

Draft Environmental Assessment
Village of Ruidoso
Proposed Close Road Bridge Replacement
DR-1783-NM, Project Worksheet 94

Lincoln County, New Mexico
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Federal Emergency Management Agency
Department of Homeland Security
500 C Street, SW
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TABLE OF CONTENTS

1	INTRODUCTION	1
2	PURPOSE AND NEED.....	5
3	ALTERNATIVE ANALYSIS.....	6
3.1	No Action Alternative	6
3.2	Proposed Action Alternative.....	6
4	AFFECTED ENVIRONMENT AND POTENTIAL IMPACTS	8
4.1	Physical Resources	8
4.1.1	Geology and Soils.....	9
4.1.2	Air Quality	10
4.1.3	Water Resources.....	11
4.1.4	Water Quality.....	14
4.1.5	Wetlands	17
4.1.6	Floodplains.....	19
4.2	Biological Resources	22
4.2.1	Threatened and Endangered Species and Critical Habitat.....	22
4.3	Cultural Resources.....	25
4.3.1	Cultural & Historical Properties	25
4.4	Socioeconomic Resources.....	27
4.4.1	Environmental Justice	27
4.4.2	Traffic	28
4.5	Summary Table	29
5	CUMULATIVE IMPACTS	33
6	MITIGATION MEASURES AND NWP-14 PERMIT CONDITIONS	33
7	AGENCY COORDINATION, PUBLIC INVOLVEMENT AND PERMITS	36
7.1	Agency Coordination	36
7.2	Public Involvement.....	36
7.3	Permits	37
8	REFERENCES	37
9	LIST OF PREPARERS.....	41

List of Figures

Figure 1: Project Area Vicinity Map	2
Figure 2: Project Area Topographic Map	3
Figure 3: Project Area Aerial Map	4
Figure 4: View of Close Road Temporary Bridge with Debris Build-up.....	5
Figure 5: Example ConSpan Arch bridge at Eagle Drive in Ruidoso, NM	6
Figure 6: View of Rio Ruidoso west of Close Road Bridge.	13
Figure 7: National Wetlands Inventory Map of the Proposed Project Area (USFWS 2014d).....	17
Figure 8: FEMA FIRM of the Proposed Project Area	19

List of Tables

Table 1: HQCF Requirements	15
Table 2: FEMA Eight-Step Process	20
Table 3: Summary of Potential Impacts and Mitigations Measures.....	29

Appendices

APPENDIX A:	Agency Consultations Letters and Responses Newspaper Affidavit
APPENDIX B:	NMDGF 2012 Bridge and Road Construction/Reconstruction Guidelines for Wetland and Riparian Areas NMDGF 2003 Trenching Guidelines
APPENDIX C:	Biological Resources Survey Report
APPENDIX D:	Cultural Resources Survey Report
APPENDIX E:	Draft Wetland Determination and Delineation Report
APPENDIX F:	General Construction Drawings

ACRONYM	DEFINITION
μS/cm	micro-Siemens per centimeter
amsl	above mean sea level
APE	Area of Potential Effect
AQB	Air Quality Bureau
BMPs	Best Management Practices
C	Celsius
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CGP	Construction General Permit
cm	centimeter
CWA	Clean Water Act
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	US Environmental Protection Agency
F	Fahrenheit
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
ft	feet
HQCF	High Quality Coldwater Fishery
in	inches
IPaC	Information, Planning, and Conservation System
km	kilometers
m	meter
MBTA	Migratory Bird Treaty Act
mg/L	milligrams per liter
NAAQS	National Ambient Air Quality Standard
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMAC	New Mexico Administrative Code
NMCRIS	New Mexico Cultural Resource Information System
NMDGF	New Mexico Department of Game and Fish
NMED	New Mexico Environment Department
NMEMNRD	New Mexico Energy, Minerals, and Natural Resources Department
NMESFO	New Mexico Ecological Services Field Office
NMHPD	New Mexico Historic Preservation Division
NMPM	New Mexico Prime Meridian
NMRPTC	New Mexico Rare Plant Technical Council
NMSA	New Mexico Statutes Annotated
NPDES	National Pollutant Discharge Elimination System
NRCS	National Resources Conservation Service
NRHP	Nations Register of Historic Places
NWI	National Wetlands Inventory
NWP	Nationwide Permit
OEM	Office of Emergency Management
OMI	Office of the Medical Investigator
PA	Public Assistance

