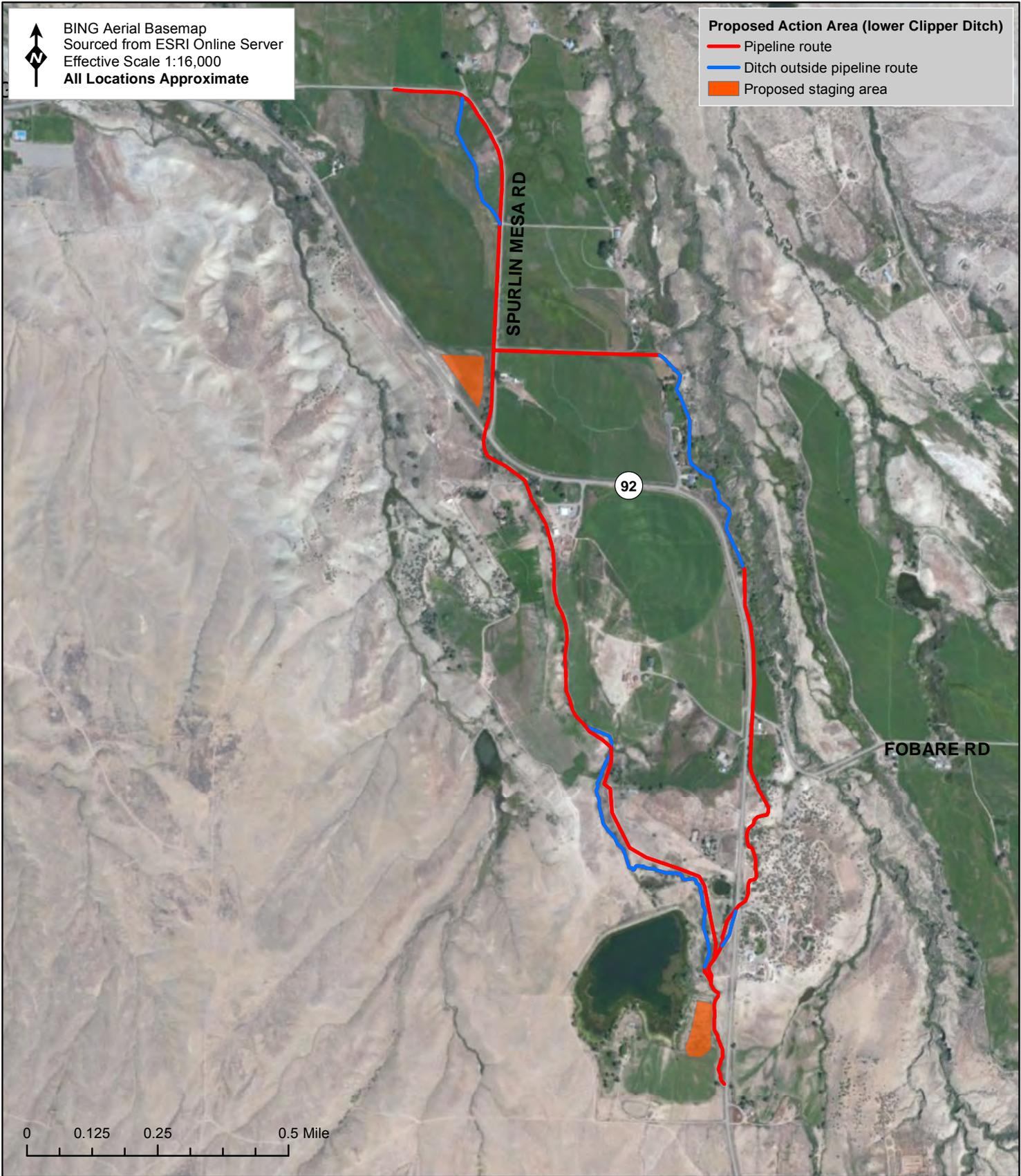
**FIGURE
1**



BING Aerial Basemap
 Sourced from ESRI Online Server
 Effective Scale 1:16,000
 All Locations Approximate

Proposed Action Area (lower Clipper Ditch)

