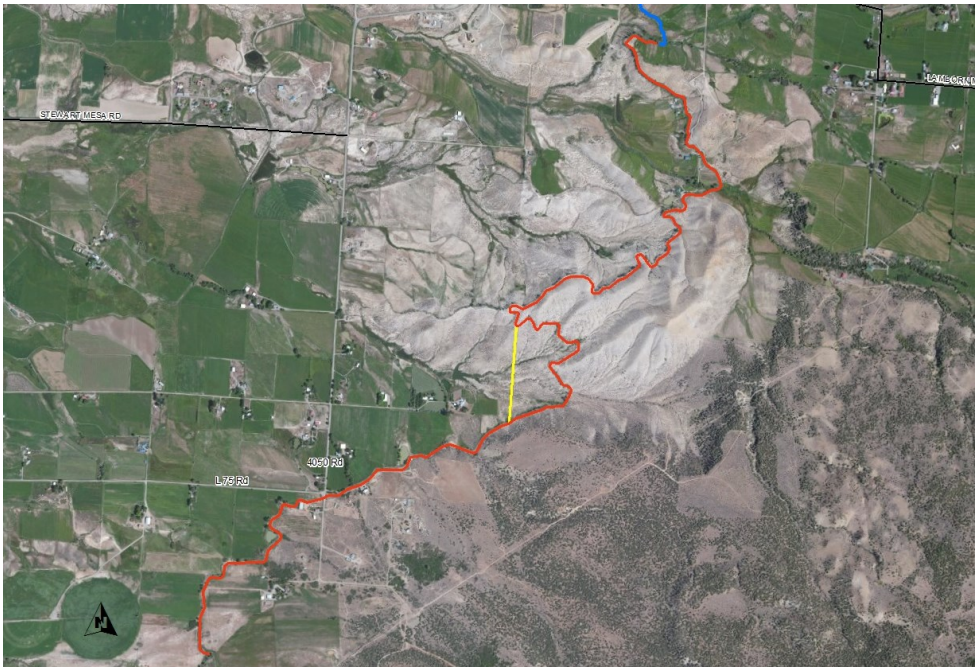
Salinity Control Phase II EA

Environmental Assessment

Minnesota Canal and Reservoir Company
Salinity Control Project Phase II 2014-2016

Paonia, CO
Delta County, Colorado



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1.0 PROPOSED ACTION

The Minnesota Canal and Reservoir Company (MCRC) of Paonia, Colorado is a private, non-profit, mutually funded irrigation company that manages several miles of water conveyance ditches, canals, and reservoirs in Delta County, Colorado. One of the canals managed by the MCRC is the Minnesota Canal. The Canal diverts water from Minnesota Creek east of Paonia to irrigate agricultural lands west and southwest of the point of diversion. The MCRC has received two grants through the Bureau of Reclamation (Reclamation), in association with a Basinwide Salinity Control Program, aimed at reducing the amount of salt and selenium that reaches the Colorado River. The first grant awarded (Phase I) was used to improve the upper 5.2 miles (mi.) (27,479 ft.) of the Minnesota Canal by piping the existing earthen canal. Phase I also included improvements to the diversion structure on Minnesota Creek. An Environmental Assessment for Phase I was prepared by Reclamation and a Finding of No Significant Impact was signed in 2012(WCAO-GJ-FONSI-12-02).

The Phase II project consists of piping the Extension Ditch for its full length from Lucas Creek to the last dividing box, a total length of 20,186 feet (3.8 miles). The Minnesota Canal becomes the Minnesota Extension Ditch at Lucas Creek. The Extension includes 14 diversion points total. The new pipe will predominantly follow the old canal alignment with minor realignments to reduce the number of fittings and length of pipe thus reducing the project cost. A siphon across Runyon Gulch is being considered which could provide considerable cost savings. It is, however, dependent on agreements from the land owner and the ditch shareholders. Approximately half of the water diverted from Minnesota Creek is delivered to the Minnesota Extension Ditch. The Extension Ditch has 14 turnouts, 4 of which are laterals. There are no storage facilities directly on the Minnesota Canal or the Minnesota Extension Ditch. The existing open canal shown in Figure 1 will be piped with plastic, low pressure pipe. Pipe size will vary from 42 inch down to 30 inch. Water will be returned to atmospheric conditions at each turnout location. Thirteen new cast in place concrete turnout boxes and one divider box will be constructed to replace the old structures. Water will be divided using a steel divider wall similar to the existing structures. In addition 2 spill boxes will replace 2 spill structures on the ditch. The proposed action does not include any new storage or irrigation of new lands.

1.1 NEED FOR AND PURPOSE OF ACTION

This environmental assessment (EA) evaluates the effects on the human environment from the piping the remaining of portions of the Minnesota Canal. Applegate Group, Inc. prepared this EA in cooperation with other federal and state agencies to comply with the National Environmental Policy Act (NEPA), Endangered Species Act (ESA), and related U.S. Department of the Interior policies and regulations. If Reclamation's review of this EA results in a Finding of No Significant Impact (FONSI), preparation of an Environmental Impact Statement would not be required before the action could be implemented.

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 is a major concern in both the Unites 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.

1.2 LOCATION AND ENVIRONMENTAL SETTING

The Minnesota Extension Canal crosses private land near the town of Paonia in Delta County, Colorado. From its beginning at Lucas Creek, the examined segment of the canal crosses portions of Section 8, 17, 18, 19, and 20 in Township 14 South, Range 91 West of the 6th Prime Meridian (Figure 2 and Figure 3). Elevations along the canal range from 5,947 ft. (1,813 m) to 5,917 ft. (1,803 m). The project area is within the North Fork of the Gunnison River valley (North Fork Valley) on the eastern edge of the Colorado Plateau physiographic province not far from the transition to the Southern Rocky Mountains. The valley is bounded on the north by the basalt-capped Grand Mesa and on the south by the West Elk Mountain range. It was formed by the waters of the North Fork of the Gunnison River, which is fed by several high-country streams draining from the West Elk Mountains and Grand Mesa. The valley begins about 4 mi. to the northeast of Paonia where the steep-walled canyon of the North Fork River gives way to a 3 mi.-wide, alluvial-floored expanse that extends west-southwest for 16 mi. where it meets the main stem of the Gunnison River. The valley, along with its bounding mesas, lies within the Mesaverde Formation deposited during the Cretaceous age around 70 million years ago. The formation is a sequence of interbedded sandstone, siltstone, shale, and coal and was deposited along the shallow shorelines of an ancient receding sea. The formation contains coal deposits that have been mined north of Paonia and continue to be mined northeast of the town in Somerset. The sediments of the project area are Cretaceous-age Mancos shale and restricted areas of Quaternary-age gravels and alluviums (Tweto 1979). Collectively, the sediments are the foundation of rich agricultural lands made productive by irrigation.

1.3 BACKGROUND INFORMATION

COLORADO RIVER BASIN SALINITY CONTROL PROGRAM

The program's overall goal is to cost-effectively reduce the amount of salinity in the Colorado River. Reclamation's Basinwide Salinity Control Program opened the program to competition through a 'Funding Opportunity Announcement' process which has greatly reduced the cost of salinity control. New salinity control projects are funded by a one-time grant that is limited to the sponsor's competitive bid. Once constructed, the facilities are owned, operated, maintained, and replaced by the sponsors at their own expense.

1.4 SCOPING

Initial scoping was primarily limited to MCRC, Applegate Group (AG), U.S. Fish and Wildlife Service, Colorado Parks and Wildlife, and the Colorado Historic Preservation Officer. Alternatives evaluated

in this EA are limited to the Proposed Action and No Action alternatives. The alternatives are discussed in Chapter 2. During scoping, AG identified the following potential issues and concerns described below which are discussed in greater detail in Chapter 3.

Water Resources

Diversion Dam Operations and Water Rights—The Minnesota Canal provides water for irrigation. Piping of the Minnesota Canal should not interfere with canal operations or adversely affect the ability to use water for irrigation.

Water Quality—Piping the existing canal provides additional water quality benefits beyond salinity reduction. Selenium concentrations would also be reduced by piping the existing Minnesota canal.

Land and Facilities Resources

Access—MCRC is responsible for obtaining all needed right-of-way and landowner consent prior to construction of the project.

Fish and Wildlife Resources

Effects on Fish and Wildlife Habitat—Public Laws 98-569 and 104-20 requires that "*the Secretary 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*."

Cultural Resources

Historic Resource Preservation—Federal agencies are responsible for ensuring that they take into account the effects of their actions on significant cultural resources and for complying with the National Historic Preservation Act, 36 CFR Part 800, and other historic preservation requirements. Because the project is federally authorized and funded, various cultural resources laws apply. Federal mandates for the examination of the project area include the National Preservation Act of 1966 (as amended), the Archaeological and Historic Preservation Act of 1974, the Federal Land Policy and Management Act of 1976, the Archaeological Resource Protection Act of 1979 (as amended), the Native American Graves and Repatriation Act, and the procedures of the Advisory Council on Historic Preservation (36 CFR 800). These laws require that all significant cultural resources be identified prior to planned development, and are intended to insure that historic and prehistoric cultural resources important to our national heritage are not inadvertently harmed or destroyed by federally initiated or authorized actions.

Alternatives evaluated in this environmental assessment include the No Action and Proposed Action Alternatives.

No Action Alternative
Under this alternative, Reclamation would not provide funding to MCRC to pipe the given portion of the Minnesota Extension Canal. Seepage from the canal continues to contribute to salt loading in the Gunnison and Colorado Rivers. Riparian and wetlands habitats associated with the Minnesota Canal and associated laterals would likely remain in place and continue to provide some benefits to local wildlife.

Proposed Action
Under the Proposed Action, Reclamation would provide funding to MCRC to pipe approximately 3.8 miles of the Minnesota Extension Canal. The proposed action does not include any new storage or irrigation of new lands. Pursuant to Public Law 104-20, signed July 28, 1995, Reclamation is authorized to pursue and fund salinity control efforts within the Colorado River Basin. In February 2008, Reclamation solicited applications for salinity control funding with the Upper Colorado River Basin. MCRC submitted an application which was accepted by Reclamation for implementation.

The cooperative agreement, which provides the funding for the project, requires MCRC to permanently dewater, remove from irrigation service, and render incapable of irrigation water delivery, all remaining remnants of open laterals replaced by buried pipe. This will require the removal of all irrigation structures (headgates, drops, etc.) and refilling the abandoned canal prism with soil.

It is anticipated that implementation of the project will result in a total annual reduction of 2,328 tons of salt in the Colorado River

CHAPTER 3-AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter discusses resources that may be affected by actions taken to pipe 3.8 miles of the Minnesota Extension Ditch. During preparation of this environmental assessment, information on issues and concerns was received from the Minnesota Ditch Company, resource agencies, and other interested parties (see Chapter 4, Consultation and Coordination, for further details).

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 chapter is concluded with a summary comparison of the alternatives and a list of mitigation measures.

3.1 GENERAL

The Minnesota Extension Canal is a privately owned canal diverting water from Minnesota Creek to irrigate agricultural lands west and southwest of the point of diversion. A majority of lands supplied by the Minnesota Extension Canal are currently flooded hay meadows located in the Reynolds Creek drainage and Stewart and Bone mesas (Figure 1).

3.2 WATER RIGHTS AND USE

The Minnesota Creek is a tributary to the North Fork of the Gunnison River within the Gunnison River Basin. The basin is approximately 7,800 square miles in size and additional discussions on water rights within the Minnesota Creek Area of the Gunnison Basin can be found in the report entitled "*Gunnison River Basin Information*, *Colorado's Decision Support Systems"* (CWCB 2004).

MCRC's water rights are listed in Table 1 (below) from the Colorado River Decisions Support System (CRDSS) (CWCB 2004). The net Absolute Decreed amount for Minnesota Canal is 59.857 cubic feet per second (cfs)(CWCB 2004).

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. Late season irrigation water would continue to be scarce in drier years and limit the types and numbers of crops produced.

Proposed Action: Under the proposed action, MCRC would have the ability to better manage its water rights with efficiencies gained from piping the system. The reduction in transport system losses may lead to improved irrigation practices (flood irrigation and use of gated pipe could be converted to sprinkler and screening the water at the diversion) which could allow for stored water to remaining in the reservoir for use later in the season. The proposed action does not include any new storage or irrigation of new lands.

Table 1-MCRC Diversion Rights listed in CRDSS

Structure Name	Structure ID #	Source	Adjudication Date	Appropriation Date	Administration Number	Decreed Amount (cfs)
Minnesota Canal	1020	Minnesota Creek	6/17/1889	5/5/1883	12178.00000	0.301
Minnesota Canal	1020	Minnesota Creek	6/17/1890	5/5/1884	12179.00000	0.301
Minnesota Canal	1020	Minnesota Creek	6/17/1891	5/5/1885	12180.00000	0.300
Minnesota Canal	1020	Minnesota Creek	6/17/1892	5/5/1886	12181.00000	0.300
Minnesota Canal	1020	Minnesota Creek	4/12/1901	6/14/1883	14413.12218	0.266
Minnesota Canal	1020	Minnesota Creek	4/13/1901	6/14/1884	14413.12218	0.266
Minnesota Canal	1020	Minnesota Creek	4/14/1901	6/14/1885	14413.12218	0.266
Minnesota Canal	1020	Minnesota Creek	4/12/1901	8/18/1883	14413.12283	0.409
Minnesota Canal	1020	Minnesota Creek	4/13/1901	8/18/1883	14413.12283	0.409
Minnesota Canal	1020	Minnesota Creek	4/14/1901	8/18/1883	14413.12283	0.400
Minnesota Canal	1020	Minnesota Creek	4/15/1901	8/18/1883	14413.12283	0.410
Minnesota Canal	1020	Minnesota Creek	4/16/1901	8/20/1883	14413.12285	0.220
Minnesota Canal	1020	Minnesota Creek	4/17/1901	8/20/1883	14413.12285	0.220
Minnesota Canal	1020	Minnesota Creek	4/18/1901	8/20/1883	14413.12285	0.215
Minnesota Canal	1020	Minnesota Creek	4/19/1901	8/20/1883	14413.12285	0.220
Minnesota Canal	1020	Minnesota Creek	4/20/1901	3/10/1984	14413.12488	0.666
Minnesota Canal	1020	Minnesota Creek	4/21/1901	3/10/1984	14413.12488	0.666
Minnesota Canal	1020	Minnesota Creek	4/22/1901	3/10/1984	14413.12488	0.666
Minnesota Canal	1020	Minnesota Creek	4/23/1901	9/1/1987	14413.13758	32.500
Minnesota Canal	1020	Minnesota Creek	6/23/1914	9/1/1903	21263.19601	0.600
Minnesota Canal	1020	Minnesota Creek	6/23/1914	9/1/1903	21263.19601	0.600
Minnesota Canal	1020	Minnesota Creek	6/23/1914	9/1/1903	21263.19601	6.000
Minnesota Canal	1020	Minnesota Creek	6/23/1914	5/1/1910	22035.00000	10.000
Minnesota Canal	1020	Minnesota Creek	2/10/1930	6/1/1910	25807.22066	10.980
Minnesota Canal	1020	Minnesota Creek	3/20/1954	9/1/1887	31924.13758	3.000

3.3 WATER QUALITY

MCRC is located in the North Fork (North Fork) of the Gunnison River watershed in west-central Colorado and flows through northwestern Gunnison and Delta Counties. Water is diverted from the Minnesota Creek and drains to the North Fork. The North Fork begins at the confluence of Muddy Creek and Anthracite Creek downstream of Paonia Dam and flows southwesterly approximately 33 miles to its confluence with the Gunnison River. The North Fork watershed (HUC 1402004) drains approximately 986 square miles and includes five small communities that line the North Fork as it flows west towards the Gunnison River (NFRIA 2009).

Table 2-Stream Segments and Water Quality Standards

Stream Segment	Designated Use	Numeric Standards				
		Physical and Biological	Inorganic (mg/L)		Metals (mg/L)	
COGUNF03 (North Fork)	Aquatic Life Cold 1 Agriculture Recreation N (Oct-Mar) Recreation E (Apr-Sept)	D.O. =6.0 mg/l D.O. (sp)=7.0 mg/l pH=6.5-9.0 Ecolab=630/100 ml Oct-Mar Ecolab=126/100 ml Apr-Sept	NH3=TVS Cal2(a)=0.019 Cal2(c)=0.011 CN=0.005	S=0.002 B=0.75 NO2=0.05 NO3=100	As(a)=340 As(c)=7.6 (Trec) Cod(a)=TVS(try) Cod(c)=TVS Crib= 50 (Trec) Curvy=TVS Cu=TVS Fe(c)=1000(Trec) Pub=TVS	Man=TVS Hg(c)=0.01(tot) Ni=TVS Se=TVS Ag(a)=TVs Ag(c)=TVS(try) Zn(a)=TVS Zn(c)=TVS(sc)
COGUNF05 (includes Minnesota Creek)	Aquatic Life Cold 1 Recreation P Water Supply Agriculture	D.O. =5.0 mg/l D.O. (sp)= 7.0 mg/l pH=6.5-9.0 Ecolab=205/100 ml	NH3=TVS Cal2(a)=0.019 Cal2(c)=0.011 CN=0.005	S=0.002 B=0.75 NO2=0.05 NO3=10 Cal(c)=250 CN=0.005	As(a)=340 As(chi)=0.02(Trek) Cod(ac)=TVS(try) Cod(chi)=TVS Crib(ac)= 50(Trek) Curvy=TVS Cu=TVS Fe(chi)=WS(dies) Fe(chi)=1000(Trek) Pub(ac.chi)=TVS	Man(ac.chi)=TVS Man(chi)=TVS Hg(chi)=0.01(tot) Ni(ac.chi)=TVS Se(ac.chi)=TVS Ag(ac)=TVs Ag(chi)=TVS(try) Zn(ac.chi)=TVS

(a)=Acute; (c)=Chronic; TVS=Table Value Standards; Trek=Total Recoverable Fraction
Data for Table from Water Quality Control Commission Regulations 31 (CDPHE 2009) and Regulation 35 (CDPHE 2010).