PNP	Private Non-Profit
seq.	et sequentia
SHPO	State Historic Preservation Officer
SOC	Species of Concern
SWPPP	Stormwater Pollution Prevention Plan
SWQB	Surface Water Quality Bureau
TES	Threatened, Endangered, and Sensitive
THPO	Tribal Historic Preservation Officer
US	United States
USACE	US Army Corps of Engineers
U.S.C.	United States Code
USDA	US Department of Agriculture
USFS	US Forest Service
USFWS	US Fish and Wildlife Service
WQCC	Water Quality Control Commission

1 INTRODUCTION

The United States (US) Department of Homeland Security’s Federal Emergency Management Agency (FEMA) is proposing to support the Village of Ruidoso (Village or Applicant) for a project in Ruidoso, Lincoln County, New Mexico. On July 27, 2008, the remnants of Hurricane Dolly passed through the Ruidoso, New Mexico area. Ruidoso and the surrounding areas received 2.46 inches (in.) of precipitation with some reports of up to 9 in., which resulted in heavy flooding within the Rio Ruidoso basin. Subsequently, a Presidential Disaster Declaration, FEMA-1783-DR-NM, was signed on August 14, 2008 for damage that occurred as a result from severe storms and flooding.

It is under the authority of the Robert T. Stafford Disaster Relief Emergency Assistance Act (42 US Code [U.S.C.] 5121 et *sequentia* [seq.]) (FEMA 2013a) [Stafford Act] that Congress has determined “to provide an orderly and continuing means of assistance by the Federal Government to State and local governments in carrying out their responsibilities to alleviate the suffering and damage which result from disasters.” This project has been initiated under the auspices of this Act.

This Environmental Assessment (EA) has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the President’s Council on Environmental Quality (CEQ) regulations to implement NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508), and FEMA’s regulations implementing NEPA (44 CFR Part 10) [FEMA 2014]. FEMA is required to consider potential environmental impacts before funding or approving actions and projects. The purpose of this EA is to analyze the potential environmental impacts of the proposed Close Road bridge replacement. FEMA will use the findings in this EA to determine whether to accept the findings and prepare a Finding of No Significant Impact (FONSI) or prepare an Environmental Impact Statement (EIS).

The proposed project area comprises approximately 2.5 acres (1.0 hectares) of Village owned and private lands that encompass the existing Close Road temporary bridge, roadway and surrounding land. It is identified within the legal descriptions: Section 25 of Township 11 South, Range 12 East, New Mexico Prime Meridian [NMPM].

The center point of the existing box culvert bridge is located at:

Location	Latitude	Longitude
Center Point	33.326420°	-105.628438°

The project area it is located within the US Geological Survey area Ruidoso Downs, New Mexico (33105-C5) 1:24,000 scale. The project boundaries are identified in Figures 1 - 3.