- Pipeline route
- Ditch outside pipeline route
- Proposed staging area



DATE: August 2013
 DRAWN BY: D. Reeder



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**PROPOSED ACTION AREA
 AERIAL PHOTO OVERVIEW**

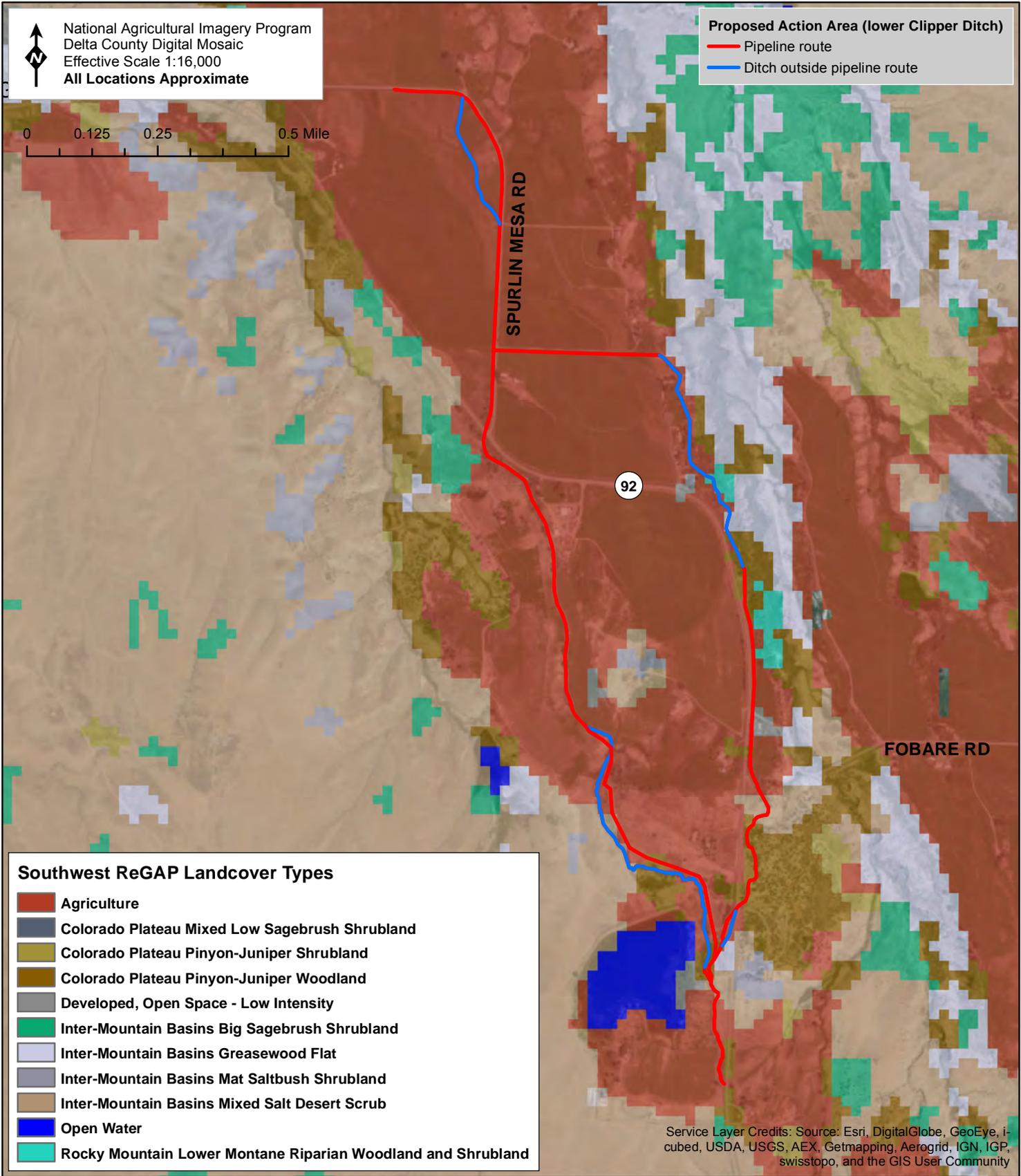
**CLIPPER IRRIGATION SALINITY CONTROL PROJECT 4
 ENVIRONMENTAL ASSESSMENT
 Delta County, Colorado**

**FIGURE
 3**

National Agricultural Imagery Program
 Delta County Digital Mosaic
 Effective Scale 1:16,000
 All Locations Approximate

0 0.125 0.25 0.5 Mile

Proposed Action Area (lower Clipper Ditch)
 — Pipeline route
 — Ditch outside pipeline route



- Southwest ReGAP Landcover Types**
- Agriculture
 - Colorado Plateau Mixed Low Sagebrush Shrubland
 - Colorado Plateau Pinyon-Juniper Shrubland
 - Colorado Plateau Pinyon-Juniper Woodland
 - Developed, Open Space - Low Intensity
 - Inter-Mountain Basins Big Sagebrush Shrubland
 - Inter-Mountain Basins Greasewood Flat
 - Inter-Mountain Basins Mat Saltbush Shrubland
 - Inter-Mountain Basins Mixed Salt Desert Scrub
 - Open Water
 - Rocky Mountain Lower Montane Riparian Woodland and Shrubland

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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**PROPOSED ACTION AREA
 MAJOR LANDCOVER TYPES**