Stream segments and Water Quality Standards for the North Fork and Alum Gulch are shown in Table 2. Official designated uses for the North Fork include the following:

- Domestic Water Supply: Water body supports use of the water as a potable water supply.
- Fish Consumption: Water body supports the water by humans for harvesting aquatic organisms for consumption.
- Primary Human Contact: Water body supports the use of water that causes the human body to come into direct contact with the water, typically to the point of submergence, or probable ingestion, or contact with membrane material of the body. Examples are ceremonial uses, swimming, and water-skiing.

Secondary Human Contact: Water body supports the use of water which may cause the water to come into direct contact with the skin, but normally not to the point of submergence, ingestion, of contact with membrane material of the body. Such contact would only occur incidentally.

Agricultural Water Supply: Water body supports the use of water for the irrigation of crops which could be used for human consumption.

Aquatic Habitat: Water body supports the use of the water by animals, plants or other organisms and is capable of supporting cold or warm water fisheries.

Livestock and Wildlife Watering: Water body supports use by livestock and/or non-domestic animals (including migratory birds) for consumption, habitation, growth, and/or propagation.

Every two years, the Colorado Department of Public Health and Environment is required to prepare a list of impaired streams not meeting water quality standards, called the 303(d) Impaired Waters List. In 2008, there were four segments on the 303(d) list for selenium (Se) impairment which included the lower portion of the North Fork and Alum Gulch.

No Action: Under the No Action Alternative, no change to existing water quality trends is predicted. The estimated 2,328 tons of salt annually contributed to the Colorado River would continue.

Proposed Action: Because construction activities will occur only within the dry canal or lateral, no change in water quality during construction is predicted. Exemptions under the Clean Water Act apply to the proposed project. The Army Corps of Engineers lists these exemptions as 1) Farm or Stock Pond or Irrigation Ditch Construction or Maintenance and 2) Maintenance of Existing Structures. Copies of the Exemption Summaries are provided as Appendix B. Because the project is exempted, no Section 401 Water Quality Certification is required, however best management practices would be implemented to protect water resources. Commitments include the following:

- 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.
- 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.
- An oil spill response plan will be prepared for areas of work where spilled contaminants could flow into water bodies. All employees and workers, including those under separate contract, will be briefed and made familiar with this plan. The plan will be developed prior to initiation of construction. An oil spill response kit, which includes appropriate-sized spill blankets, shall be easily accessible and on-site at all times.
- On-site 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.

Implementation of off-farm of the project is predicted to result in an annual reduction of 2,328 tons of salt in the Colorado River.

3.4 VEGETATION AND LAND USE

The project area is in the Upper Sonoran life zone characterized by pinyon-juniper forests, Gambel oak, sagebrush, rabbitbrush, buffalo currant, and serviceberry. Over the years, the canal has created its own greenbelt where various trees, shrubs, and grasses have flourished along its banks. Common plants in the wetter areas include: narrow leaf cottonwood, coyote willow, skunkbrush sumac, thinleafed alder, chokecherry, wild rose, and western wheatgrass. There were also a few sedges and some cattails found in isolated portions of the ditch. Common plants in the drier areas include: serviceberry, juniper trees & bushes, pinion trees, mountain mahogany, Gambel oak, sagebrush, rabbitbrush, yellow clover, shrubby cinquefoil, Indian Rice Grass, prickly-pear cactus, and four-winged salt brush. Non-native weeds found along the ditch include: Russian olive, Canada thistle, Russian knapweed, hounds tongue, whitetop, and tamarisk. In addition to the weeds and native plant species, several fruit trees grow along the canal's outer banks. Although trees flourish along the canal, their growth has been hindered along the canal's access road.

Figure 2 shows the major landcover classifications based on the Southwest Regional Gap Analysis Project (NatureServe 2004).

Landcover types include Agriculture, Colorado Plateau Pinyon-Juniper Woodland, Rocky Mountain Lower Montane Riparian Woodland and Shrubland, Rocky Mountain Lower Montane-Foothill Shrubland, Inter-Mountain Basins Greasewood Flat, Inter-Mountain Basins Big Sagebrush Shrubland. A detailed description of each landcover type is as follows:

Inter-Mountain Basins Big Sagebrush Shrubland: This ecological system occurs throughout much of the western U.S., typically in broad basins between mountain ranges, plains and foothills between 1,500-2,300 m elevation. Soils are typically deep, well-drained and non-saline. These shrublands are dominated by Basin Big Sagebrush and Wyoming Big Sagebrush. Scattered Juniper spp. Greasewood, Antelope Bitterbrush, or Mountain Snowberry may co-dominate disturbed stands. Perennial herbaceous components typically contribute less than 25% vegetation cover. Common *graminoid* species include Indian Ricegrass, Blue Grama, Thickspike Wheatgrass, Idaho Fescue, Needle and Thread, Basin Wildrye, Western Wheatgrass or Bluebunch Wheatgrass.

Colorado Plateau Pinyon-Juniper Woodland: This ecological system occurs on dry mountains and foothills of the Colorado Plateau region from the Western Slope of Colorado to the Wasatch Range, south to the Mogollon Rim and east into the NW corner of New Mexico. It is typically found at lower elevations ranging from 1,500-2,440 m. These woodlands occur on the warm, dry sites on mountain slopes, mesas, plateaus, and ridges. Severe climatic events occurring during the growing season, such as frosts and droughts, are thought to limit the distribution of pinyon-juniper woodlands to relatively narrow altitudinal belts on mountainsides. Soils supporting this system vary in texture ranging from stony, cobbly, gravelly sandy loams to clay loam or clay. Pinyon Pine and/or Utah Juniper dominate the tree canopy. Rocky Mountain Juniper may co-dominate or replace Utah Juniper at higher elevations. Understory layers are variable and may be dominated by shrubs, *graminoids*, or be absent. Associated species include Manzanita, Sagebrush, Mountain

Mahagany, Blackbrush, Cliffrose, Antelope Bitterbrush, Gambel Oak, Blue Grama, James Galleta, or Muttongrass. This system occurs at higher elevations than Great Basin Pinyon-Juniper Woodland and Colorado Plateau shrubland systems where sympatric.

Rocky Mountain Lower Montane Riparian Woodland and Shrubland: This system is found throughout the Rocky Mountain and Colorado Plateau regions within a broad elevation range from approximately 900 to 2,800 m. This system often occurs as a mosaic of multiple communities that are tree-dominated with a diverse shrub component. This system is dependent on a natural hydrologic regime, especially annual to episodic flooding. Occurrences are found within the flood zone of rivers, on islands, sand or cobble bars, and intermediate stream banks. They can form large, wide occurrences on mid-channel islands in larger rivers or narrow bands on small, rocky canyon tributaries and well-drained benches. It is also typically found in backwater channels and other perennially wet but less scoured sites, such as floodplain swales, and irrigation ditches. Dominant trees may include Boxelder, Narrowleaf Cottonwood, Black Cottonwood, Freemont Cottonwood, Douglas-fir, Blue Spruce, Peachleaf Willow, or Rocky Mountain Juniper. Dominant shrubs include Rocky Mountain Maple, Gray Alder, Water Birch, Redosier Dogwood, River Hawthorn, *Forestiera*, Chokecherry, Skunkbush Sumac, Willow spp., Silver Buffaloberry, and Honeysuckle. Exotic trees of Russian olive and Salt Cedar are common in some stands. Generally, the upland vegetation surrounding this riparian system is different and ranges from grasslands to forests.

Rocky Mountain Lower Montane Riparian Foothill Shrubland: This ecological system is found in the foothills, canyon slopes and lower mountain slopes of the Rocky Mountains and on outcrops and canyon slopes in the western Great Plains. It ranges from southern New Mexico extending north into Wyoming, and west into the Intermountain region. These shrublands occur between 1,500-2,900 m elevations and are usually associated with exposed sites, rocky substrates, and dry conditions, which limit tree growth. It is common where *Quercus gambelii* is absent such as the northern Colorado Front Range and in drier foothills and prairie hills. This system is generally drier than Rocky Mountain Gambel Oak-Mixed Montane Shrubland (CES306.818). Scattered trees or inclusions of grassland patches or steppe may be present, but the vegetation is typically dominated by a variety of shrubs including *Amelanchier utahensis, Cercocarpus montanus, Purshia tridentata, Rhus trilobata, Ribes cereum, Symphoricarpos oreophilus*, or *Yucca glauca*. In northeastern Wyoming and north into adjacent Montana, *Cercocarpus ledifolius*, usually with *Artemisia tridentata*, is the common dominant shrub. Grasses are represented as species of *Muhlenbergia, Bouteloua, Hesperostipa*, and *Pseudoroegneria spicata*. Fires play an important role in this system as the dominant shrubs usually have a severe die-back, although some plants will stump sprout. *Cercocarpus montanus* requires a disturbance such as fire to reproduce, either by seed sprout or root crown sprouting. Fire suppression may have allowed an invasion of trees into some of these shrublands, but in many cases sites are too xeric for tree growth.

Inter-Mountain Basins Greasewood Flat: This ecological system occurs throughout much of the western U.S. in intermountain basins and extends onto the western Great Plains. It typically occurs near drainages on stream terraces and flats or may form rings around playas. Sites typically have saline soils, a shallow water table and flood intermittently, but remain dry for most growing seasons. This system usually occurs as a mosaic of multiple communities, with open to moderately dense shrublands dominated or codominated by *Sarcobatus vermiculatus*. *Atriplex canescens, Atriplex confertifolia*, or *Krascheninnikovia lanata* may be present to codominant. Occurrences are often surrounded by mixed salt desert scrub. The herbaceous layer, if present, is usually dominated by graminoids. There may be inclusions of *Sporobolus airoides, Distichlis spicata* (where water remains ponded the longest), or *Eleocharis palustris* herbaceous types.

Field surveys were also conducted by Wildlife and Natural Resource Concepts & Solutions, LLC of Montrose, Colorado to evaluate and map riparian and wetland habitats associated with the off-farm irrigation system. A total of 21.2 acres of riparian and non-jurisdictional wetlands were identified adjacent to the affected portion of the Minnesota Canal and laterals. Figure 3 shows the locations of these habitat types in relation to the proposed project, and Table 5 summarizes the habitat types and scores for each of the areas identified.

The Colorado Noxious Weed Act (Title 35, Article 5.5, C.R.S.) mandates that all persons must control noxious weeds on their property if such plants are a threat to neighboring landowners or natural ecosystems. To comply with the Law, the Board of County Commissioners must adopt a noxious weed plan for all unincorporated lands within its jurisdiction. For Delta County, the Delta County Noxious Weed Management Plan (Delta County 2010) identifies leafy spurge along Minnesota Creek and scattered infestations of whitetop, Russian knapweed, oxeye daisy, yellow toad flax and scotch thistle within the North Fork area. Canadian thistle is also listed as a county-wide infestation. The list of weedy species along the Minnesota Canal include cheatgrass, Russian thistle, curly dock, milkweed, and mustard.

The Delta County Noxious Weed List includes the following:

Yellow starthistle	Purple loosestrife	Myrtle spurge
Common burdock	Diffuse knapweed	Spotted knapweed
Russian knapweed	Hoary cress or Whitetop	Leafy spurge
Canada thistle	Musk thistle	Scotch thistle
Bull thistle	Yellow toadflax	Oxeye daisy
Poison hemlock	Halogeton	Russian olive
saltcedar		

No Action: The No Action Alternative would have no effect on existing vegetation or current land uses.

Proposed Action: Temporary disturbances within the footprint of the pipeline and along the potential siphon alignment would occur during construction, and the existing canal and laterals would be dewatered and filled so that they no longer transport irrigation water. Irrigation of hay adjacent to the canal will maintain water levels to some extent, lessening habitat losses associated with dewatering the canal. Pipeline alignments and construction footprints will be revegetated subject to the easement and agreements between MCRC and individual land owners. Impacts to habitat along the Minnesota Ditch due to piping can be minimized by avoiding the removal of trees as much as possible along the pipe trench, installing an occasional pipe cleanout that could occasionally be opened near more critical riparian areas, and proper revegetation of the area over the pipeline.

During construction of the Proposed Action, an increase in noise and traffic would occur. To date, Reclamation has not been advised of concerns regarding disturbances during construction. Any complaints would be resolved on a case-by-case basis. Access for construction, operations and maintenance would utilize existing roadways. MCRC would obtain easements where necessary for improvements and pipeline alignments on public and private property.

Construction activities will likely result in an initial increase in noxious weeds (i.e., Russian

knapweed). Herbicide applications and revegetation with appropriate seed mixes should result in a reduction in the number noxious weeds along the existing alignment. In addition, the loss of the wetted canal perimeter by piping and the associated reduction in maintenance will minimize the potential for reinfestation in the majority of locations. One specific benefit of the piping of the canal will be the removal of several stretches of Russian olive and tamarisk. Delta County Noxious Weed Management Plan adopted in 2010 recommends the following herbicides for the 5 most common weeds in Delta County:

Table 4- Herbicide Guide for Delta County Weed Management Plan (2010)*

Common Target Weeds	Preferred Herbicides	Application Timing
Whitetop/hoary cress	-Telar + 24D (amine) -Escort/ally	Spring: late bud-early flower
Russian knapweed	-Milestone -Curtail, Transline, Stinger -Redeem R & P	Spring: Rosette to early flower Fall: Apply up until first hard freeze. Applications under drought conditions will not be effective.
Canada thistle	Same as Russian knapweed	
Scotch thistle, musk thistle	Same as Russian knapweed, or -Telar -Banvel + 24D (amine)	Spring: Rosette to early flower Fall: Rosette Spring: These species are biennials and be controlled by chopping/digging.

*follow the label for each herbicide, additional recommendations can be found in the Delta County Plan or by contacting the local Colorado State University Cooperative Extension Service agent.

Reclamation has developed habitat evaluation procedures that estimate habitat losses or changes associated with salinity improvements in their May 2012 "Basinwide Salinity Control Program: Procedures for Habitat Replacement." In April 2013, Wildlife and Natural Resource Concepts & Solutions, LLC. evaluated the habitat impacts for the Minnesota Ditch Phase II piping project to quantify potential wetland and riparian habitat values that would be lost in the project area due to project implementation see Appendix H. Predicted losses of riparian and wetlands habitats supported by canal and lateral prisms and seepages are estimated in Table 5. A total of 21.21 acres of non-jurisdictional wetland habitat were identified adjacent to or associated with the existing canal and laterals. With the removal of the wetted canal and lateral prisms and seeps, an estimated 21.21 acres will be lost with a total fish and wildlife habitat value of 24.4. Fish and wildlife habitat values are discussed in greater detail in the Fish and Wildlife Resource Section.

Table 5-Predicted Vegetation Habitat Value Losses

Wetland ID	Habitat Type	Existing Acres	Habitat Score			Habitat Credits Lost[1]
			Before	After	Loss	
H1	Shrub/Grass	0.28	6.8	5.8	1.00	0.28
H2	Shrub/Grass	1.50	6.4	5.0	1.40	2.10
H3	Shrub/Grass	0.50	5.8	5.0	0.80	0.40
H4	Shrub/Grass	0.85	5.9	4.9	1.00	0.85
H5	Shrub/Grass	0.80	6.1	4.2	1.90	1.52
H6	Shrub/Scrub	3.78	6.3	4.8	1.50	5.67
H7	Shrub/Scrub	5.55	6.3	4.8	1.50	8.32
H8	Grass/Emergents	1.08	6.4	5.3	1.10	1.19
H9	Grass/Emergents	0.76	5.2	4.3	0.90	0.68
H10	Shrub/Grass	1.93	5.4	4.5	0.90	1.74
H11	Shrub/Grass	3.16	5.5	5.0	0.50	1.58
H12	Shrub	1.02	4.6	4.5	0.10	0.10
Totals		**21.21**				**24.44**

[1] Habitat Credits Lost = Existing Acres * Habitat Score Loss

The adjustments to the acres impacted are due to current irrigation practices. The Minnesota Extension Ditch runs adjacent to irrigated fields it supplies water to, as well as other lateral ditches and irrigated fields which are located below segments of the ditch. Vegetation along the ditch or below the ditch could be lost if the ditch is piped and the vegetation cannot get water from another source. If this is the case, the estimated habitat loss is not expected to change and the adjusted value is 100%. If the impacted vegetation is near an irrigated field, on-farm irrigation or irrigation return flows could provide water to this vegetation. This circumstance would reduce the expected habitat losses. If only a quarter of the habitat is expected to be lost due to current irrigation practices, the adjusted value is 25-percent (25-percent X Acres of Expected Habitat Loss due to Ditch Piping). There are also areas along the ditch that have other irrigation ditches and irrigated fields above it where water can drain or subsurface flow down off the hillside. These flows can help offset the water that would be lost to ditch piping; however, this could change if irrigation practices above the ditch change.