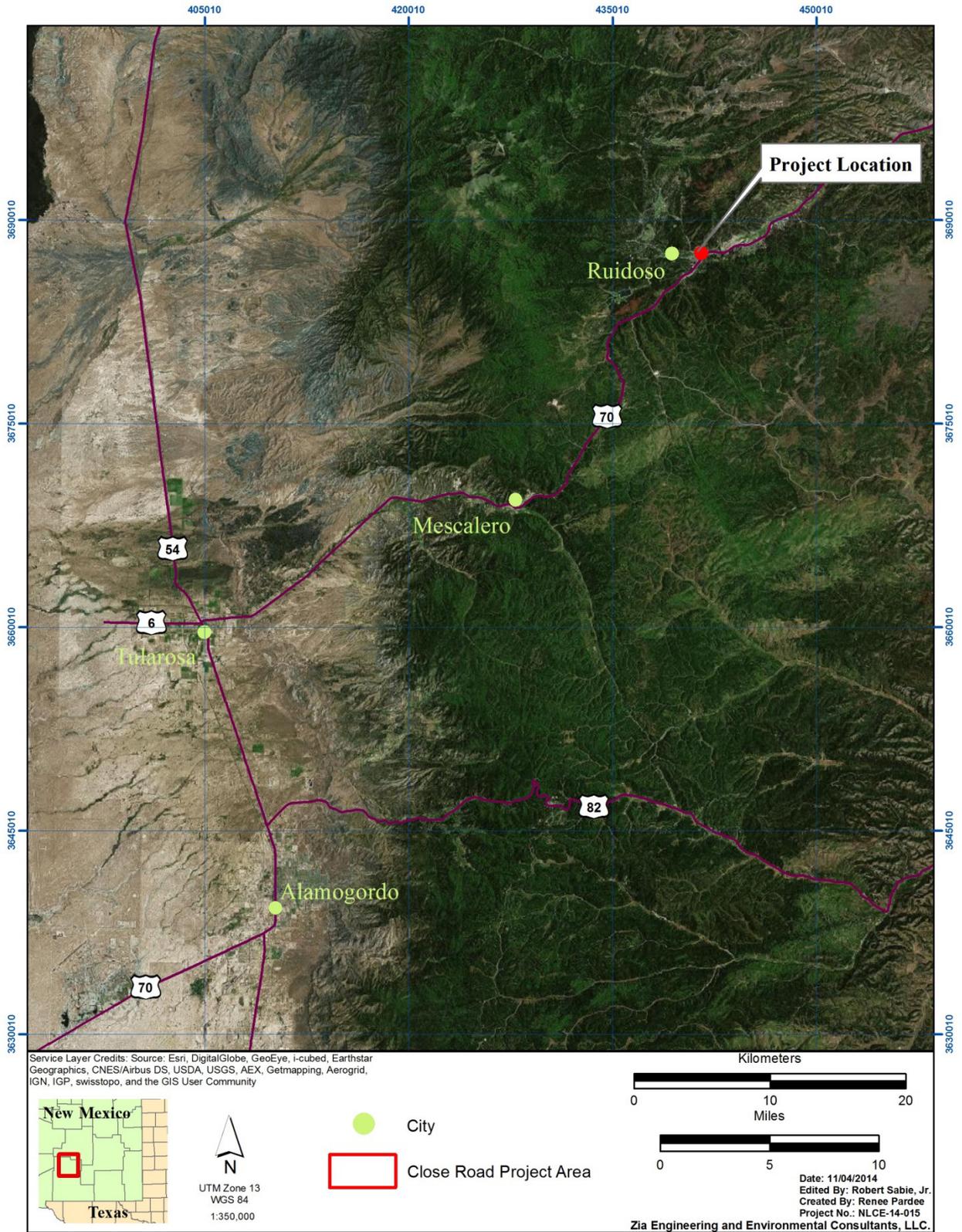


Figure 1: Project Area Vicinity Map

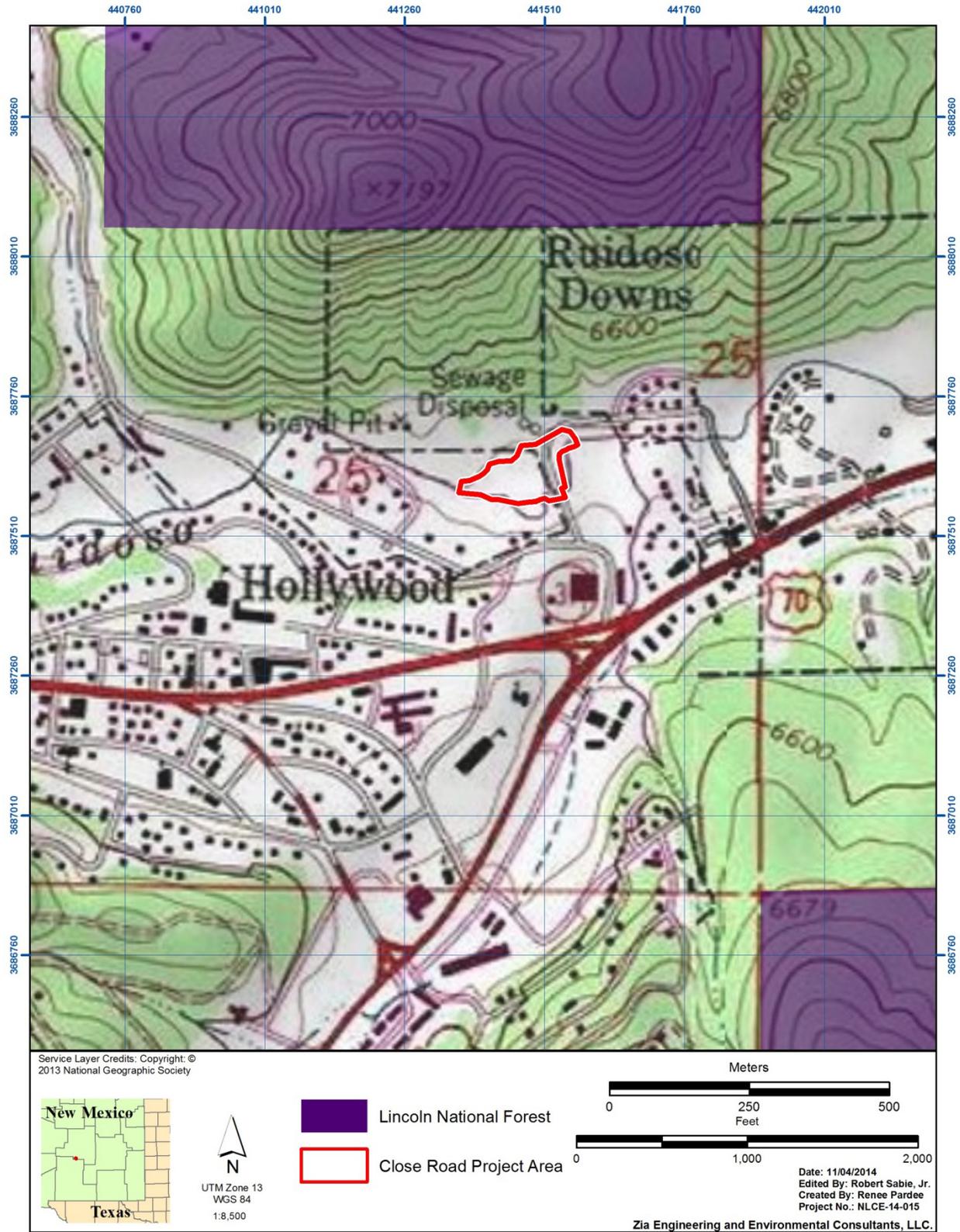


Figure 2: Project Area Topographic Map

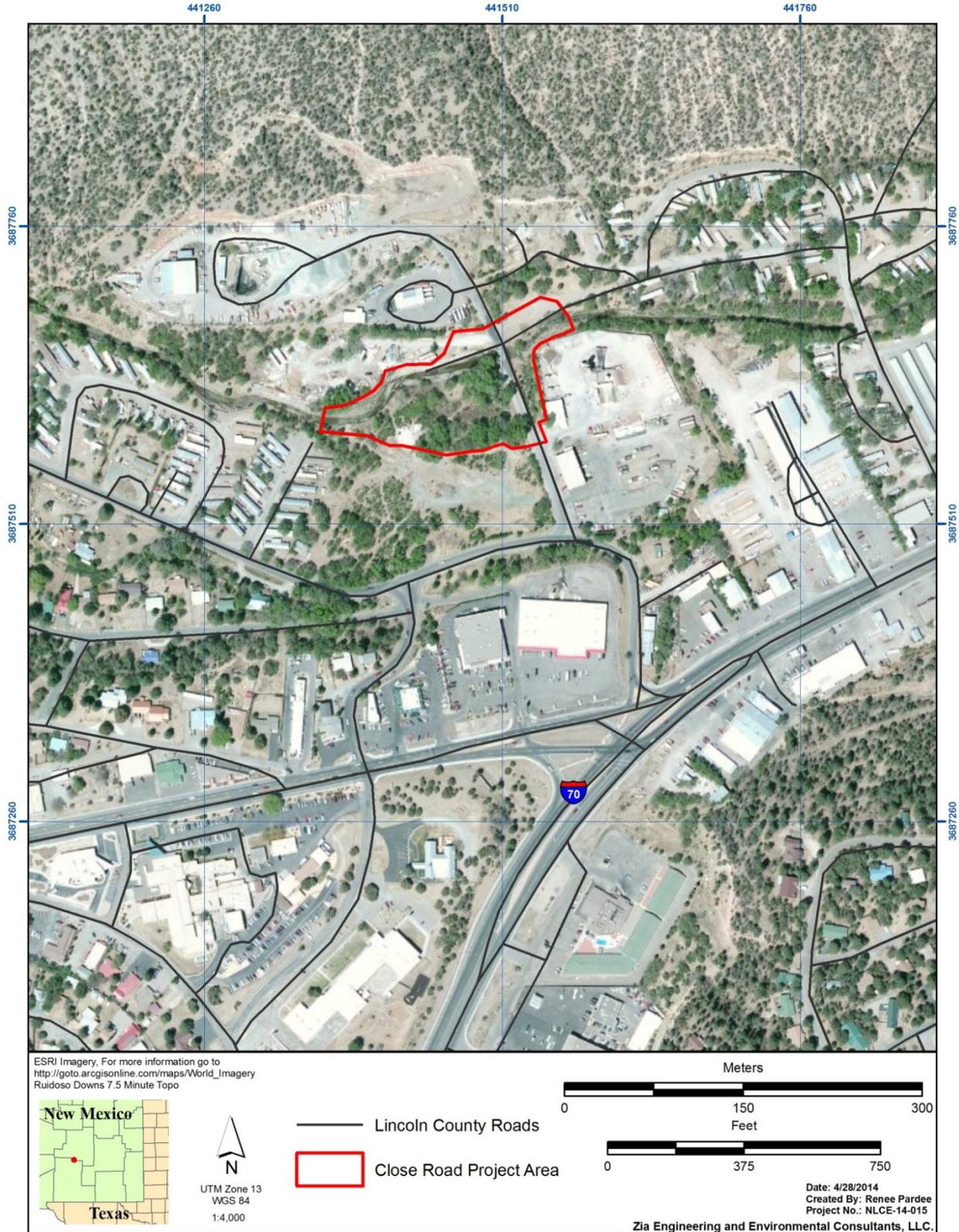


Figure 3: Project Area Aerial Map

2 PURPOSE AND NEED

Through the Public Assistance (PA) Program authorized under the Stafford Act, FEMA provides supplemental Federal disaster grant assistance for debris removal (Stafford Act Authority §§403(a)(3); 407; 502(a)), emergency protective measures (Stafford Act Authority §§403(a)(3); 418; 419; 502(a)), and the repair, replacement, or restoration of disaster-damaged, publically owned facilities and the facilities of certain Private Non-Profit (PNP) organizations (Stafford Act Authority §406). The PA Program also encourages protection of these damaged facilities from future events by providing assistance for hazard mitigation measures during the recovery process.

The remnants of Hurricane Dolly passed through the Ruidoso, New Mexico area in July 2008 which resulted in the flooding of the Rio Ruidoso basin. Following the flooding, FEMA funded the installation of multiple temporary box culvert crossings, including the one at Close Road as part of an emergency action. The Village hired Wilson and Company to design the installation of the existing box culverts, and then the Village Street Department will be responsible for the construction and installation. The Close Road temporary box culvert bridge was not intended to provide a permanent river crossing. The temporary box culvert bridge crossing collects debris flowing down the river during flood events. If not cleared, the debris has the potential to exacerbate flooding in the project area, leading to overtopping or washout of the temporary box culvert bridge and accelerating embankment erosion.