**CLIPPER IRRIGATION SALINITY CONTROL PROJECT 4
 ENVIRONMENTAL ASSESSMENT
 Delta County, Colorado**

**FIGURE
 4**

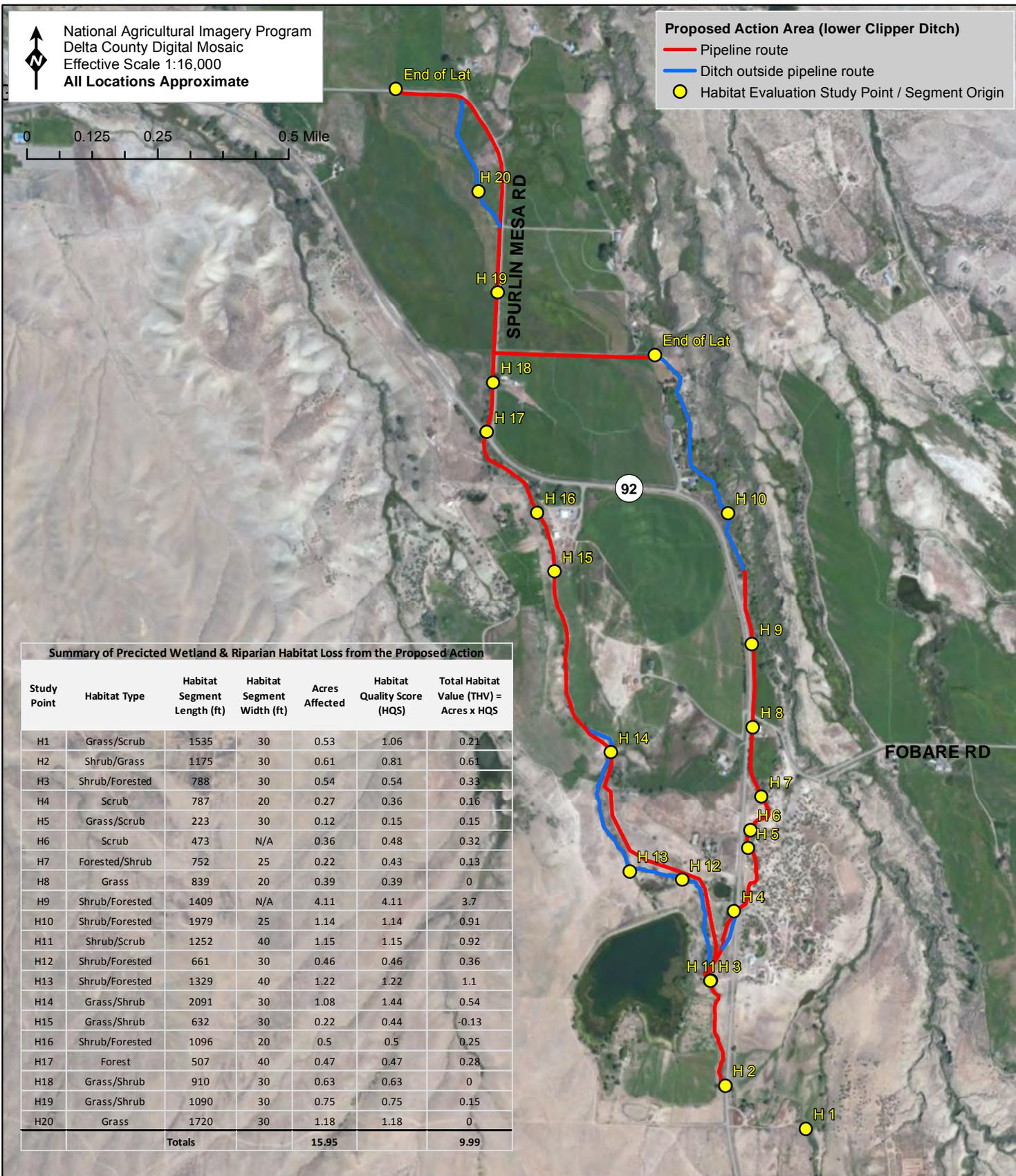


National Agricultural Imagery Program
Delta County Digital Mosaic
Effective Scale 1:16,000
All Locations Approximate

0 0.125 0.25 0.5 Mile

Proposed Action Area (lower Clipper Ditch)

- Pipeline route
- Ditch outside pipeline route
- Habitat Evaluation Study Point / Segment Origin



Summary of Predicted Wetland & Riparian Habitat Loss from the Proposed Action

Study Point	Habitat Type	Habitat Segment Length (ft)	Habitat Segment Width (ft)	Acres Affected	Habitat Quality Score (HQS)	Total Habitat Value (THV) = Acres x HQS
H1	Grass/Scrub	1535	30	0.53	1.06	0.21
H2	Shrub/Grass	1175	30	0.61	0.81	0.61
H3	Shrub/Forested	788	30	0.54	0.54	0.33
H4	Scrub	787	20	0.27	0.36	0.16
H5	Grass/Scrub	223	30	0.12	0.15	0.15
H6	Scrub	473	N/A	0.36	0.48	0.32
H7	Forested/Shrub	752	25	0.22	0.43	0.13
H8	Grass	839	20	0.39	0.39	0
H9	Shrub/Forested	1409	N/A	4.11	4.11	3.7
H10	Shrub/Forested	1979	25	1.14	1.14	0.91
H11	Shrub/Scrub	1252	40	1.15	1.15	0.92
H12	Shrub/Forested	661	30	0.46	0.46	0.36
H13	Shrub/Forested	1329	40	1.22	1.22	1.1
H14	Grass/Shrub	2091	30	1.08	1.44	0.54
H15	Grass/Shrub	632	30	0.22	0.44	-0.13
H16	Shrub/Forested	1096	20	0.5	0.5	0.25
H17	Forest	507	40	0.47	0.47	0.28
H18	Grass/Shrub	910	30	0.63	0.63	0
H19	Grass/Shrub	1090	30	0.75	0.75	0.15
H20	Grass	1720	30	1.18	1.18	0
Totals				15.95		9.99



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AFFECTED RIPARIAN & WETLAND HABITAT

**CLIPPER IRRIGATION SALINITY CONTROL PROJECT 4
ENVIRONMENTAL ASSESSMENT
Delta County, Colorado**

FIGURE

5

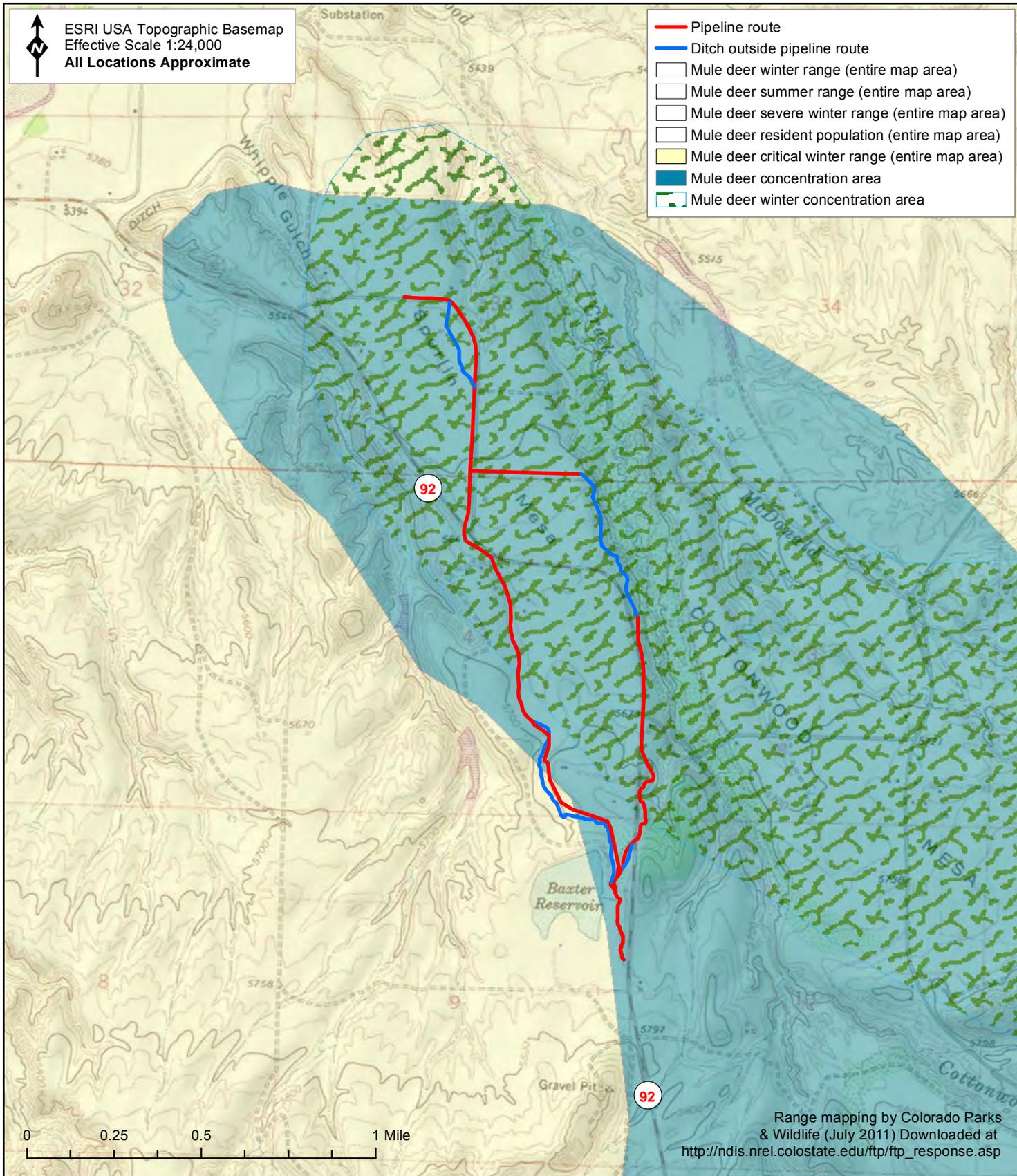
DATE: August 2013

DRAWN BY: D. Reeder



ESRI USA Topographic Basemap
 Effective Scale 1:24,000
 All Locations Approximate