Construction of the proposed siphon at Runyon Gulch would cross an arid section and is predicted to result in the minimal loss of vegetation once the area is reseeded. This segment of the ditch will be revegetated with an appropriate dryland seed mixture.

3.5 FISH AND WILDLIFE RESOURCES

The piping project crosses some irrigated farmland, but most of it is across drier sagebrush-shrub land with some pinion-juniper woodlands. There are a number of seeps located below the ditch that create more diversity in vegetation, and these areas will be impacted the most by the piping of the ditch. In the project area, riparian areas and seep areas have narrow leaf cottonwood, coyote willow, skunkbrush sumac, thinleafed alder, chokecherry, wild rose, and western wheatgrass. There were also a few sedges and some cattails found in isolated portions of the ditch. Common plants in the drier areas include: serviceberry, juniper trees & bushes, pinion trees, mountain mahogany, Gambel oak, sagebrush, rabbitbrush, yellow clover, shrubby cinquefoil, Indian Rice Grass, prickly-

pear cactus, and four-winged salt brush. Non-native weeds found along the ditch include: Russian olive, Canada thistle, Russian knapweed, hounds tongue, whitetop, and tamarisk.

Portions of the Minnesota Ditch for Phase II are adjacent to flood irrigated fields. Irrigation water in these fields will continue to feed the groundwater for adjacent habitat areas and thereby lessen the effect on existing habitat when ditch seepage is eliminated. Impacts on wildlife using the area along the ditch could still occur because the open irrigation ditch is one of the sources of water during the irrigation season. In the past the canal has not typically carried water during the winter periods and therefore impacts to the wildlife water supply would be negligible.

43 USC Chapter 32A, Subchapter II, Section 1592 (a)(6) requires the Secretary, acting through the Bureau of Reclamation, to implement a basinwide salinity control program. The program is required to provide for the mitigation of incidental fish and wildlife values that are lost as a result of the measures and associated works. Reclamation has developed habitat evaluation procedures that estimate habitat losses or changes associated with salinity improvements. The procedures predict changes in habitat values. The changes are then multiplied by the estimated acres lost or altered to predict the habitat units needed to mitigate for incidental fish and wildlife values lost (see Table 5).

The Colorado Parks and Wildlife (CPW) describes the project area as winter and severe winter range for elk. For deer, the CPW lists the project area as a mule deer concentration area, winter range, winter concentration area, summer range, severe winter range, resident population area, and critical winter range (CPW 2012, 2010). The project area is also described as a winter forage area for the bald eagle and is within the historic range of Gunnison Sage Grouse.

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 may affect water quality within the drainage, and thereby may impact the fish and wildlife using the area.

Proposed Action: Upland wildlife habitat disturbed 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.

Construction areas will be confined to the smallest feasible area to limit disturbance to wildlife within the Project Area. Open pipeline trenches left overnight would be kept to a minimum to reduce potential entrainment of small animals and public safety problems. Construction holes or pipeline trenches left open overnight shall be covered or include exit ramps at least every ¼ mile to allow entrapped animals to escape. Covers shall be secured in place and shall be strong enough to prevent livestock or wildlife from falling through.

In general, impacts on wildlife using the area along the ditch should also be minimal because much of the area is farmed and there is similar existing habitat nearby. Flood irrigation of fields along the pipeline route will maintain groundwater levels to some extent, lessening impacts to wildlife that will occur as a result of the elimination of canal seepage.

The estimated loss of 21.21 acres of riparian and wetland habitats, which equates to the loss of 24.44 habitat credits, would directly impact those species dependent on these habitat types.

Predicted habitat losses include emergent, shrub/scrub, and forested wetland habitats supported by irrigation seepage and the wetted canal prisms (see Table 5). All projects receiving funding through the Colorado River Basin Salinity Control Program are required to implement a habitat replacement plan to provide for the mitigation of incidental fish and wildlife values that are lost due to the project. Failure to comply with the habitat replacement requirements could lead to a cessation of funding under the cooperative agreement.

MCRC implemented a habitat replacement project on property owned by the Town of Paonia, Colorado along the North Fork River for Phase I of the Minnesota Canal piping project. Phase I required 11.17 units of habitat to be replaced and the Town of Paonia habitat replacement project generated 22.73 habitat units. The 11.56 excess habitat units from Phase I will be utilized for Phase II of the project. Phase II of the project requires a total of 24.44 habitat credits to be replaced. After utilizing the excess credits from Phase 1, 12.88 habitat units need to be generated with an additional habitat replacement project. A Habitat Replacement Plan (HRP) has been approved to take place near the project area on Peter Heller's property, about 2 miles south of the town of Paonia in Delta County, Colorado. The HRP includes the construction of 9 potholes for waterfowl and shore birds, and the de-silting of an existing man-made pond. Invasive weeds such as tamarisk, Russian olive, and Russian knapweed would be removed , and an effective weed control program would be implemented. Native plantings would be established in the newly constructed wetland areas. Native plants would include species such as narrowleaf cottonwoods, sumac, native plum, New Mexico privet, cotoneaster, alkali bulrush, hardstem bulrush, and Nebraska sedge. The property is held in a conservation easement and the Habitat Replacement Plan will create approximately 15.73 habitat credits.

No impacts to nesting birds are expected because activities within the canal prism would occur outside the irrigation season prior to or after the traditional nesting season (March 15th to August 31st).

In addition, improved water quality would likely benefit downstream aquatic species (amphibians and fish) by reducing salt and selenium loading in the North Fork, Gunnison, and Colorado rivers.

3.6 THREATENED AND ENDANGERED SPECIES

The Endangered Species Act (ESA) of 1973 protects federally listed endangered, threatened and candidate plant and animal species and their critical habitats. Table 6 lists these species that may occur within Delta County, Colorado and Minnesota Creek (USFWS 2010). A general description of each species follows.

Table 6-Federally Listed, Candidate and BLM Sensitive Species

Common Name	Scientific Name	Listing Status
Black-footed ferret	*Mustela nigripes*	Endangered
Bonytail	*Gila elegans*	Endangered
Canada lynx	*Lynx canadensis*	Threatened
Clay-loving wild buckwheat	*Erigonum pelinophilum*	Endangered
Colorado Basin hookless cactus	*Sclerocactus glaucus*	Threatened
Colorado pikeminnow	*Ptychocheilus lucius*	Endangered
Colorado desert parsley	*Lomatium concinnum*	Sensitive
Rocky Mountain thistle	*Cirsium perplexans*	Sensitive
Greenback cutthroat trout	*Oncorhynchus clarki stomias*	Threatened
Gunnison sage grouse	*Centrocercus minimus*	Candidate
Humpback chub	*Gila cypha*	Endangered
Mexican spotted owl	*Strix occidentalis lucida*	Threatened
Razorback sucker	*Xyrauchen texanus*	Endangered
Yellow-billed cuckoo	*Coccyzus americanus*	Candidate

Black-footed Ferret: The black-footed ferret is one of the most endangered mammals in North America. The ferret is associated with prairie dog towns and was once believed extinct. A reintroduction program is underway, including introductions in northwest Colorado. At the present time, there are no known populations in the project area or the Gunnison Basin. Potential habitat is fragmented in the basin, with prairie dog towns separated by cropland and other human developments. Historical presence in the basin is not known.

Bonytail: The bonytail is a large cyprinid fish endemic to the Colorado River and is the rarest of the four big river endangered fishes in the Colorado River Basin. Wild populations are considered nearly extinct.

The Minnesota Creek basin has never been confirmed as habitat for this species; however, early sampling and anecdotal information suggests the species was common in the Green and Colorado Rivers in the early 20th century (McAda, 2003). The Fish and Wildlife Service (2002) cited one capture in the Gunnison River near Delta by Jordan (1891), although identification of this specimen has been questioned. There were 5 captures in the mainstem Colorado River in the 1980's. Therefore it is possible that the species once utilized the Gunnison River.

Canada Lynx: Lynx may have disappeared from Colorado by about 1973. Sightings prior to that time were few, scattered throughout mountainous areas of the state. In 1999 a program of lynx restoration began in the San Juan Mountains, and by 2005 more than 200 animals had been released, a number of litters of kittens had been born, and lynx were expanding throughout the high country and occasionally beyond. Lynx reproduction has not been confirmed in 2007 and 2008, possibly related to snowshoe hare decline, but reproduction was reported in 2009 and 2011. The lynx is found in dense sub-alpine forest and willow corridors along mountain streams and avalanche chutes, the home of its favored prey species, the snowshoe hare.

Reintroduced lynx have entered the Gunnison Basin where potential habitat occurs at higher elevations. The potential exists that the species will become permanently established in the basin.

Clay-loving Wild Buckwheat: The clay-loving wild buckwheat is a small shrub that is found in semi-

desert shrub communities of adobe hills. It is normally located in specific microhabitats and can be associated with shadscale and mat saltbush. Its range is restricted to small acreages in Delta and Montrose Counties and primary threats include fragmentation or clearing of habitat for urban development and off-road vehicle use. In the early 20th century, habitat was probably more extensive and was probably cleared for agricultural lands. Soils supporting the species are derived from Mancos shale (Lyon and Williams 1998). The potential for habitat for Clay-loving Buckwheat exists in the project area however none were found during the surveys conducted in May and November 2013.

Colorado Basin Hookless Cactus: The Colorado Basin hookless cactus is a small cactus normally found on gravelly alluvial soils or in clay between 4,500 and 6,000 feet and can be associated with shadscale, sagebrush, greasewood, saltbush, and other desert vegetation. In Colorado it is reported from Montrose, Delta, Gunnison, Garfield, and Mesa Counties. Threats may include trampling from grazing, recreation use of lands, off-road vehicle use, and development on some lands. Past reports include populations on benches along the Gunnison River from Hotchkiss downstream (Lyon and Williams 1998). The potential for habitat for Colorado Basin Hookless Cactus exists in the project area however none were found during the surveys conducted in May and November 2013.

Colorado Pikeminnow: The Colorado pikeminnow (formerly known as the Colorado squawfish) is the largest member of the minnow family in North America and historically was the main predator fish in the Colorado River system. This long-lived fish was found throughout warm water reaches of the entire Colorado River Basin downstream to the Gulf of California. It is estimated that the pikeminnow no longer occurs in approximately 75 percent of its historic range and was listed as endangered in 1967. The Green River and its major tributaries support the largest population; the upper Colorado River population is more limited (Osmundson and Burnham 1998). The Green River is probably the key to recovery of the species. The species occurred in the Gunnison River and has probably not ever been totally expatriated from the river; its historical upstream limits on the Gunnison are not known, but fish probably occurred at least upstream to the North Fork confluence.

Razorback Sucker: The razorback sucker is a large catostomid, endemic to the Colorado River Basin of the western United States. The species belongs to a monotypic genus that is distinguished by a prominent dorsal keel that rises immediately posterior to the occiput. It is long-lived and individuals may exceed 40 years of age. The historic distribution of razorback sucker has been reduced by 75 percent (Minckley et al., 1991) and its extremely low abundance within remaining habitat caused it to be listed as endangered under the Endangered Species Act of 1973. Anecdotal accounts indicate that razorback sucker were common in the Gunnison River near Delta in the early and middle portions of the 20th Century.

Greenback Cutthroat Trout: The greenback cutthroat trout is a freshwater fish with numerous large spots and a green back. The species is found in clear, swift-flowing mountain streams with overhanging banks and vegetative cover. Juveniles tend to shelter in shallow backwaters and lakes. Spawning occurs in spring, or in some high-elevation sites, during the early summer.

Gunnison Sage Grouse: The Gunnison sage-grouse is a species of sage-grouse found south of the Colorado River in Colorado and Utah. They are about one-third smaller than the greater sage-grouse, and males have more distinct, white barring on their tail feathers, longer and more dense filoplumes on their necks. Female Gunnison and greater sage-grouse have nearly the same

plumage, but the female Gunnison is again about one-third smaller than the greater sage-grouse. Male Gunnison sage-grouse conduct an elaborate display when trying to attract females on breeding grounds (leks) in the spring. Nesting begins in mid-April and continues into July.

The Gunnison sage-grouse is a species of special concern in Colorado. Human development, livestock, grazing, and increased ungulate populations have all contributed to historic losses of habitat for the Gunnison sage-grouse. In 2013, the Gunnison sage-grouse was proposed for listing as an endangered species.

No known populations of Gunnison sage-grouse have been found in the proposed piping corridor. The nearest known species occurrences are approximately 13 miles from the proposed project site.

Colorado River Cutthroat Trout: The Colorado River cutthroat trout is native to the Colorado River basin. The species is found in clear, cold, naturally-fluctuating water and requires well-distributed pools, stable stream banks, and abundant stream cover. This species is extremely imperiled and currently occupies approximately five percent of its historic range. CPW manages a small population of Colorado River Cutthroat Trout on the East Fork of Minnesota Creek, above Beaver Reservoir. Beaver Reservoir is approximately 7 miles upstream of the Minnesota diversion and is a sufficient fish barrier to downstream nonnative fish.

Humpback Chub: The humpback chub is a mid-sized cyprinid endemic to the Colorado River, generally found in deep-water canyon-bound reaches of the Colorado, Yampa, and Green Rivers. The Gunnison River has never been confirmed as important habitat for this species; however, sampling was very limited in potential habitat areas in the early and mid-20th century period. Only one specimen has been confirmed and it was found in a canyon area about 4-miles downstream from Bridgeport in 1995. Two of the key river reaches for this species are located at Black Rocks and Westwater Canyon on the Colorado River downstream from the Gunnison confluence near the Colorado-Utah Stateline.

Mexican Spotted Owl: The Mexican spotted owl is a federally listed threatened species. These owls are nocturnal and non-migratory. The spotted owl occupies steep rocky canyons and they are typically found between 4,100 and 9,000 feet above sea level. These owls tend to be opportunistic feeders and prey on small mammals, birds, reptiles, and insects. Spotted owls utilize suitable naturally occurring sites and nests built by other animals. The eggs are incubated for approximately 32 days. Fledging typically occurs 36 days after the eggs hatch.

Most known owls exist within the boundaries of 11 National Forests in Arizona and New Mexico. Those found in Colorado only inhabit the Mesa Verde National Park area. No specimens or habitat are known to exist within the project area.

Yellow-billed Cuckoo: The western yellow-billed cuckoo was proposed for listing under the ESA as threatened in 2013. The species breeds in large blocks of riparian habitats, in particular cottonwood woodlands, and dense understory foliage appears to be important. Based on historical accounts, the species was localized and uncommon along Colorado drainages while being locally common in other western areas (Fish and Wildlife Service 2005). The species was probably never common in western Colorado and is now extremely rare (Kingery 1998). In 1998, 242 miles of riparian habitat were surveyed along six rivers in west-central Colorado with one cuckoo detected (Dexter 1998). However, in 2008 breeding was confirmed along the North Fork (Beason 2008).

Cottonwood woodlands have been lost or fragmented in the study area due to clearing for towns and agriculture, filling and diking of lowlands, development of recreation sites in woodlands, fires, invasion of tamarisk and other non-native plants, and reduction of spring peaks that are important for regeneration of cottonwood stands, making the potential for Yellow-billed Cuckoo habitat low. There are no known occurrences of the Yellow-billed Cuckoo in the project area.

Northern Leopard Frog: The Northern leopard frog is a BLM sensitive species. The species requires a mosaic of habitats to meet the requirements of all of its life stages and breeds in a variety of aquatic habitats that include slow-moving or still water along streams and rivers, wetlands, permanent or temporary pools, beavers ponds, and human-constructed habitats such as earthen stock tanks and borrow pits.

Northern leopard frog range includes the northern tier of the United States, western states and the southern Canadian provinces. Declines of the species have been documented in most western states. Threats include habitat loss, non-native species, pollution and climate changes that individually and cumulatively have resulted in population declines, local extinctions and disappearance from vast areas of its historic range.

Rocky Mountain Thistle: The Rocky Mountain thistle is a local endemic whose global distribution is restricted to western Colorado. It is a member of the sunflower family and is a BLM sensitive species. The most recent data suggests that it is imperiled due to the small number of occurrences and small population sizes.

Primary threats to Rocky Mountain thistle include the use of biological controls and herbicides in the management of non-native *Cirsium* species, invasion of non-native plant species, and impacts from recreational, agricultural, industrial and residential land uses.

No Action: In the absence of the proposed action, salt loading from the project area would continue and the cumulative water quality benefits of the Colorado River Basin Salinity Control Program on listed aquatic species would occur.