The purpose of the proposed project is:

- Minimize the potential for future damage to the public transportation infrastructure from flooding and debris.
- Minimize impacts on connecting roadways and embankments.
- Minimize impacts associated with flooding such as soil embankment erosion, overtopping or washout.
- Allow for unimpeded water flow.
- Minimize impacts on natural and cultural resources.



Figure 4: View of Close Road Temporary Bridge with Debris Build-up.

3 ALTERNATIVE ANALYSIS

3.1 No Action Alternative

Under the No Action Alternative, the existing FEMA funded temporary box culvert bridge, which consists of three barrel box culverts with openings that are 10 feet (ft.) wide by 8 ft. high by 18 ft. deep (Figure 4), will remain as the crossing of the Rio Ruidoso. During flood events, debris flowing down the river will continue to collect at the walls of the culverts, creating an obstacle to aquatic migration. The existing culvert crossing and waterway would continue to have the potential during flood events to be overtopped or washed out, damage public transportation infrastructure, and accelerate soil embankment erosion. The collection of debris and sediment at the culverts can negatively influence the natural conditions of the river, such as temperature and pH, which could potentially impact the cold-water fishery designation of Rio Ruidoso.

The No Action Alternative does not address the purpose of the proposed project, which includes the project objectives stated in Section 2 and restated below:

- Minimize the potential for future damage to the public transportation infrastructure from flooding and debris.
- Minimize impacts on connecting roadways and embankments.
- Minimize impacts associated with flooding such as soil embankment erosion, overtopping or washout.
- Allow for unimpeded water flow.
- Minimize impacts on natural and cultural resources.

3.2 Proposed Action Alternative



Figure 5: Example ConSpan Arch bridge at Eagle Drive in Ruidoso, NM

The Proposed Action Alternative will consist of the temporary relocation of power and telephone lines and the permanent relocation of the water line running from the Hollywood Wells under the existing culvert bridge and into the Village, followed by the demolition necessary to remove the existing three-barrel temporary box culvert crossing structure. A precast concrete ConSpan Arch culvert with a 60 ft. span and a 12 ft. rise will be installed (Figure 5; Appendix F). The intended sequence of major construction activities is as follow: site preparation/mobilization; temporary utilities relocates; demolition; clearing and

stockpiling; river grading; bridge construction, including installation of utility casings; permanent utility relocations; river bank slope protection construction; roadway construction including installation of signage, striping, street lights and guardrails; and final stabilization, site inspection and clean-up.

River base flow would be diverted around the construction area by use of a coffer dam and channel or by use of a coffer dam and drainage pipes. Erosion during construction will be controlled by use of straw-waddles and silt fences to stabilize exposed side slopes. Sediment berms will be used to contain staging and storage areas. Check dams will be used within the river channel to settle sediment that may be conveyed in runoff because of rainfall within the construction area. Areas determined to be at final grade will be seeded and mulched within 14-days to establish final stabilization. A gravel construction entrance will be utilized to minimize tracking of sediment off-site. A National Pollutant Discharge Elimination System (NPDES) permit will be applied for and Stormwater Pollution Prevention Plan (SWPPP) has been developed (Zia 2014e). These efforts will minimize the potential of construction materials or other construction-related waste to enter the Rio Ruidoso.

The proposed channel is designed to be 60 ft. wide and provide 12 ft. of channel depth on the north bank of the river and 9 ft. of channel depth on the south bank of the river upstream of the proposed crossing structure. Downstream of the proposed crossing structure, the proposed channel is designed to provide 12 ft. of channel depth. The channel banks immediately upstream and downstream of the crossing will be stabilized using gabion basket walls. The proposed bridge replacement is designed to perform hydraulically better than or equal to the existing temporary structure (Zia 2014d).