- Pipeline route
- Ditch outside pipeline route
- Mule deer winter range (entire map area)
- Mule deer summer range (entire map area)
- Mule deer severe winter range (entire map area)
- Mule deer resident population (entire map area)
- Mule deer critical winter range (entire map area)
- Mule deer concentration area
- Mule deer winter concentration area



Range mapping by Colorado Parks & Wildlife (July 2011) Downloaded at http://ndis.nrel.colostate.edu/ftp/ftp_response.asp

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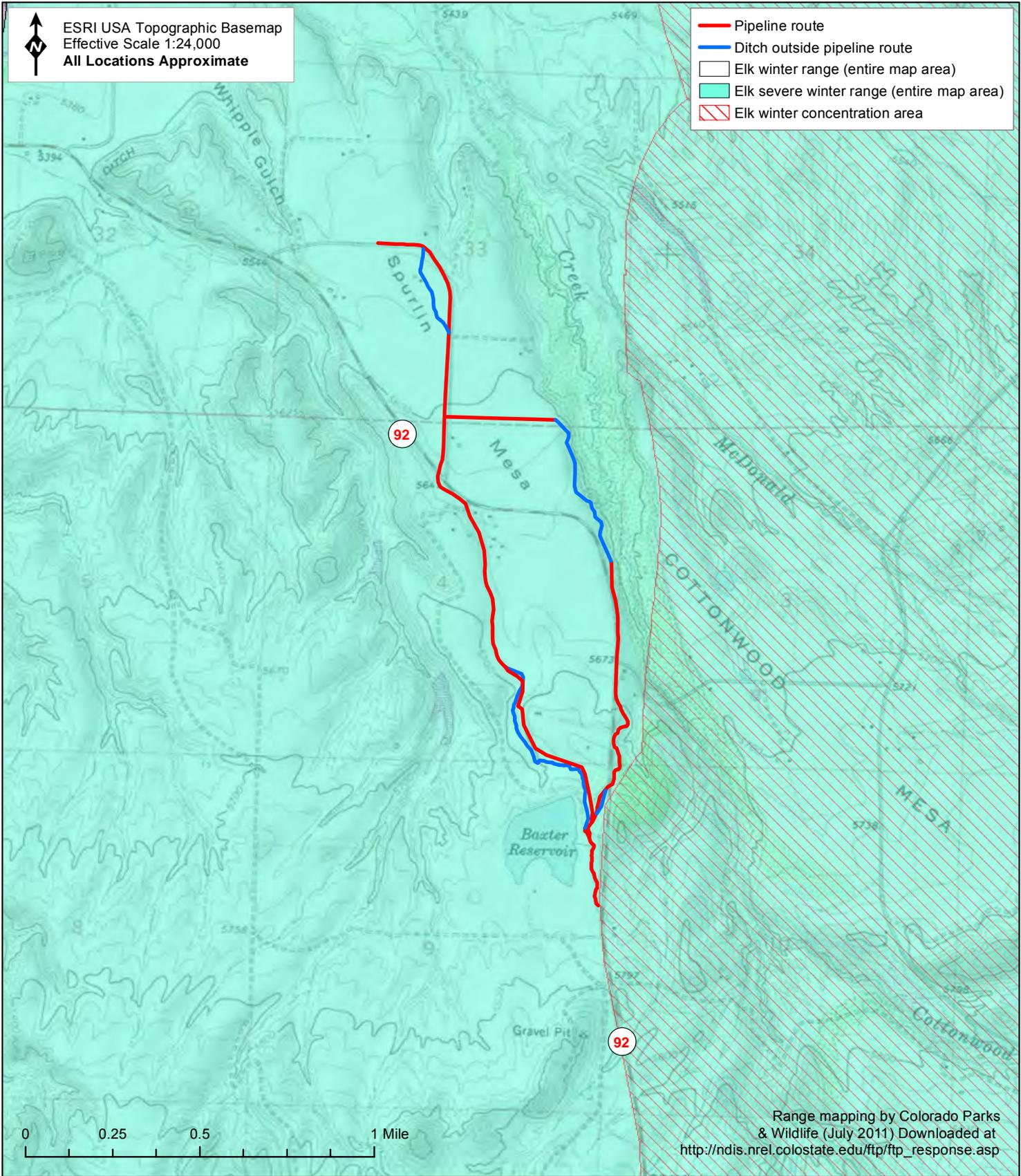
MULE DEER RANGE MAP
CLIPPER IRRIGATION SALINITY CONTROL PROJECT 4
ENVIRONMENTAL ASSESSMENT
 Delta County, Colorado

FIGURE
6



ESRI USA Topographic Basemap
 Effective Scale 1:24,000
 All Locations Approximate

- Pipeline route
- Ditch outside pipeline route
- Elk winter range (entire map area)
- Elk severe winter range (entire map area)
- Elk winter concentration area



0 0.25 0.5 1 Mile

Range mapping by Colorado Parks & Wildlife (July 2011) Downloaded at http://ndis.nrel.colostate.edu/ftp/ftp_response.asp