Proposed Action: On May 14, 2013, and November 15, 2014, E.M. Ecological conducted a rare plant assessment and survey along the Minnesota Canal extension including the siphon alignment. There were no federally threatened or endangered species identified. Habitat for listed species does not occur within the project area or are not of adequate size to support the listed species. Two federally listed Sensitive species were found in the project right of way within the McCluskey State Wildlife Area: Colorado desert parsley (*Lomatium concinnum*) and Rocky Mountain thistle (*Cirsium perplexans*). The occurrences of the Sensitive species were in the SW quadrant of Section 17, Township 14 South, Range 91 West. The locations of the Sensitive species are shown in Figure 4. The majority of the desert parsley plants appear to be growing far enough away from the ditch that disturbance to most plants could be avoided with minimal effort. The same holds true for the Rocky Mountain thistle occurrences. Even though some disturbance and individual plant mortality may occur, the populations of these two species in the area would not likely be adversely affected from the pipeline installation activities.

Reclamation consulted with the U.S. Fish and Wildlife Service during Phase I of the Minnesota Canal

piping project regarding all historic depletions associated with the Minnesota Canal and Reservoir Company, including the depletions associated with Phase II of the Minnesota Canal piping project. No new depletions would occur as a result of the proposed action and MCRC's historic depletions (3,190 ac/ft/yr) would continue to adversely impact endangered fish. In August 2012, the Service determined that the project fits under the umbrella of the Gunnison River Basin Programmatic Biological Opinion (PBO) (Fish and Wildlife Service) and would avoid the likelihood of jeopardy and/or adverse modification of critical habitat for depletion impacts. The Minnesota Canal and Reservoir Company entered into a Recovery Agreement (Appendix C) which provides certainty that its depletions can occur consistent with section 7 of the Endangered Species Act. No further consultation is required for historic depletions.

Reclamation has determined that the proposed action has no new effect on bonytail chub, Colorado pikeminnow, humpback chub, and razorback sucker, and no effect on black-footed ferret, Canada lynx, clay-loving wild buckwheat, Colorado Basin hookless cactus, greenback cutthroat trout, Gunnison's prairie dog, , Mexican spotted owl, North American wolverine, and Mexican spotted owl. Gunnison sage-grouse and yellow-billed cuckoo will also not be affected. Furthermore, the cumulative efforts of the Colorado River Basin Salinity Control Program are improving water quality within designated critical habitats for the Colorado pikeminnow, razorback sucker, humpback chub, and bonytail chub throughout the Colorado River and Gunnison River basins by reducing salt and selenium loads.

3.7 INDIAN TRUST ASSETS

Indian trust assets (ITAs) are legal interests in property held by the United States for Indian Tribes or individuals. Reclamation and other Federal agencies share the responsibility to protect these assets. 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, the No Action and Proposed Action have no effect on Indian trust assets.

3.8 ENVIRONMENTAL JUSTICE

Executive Order 12898 on Environmental Justice provides that Federal agencies analyze programs to assure that they do not disproportionately adversely affect 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, the No Action and Proposed Action have no effect on environmental justice.

3.9 CULTURAL RESOURCES

In May 2013, Alpine Archaeological Consultants, Inc. conducted a Class III cultural resource inventory of irrigation features and areas slated for disturbance (Alpine, 2013). The inventory examined 3.83 miles of the Minnesota Canal, from its crossing at Lucas Creek to approximately 1 mile southwest of Bell Creek. The inventory resulted in a complete recording of the affected portion of the canal and its associated water control features. One historic site was also documented during the inventory; no Isolated Finds were discovered. In April 2014 Alpine Archaeological Consultants, Inc. conducted a follow up survey on the potential siphon (Runyon Gulch) disturbance area. The same criteria was used from the initial survey the previous year. No historic sites or Isolated Finds were discovered in the follow up survey.

Twenty three features associated with the canal were identified and documented along the main segment of the Minnesota Canal. Water control features include small, secondary, side-outlet headgates that function to distribute water to shareholders along the canal and Parshall flumes. Five of the 23 water features identified were foot bridges not related to the function of the canal. All of the bridges were built by private landowners to allow crossing of the Minnesota Canal.

The Articles of Incorporation for the Minnesota Ditch Company states that the canal's construction did not begin until February 19, 1885 (Minnesota Ditch Company 1887). The ditch was reported to have a base width of 6½ ft., top width of 7½ ft., and a depth of 2 ft. The carrying capacity of the ditch was to be approximately 140 acre-feet of water. The Minnesota Ditch Company was incorporated on May 30, 1887 with Aaron Clough, John Lane, Wesley Ault, C. H. Amway, Joseph Fluallen, Bessie Goodenow, and R. Adams serving as the company's board of directors. The company was organized with $7,480 of capital stock divided into 170 shares at $44 a share. In just over one year, the company was reincorporated as the Minnesota Canal Company on August 25, 1888 (Minnesota Canal Company 1888). The name change and reincorporation was likely prompted by a substantial increase in water appropriated to the ditch in the fall of 1887. Under the ownership of the Minnesota Canal Company, the canal continued to carry water as far as Lucas Creek on Lamborn Mesa until the spring of 1897 when the canal was extended an additional 3.6 mi. southwest and southeast and onto Stewart and Bone mesas. The construction of the extension began on April 4, 1897. The resulting canal had a bottom width of 5 ft., a top width of 8 ft., a depth of 3 ft., and a grade of 5 ft. to the mile (Delta County Ditch Record No. 13284). The Minnesota Canal Company continued to operate until it was consolidated along with its subsidiary, the Minnesota Canal Supply Ditch and Reservoir Company, into the Minnesota Canal and Reservoir Company on May 4, 1903 (Minnesota Canal and Reservoir Company 1903). The Minnesota Canal and Reservoir Company continues to manage the canal today.

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

Proposed Action: The Minnesota Canal was previously determined eligible for the National Register of Historic Places because of its association with the early agriculture of the North Fork Valley. In consultation with the Colorado State Historic Preservation Office (Colorado SHPO), Reclamation determined that the Proposed Action would have an adverse effect on the Minnesota Canal. A Memorandum of Agreement has been developed between Reclamation, MCRC, and the Colorado SHPO to mitigate the adverse effects of the proposed action. The MOA stipulates that Level I Documentation as described in *Historic Resource Documentation, Standards for Level l, II, and III Documentation* (Colorado SHPO 2007) of the Minnesota Canal is appropriate to mitigate the adverse effects of the Proposed Action. A copy of consultation and MOA are attached in Appendix D for reference.

3.10 RECREATION RESOURCES

The proposed project is located on private lands with easements held by MCRC, therefore, the No Action and Proposed Action will have no effect on recreation resources.

3.11 VISUAL RESOURCES

The proposed project is located on private lands with easements held by MCRC, therefore none of the land is within a Visual Resource Management Area. During preconstruction, staging of

materials, construction, and post-construction rehabilitation of the project area, the existing ditch will be filled, graded and revegetated to match the surrounding landscape. This would be a net improvement to the visual character of the area once the project was completed.

3.12 PRIME AND UNIQUE FARMLAND

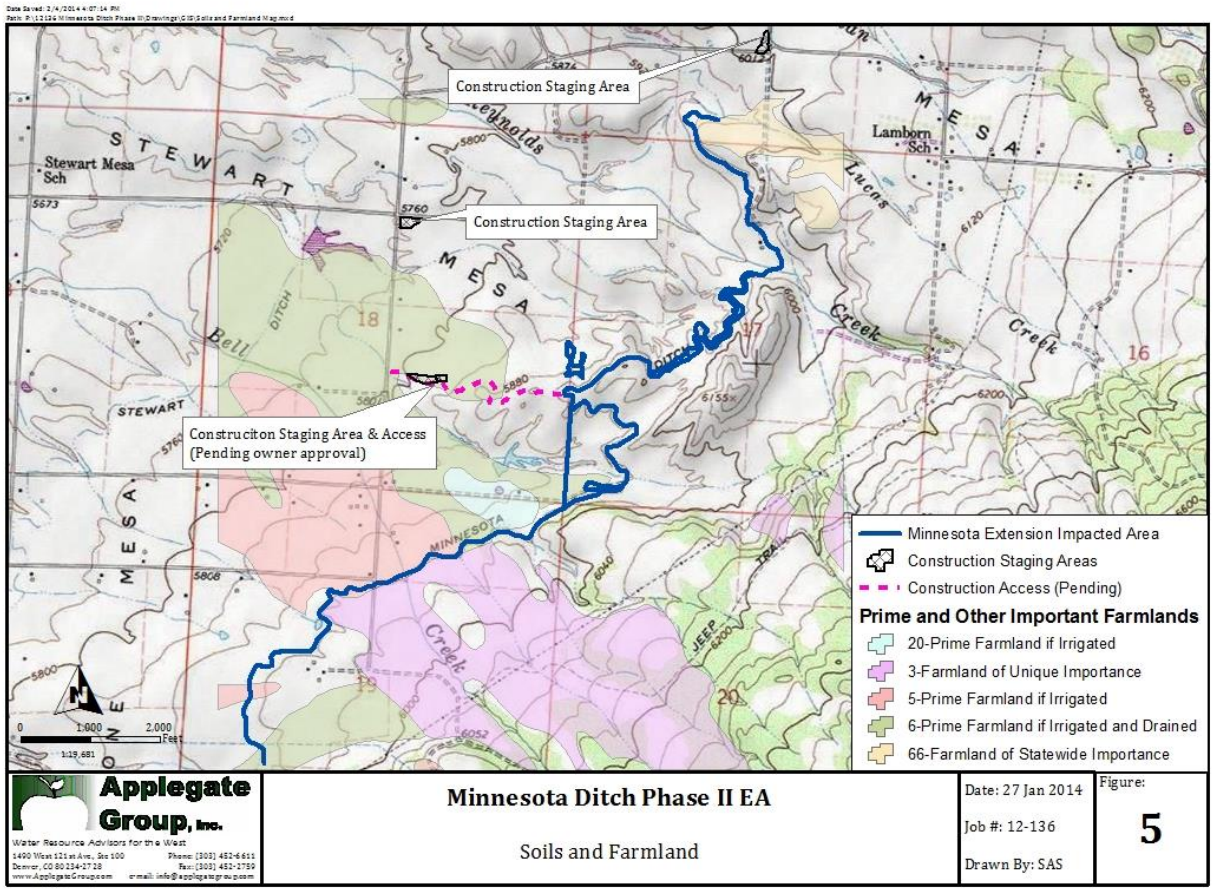
Prime and unique farmlands are designations assigned by the Department of Agriculture. Prime farmland has the best combination of physical and chemical characteristics for producing food, feed, forage fiber and oilseed crops. Unique farmland is land other than prime farmland that is used for the production 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. In addition, farmlands of statewide importance are lands that nearly meet the requirements for prime farmland and have been identified by state agencies.

Within the reaches of the project footprint, the following prime and unique farmlands exist either adjacent to or near the Minnesota Canal Extension (Table 7 and Figure 5).

Table 7-Prime and Other Important Farmlands

Map Symbol	Map Unit Name	Farmland Classification
3	Aqua Fria stony loam, 3 to 12 percent slopes	Farmland of unique importance
5	Aqua Fria clay loam, 1 to 6 percent slopes	Prime Farmland if Irrigated
6	Apishapa silty clay loam, 0 to 5 percent slopes	Prime Farmland if Irrigated and Drained
20	Cerro loam, 1 to 6 percent slopes	Prime Farmland if Irrigated
66	Razor silty clay loam, 3 to 12 percent slopes	Farmland of Statewide Importance

Because the canal prism will be filled, contoured and reseeded, the project action will benefit adjacent prime and unique farmland. Once constructed and reclaimed, annual maintenance activities adjacent to these farmlands would be greatly reduced. In addition, improved water delivery should assist in keep these agricultural lands in production.



3.13 OTHER RESOURCES

There are no Wild and Scenic Rivers, Wilderness, or Wilderness Study Areas within or in close proximity to the project area. Therefore, there would be no impact to these resources from the No Action Alternative or the Action Alternative.

3.14 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 Project Area or vicinity. Specifically, there are no leased BLM parcels within the project area.

The Proposed Action will comply with all relevant federal, state and local permits (detailed in the Summary and Environmental Commitments Section of this document). The proposed 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.

There are three federal programs that include the project area at a basin-wide scale. The first program is the Colorado River Basin Salinity Control Program (CRBSCP), which provided the funding for implementation of the proposed action. Collectively, projects funded under the CRBSCP 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 (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 Plan which was incorporated as a conservation measure in the Gunnison Basin Programmatic Biological Opinion (Fish and Wildlife Service 2009). Reclamation, working with entities in the Gunnison Basin, developed a plan to reduce selenium levels in the Gunnison River at Whitewater. When the Proposed Action is analyzed with components of these basin-wide programs, the cumulative beneficial effects on water quality are significant.

3.13 SUMMARY OF IMPACTS

Table 8 lists predicted impacts of the No Action and Proposed Action Alternatives analyzed in this Environmental Assessment.

The proposed action will result in no change or have no effect on Indian trust assets, environmental justice, or recreation resources. Water rights and uses, water quality, and endangered species would all benefit from the proposed action. Negative impacts to vegetation, fish and wildlife, and cultural resources would not be significant with implementation of the mitigation measures described in Chapter 4, the Environmental Commitments and Mitigation Section of this document.

Table 8-Summary of Impacts

Resource Issue	Alternatives	
	No Action	**Proposed Action**
Water Rights and Use	No Change	No Change
Water Quality	Continued salt loading from the Project Area to the Colorado River Basin	Estimated annual reduction of 2,328 tons of salt loading to the Colorado River from off-farm improvements. Also potential selenium loading reductions to Alum Gulch, North Fork and Gunnison Rivers.
Vegetation and Land Use	No Change	Estimated loss of 21.2 acres of CWA non-jurisdictional wetland and riparian habitat
Fish and Wildlife Resources	No Change	Short-term temporary impact to local wildlife during construction. Estimate loss of 24.4 habitat units from reduced seepage and canal prism habitat. Habitat units lost as a result of project implementation will be mitigated with the implementation of a Habitat Replacement Plan.

Threatened and Endangered Species	Salt and Selenium loading from the project area would continue to affect aquatic dependent species, as would historic depletion.	Historic depletions would continue to adversely affect the Colorado River fishes, however the Upper Colorado River Endangered Fish Recovery Program serves as the Reasonable and Prudent Alternative for these impacts. The proposed project would continue to improve water quality by contributing to reducing salt and selenium loading in the Gunnison and Colorado rivers (see Appendix C). Two Federally listed Sensitive plant species (Colorado desert parsley and Rocky Mountain thistle) are located in the ditch right-of-way. Sensitive plant species will be marked prior to construction, and construction activities will be implemented with minimal impacts on the Federally listed plants.
Indian Trust Assets	No Effect	No Effect
Environmental Justice	No Effect	No Effect
Cultural Resources	No Effect	Adverse affect to Minnesota Ditch (See Appendix D). Adverse effects will be mitigated through the execution of an MOA and Level I Documentation.
Recreation Resources	No Effect	No Effect
Visual Resources	No Effect	No Effect
Prime and Unique Farmland	No Effect	Beneficial Effects
Cumulative Impacts	No Effect	Beneficial Effects

CHAPTER 4 - ENVIRONMENTAL COMMITMENTS AND 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 MCRC requires that MCRC be responsible for "…implementing and/or complying with the environmental commitments contained in the NEPA/ESA 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. Environmental commitments include:

1. Construction Activities confined to the Surveyed Corridor - All construction activities would be confined to within 100 feet of the surveyed pipeline alignment and construction staging

areas. Construction activities outside of this corridor would require additional review by Reclamation to determine if the existing surveys and information are adequate to evaluate additional impacts outside this corridor. If additional borrow or waste areas are identified, the areas will be inventoried, surveyed and evaluated prior to use. Additional NEPA/ESA compliance activities may be required if determined by Reclamation.

2. Disturbed Areas - During construction, topsoil (if present) 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 and planting would occur at appropriate times with weed-free seed mixes as per landowner specifications

3. Water Quality - Best Management Practices (BMPs) would be implemented to minimize erosion and protect water quality of downstream resources. BMPs are described in greater detail in the Water Quality section of this document. In the event that dewatering during construction is needed, MCRC or its contractor would obtain required CWA Section 402 permits prior to dewatering. BMPs include:

    - 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 waterway. 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.
    - An oil 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. An oil spill response kit, which includes appropriate-sized spill blankets, shall be easily accessible and onsite at all time.
    - 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.

4. Irrigation Facilities and Structures - Pursuant to the Cooperative Agreement between MCRC and Reclamation (Co. Ag. No. R13AC40005), MCRC will permanently dewater, remove from irrigation service, and render incapable of irrigation water delivery the Minnesota Canal. The proposed pipeline, including new division boxes, will be placed along the existing canal and backfilled appropriately. MCRC will remove all existing irrigation structures (headgates, drops, etc.) and refill any abandoned canal prism with soil.

5. Vegetation Resources - Populations of Federally listed Sensitive plant species (Colorado desert parsley and Rocky Mountain thistle) will be marked along the ditch to identify areas where construction activities will be implemented with care to minimize impacts and

disturbances as best as possible. 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. Pipe cleanouts/drains will be installed near more critical riparian areas, and opened occasionally to provide necessary moisture, planting and reseeding disturbed areas, per landowner specifications, monitoring plantings to ensure establishment, control of 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.