The Proposed Action Alternative does address the purpose of the proposed project by replacing the temporary culvert bridge with a ConSpan arch bridge. Additionally, it does address the needs of the Village, which include the project objectives stated in Section 2 and restated below:

- Minimize the potential for future damage to the public transportation infrastructure from flooding and debris.
- Minimize impacts on connecting roadways and embankments.
- Minimize impacts associated with flooding such as soil embankment erosion, overtopping or washout.
- Allow for unimpeded water flow.
- Minimize impacts on natural and cultural resources.

The resources (Section 4) further analyzed for potential impacts include geology and soils, air quality, water resources, water quality, wetlands, floodplains, biological resources, cultural resources, socioeconomic resources, and traffic. Mitigation measures were developed for any anticipated negative impacts (Section 6). Furthermore, cumulative impacts (Section 5) that may occur as part of the proposed action were also analyzed.

4 AFFECTED ENVIRONMENT AND POTENTIAL IMPACTS

This chapter describes the affected environment and potential impacts associated with implementation of the alternatives, organized by the following resource topics: physical resources, water resources, biological resources, cultural resources, and socioeconomic resources. The CEQ and FEMA regulations (44 CFR Part 10) that implement NEPA require NEPA documents to be concise, focus on the issues relevant to the project, and exclude extraneous background data and discussion of subjects that are not relevant or would not be affected by the project alternatives. Accordingly, the following is a summary of resource areas not evaluated in detail in this EA:

Seismicity

Most earthquake activity in New Mexico has been concentrated in the Rio Grande Valley between Socorro and Albuquerque. The proposed undertaking is not located in an area that has known significant seismological activity or potential hazards.

Coastal Resources

The proposed undertaking is not located in a coastal zone.

Public Services and Utilities

The proposed undertaking is in a rural, low population density. The project alternatives would not increase the need for public services or utilities.

Public Health and Safety

The proposed undertaking is in a rural, low population density. Issues related to flooding and access to the proposed project area by emergency service providers are addressed in the water resources and traffic sections.

Hazardous Materials

Hazardous materials have not been identified in the project area. Construction of the bridge is not expected to result in any hazardous materials or toxic waste related impacts. Demolition of the temporary bridge may produce small amounts of hazardous materials (e.g., household hazardous waste, and white goods) from removal of built up or buried debris in the vicinity of the current bridge. Handling and disposal of hazardous materials will be in accordance with local, State and Federal requirements.

4.1 Physical Resources

Ruidoso, New Mexico, tends to be semi-arid with average annual rainfall measuring approximately 22.7 in. (57.7 centimeters [cm]). Most rainfall occurs in August with approximately 4.4 in. (11.2 cm) of precipitation. Maximum average temperatures are in the 80's° Fahrenheit (F) (26.7 - 32.2° Celsius [C]) and average minimum temperature is in the teens (-12.2 - -6.7°C). (IDcide.com 2014)

The proposed project area is located approximately 6,445 ft. above mean sea level (amsl). The existing river channel is a well-defined watercourse approximately 33 ft. wide and ranges from approximately 8 ft. to 10 ft. tall. The channel sidewalls have steep side slopes lined with boulders to prevent erosion.

4.1.1 Geology and Soils

Analysis of soils in the area helps determine if further protection may be required by Federal agencies for prime and unique farmlands. Under the Farmland Protection Policy Act (US Department of Agriculture [USDA] 1981), Federal agencies are required to protect lands with prime or unique farmland distinctions and prevent conversion of these lands for local or nonagricultural use. According to the Natural Resources Conservation Service (NRCS) for New Mexico, soils must be comprised of over 50 percent prime, unique or statewide importance soils to be protected under the Farmland Protection Policy Act (USDA 1981).