DATE: August 2013
 DRAWN BY: D. Reeder

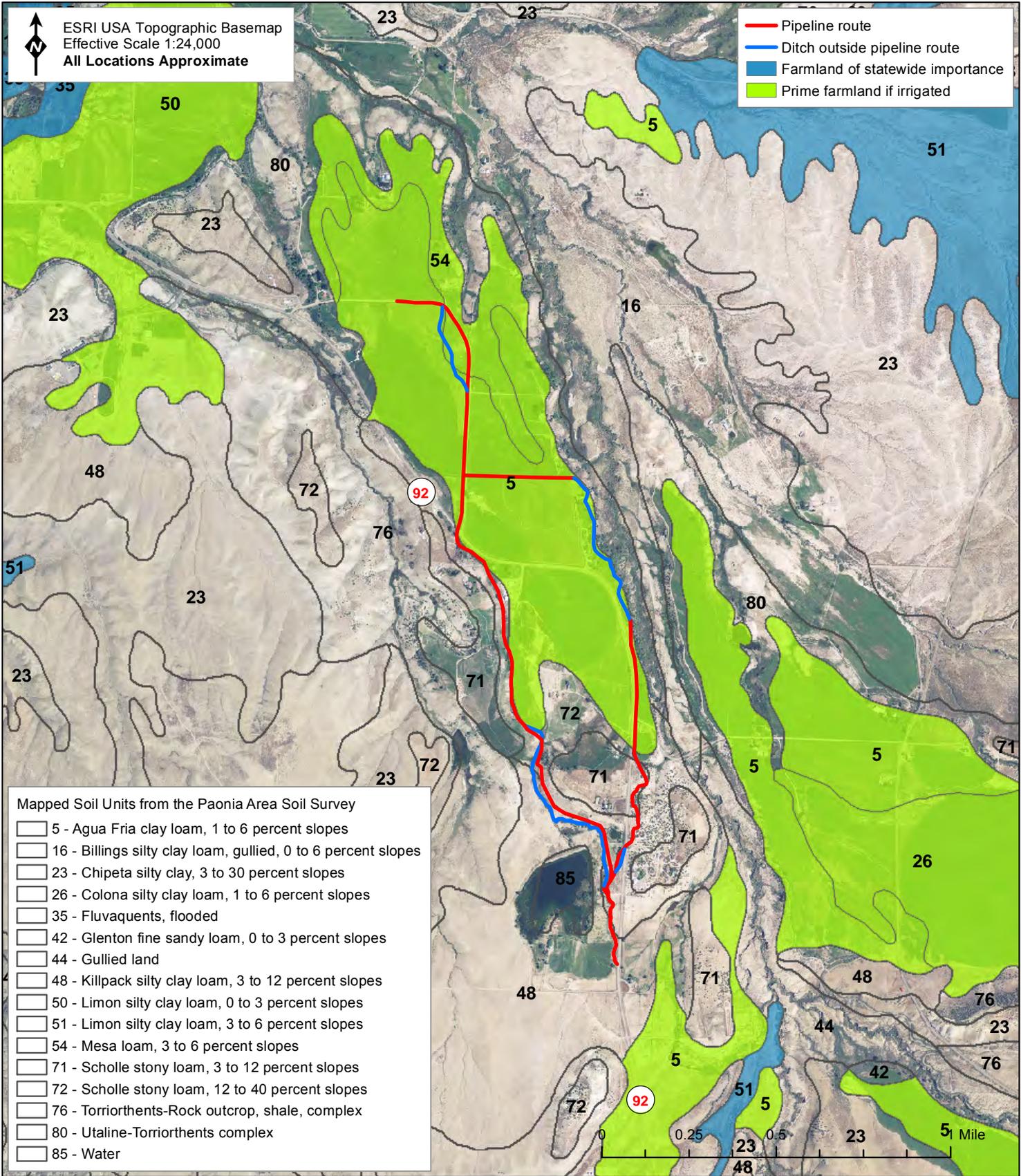


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ELK RANGE MAP

**CLIPPER IRRIGATION SALINITY CONTROL PROJECT 4
 ENVIRONMENTAL ASSESSMENT
 Delta County, Colorado**

**FIGURE
 7**



DATE: August 2013
DRAWN BY: D. Reeder


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**AGRICULTURAL RESOURCES
& MAPPED SOIL UNITS**
 CLIPPER IRRIGATION SALINITY CONTROL PROJECT 4
 ENVIRONMENTAL ASSESSMENT
 Delta County, Colorado

**FIGURE
8**

ATTACHMENT A

Distribution List

Organizations

Mr. Kyle Banks
District Wildlife Manager
Colorado Parks and Wildlife

Mr. J. Wenum
Gunnison Area Wildlife Manager
Colorado Parks and Wildlife

Delta County Planning and Development

Delta County Road and Bridge

Ms. Patty Gelatt
Assistant Field Supervisor
US Fish and Wildlife Service

Hotchkiss Crawford Historical Museum
P.O. Box 724
Hotchkiss, CO 81415

Crawford Area Chamber of Commerce
P.O. Box 22
Crawford, CO 81415

Mr. Nathan Green
US Army Corps of Engineers
Colorado West Regulatory Branch

Mayor Jim Crook
Town of Crawford
P.O. Box 56
Crawford, CO 81415

Ms. Barb Sharrow
Uncompahgre Field Office
Bureau of Land Management
Montrose, CO

Mr. Steve Miller
Colorado Water Conservation
Board
Denver, CO

Mr. Dave Kanzer
Colorado Water Conservation
District
Glenwood Springs, CO

Mr. Ralph D'Alessandro
Delta Conservation District
Delta, CO

Landowners

Shaw, George E.
Drake, John Burns
Driscoll, Joel
Levalley, Mark
Marti, M. Felix
Shiflet, George Nelson
Pagone, Lindy S.
Carpenter, Adam A.
Carpenter, William A. Jr.
Pavlisick, Shirley K.
Welt, Donald & Terry
Welt, John I.
Oconnell, John Michael Sr.
Ware, Ardith
Jones, Jeffrey R.
Hostetler, Kurt E.
Hooker, David C.
Raff, Esther A.
Whitmire, David

ATTACHMENT B

Exemptions from Section 404 of the Clean Water Act



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/Gunnison Basin Office-402 Rood Ave., Room 142, Grand Junction, CO 81501	(970) 243-1199
Durango Office-278 Sawyer Dr., Unit #1, Durango, CO 81301	(970) 375-9506
Frisco Office-301 W Main, Suite 202, P.O. Box 607, Frisco, CO 80443	(970) 668-9676
St. George Office-321 North Mall Drive, Suite L-101, St. George, UT 84790	(435) 986-3979



US Army Corps of Engineers

Sacramento District
 1325 J Street
 Sacramento, CA 95814-2922

Maintenance Exemption Summary

Maintenance (Including Emergency Reconstruction)

Pursuant to Section 404 of the Clean Water Act (33 USC 1344) and Federal Regulations (33 CFR 323.4(a)(2)), certain discharges for the maintenance, including emergency reconstruction of recently damaged parts, of currently serviceable structures such as dikes, dams, levees, groins, riprap, breakwaters, causeways, bridge abutments or approaches, and transportation structures, have been exempted from requiring a Section 404 permit. Maintenance does not include any modification that changes the character, scope, or size of the original fill design. Emergency reconstruction must occur within a reasonable period of time after damage occurs in order to qualify for 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 conversion of a Section 404 wetland to a non-wetland is a change of use of an area of waters of the United States. 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.