6. Noxious Weeds - Noxious weeds shall be controlled following the Delta County Weed Management Plan. A copy of the County Plan is attached as Appendix E.

7. Fish and Wildlife Resources - Construction areas would be confined to the smallest feasible area to limit disturbance to wildlife within the Project Area. Open pipeline trenches left overnight would be kept to a minimum to reduce potential entrainment of small animals and public safety problems. Construction holes or pipeline trenches left open overnight shall be covered or include exit ramps at least every ¼ mile to allow entrapped animals to escape. Covers shall be secured in place and shall be strong enough to prevent livestock or wildlife from falling through.

8. Habitat Replacement - Development and/or enhancement to replace the predicted 24.4 fish and wildlife habitat units lost under the proposed action are required under the Colorado River Salinity Control Act. MCRC is responsible for developing and implementing a Reclamation approved wildlife habitat replacement plan to replace fish and wildlife values foregone as required by the Salinity Control Act. Habitat replacement will be implemented at Peter Heller's property concurrently with installation of the pipelines. At the request of MCRC, Reclamation staff will assist in developing potential habitat replacement, however the responsibly for habitat replacement is MCRC's. A portion of the required habitat replacement will come from excess credits from a habitat replacement project completed in the Town of Paonia on Town owned property adjacent to the North Fork. The remainder of habitat credits will come from the new habitat project at the Heller property. Additional NEPA, ESA, and Historic Preservation Act compliance may be needed to implement the habitat replacement plan. The habitat replacement plan must be approved and in place prior to starting construction. Failure to implement habitat replacement concurrent with construction may result in delays in obligating funding under the Cooperative Agreement.

9. Federally Listed Species – In August 2012, MCRC entered into a recovery agreement with the Fish and Wildlife Service to incorporate its historic depletions under the umbrella of the Gunnison Basin Biological Opinion. The recovery agreement is included in Appendix C. In the event that threatened or endangered species are encountered during construction, MCRC shall stop construction activities until Reclamation has completed consultation with the Fish and Wildlife Service to ensure that adequate measures are in place to avoid or reduce impacts to the species.

10. Cultural Resources - Reclamation, MCRC and the Colorado State Historic Preservation Office (SHPO) will enter into a Memorandum of Agreement to mitigate the Proposed Action's adverse effects to cultural resources. The MOA will commit to historic resource

documentation of the Minnesota Canal (5DT1780), recording 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). The Level I documentation will include a narrative that synthesizes the existing documentation on the properties and describes the properties in the context of the development and history of the Minnesota Canal System. The report shall be submitted to the SHPO within one year of the execution of the MOA. A copy of the MOA is included in Appendix D. In the event that cultural and/or paleontological resources are discovered during construction, MCRC shall stop construction activities until Reclamation has completed consultation with the SHPO and appropriate measures are implemented to protect or mitigate the discovered resource.

11. Hazardous Materials - During construction, the use, storage and disposal of hazardous waste materials and wastes on-site will be managed in accordance with all federal, state, and local standards.

CHAPTER 5-CONSULTATION AND COORDINATION

5.0 GENERAL

The Minnesota Ditch Piping Project was developed by MCRC as a means to address the guidelines in the Colorado River Salinity Control Program and to improve the efficiency of the MCRC system. Conceptual plans were developed by MCRC with assistance from Applegate Group, Inc. of Denver, CO. MCRC prepared and submitted a formal funding application for the Basin-wide salinity funds through Reclamation's Funding Opportunity Announcement (FOA) R12SF40034.

5.1 CONSULTATION WITH OTHER AGENCIES

This EA was prepared by Applegate Group, Inc. for the Bureau of Reclamation and MCRC. Local, state and federal agencies were contacted and consulted in the preparation of this document. Agencies and organizations consulted during the document development include the following:

- Advisory Council on Historic Preservation, Denver, CO
- U.S. Army Corps of Engineers, Grand Junction, CO
- Colorado Parks and Wildlife, Gunnison, CO
- Colorado Office of Archaeology and Historic Preservation, Denver, CO
- Colorado Water Conservation Board, Denver, CO
- Minnesota Canal and Irrigation Company, Hotchkiss, CO
- Town of Paonia, Paonia, CO
- Delta County, Delta, CO
- U.S. Fish and Wildlife Service, Ecological Service, Grand Junction, CO
- Landowners adjacent to the Minnesota Canal

5.2 COMMENT PERIOD

A Draft EA was released for public review and comment on June 16, 2014, and comments were accepted up through July 7, 2014. No comments were received on the Draft EA.

5.3 DISTRIBUTION LIST

Appendix A contains the distribution list for this environmental assessment.

5.4 LIST OF PREPARERS

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Craig Ullmann, P.E., Applegate Group, Inc.
Teddy Martinez, E.I., Applegate Group, Inc.
Terence Stroh, Bureau of Reclamation
Jenny Ward, Bureau of Reclamation

REFERENCES

E.M. Ecological, LLC. 2013. Rare Plan Surveys Along the Potential Siphon Alignment, Phase II for the Minnesota Ditch-Addendum to EM Ecological June 11, 2013 Memo, Delta County, Colorado. March 2014

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Wildlife and Natural Resource Concepts & Solutions, LLC. 2013. Impacts on Minnesota Ditch by Second Piping Project.

APPENDIX A – DISTRIBUTION LIST

Organizations

Mr. Willie Kistler
Minnesota Canal and Reservoir Company

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, District #3

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

Mr. Neal Schwieterman, Mayor
Town of Paonia

Mr. Edward C. Nichols, State Historic Preservation Officer
Colorado Historical Society

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

Mr. Steve Miller
Colorado Water Conservation Board

Mr. Dave Kanzer
Colorado River Water Conservation District

Mr. Ralph D'Alessandro
Delta Conservation District

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US Army Corps
of Engineers
Albuquerque District
4101 Jefferson Plaza NE
Albuquerque, NM 87109-3435
Fax No. 505-342-3498

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 irrigation exemption will not be complied with, an individual 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 additional information concerning exemptions, nationwide permits, or for a written determination regarding a specific project, please contact the Corps at the following addresses:

In New Mexico:
Albuquerque District Corps of Engineers
ATTN: Regulatory Branch
4101 Jefferson Plaza, NE
Albuquerque, New Mexico 87109-3435
Phone: (505) 342-3283

In southeastern Colorado:
Southern Colorado Regulatory Office
720 North Main Street, Room 300
Pueblo, Colorado 81003-3047
Phone: (719) 543-9459

In southern New Mexico and western Texas:
El Paso Regulatory Office
P.O. Box 6096
Ft. Bliss, Texas 79906-0096
Phone: (915) 568-1359

US Army Corps
of Engineers
Albuquerque District
4101 Jefferson Plaza NE
Albuquerque, NM 87109-3435
Fax No. 505-342-3498

Maintenance Exemption Summary

MAINTENANCE OF EXISTING STRUCTURES

Pursuant to Section 404 of the Clean Water Act (33 USC 1344) and Federal Regulations (33 CFR 323.4), certain discharges for the maintenance of currently serviceable structures have been exempted from requiring a Section 404 permit. Included in the exemption is 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. Maintenance does not include any modification that changes the character, scope, or size of the original fill design. Emergency reconstruction of unserviceable structures should 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 discharge of material into backwater areas during the maintenance of a structure or for construction of a pilot channel through a channel reach were existing flowage areas or wetlands are cut off or filled by the placement of material in the waters. A conversion of a Section 404 wetland to a non-wetland is a change in 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 maintenance exemption will not be complied with, an individual 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 additional information concerning exemptions, nationwide permits, or for a written determination regarding a specific project, please contact the Corps at the following addresses:

In New Mexico:
Albuquerque District Corps of Engineers
ATTN: Regulatory Branch
4101 Jefferson Plaza, NE
Albuquerque, New Mexico 87109-3435
Phone: (505) 342-3283

In southeastern Colorado:
Southern Colorado Regulatory Office
720 North Main Street, Room 300
Pueblo, Colorado 81003-3047
Phone: (719) 543-9459

In southern New Mexico and western Texas:
El Paso Regulatory Office
P.O. Box 6096
Ft. Bliss, Texas 79906-0096
Phone: (915) 568-1359

WCG-TStroh
ENV-7.00

JUL 17 2012

MEMORANDUM

To: Western Colorado Supervisor, Ecological Services, Grand Junction, Colorado

From: Ed Warner
Area Manager

ED WARNER

Subject: Consultation of Minnesota Canal and Reservoir Company Historic Depletions for Gunnison Basin Programmatic Biological Opinion (PBO)

The Bureau of Reclamation under the Colorado River Salinity Control Program has entered into a contract with the Minnesota Canal and Reservoir Company (Minnesota) to pipe portions of the Minnesota Canal to reduce salt loading into the Colorado River. Minnesota has an estimated average annual depletion of 3,190 acre-feet based on data provided by the Colorado Water Conservation Board for the period from 1990 to 2000. Lands irrigated by the Minnesota Canal are estimated at 2,136 acres with diversion on Minnesota Creek, east of Paonia, Colorado. A draft environmental assessment is attached which also serves as Reclamation biological assessment for the proposed project. No new depletions are associated with the project.

The Service has previously issued biological opinions that all depletions with the Upper Colorado River Basin have an adverse effect to Colorado pikeminnow, razorback sucker, humpback chub, and bonytail. The Upper Colorado River Basin Endangered Fish Recovery Program is intended to serve as the reasonable and prudent measure for adverse effects to the endangered fish.

Based on the Gunnison PBO, individual section 7 consultations are required on the Salinity Control Project pursuant to Endangered Species Act, to determine if they fit under the umbrella of the PBO. A draft recovery agreement has been provided to the Minnesota Canal and Reservoir Company and they have been directed to contact your office if there are questions.

Reclamation requests the Service's concurrence that the Minnesota Canal Piping Project will have no new adverse affects to Colorado pikeminnow, razorback sucker, humpback chub, and bonytail; and that Minnesota's historic depletion fits under the umbrella of the PBO.

Reclamation has also determined that the proposed project will have no effect on black-footed ferret, Canada lynx, clay-loving buckwheat, Colorado Basin hookless cactus, greenback cutthroat trout, and yellow-billed cuckoo.

If you have any question or need additional information, please contact me directly at 970-248-0608 or by email at tstroh@usbr.gov.

Attachment-2

Draft Environmental Assessment dated May 2012
Applegate Group Inc. Memorandum dated April 4, 2012

cc: Mr. Willie Kistler
Minnesota Canal and Reservoir Company
12257 4050 Rd
Paonia, CO 81428

Mr. Craig Allman
Applegate Group, Inc.
118 West 6th St., Suite 100
Glenwood Springs, CO 81601

bc: WCG-SMcCall, WCG-DCrabtree

WBR:TStroh:kcronecrunk:7/12/2012:970-248-0608:Consultation of Minnesota Canal and Reservoir Company Historic Depletions for Gunnison Basin Programmatic Biological Opinion (PBO)

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
764 Horizon Drive, Building B
Grand Junction, Colorado 81506-3946

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8/15 | BRL | Ullenberg
| | Shoop
| | McCall

IN REPLY REFER TO:
ES/GJ-6-CO-09-F-0001-GP-020
TAILS 06E24100-2012-F-0208

August 10, 2012

Memorandum

To: Area Manager, Bureau of Reclamation, Grand Junction, Colorado

From: Western Colorado Supervisor, Ecological Services, Grand Junction, Colorado

Subject: Consultation of Minnesota Canal and Reservoir Company Historic Depletions for Gunnison Basin Programmatic Biological Opinion (PBO)

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

The Bureau of Reclamation under the Colorado River Salinity Control Program has entered into a contract with the Minnesota Canal and Reservoir Company (Minnesota) to pipe portions of the Minnesota Canal to reduce salt loading into the Colorado River. Minnesota has an estimated average annual depletion of 3,190 acre-feet based on data provided by the Colorado Water Conservation Board for the period from 1990-2000. Lands irrigated by the Minnesota Canal are estimated at 2,136 acres with diversion on Minnesota Creek, east of Paonia, Colorado.

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

On December 4, 2009, the Service issued a final Gunnison River Basin Programmatic Biological Opinion (this document is available for viewing at the following internet address:

1. **The amount or extent of take specified in the incidental take statement for this opinion is exceeded**. The terms and conditions outlined in the incidental take statement are not implemented. The implementation of the proposed reoperation of Aspinall and the Selenium Management Program will further decrease the likelihood of take caused by water depletion impacts.

2. **New information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion**, such as impacts due to climate change. In preparing this opinion, the Service describes the positive and negative effects of the action it anticipates and considered in the section of the opinion entitled "EFFECTS OF THE ACTION."

3. **The identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the BO.** It would be considered a change in the action subject to consultation if the reoperation of Aspinall and the Selenium Management Program described in this opinion are not implemented within the required timeframes. If a draft Selenium Management Program document is not completed within 18 months of the final PBO and a final document within 24 months, reinitiation of consultation will be required. Reinitiating consultation could consist of an exchange of memoranda examining the progress made on the plan and evaluating the consequences of extending the timeframe. Also, at any time, if funding is not available to implement the Selenium Management Program reinitiation of consultation will be required.

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

4. **The Service lists new species or designates new or additional critical habitat, where the level or pattern of depletions covered under this opinion may have an adverse impact on the newly listed species or habitat.** If the species or habitat may be adversely affected by depletions, the Service will reinitiate consultation on the PBO as required by its section 7 regulations. The Service will first determine whether the Recovery Program can avoid such impact or can be amended to avoid the likelihood of jeopardy and/or adverse modification of critical habitat for such depletion impacts. If the Recovery Program can avoid the likelihood of jeopardy and/or adverse modification of critical habitat no additional recovery actions for individual projects would be required, if the avoidance actions are included in the Recovery Action Plan. If the Recovery

GUNNISON RIVER RECOVERY AGREEMENT

This RECOVERY AGREEMENT is entered into this 10 day of August, 2012, by and between the United States Fish and Wildlife Service (Service) and Minnesota Canal and Reservoir Company (Water User).

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

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

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

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

WHEREAS, Water User is the Minnesota Canal and Reservoir Company (Water Project), which causes or will cause depletions to the Gunnison River subbasin; and

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

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

NOW THEREFORE, Water User and the Service agree as follows1:

1. The Service agrees that implementation of the Recovery Elements specified in the 2009 Opinion will avoid the likelihood of jeopardy and adverse modification under section 7 of the ESA, for depletion impacts caused by Water User's Water Project. Any consultations under section 7 regarding Water Project's depletions are to be governed by the provisions of the 2009 Opinion. The Service agrees that, except as provided in the 2009 Opinion, no other measure or action shall be required or imposed on Water Project to comply with section 7 or section 9 of the ESA with regard to Water Project's depletion impacts or other impacts covered by the 2009 Opinion. Water User is entitled to rely on this Agreement in making the commitment described in paragraph 2. Language to protect a water user that does their part, but actions of others cause se goals to not be met.

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

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

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

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

a. The Service removes the listed species in the Upper Colorado River Basin from the endangered or threatened species list and determines that the Recovery Elements are no longer needed to prevent the species from being relisted under the ESA; or

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1Individual Recovery Agreement may be changed to fit specific circumstances.

b. The Service determines that the Recovery Elements are no longer needed to recover or offset the likelihood of jeopardy to the listed species in the Upper Colorado River Basin; or

c. The Service declares that the endangered fish in the Upper Colorado River Basin are extinct; or

d. Federal legislation is passed or federal regulatory action is taken that negates the need for [or eliminates] the Recovery Program.

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

Minnesota Canal and Reservoir Company — Date: 7/27/12

Western Colorado Supervisor
U.S. Fish and Wildlife Service — Date: 8/10/12

HISTORY Colorado

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17 April 2014 CHS #65450

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

RE: Minnesota Canal Salinity Control Project, Delta County

Dear Mr. Warner:

Thank you for your recent correspondence received 28 March 2014, concerning the proposed replacement of a segment of the earth-lined Minnesota Canal (5DT.1593.3) with a pipe. On 27 February 2014, our office concurred that this project would have an adverse effect on historic resources.

Our office has reviewed the submitted draft Memorandum of Agreement (MOA) that proposed mitigating the adverse effect by documenting this segment of the Minnesota Canal to HABS/HAER Level II standards. We concur that this is the most effective and appropriate way to mitigate the adverse effect created by this project, and would be amenable to signing a finalized copy of the draft MOA submitted with your 28 March 2014 correspondence.

If you have not already done so, you should at this time contact the Advisory Council on Historic Preservation and invite them to participate in the drafting and signing of the MOA. The Council's decision (agree to participate or decline to participate) should be noted as a separate clause under the MOA's "Whereas" section, similar to the existing "Whereas" clause regarding the participation of the Hotchkiss-Crawford Historical Society.

If you have any questions, please contact Joseph Saldibar, Architectural Services Manager, at (303) 866-3741.

Sincerely,

Edward C. Nichols
State Historic Preservation Officer, and
President, Colorado Historical Society

OFFICE OF ARCHAEOLOGY AND HISTORIC PRESERVATION
303-866-3392 * Fax 303-866-2711 * E-mail: oahp@state.co.us * Internet: www.historycolorado.org

MEMORANDUM OF AGREEMENT
BETWEEN
THE MINNESOTA CANAL AND RESERVOIR COMPANY,
BUREAU OF RECLAMATION WESTERN COLORADO AREA OFFICE,
AND THE COLORADO STATE HISTORIC PRESERVATION OFFICER
REGARDING PHASE II OF THE MINNESOTA CANAL PIPING PROJECT,
COLORADO RIVER BASIN SALINITY
CONTROL PROGRAM

WHEREAS, the Bureau of Reclamation (Reclamation) and the Minnesota Canal and Reservoir Company (MCRC) plan to pipe the Minnesota Canal Extension Ditch in Phase II of the Minnesota Canal Piping Project (Project); and

WHEREAS, Reclamation plans to fund MCRC to pipe the lower portion of the Minnesota Canal to reduce salt loading in the Colorado River, as allowed for by the Basinwide Salinity Control Program, thereby making the Project an undertaking subject to review under Section 106 of the National Historic Preservation Act (NHPA), 16 U.S.C. § 470f, and its implementing regulations, 36 CFR Part 800; and

WHEREAS, Reclamation as lead Federal agency has determined that Phase II of the Minnesota Canal Piping Project will have an adverse effect on the Minnesota Canal (5DT1593). This cultural resource has been determined by Reclamation, in consultation with the Colorado State Historic Preservation Officer (SHPO), to be eligible for inclusion on the National Register of Historic Places under Criteria A and/or C; and

WHEREAS, MCRC is the sponsor of the Project, has participated in the consultation, and has been invited by Reclamation to sign this Memorandum of Agreement (MOA);

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

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. Reclamation shall ensure that the following measures are carrier out:

    a. Prior to any modification of the Minnesota Canal (5DT1593), 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).

b. The documentation will include mapping of the properties and photographic documentation of those portions of each historic property to be included in the lining 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.

c. Reclamation will supplement the Level 1 Documentation with a descriptive and historical narrative. The narrative will synthesize the existing documentation on Site 5DT1593 and describe it in the context of the development and history of the North Fork area. The narrative will include photographs of the landscape features taken during the cultural resources survey. A Summary Report for the two recorded segments, which includes the Level 1 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 Advisory Council on Historic Preservation (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 of 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 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 Carry Out 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, MCRC, 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 Phase II of the Minnesota Canal Piping Project on the historic property and that Reclamation has taken into account the effects of the undertaking on historic properties.

SIGNATORIES:

Colorado State Historic Preservation Officer

By:_____ Date: 7/1/14
Edward C. Nichols, SHPO

Bureau of Reclamation, Western Colorado Area Office

By:_____ Date: 6-23-14
Ed Warner, Area Manager

Minnesota Canal and Reservoir Company

By:_____ Date: 6/18/14
Willy Kistler, President

DELTA COUNTY NOXIOUS WEED MANAGEMENT PLAN

Adopted April 5 , 2010

I INTRODUCTION

1.01 Purpose

The purpose of the Delta County Noxious Weed Management Plan is to protect effectively against designated noxious weeds which constitute a present threat to the continued economic and environmental value of lands in the unincorporated County. This Plan implements the mandates of the Colorado Noxious Weed Act, and includes setting forth management objectives, plans, methods or practices which utilize a variety of techniques for the integrated management of noxious weeds. In establishing a coordinated program for the integrated management of noxious weeds, it is the County's intent to encourage all appropriate and available management methods, promoting those methods which are the most environmentally benign and which are practical and economically feasible, consistent with the noxious weed management objectives and plans mandated by the State Department of Agriculture and the Colorado Noxious Weed Act.

1.02 Enactment Authority

This plan complies with the Colorado Noxious Weed Act (Title 35, Article 5.5, C.R.S) as revised by the 2004 Colorado Legislature. The purpose of the Delta County Noxious Weed Management Plan is to coordinate the control of targeted noxious weeds within Delta County as determined by the Colorado Noxious Weed Act. The targeted noxious weeds to be controlled are designated within this plan. Control is aimed at eradicating, reducing, suppressing or containing populations of non-native, invasive noxious weeds which pose a threat to the environment and economy of Delta County by reducing wildlife habitat, agricultural production, property values, and threatening the native plant populations unique to Delta County.

1.03 Jurisdiction and Scope

Upon acceptance of this plan, the Delta County Board of County Commissioners will approve the new Delta County Noxious Weed Management Plan (CRS§35-5.5-105). The Delta County Noxious Weed Program (the Program) will then implement the Delta County Noxious Weed Plan. The Program will monitor and control weeds on county properties, on governmental properties and right of ways under intergovernmental cooperative agreements between the federal and state governments found within the county, and on private property under contract with the private property owner. Municipalities in Delta County are not covered by this Plan and must implement their own weed control strategies.

The Colorado Noxious Weed Act provides a mechanism to enforce weed control on private lands. A summary of this act is found in Attachment A. However, the Delta County Commissioners have historically preferred to pursue a policy of voluntary weed control by property owners. Enforcement procedures for control of selected species on the Colorado Department of Agriculture A and B list will be implemented when necessary. These species, as of January 1, 2010, are yellow starthistle, purple loosestrife and leafy spurge.

1.04 Severity of Noxious Weeds in Delta County

Delta County currently has some well established weed problems that cannot be solved in the near term. The primary weeds in this category are Russian knapweed, Canada, musk and scotch thistles and hoary cress (whitetop). A second group of weeds can be controlled in a very short period of time with prompt identification and diligent control. These include oxeye daisy, yellow toadflax and escaped ornamentals such as myrtle spurge and purple loosestrife. The largest infestation of yellow starthistle in Colorado was found northwest of Paonia in 2008. This infestation will get the highest priority for control. The increased soil disturbance through the subdivision of land into residential and recreational areas, as well as increased use of public and private lands may create new noxious weed problems. It is imperative that the Delta County Weed Control Program continues to monitor weed populations throughout the county and initiate control programs before weed densities of new infestations become unmanageable.

1.05 Operating Budget

The Delta County Noxious Weed Program is administered by Delta County Board of County Commissioners. Funding sources include the Delta County General Fund, cooperative funding with public agencies, grants, and revenue producing contracts. Memorandums of Understanding (MOUs) are currently in place between Delta County and the US Forest Service, Bureau of Land Management and the Colorado Division of Wildlife.

1.06 Public Comment

Public comment and participation is encouraged. Public comments may be directed to the Program Coordinator in the Hotchkiss Courthouse Annex, members of the Weed Advisory Board or to the Board of County Commissioners.

1.07 Delta County Weed Advisory Board

The Delta County Commissioners will appoint the Delta County Weed Advisory Board (CRS§35-5.5-107). The Delta County Weed Advisory Board will provide policy and advice for weed control in Delta County with the approval of the Delta County Board of County Commissioners. Powers for the Weed Advisory Board are outlined in the Colorado Noxious Weed Act under the provision of CRS§35-5.5-107.

1.08 Weed Lists: State of Colorado

Under the Colorado Noxious Weed Act, the Colorado Department of Agriculture has appointed a Colorado State Noxious Weed Advisory Board. The Colorado State Noxious Weed Advisory Board and the Department of Agriculture Commissioner have designated the following classifications and management goals for the noxious weed species below:

List A Species

List A species in Colorado are designated by the Commissioner for eradication. These weeds are either relatively rare or have not been found in Colorado. Species that are in **bold print** are known to exist in Delta County as of January 1, 2009.

African rue (*Peganum harmala*)
Camelthorn (*Alhagi pseudalhagi*)
Common crupina (*Cupina vulgaris*)
Cypress spurge (*Euphorbia cyparissias*)
Dyers woad (*Isatis tinctoria*)
Giant salvinia (*Salvinia molesta*)
Hydrilla (*Hydrilla verticillata*)
Meadow knapweed (*Centaurea pratensis*)
Mediterranean sage (*Salvia aethopsis*)
Medusahead (*Taeniatherum caput-medusae*)
Myrtle spurge *(Euphorbia myrsinites)*
Orange hawkweed *(Hieracium aurantiacum)*
Purple loosestrife (*Lythrum salicaria*)
Rush skeletonweed (*Chondrilla juncea*)
Sericea lespedeza (*Lespedeza cuneata*)
Squarrose knapweed (*Centaurea virgata*)
Tansy ragwort (*Senecio jabobaea*)
Yellow starthistle (*Centaurea solstitialis*)

List B Species

List B weed species are species for which the Commissioner (in consultation with the state noxious weed advisory committee, local governments, and other interested parties) develops and implements state noxious weed management plans designed to stop the continued spread of these species. Species that are in **bold print** are known to exist in Delta County as of January 1, 2009

Absinth wormwood (*Artemisia absinthium*)
Black henbane *(Hyoscyamus niger)*
Bouncingbet (*Saponaria officinalis*)

Bull thistle ***(Cirsium vulgare)***
Canada thistle ***(Cirsium arvense)***
Chinese clematis *(Clematis orientalis)*
Common tansy ***(Tanacetum vulgare)***
Common teasel (*Dipsacus fullonum*)
Dalmatian toadflax *(Linaria dalmatica)*
Dame's rocket ***(Hesperis matronalis)***
Diffuse knapweed *(Centaurea diffusa)*
Eurasian watermilfoil *(Myriophyllum spicahim*)
Hoary cress or Whitetop ***(Cardaria draba)***
Houndstongue ***(Cynoglossum officinale)***
Leafy spurge ***(Euphorbia esula)***
Moth mullein (*Verbascum blattaria*)
Musk thistle ***(Carduus nutans)***
Oxeye daisy ***(Chrysantheum leucanthemum)***
Perennial pepperweed (*Lepidium latifolium*)
Plumeless thistle ***(Carduus acanthoides)***
Quackgrass (*Elytrigian repens*)
Redstem filaree (*Erodium cicutarium*)
Russian knapweed ***(Centaurea repens)***
Russian olive (*Elaneagnus angustifolia*)
Saltcedar ***(Tamarix ramossissima)***
Scentless chamomile ***(Matricaria perorate)***
Scotch thistle (*Onopordum acanthium*)
Spotted knapweed ***(Centaurea maculosa)***
Spurred anoda (*Anoda cristata*)
Sulfur cinquefoil (*Potentilla recta*)
Venice mallow (*Hibiscus trionum*)
Wild caraway ***(Carum carvi)***
Yellow nutsedge (*Cyperus esculentus*)
Yellow toadflax ***(Linaria vulgaris)***

List C Species

List C weed species are species for which the Commissioner (in consultation with the state noxious weed advisory committee, local governments, and other interested parties) will develop and implement state noxious weed management plans designed to support the efforts of local governing bodies to facilitate more effective integrated weed management on private and public lands. The goal of such plans will be to stop the continued spread of these species and provide additional education, research, and biological control resources to jurisdictions that choose to require management of List C species. Species that are in **bold print** are known to exist in Delta County as of January 1, 2009

Cheatgrass ***(Bromus tectorum)***
Chicory (*Cichorium intybus*)

Common burdock (*Arctium minus*)
Common mullein *(Verbascum thapsus)*
Field bindweed *(Convolvulus arvensis)*
Halogeton (*Halogeton glomeratus*)
Johnsongrass (*Sorghum halepense*)
Jointed goatgrass (*Aegilops cylindrica*)
Perennial sowthistle (*Sonchus arvensis*)
Poison hemlock (*Conium maculatum*)
Puncturevine (*Tribulus terrestris*)
St. Johnswort *(Hypericum perforatum*)
Velvetleaf *(Abutilon theophrasti*)
Volunteer rye (*Secale cereale*)
Wild-prose millet (*Panicum miliaceum*)

1.09 Delta County Noxious Weed List

Yellow starthistle (*Centaurea solstitialis)*
Purple loosestrife (*Lythrim salicaria)*
Myrtle spurge *(Euphorbia myrsinites)*
Common burdock (*Arctium minus*)
Diffuse knapweed *(Centaurea diffusa)*
Spotted knapweed (*Centaurea maculosa*)
Russian knapweed *(Centaurea repens)*
Hoary cress or Whitetop *(Cardaria draba)*
Leafy spurge *(Euphorbia esula)*
Canada thistle *(Cirsium arvense)*
Musk thistle *(Carduus nutans)*
Scotch thistle (*Onopordum acanthium*)
Bull thistle *(Cirsium vulgare)*
Yellow toadflax *(Linaria vulgaris)*
Oxeye daisy *(Chrysantheum leucanthemum)*
Poison hemlock (*Conium maculatum*)
Halogeton (*Halogeton glomeratus*)
Russian olive (*Elaneagnus angustifolia*)
Saltcedar *(Tamarix ramossissima)*

II: GEOGRAPHICAL OVERVIEW OF COUNTY DESIGNATED NOXIOUS WEED INFESTATIONS IN DELTA COUNTY

2.01 Description of Delta County

1. Major Natural Features:
   a. Lakes and Reservoirs: Crawford Reservoir, Sweitzer Lake, Fruitgrowers Reservoir, numerous Grand Mesa lakes and reservoirs.

b. Major River Drainages: Gunnison River, North Fork Gunnison River, Uncompaghre River, Surface Creek, Escalante Creek.
c. Major Mountain Ranges: West Elks, Grand Mesa (south side) lower Uncompaghre Plateau (east side). Highest elevation approximately 11,300 feet
d. National Forests: Grand Mesa National Forest, Gunnison National Forest
e. Wilderness: Gunnison Gorge

2. Land Use Statistics:
   a. Total acreage 735,532 acres (1149 square miles)
   b. Federal or state ownership- 415,749 acres acres (56 %)
   c. Agricultural lands-254,144 acres (36%)
   d. Residential land-25,743 acres (3.5%)
   e. Other: 33,099 acres (4.5%)

2.02 County-wide Infestations

The most common County designated noxious weeds on private, Bureau of Land Management and County lands (primarily county roads) are Russian knapweed, whitetop, and Canadian thistle. The most widely spread listed weed on U.S. Forest Service managed lands is Canadian thistle.

2.03 State Highways

Russian knapweed and whitetop are the most common. Yearly spray treatments were made from 1996 until 2006. Infestation densities were reduced about 80 percent. Colorado Department of Transportation (CDOT) budget reallocations curtailed this program in 2007-2008. The primary weed problem currently is kochia (not a listed noxious weed).

2.04 North Fork River

The North Fork has scattered infestations of whitetop, Russian knapweed, oxeye daisy, yellow toadflax and scotch thistle. There are dense concentrations of tamarisk and Russian Olive. The property on most of the river is private. Control efforts for all species has been minimal.

2.05 Gunnison River: Smith Fork-Pleasure Park-Lawhead Gulch

The primary weed species are Russian knapweed, tamarisk and whitetop. Control efforts for all species has been ongoing since 2002. Approximately 90 percent of tamarisk has been removed between the Smith Fork and Lawhead Gulch (16 miles). There are minor infestations of yellow toadflax and oxeye daisy between Pleasure Park and Delta. Russian olive is the main invader downstream from Austin to the Highway 65 bridge.

2.06 Gunnison River: Delta to Mesa County

Russian knapweed and tamarisk are the primary invaders.

2.07 West and Southwest Delta County

The dominating invasive species are Russian knapweed, whitetop and halogeton. Halogeton will be first to take hold in disturbed areas such as pipelines and utility corridors

2.08 Upper Surface Creek Area

Scotch thistle, Canadian thistle, Russian knapweed and whitetop are common. There is also a large population of myrtle spurge on the west side of Cedaredge within the city limits.

2.09 Northeastern Delta County

Large portions of this area are within the Grand Mesa and Gunnison National Forests. There are also some large parcels of private land. This area is much higher in altitude than the rest of Delta County. Weeds that thrive in this alpine setting are Canadian thistle, musk thistle, oxeye daisy and scentless chamomile. There are a few spots of plumeless thistle. In the West Muddy drainage, there are some oxeye daisy populations that cover hundreds of acres. Most of these are on open ground such as pastures and meadows. Joint control efforts between the U.S. Forest Service, Delta County and private landowners have been ongoing since 2001 for oxeye daisy. Much of the work on private land was funded by Colorado Division of Wildlife and conducted by the Program.

2.10 Fruitland and Redlands Mesa

Both of these mesas have very large, long established populations of Russian knapweed on private land and county roads. Whitetop is a secondary infestation. Control of knapweed in parts of these areas is prohibitively expensive. A second problem is that when knapweed is controlled, whitetop tends to replace it.

2.11 Special Weed Concern # 1: Yellow starthistle

Yellow starthistle is located northwest of Paonia on Stucker Mesa ½ mile west of Roatcap Creek. The estimated acreage is 75 infested acres spread out over about 400 total acres. The majority if the starthistle is on private land. Several small, scattered patches are on the surrounding BLM land.

2.13 Special Weed Concern # 2: Purple loosestrife

Purple loosestrife is located on private land southwest of Cedaredge, three quarters of a mile west of Highway 65 and directly south of Melinda Way. There are two main infestation covering 20 acres and several groups of plants scattered along neighboorhood ponds and ditches.