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St. George Office-321 North Mall Drive, Suite L-101, St. George, UT 84790	(435) 986-3979

Updated OCT 2005

ATTACHMENT C

Structure Summary Report for the Crawford Clipper Ditch Headgate

Structure Summary Report

HydroBase

State of Colorado

Structure Name: CRAWFORD CLIPPER DITCH **Water District:** 40 **Structure ID Number:** 500

Source: SMITH FORK CREEK

Location: Q10 Q40 Q160 Section Twnshp Range PM
 NE SW NW 32 15S 91W S

Distance From Section Lines: From N/S Line: 1923 N From E/W Line: 1327 W

UTM Coordinates (NAD 83): Northing (UTM y): 4287402 Easting (UTM x): 274660 Spotted from PLSS distances from section lines

Latitude/Longitude (decimal degrees): 38.706560 -107.591461

Water Rights Summary: Total Decreed Rate(s) (CFS): Absolute: 164.3160 Conditional: 0.0000 AP/EX: 0.0000

 Total Decreed Volume(s) (AF): Absolute: 0.0000 Conditional: 0.0000 AP/EX: 0.0000

Water Rights -- Transactions

Case Number	Adjudication Date	Appropriation Date	Administration Number	Order Number	Priority Number	Decreed Amount	Adjudication Type	Uses	Action Comment
75CW0082	1889-06-17	1885-10-19	13076.00000	0	3	71.0200 C	O,C,AB	1	ABANDON BY CW 74/82 3/25/1975
CA0038	1889-06-17	1885-10-19	13076.00000	0	3	12.5000 C	O	1	P50
CA0038	1889-06-17	1885-10-19	13076.00000	0	3	71.0200 C	O,C	1	P50
CA0340	1903-02-27	1884-04-10	19413.12519	0	4	12.2430 C	S	1	SEE CA340 5/5/1905 P164, 231
CA0340	1903-02-27	1891-04-01	19413.15066	0	R19	1.0340 C	S	1	CA 2/27/1903 P164
CA0340	1903-02-27	1892-04-01	19413.15432	0	R20	2.5310 C	S	1	CA 2/27/1903 P164
CA0340	1903-02-27	1893-04-01	19413.15797	0	24	1.2750 C	S	1	SEE CA340 5/5/1905 P164, 231
CA0340	1903-02-27	1894-04-01	19413.16162	0	27	3.1870 C	S	1	SEE CA340 5/5/1905 P164, 231
CA0340	1903-02-27	1895-04-01	19413.16527	0	28	3.3930 C	S	1	SEE CA340 5/5/1905 P164, 231
CA0340	1903-02-27	1896-04-01	19413.16893	0	32	4.0880 C	S	1	SEE CA340 5/5/1905 P164, 231
CA0340	1903-02-27	1897-04-01	19413.17258	0	33	1.8940 C	S	1	SEE CA340 5/5/1905 P164, 231
CA0340	1903-02-27	1898-04-01	19413.17623	0	35	1.9870 C	S	1	SEE CA340 5/5/1905 P164, 231
CA0340	1903-02-27	1899-04-01	19413.17988	0	38	3.8060 C	S	1	SEE CA340 5/5/1905 P164, 231
CA0340	1903-02-27	1900-04-01	19413.18353	0	39	3.6380 C	S	1	SEE CA340 5/5/1905 P164, 231
CA2030	1930-02-10	1905-04-01	25807.20179	0	G41	41.7700 C	S	1	P811
CA2563	1937-05-28	1930-02-11	29261.00000	0	H147	60.9700 C	S	1	P1439
CA3503	1954-03-20	1883-04-10	31924.12153	0	J9	10.0000 C	S	89	P1740; USE DURING NON-IRRIGATION SEASON

Water Rights -- Net Amounts

Adjudication Date	Appropriation Date	Administration Number	Order Number	Priority/Case Number	Rate (CFS)			Volume (Acre-Feet)		
					Absolute	Conditional	AP/EX	Absolute	Conditional	AP/EX
1889-06-17	1885-10-19	13076.00000	0	3	12.5000	0	0			
1903-02-27	1884-04-10	19413.12519	0	4	12.2430	0	0			
1903-02-27	1891-04-01	19413.15066	0	R19	1.0340	0	0			
1903-02-27	1892-04-01	19413.15432	0	R20	2.5310	0	0			
1903-02-27	1893-04-01	19413.15797	0	24	1.2750	0	0			
1903-02-27	1894-04-01	19413.16162	0	27	3.1870	0	0			
1903-02-27	1895-04-01	19413.16527	0	28	3.3930	0	0			
1903-02-27	1896-04-01	19413.16893	0	32	4.0880	0	0			
1903-02-27	1897-04-01	19413.17258	0	33	1.8940	0	0			
1903-02-27	1898-04-01	19413.17623	0	35	1.9870	0	0			
1903-02-27	1899-04-01	19413.17988	0	38	3.8060	0	0			
1903-02-27	1900-04-01	19413.18353	0	39	3.6380	0	0			
1930-02-10	1905-04-01	25807.20179	0	G41	41.7700	0	0			
1937-05-28	1930-02-11	29261.00000	0	H147	60.9700	0	0			
1954-03-20	1883-04-10	31924.12153	0	J9	10.0000	0	0			

Irrigated Acres Summary -- Totals From Various Sources

GIS Total (Acres):	3355.013	Reported: 2005
Diversion Comments Total (Acres):	3480	Reported: 2006
Structure Total (Acres):		Reported:

Irrigated Acres From GIS Data

Year	Land Use	Acres Flood	Acres Furrow	Acres Sprinkler	Acres Drip	Acres Groundwater	Acres Total
1993	***Year Total***	1706.00	520.67	0	0	0	3189.64
1993	ALFALFA	0	30.05	0	0	0	30.05
1993	GRASS_PASTURE	1706.00	490.62	0	0	0	3159.60
2000	***Year Total***	1426.34	527.98	0	0	0	3428.76
2000	GRASS_PASTURE	1426.34	527.98	0	0	0	3428.76
2005	***Year Total***	2066.25	535.60	0	0	0	3355.01
2005	ALFALFA	26.57	0	0	0	0	26.57
2005	GRASS_PASTURE	2025.06	526.82	0	0	0	3286.17
2005	SMALL_GRAINS	14.62	8.78	0	0	0	42.27

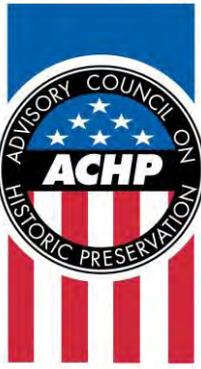
Diversion Comments

IYR	NUC Code	Acres Irrigated	Comment
1970		9600	
1971		9600	
1972		9600	
1973		9600	
1974		9600	
1975		3480	
1976		3480	
1978		3480	
1979		3480	
1980		3480	
1981		3480	
1983		3480	
1984		3480	
1985		3480	
1986		3480	
1987		3480	
1988		3480	
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1994		3480	
1995		3480	
1996		3480	
1997		3480	
1998		3480	
1999		3480	
2000		3480	
2001		3480	
2002		3480	
2003		3480	
2004		3480	
2005		3480	
2006		3480	

Note: Diversion comments and reservoir comments may be shown for a structure, if both are available.

ATTACHMENT D

Cultural Resources Compliance Documents



Preserving America's Heritage

February 6, 2014

Mr. Ed Warner
Area Manager
Bureau of Reclamation
Upper Colorado Region
Western Colorado Area Office
2764 Compass Drive, Suite 106
Grand Junction, CO 81506

**Ref: *Proposed Spurlin Mesa Lateral of the Crawford Clipper Ditch Piping Project
Delta County, Colorado
WCG-JHamilton, ENV-3.00***

Dear Mr. Warner:

On January 27, 2014, the Advisory Council on Historic Preservation (ACHP) received the Memorandum of Agreement (MOA) for the above referenced project. In accordance with Section 800.6(b)(1)(iv) of the ACHP's regulations, the ACHP acknowledges receipt of the MOA. The filing of the MOA, and execution of its terms, completes the requirements of Section 106 of the National Historic Preservation Act and the ACHP's regulations.

We appreciate you providing us with a copy of this MOA and will retain it for inclusion in our records regarding this project. Should you have any questions or require additional assistance, please contact, Tom McCulloch at 202-606-8554, or via email at tmcculloch@achp.gov.

Sincerely,

Raymond V. Wallace
Historic Preservation Technician
Office of Federal Agency Programs

**MEMORANDUM OF AGREEMENT
BETWEEN
THE WESTERN COLORADO AREA OFFICE, BUREAU OF RECLAMATION
AND THE COLORADO STATE HISTORIC PRESERVATION OFFICER
REGARDING THE SPURLIN MESA LATERAL OF THE CRAWFORD CLIPPER DITCH
PIPING PROJECT, COLORADO RIVER BASIN SALINITY CONTROL PROGRAM**

WHEREAS, the Bureau of Reclamation (Reclamation) as lead Federal agency has determined that the Spurlin Mesa Lateral of the Crawford Clipper Ditch Piping Project will have an adverse effect on the lateral (5DT1511.1 and 5DT1511.2). The lateral has been determined by Reclamation and the Colorado State Historic Preservation Officer (SHPO) to be eligible for inclusion in the National Register of Historic Places (NRHP). Reclamation has consulted with the SHPO pursuant to 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act (NHPA) (26 U.S.C. 470f); and

WHEREAS, the Crawford Clipper Ditch Company is the sponsor of the Spurlin Mesa Lateral of the Crawford Clipper Ditch Piping Project and has participated in the consultation and has been invited to sign the Memorandum of Agreement (MOA) as a concurring party; and

WHEREAS, the Hotchkiss-Crawford Historical Society has been invited to participate and sign the Memorandum of Agreement (MOA) as a concurring party; and

WHEREAS, in accordance with 36 CFR § 800.6(a)(1), Reclamation has notified the Advisory Council on Historic Preservation (Council) of its adverse effect determination, providing the specified documentation, and the Council has chosen not to participate in the consultation pursuant to 36 CFR § 800.6(a)(1)(iii);

NOW, THEREFORE, pursuant to Section 106 of the NHPA, Reclamation and the SHPO agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect on historic properties.

STIPULATIONS

1. It is mutually understood and agreed by and between the parties that:
 - a. Prior to any modification of the Spurlin Mesa Lateral (5DT1511.1 and 5DT1511.2), Reclamation will ensure that this property will be recorded in accordance with the guidance for Level I Documentation found in "Historic Resource Documentation, Standards for Level I, II, and III Documentation" (Office of Archaeology and Historic Preservation Publication 1595, October 2007). The documentation will include mapping of the property and

photographic documentation of those portions of the historic property to be included in the piping project. Photographs will be black and white archival quality (4" x 6") prints. Features will be plotted on the maps with GPS waypoints and will be extensively described and indexed in the report.

- b. Reclamation will supplement the Level I Documentation with a descriptive and historical narrative. The narrative will synthesize the existing documentation on 5DT1511.1 and 5DT1511.2, and describe the lateral in the context of the development and history of the Smith Fork area. The narrative will include photographs of the landscape features taken during the cultural resources survey. A Summary Report for the recorded segment, which includes the Level I Documentation and the narrative, will be prepared.

The Summary Report will be prepared within one year of the execution of this MOA.