2.13 Special Weed Concern # 3: Leafy spurge

Leafy spurge is found primarily east and south of Paonia. Private lands on both sides of Minnesota Creek Road as well as the BLM land south of this road were the original seed source of the infestation. Transportation vectors for spreading leafy spurge seed have been the Turner, Minnesota and Stewart Ditches. Plants have been found on the Stewart Mesa extension as far southwest at Back River Road and Slate Road. Plants have been found on Stewart Mesa as far south as L

75 Road. Except for two portions of private land along Minnesota Creek, infestations are spotty and small. Usually they appear along irrigation laterals or adjacent to irrigation gated pipe. Smaller outbreaks of this weed are treated by the Program at no charge to the landowner. This problem weed is persistent but has been contained.

2.14 Special Weed Concern # 4: Yellow toadflax on Coal Creek (Gunnison County)
There were 640 acres of inventoried toadflax in the Coal Creek/Anthracite drainage in 2005. Coal Creek is one of the headwaters of the North Fork of the Gunnison River. The North Fork joins the Gunnison River 3 miles west of Hotchkiss. Toadflax has been found along irrigation systems in eastern Delta County that get water from the North Fork and as far downstream on the Gunnison as Delta (42 miles downstream from Coal Creek). The Coal Creek drainage is the seed source. There are no other large toadflax infestations in the area that could be a source. The Delta County Weed Program and the U.S. Forest Service worked on a joint program from 2004-2007 to control this weed. As of September 2007, expenditures amounted to $103,000. Toadflax populations have been reduced by 75-80 percent. This project continued in 2008 and included the Paonia Dam and the Fire Mountain ditch. In 2008 the Program received $26,000 in grant funding for this project.

2.15 Endangered or Rare Plant Species
Delta County hosts two plants that are on the Federal Endangered Species list. These are Clay Loving Buckwheat (*Eriogonum pelinophilum*) and the Uinta Basin Hookless Cactus.(*Sclerocactus glaucus*). Thirteen more species are considered to be rare according to a Colorado Natural Heritage Program survey conducted in 1997. This survey is on file at the Program's Hotchkiss office. These survey maps are checked before herbicide treatments begin each year in order to avoid further disturbance of these rare plant populations.

III: PLAN IMPLEMENTATION STRATEGIES

3.01 Goals of the Plan

The goals of this Delta County Weed Management Plan are to comply with and execute the requirements of the .Colorado Noxious Weed Act. The Program will accomplish these goals by instituting county-wide programs that address the following fundamentals:

- Awareness, education and training
- Prevention and detection
- Inventory, survey and mapping
- Integrated control (biological, chemical, cultural and mechanical)
- Monitoring and evaluation
- Reporting

It is essential to develop a spirit of cooperation among landowners (federal, state, county, municipal or private) and Delta County by working with these landowners to understand and institute integrated weed management.

3.02 Public Awareness and Education

The Delta County Noxious Weed Program and Colorado State University Cooperative Extension Office will place timely articles in local papers, newsletters and other local publications. Additionally, a spokesperson will be provided for local community and civic organizations as part of the educational program. On-site visits to landowners to identify weed problems and improvise control strategies will be provided at no charge to landowners. A Delta County Weed Program website will be placed within the existing Delta County official site with links to information on identifying and controlling noxious weeds.

3.03 Prevention Measures.

The first priority is to prevent the introduction of any noxious weed to any area not previously infested. The most obvious method is to stop transporting viable seed or propagating plant parts by mechanical means. All equipment should be cleaned when leaving all infested areas to prevent contaminating rights-of-way and the next area entered.

Along these lines, it is strongly recommended that everyone use noxious weedfree certified seed. Feed containing viable noxious weed seeds should not be purchased, transported, or used: Since designated weeds will set seed prior to normal harvest dates, crops need to be treated if they are to be moved from the infested area.

Also to be considered is once seed has reached maturity, it can remain viable for years. During this time, it can re-infest the same area long after the weed problemappears to have been solved, or it can be transported to other areas. This can occur naturally by wind and water or mechanically by movement of vehicles or equipment. Seeds are also transported great distances by domestic animals and wildlife.

Many of the most common weed problems occur in response to disturbed soils. Disturbances can result from a number of conditions including overgrazed pastures, overused turf, clear cut woodlands, pipeline construction and energy/gravel development, improperly maintained road edges, and land development. Land management practices that minimize soil disturbance are invaluable in prevention and control of undesirable plant species.

3.04 Surveying and Mapping

It is the long term goal of the Program to map the major infestations of noxious weeds on the county and state roads using GIS and GPS technology that will allow integration into a layer on the Delta County GIS map.

3.05 Mechanical Control

Mechanical control includes cultivation, mowing, hand pulling and burning. All of these measures, when used correctly, can be of great help when used in conjunction with another type of control. When used alone, they rarely have a positive long-range effect due to the excellent survival ability of noxious weeds. It may, in fact, make the problem worse through spreading seed or plant parts and by eliminating the desirable competitive species on site.

3.06 Biological Control

Biological control is the control of undesirable plants through the use of living organisms. The organism may be an insect, plant, pathogen or livestock, such as sheep, goats or cattle. Recent programs have shown livestock to be very valuable in controlling many weed species. This is especially true in instances of large infestations and in environmentally sensitive areas. When moving livestock from such an infested area for biological control, care should be taken to prevent transportation of seeds to a clean area. If possible, when applicable, livestock should be quarantined for five days to allow all seed to pass through the digestive track. Seed may also need to be sterilized or removed from the animals' hair or wool.

Several varieties of insects which can be used on various plants are commercially available. They may be purchased by individuals to be used as part of an integrated plan. This type of control is still in its infancy. It is being researched and directed by the Colorado Department of Agriculture Insectary in Palisade, Colorado. Ideally, insects will provide an economical and environmentally safe control method. However, there are certain problems associated with this type of control. First, there is a limited supply of all species and purchasing insects may require a large initial investment. The compatibility of herbicides and insects is not well known. Also, participation in this project may preclude the use of certain types of control, which would allow infestations to multiply and set seed. To prevent this, land operators must prepare an integrated plan to effectively control these infestations. Research indicates insects may be a valuable control method to be used in integrated pest management plans in the future.

3.07 Chemical Control

All chemical application must be done according to the label for each individual product. The choice of chemicals and application rates that are used should be the least environmentally damaging as determined by information currently available. This determination may come first from the recommendations in the Colorado Pesticide Guide from Colorado State University Cooperative Extension. It may

also be tempered by the wishes of land owners and the experience of trained personnel associated with the program.

While chemicals are a powerful tool, it must be realized that they are just a tool and must be used only as a part of an integrated management plan.

3.08 Cultural Control

Cultural control means those methodologies or management practices conducted to favor the growth of desirable plants over undesirable plants, including, but not limited to, maintaining an optimum fertility and plant moisture status in an area, planting at optimum density and spatial arrangement in an area, and planting species most suited to an area.

3.09 Environmental Considerations

Environmental concerns including human interactions, water, air, wildlife, fisheries, amphibians, soil, plants and beneficial insects will be considered when selecting and implementing a specific weed control program. Delta County has a large number of vineyards and organic agricultural operations. These will be identified and mapped in order to avoid herbicide applications near these sites.

The Colorado Pesticide Sensitivity list will be periodically checked for the names and addresses of chemically sensitive people. No herbicides will be applied near their locations. Whenever possible, these people will be contacted prior to any herbicide application in their general area so that they can avoid traveling in that vicinity.

IV. RESPONSIBILITIES OF THE NOXIOUS WEED PROGRAM

4.01 Strive to identify and contain, reduce or eradicate current weed infestations and reduce or eliminate weed seed production in certain species.

4.02 Monitor for new infestations and new invasive species so as to prevent new encroachments on unincorporated lands in the County.

4.03 Develop and implement Integrated Weed Management Plans for noxious weeds on County owned property, easements, and rights-of-way.

4.04 Protect agricultural production, native plant ecosystems, watersheds, and recreational lands from degradation by noxious weeds by enforcing the Noxious Weed Act and working through cooperative agreements with city, state and federal agencies and adjacent counties and states.

4.05 Preserve the quality of life in rural areas of unincorporated Delta County through desirable plant stewardship and noxious weed management to enhance human health aspects, land values and esthetics.

4.06 Provide technical support and recommendations for noxious weed management and work with landowners, including state and federal agencies, to develop their Integrated Weed Management Plans.

4.07 Educate Delta County citizens on the impact of noxious weeds on the economy and the environment and provide information on Best Management Practices for noxious weeds.

ATTACHMENT A

Authority: Colorado Weed Management Act: C.R.S. Title 35, Article 5.5, as amended

Purpose of C.R.S. Title 35, Article 5.5

Because certain undesirable plants, primarily aggressive non-native invaders, constitute a threat to the "continuous economic and environmental value of the lands of the state", these species must be managed on private and public lands, using integrated management techniques which are the least damaging to the environment and which are practical and economically reasonable.

A Brief Abstract

As mandated by the Colorado Noxious Weed Act, all persons must control noxious weeds on their property if such plants are a threat to neighboring landowners or natural ecosystems. Weed control programs should be integrated in their approach, using all available technologies for effective weed control. To comply with the Law, the Board of County Commissioners must adopt a noxious weed management plan for all unincorporated lands within its jurisdiction. The Commissioners may use employees or contractors to enforce noxious weed control on county lands. Costs for aid control on county property are to be paid from the county noxious weed management fund, if one exists. The Commissioners may enter into cooperative weed management agreements with other governmental agencies.

The Noxious Weed Advisory Board, a commission of resident private landowners, must develop a management plan to be reviewed at least once every three years. At least a majority of the members of the Board must own forty or more acres of property. The Board designates which species are to be managed within the County, thereby establishing the County Noxious Weed List. Additional plants can be added to the list, after a public hearing with 30 days prior notice. The Board can require identified landowners to submit weed management plans when species on the list are found on their property.

The County has the right to inspect premises under at least one of the following conditions:

(a) the landowner requests inspection;
(b) a neighbor files a complaint or report; or
(c) the Weed Program Manager makes a visual observation of a weed infestation from a public right of way (ROW) or a public area.

Before entering private property, the landowner or occupant must be notified of the problem by certified mail. If entry is refused, an inspection warrant may be obtained by the Weed Program. A landowner cannot deny entry to inspect if a warrant is secured. After inspection, a notice of the problem and control recommendations must be sent by mail. Within 10 days of notification, the landowner or occupant must comply with the

recommendations, submit an acceptable weed management plan, or request an arbitration panel hearing. The county has the authority to act in the case of failure to comply with the Act, with an assessment of the cost of control plus overhead expenses, up to 20 percent, charged against the land. Noxious weeds may be declared a public nuisance, subject to all applicable laws and remedies for abatement, including removal or destruction of the weeds.

The County cannot force a private owner to control weeds without first having equal or greater successful control measures on county-owned lands adjacent to the private property in question.

State agencies have the same responsibility as private landowners. Notification by the county is the same as for private landowners. The county has the power to enforce and charge state agencies for weed control on state lands. The county may enter into cooperative agreements for weed management with State and Federal agencies. Public rights-of-way (ROWs), easements, utilities, mining operations, etc., must be in compliance with the management plan and must bear the financial responsibility of weed control.

The Colorado Noxious Weed Act established a state weed coordinator position to oversee implementation of the Law. A State Noxious Weed Management Fund was established to fund grants or contracts for weed management practices, with procedures for allocation of funds to appropriate entities. The fund was broadened in 2000 to include grants for educational programs. Counties may levy a tax, upon voter approval, to fund noxious weed management programs.

ATTACHMENT B

Herbicide Guide: The 5 Most Common Noxious Weeds of Delta County
January 1, 2009

Note: All herbicides listed are labeled for roadsides and range and pasture. They are not labeled for turf (yards), golf courses, and public areas. Different formulations of the active ingredients are available for turf use. See your dealer for more information on these products.

Common Target Weeds	Preferred Herbicides (based on experience by Delta County Weed Program)	Application Timing
Whitetop/hoary cress	• Telar + 24D (amine) • Escort/Ally	Spring: late bud-early flower
Russian knapweed	• Milestone • Curtail, Transline, Stinger • Redeem R & P	Spring: Rosette to early flower. Fall: Apply up until first hard freeze. Applications under drought conditions will not be effective.
Canada thistle	Same as Russian knapweed	
Scotch thistle, musk thistle	Same as Russian knapweed, or • Telar • Banvel + 24D (amine)*	Spring: Rosette to early flower. Fall: Rosette Spring: These species are biennials and be controlled by chopping/digging

*Banvel and 24d are very volatile in weather above 85 degrees. Vapor drift can occur and damage non-target species up to ¼ mile away!!

WARNING!!!!

Herbicides must be used with extreme caution. They are poisons and should be treated carefully. Most herbicides can be purchased without an applicator license. Tordon requires a license for purchase. The label is a legal document that outlines the uses and restrictions of the chemical.

READ THE LABEL before buying, before applying and again after using an herbicide. READ THE LABEL before buying to determine if the herbicide is the right one for your situation, if it is labeled for the weeds you are trying to control, for information on the

addition of adjuvant or surfactants, and for other restrictions, such as for grazing and planting.

READ THE LABEL before applying to get the correct rate to use, how to mix and apply the product, what personal protection you may need while mixing and applying the herbicide, and for information on how to dispose of left over mix. READ THE LABEL after applying to check reentry intervals, to check planting and grazing restrictions, and for disposal and clean-up information. Never use more than the recommended rate on the label. Higher rates will cause the tops of the plants to burn down quickly. The herbicide may not have the chance to move into the root zone and the weed may sprout again. And you are wasting money!

Pre-emergent herbicides prevent the germination of seeds and do not work on established perennial weeds. Application timing of pre-emergents is critical; they are usually applied in the spring. Precipitation or irrigation may be needed to move the chemical into the germination zone (the top 3-5 inches of soil).

Post-emergent herbicides work on the growing parts of the weed, including roots. Therefore post-emergent herbicides work on annuals, biennials, and perennials. Drought and heat may reduce the effectiveness of these herbicides. The use of herbicides may be the only effective control method for some species. However, herbicides should be used in conjunction with other methods for the highest level of control. Herbicide use is determined by restrictions and instructions on the product label. Materials or products mentioned in this Plan are based on experience in Delta County or recommendations of Colorado State University Cooperative Extension Service and should not be construed as endorsement by Delta County.

ATTACHMENT C

NOXIOUS WEED INFORMATION RESOURCES

Contacts

- **Delta County Weed Program Coordinator**
  Delta County Fairgrounds
  P.O Box 729
  Hotchkiss, CO. 81419
  970-872-3090
  Fax: 970-872-1250
  e-mail: wcallicutt@deltacounty.com

- **Colorado State University Extension**
  Dr. Curtis E. Swift, Area Extension Agent, Horticulture
  Colorado State University Extension
  2775 US Hwy 50, Grand Junction, CO. 81503
  voice: 970-244-1840
  fax: 970-244-1700

  Delta Office CSU Extension:
  525 Dodge Street:
  970-874-2195

  State Weed Coordinator
  Colorado Department of Agriculture
  Division of Plant Industry
  700 Kipling St., Suite 400
  Lakewood, CO 80215-5894
  303-239-4182
  steve.ryder@ag.state.co.us

- **Colorado Department of Agriculture: Noxious Weed Management Program**
  http://www.colorado.gov/cs/Satellite/Agriculture-Main/CDAG/1167928159176

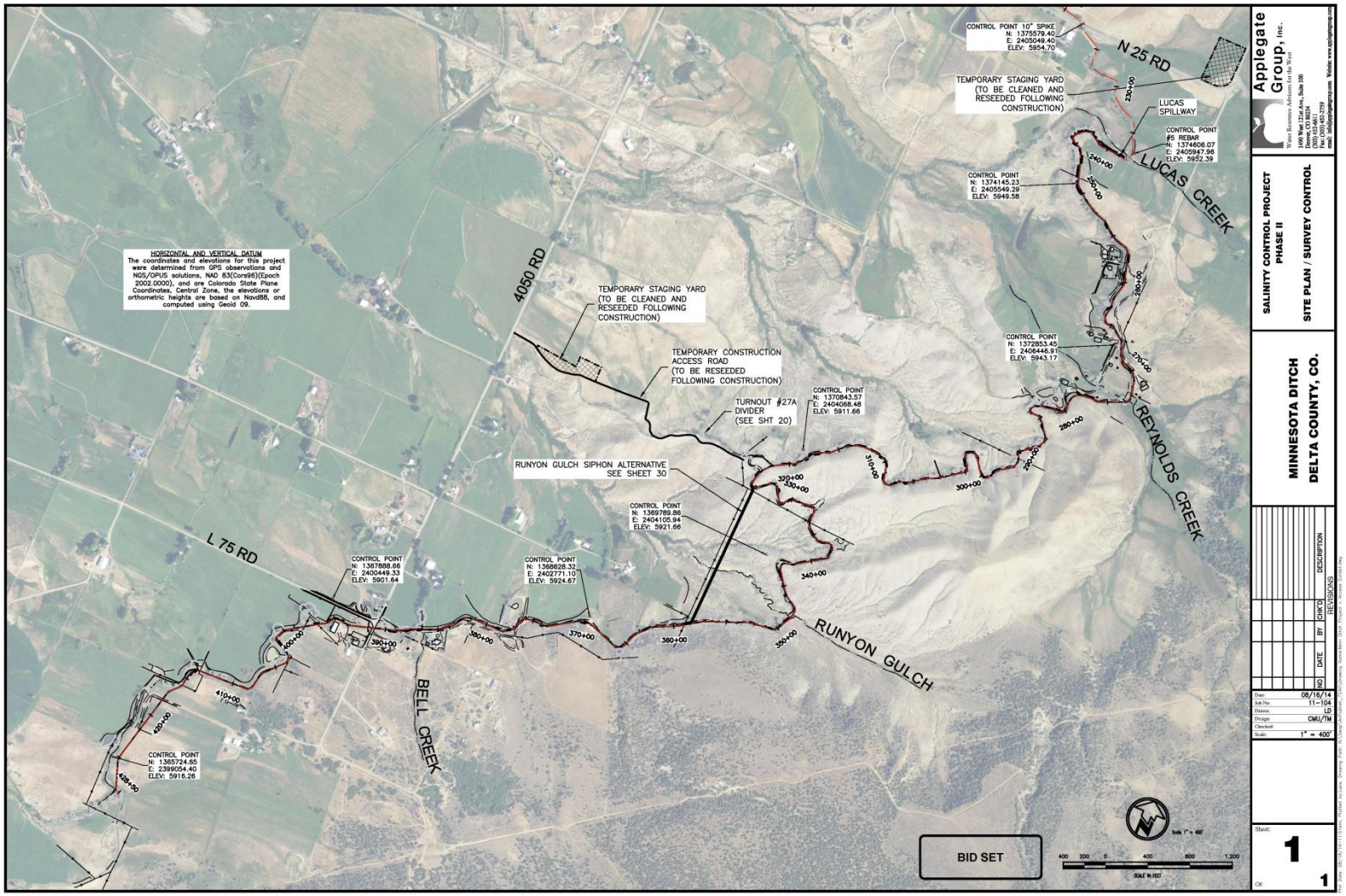
  Colorado Department of Agriculture
  Division of Plant Industry
  Biological Control Section
  Palisade Insectary
  P.O. Box 400
  Palisade, CO 81526
  970-464-7916

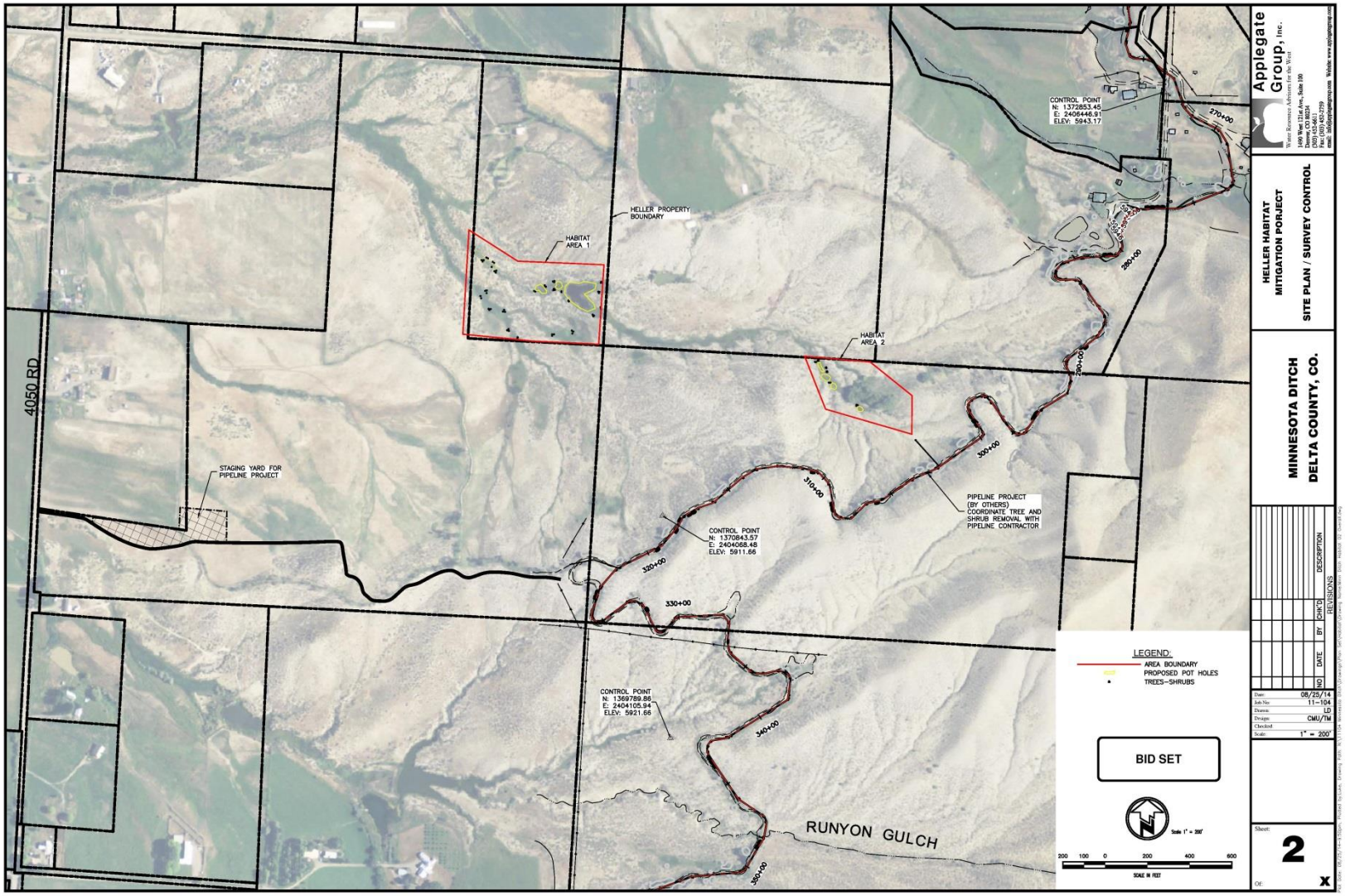
On Line Information:

Note: There are more on-line sites than can be listed here. These sites have links to dozens of the most useful sites for weed identification and control.

- Colorado Weed Management Association: http://www.cwma.org/
- Colorado State University Extension-Tri River Area: http://westernslopegardening.org/
- Weed Fact Sheets: http://www.colostate.edu/Dept/CoopExt/Adams/weed/factsheet.htm
- Colorado Department of Agriculture: Noxious Weed Management Program http://www.colorado.gov/cs/Satellite/Agriculture-Main/CDAG/1167928159176
- National Invasive Species Information Center: http://www.invasivespeciesinfo.gov/index.shtml
- Center for Invasive Plant Management: http://www.weedcenter.org/
- Managing Invasive Plants: http://www.fws.gov/invasives/staffTrainingModule/index.html
- Weed Science Society of America: http://www.wssa.net/

APPENDIX F – SITE PLAN




HELLER PROPERTY BOUNDARY
HABITAT AREA 1
HABITAT AREA 2
4050 RD
STAGING YARD FOR PIPELINE PROJECT
PIPELINE PROJECT (BY OTHERS) COORDINATE TREE AND SHRUB REMOVAL WITH PIPELINE CONTRACTOR
CONTROL POINT N: 1370843.57 E: 2404068.48 ELEV: 5911.66
CONTROL POINT N: 1369789.86 E: 2404105.94 ELEV: 5921.66
CONTROL POINT N: 1372853.45 E: 2406446.91 ELEV: 5943.17
RUNYON GULCH
270+00
280+00
290+00
300+00
310+00
320+00
330+00
340+00
350+00
LEGEND:
AREA BOUNDARY
PROPOSED POT HOLES
TREES–SHRUBS
BID SET
200 100 0 200 400 600
SCALE IN FEET
Applegate Group, Inc.
HELLER HABITAT MITIGATION PROJECT
SITE PLAN / SURVEY CONTROL
MINNESOTA DITCH
DELTA COUNTY, CO.
REVISIONS
NO DATE BY CHK'D DESCRIPTION
Date: 08/25/14
Job No: 11-104
Drawn: ED
Design: CMU/TM
Checked:
Scale: 1" = 200'
Sheet: 2
OF:

APPENDIX G – HABITAT IPACTS

5/30/2013

Minnesota Ditch Phase II

Habitat Areas Affected

Habitat Point	Habitat Type	Feet of Ditch	Width of Impact (Ft.)	Sq. ft Impacted	Acreage of impact	Amount of Impact	Habitat Credits Lost
H1	Shrub/Grass	306	40	12240	0.28	1.00	0.28
H2	Shrub/Grass	1635	40	65400	1.50	1.40	2.10
H3	Shrub/Grass	724	30	21720	0.50	0.80	0.40
H4	Shrub/Grass	1237	30	37110	0.85	1.00	0.85
H5	Shrub/Grass				0.80	1.90	1.52
H6	Shrub/Scrub				3.78	1.50	5.67
H7	Shrub/Scrub	6040	40	241600	5.55	1.50	8.32
H8	Grass/Emergents				1.08	1.10	1.19
H9	Grass/Emergents				0.76	0.90	0.68
H10	Shrub/Grass	2807	30	84210	1.93	0.90	1.74
H11	Shrub/Grass	4585	30	137550	3.16	0.50	1.58
H12	Shrub	1481	30	44430	1.02	0.10	0.10
						Total Habitat Credits Lost:	**24.44**

29-Apr-13

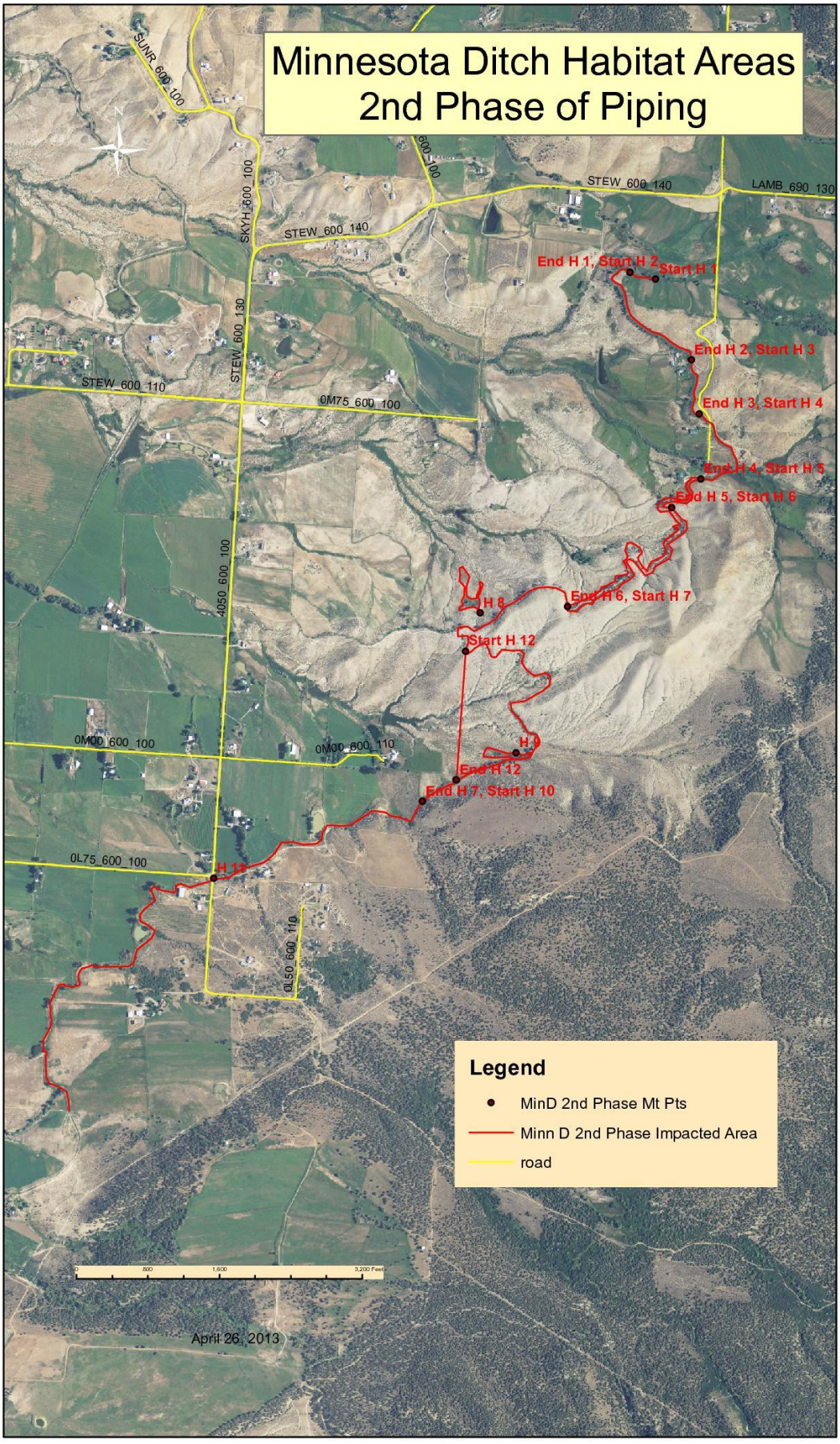
Minnesota Ditch Phase II

Habitat Quality Scoring

Habitat Site	**MD 1**		**MD 2**		**MD 3**		**MD 4**		**MD 5**		**MD 6**		**MD 7**		**MD 8**	
Mapped Acres/Adjustment	0.28	**100%**	1.50	**100%**	0.50	**100%**	0.85	**100%**	0.80	**100%**	3.78	**100%**	5.55	**100%**	1.08	**100%**
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
Vegetation Diversity	7	5	5	3	5	3	5	3	6	3	4	2	4	2	8	8
Stratification	10	8	10	6	8	8	8	8	10	6	10	4	10	4	10	6
Native vs. Non-Native species	8	8	8	8	8	8	8	8	8	6	8	8	8	8	8	8
Noxious Weeds	7	8	7	8	8	8	8	8	8	8	8	9	8	9	7	8
Overall Vegetative Condition	10	8	10	8	8	6	8	6	9	6	8	8	8	8	8	8
Disease Additional scoring	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Interspersion of open water	1	0	1	0	1	1	1	0	1	0	1	0	1	0	0	0
Connectivity	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Uniqueness or Abundance	8	4	6	2	6	2	5	2	6	2	5	2	5	2	8	2
Water Supply	4	4	4	2	2	2	4	7	4	2	4	0	4	0	2	0
Alteration	8	8	8	8	7	7	7	2	4	4	10	10	10	10	8	8
Raw Scores	68	58	64	50	58	50	59	49	61	42	63	48	63	48	64	53
Habitat Quality Score (HQS)	**6.80**	**5.80**	**6.40**	**5.00**	**5.80**	**5.00**	**5.90**	**4.90**	**6.10**	**4.20**	**6.30**	**4.80**	**6.30**	**4.80**	**6.40**	**5.30**
Habitat Score Difference	1.00		1.40		0.80		1.00		1.90		1.50		1.50		1.10	
Habitat Credits Lost	**0.28**		**2.10**		**0.40**		**0.85**		**1.52**		**5.67**		**8.33**		**1.19**	

Habitat Site	MD 9		MD 10		MD 11		MD 12	
Mapped Acres/Adjustment	0.76	100%	1.93	100%	3.16	100%	1.02	100%
	Before	After	Before	After	Before	After	Before	After
Vegetation Diversity	5	2	5	3	5	4	3	3
Stratification	6	4	10	8	10	10	6	6
Native vs. Non-Native species	8	7	8	8	8	8	8	9
Noxious Weeds	7	8	7	9	8	9	9	9
Overall Vegetative Condition	8	8	8	8	8	8	6	6
Disease Additional scoring	0	0	0	0	0	0	0	0
Interspersion of open water	0	0	1	0	1	0	0	0
Connectivity	5	5	5	5	5	5	5	5
Uniqueness or Abundance	4	2	4	2	4	2	2	2
Water Supply	2	0	4	0	4	2	2	0
Alteration	7	7	2	2	2	2	5	5
Raw Scores	52.00	43.00	54.00	45.00	55.00	50.00	46.00	45.00
Habitat Quality Score (HQS)	**5.20**	**4.30**	**5.40**	**4.50**	**5.50**	**5.00**	**4.60**	**4.50**
Habitat Score Difference	0.90		0.90		0.50		0.10	
Habitat Credits Lost	**0.68**		**1.74**		**1.58**		**0.10**	

Total Habitat Credits Lost **24.44** **Credits**


Minnesota Ditch Habitat Areas
2nd Phase of Piping
SUNR 600 100
SKYH 600 100
600 100
STEW 600 140
LAMB 690 130
STEW 600 140
STEW 600 130
STEW 600 110
0M75 600 100
4050 600 100
0M00 600 100
0M00 600 110
0L75 600 100
0L50 600 110
End H 1, Start H 2
Start H 1
End H 2, Start H 3
End H 3, Start H 4
End H 4, Start H 5
End H 5, Start H 6
End H 6, Start H 7
H 8
Start H 12
H 9
End H 12
End H 7, Start H 10
H 11
Legend
MinD 2nd Phase Mt Pts
Minn D 2nd Phase Impacted Area
road
0
800
1,600
3,200 Feet
April 26, 2013