2. **Monitoring:** The signatories may monitor activities pursuant to this MOA, and the Council will review such activities if so requested by a party to this MOA. Reclamation will cooperate with the signatories in carrying out their review and monitoring responsibilities.
3. **Dispute Resolution:** Should the SHPO object within 30 days to any documentation provided for its review pursuant to this agreement, Reclamation shall consult with the SHPO to resolve the objection. If Reclamation determines the objection cannot be resolved Reclamation shall forward all documentation relevant to the dispute to the Council. Within 30 days after receipt of all pertinent documentation the Council will:
 - a. Advise the agency that the Council concurs in the agency's proposed response to the objection, whereupon the agency will respond to the objection accordingly;
 - b. Provide the agency with recommendations, which the agency shall take into account in reaching a final decision regarding its response to the objection; or
 - c. Notify the agency that the objection will be referred for comment pursuant to 36 CFR § 800.7(a)(4), and proceed to refer the objection and comment. The agency shall take the resulting comment into account in accordance with 36 CFR § 800.7(c)(4).
4. **Amendment and Termination:** Any signatory to this agreement may request that it be amended, whereupon the parties will consult to reach a consensus on the

proposed amendment. Where no consensus can be reached, the agreement will not be amended.

5. **Duration:** This MOA will be null and void if its stipulations are not carried out within five (5) years from the date of its execution. At such time, and prior to work continuing on the undertaking, Reclamation shall either (a) execute a MOA pursuant to 36 CFR § 800.6, or (b) request, take into account, and respond to the comments of the Council under 36 CFR § 800.7. Prior to such time, Reclamation may consult with the other signatories to reconsider the terms of the MOA and amend it in accordance with Stipulation 4 above. Reclamation shall notify the signatories as to the course of action it will pursue.
6. In the event that Congress amends Section 106 of the NHPA or in the case of substantial changes to 36 CFR Part 800, the parties to this agreement will consider whether it would be appropriate to amend the agreement. Any signatory to this agreement may terminate it by providing thirty (30) days notice to the other parties, provided that the signatories and concurring parties will consult during the period prior to termination to seek agreement on amendments or other actions that would avoid termination.
7. **Failure to Carryout Terms:** Failure to carry out the terms of this MOA requires that Reclamation again request the Council's comments in accordance with 36 CFR Part 800. If Reclamation cannot carry out the terms of the MOA, it will not take or sanction any action or make an irreversible commitment that would result in an adverse effect to the historic property covered by the MOA or that would foreclose the Council's considerations of modifications or alternatives that could avoid or mitigate the adverse effect on the properties until the commenting process has been completed.

Execution of this MOA by Reclamation and the SHPO, its subsequent acceptance by the Council, and implementation of its terms, evidence that Reclamation has afforded the Council an opportunity to comment on the effects of the Minnesota Canal Piping Project on the two historic properties and that Reclamation has taken into account the effects of the undertaking on historic properties.

SIGNATORIES:

Colorado State Historic Preservation Officer

By: Richard A. Warner (Deputy SHPO) Date: 12-10-13
for Edward C. Nichols, SHPO

Bureau of Reclamation, Western Colorado Area Office

By: Ed Warner Date: 11-18-13
Ed Warner, Area Manager

CONCURRING PARTIES:

Crawford Clipper Ditch Company

By: Gary Kraai Date: 11/9/13
Gary Kraai

ATTACHMENT E

Comment / Response on Draft EA

A draft EA was distributed for agency review (See Attachment A – Distribution List) and comment on January 27, 2014. Comments were requested by February 17, 2014.

A total of one written comment was received on the Draft EA, and a copy is provided as Attachment E.

Comment Letter – U.S. Army Corps of Engineers

Comment: This comment letter consists of an email from Mr. Nathan Green, Regulatory Project Manager, Regulatory Division, Sacramento District, U.S. Army Corps of Engineers (see following page). The email was in regards to the statement that the project does not require 401 water quality certification because it qualifies for an exemption to Section 404 of the Clean Water Act.

Response: A 401 certification is not required if there is no federal permit (Section 404) required for this project. Construction or maintenance of irrigation ditches is exempt from Section 404 (see Attachment B). The appropriate citation from Colorado's Regulation No 82, 401 Certification Regulation (5 CCR 1002-82) is listed below:

82.3 APPLICABILITY AND SCOPE

(A) No federal license or permit for which water quality certification is required under

Section 401 of the Federal Act may be issued without the certification provided pursuant to these regulations, except as provided in subsection 82.3(B).

(B) General or nationwide permits to discharge dredged or fill material issued under

section 404 of the federal act are authorized for use without additional action by the Division.

(C) Any certification issued by the Division pursuant to these regulations shall apply to both the construction and operation of the project for which a federal license or permit is required, and shall apply to the water quality impacts associated with the project.

The Draft EA has been modified to reflect that no federal permit is being issued for this project, and therefore no Section 401 Water Quality Certification is required for the Proposed Action.

2/4/14

DEPARTMENT OF THE INTERIOR Mail - Draft EA Clipper Ditch Pipeline (UNCLASSIFIED)



Hamilton, Jennifer <jhamilton@usbr.gov>

Draft EA Clipper Ditch Pipeline (UNCLASSIFIED)

1 message

Green, Nathan J SPK <Nathan.J.Green@usace.army.mil>
To: "Hamilton, Jennifer" <jhamilton@usbr.gov>
Cc: "Hranac - CDPHE, John" <john.hranac@state.co.us>

Tue, Feb 4, 2014 at 11:03 AM

Classification: UNCLASSIFIED
Caveats: NONE

Hi Jenny,

I reviewed the draft EA and the only comment I have is regarding the statement that the project does not require 401 water quality certification because it qualifies for an exemption to Section 404 of the Clean Water Act. I do not think this is accurate. Under Nationwide General Permits in the state of Colorado, water quality certification is automatically certified statutorily by Colorado Department of Public Health and Environment. I would contact John Hranac with CDPHE to be sure your project is in compliance with Section 401 water quality certification requirements. I have copied John on this email and included a link to your EA for his use. Please feel free to contact me with any other questions.

<http://www.usbr.gov/uc/envdocs/ea/clipperirrig/draft-EA.pdf>

Sincerely,

Nathan Green
Regulatory Project Manager
Regulatory Division, Sacramento District
U.S. Army Corps of Engineers
400 Rood Avenue, Room 224
Grand Junction, Colorado 81501-2563

O: (970) 243-1199 x 12

F: (970) 241-2358

Let us know how we're doing. Take our short customer survey at: http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey

Our website address has changed: <http://www.spk.usace.army.mil/Missions/Regulatory.aspx>

Classification: UNCLASSIFIED
Caveats: NONE