4.1.1.1 Affected Environment

Geology: The Ruidoso and Ruidoso Downs areas were created during the Permian Period (290 to 248 million years ago) within Yeso and San Andres Formations consisting of marine limestone, sandstone, and mudstones. (Wilkes 2005)

Soils: The project area consisted of one soil, 7 - Cumulic Haplustolls, gently sloping - mapped by the NRCS Web Soil Survey (USDA 2008b). The Cumulic Haplustolls is defined as gently sloping alluvium derived from igneous and sedimentary rocks, which are found on valley floors. It is located at elevations of 6,300 to 7,100 ft. and slopes are 0 to 8 percent. This soil is classified as well drained and does not pond but occasionally floods. It has a depth of more than 80 in. (203 cm) to a restrictive layer. The available water capacity within this component is low (approximately 5.4 in. [13.7 cm]). The soil is not classified as prime farmlands or a hydric soil (USDA 2008b). The USDA ecological classification that defines this soil is Bottomland (R070CY103NM):

This site occurs in the bottoms of broad major drainageways that receive additional runoff from surrounding uplands on a regular basis. Slopes range from 0 to 3 percent. Direction of slope is not significant. Elevations range from 5,000 to 6,500 ft. above sea level. (USDA 2008a)

4.1.1.2 Environmental Consequences

No Action Alternative: Under the No Action Alternative, the temporary box culvert bridge would remain as the crossing of the Rio Ruidoso. Impact to the geology of the area is not expected under the No Action Alternative. During flood events, debris flowing down the river will continue to collect at the walls of the culverts, impeding water flow. The existing culvert crossing and waterway would continue to have the potential to exacerbate flooding in the project area, leading to overtopping or washout of the temporary box culvert bridge and accelerating embankment erosion.

Proposed Action Alternative: The Proposed Action Alternative will remove the temporary box culvert bridge and replace it with a ConSpan Arch bridge. Impact to the geology of the area is not expected under the Proposed Action Alternative. Short-term adverse effects on soils/sediments from ground disturbances and soil exposure would be expected during construction activities. A SWPPP has been prepared (Zia 2014e), and the Village will enforce it during construction, which will allow the Rio Ruidoso to maintain its cold water fishery classification. Additionally, construction will occur during the lowest flow of water within the Rio Ruidoso. The contractor will be responsible for proper maintenance of construction equipment to eliminate potential impacts to soil resources.

The new bridge design meets the following under the Purpose and Need objective when analyzing geology and soils for the Proposed Action Alternative:

<u>Purpose and Need Objective</u>	<u>How the Proposed Action Alternative meets that objective for this resource</u>
Minimize impacts on connecting roadways and embankments	The proposed bridge will facilitate water flow during flood events to minimize damage to the adjacent roadways and embankments.
Minimize impacts associated with flooding such as soil embankment erosion, overtopping or washout	Flood events have the potential to cause additional erosion damage as well as overtop the embankments and washout the embankment. The ConSpan Arch bridge as well as the stabilization of the embankment will reduce the likelihood of these impacts from occurring.
Allow for unimpeded water flow	Since the ConSpan Arch bridge does not contain any structures under its arch, water can flow unimpeded as well as eliminate debris collecting under it.

4.1.2 Air Quality

The US Environmental Protection Agency (EPA) under the Clean Air Act (CAA) (1970) has established standards for maintaining ambient air quality. Air pollution occurs when pollutant materials exceed the standards set for a region. Air pollution has the capacity to cause physical harm to a human being. Pollutant materials can be broken up into six groups: ozone (O₃), particulate material (PM), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and lead (Pb). Under the CAA, EPA is required to establish a National Ambient Air Quality Standard (NAAQS) (2010) for each of the six pollutant groups (EPA 2010).

Ruidoso, New Mexico lies within EPA Region 6. The New Mexico Environment Department (NMED) Air Quality Bureau (AQB) has created statewide ambient air quality standards (New Mexico Administrative Code [NMAC] 20.2.3, 2002).

4.1.2.1 Affected Environment

The Village of Ruidoso and Ruidoso Downs are in air quality attainment with NMED ABQ and NAAQS.

4.1.2.2 Environmental Consequences

No Action Alternative: Under the No Action Alternative, the temporary box culvert bridge would remain as the crossing of the Rio Ruidoso. Air quality would not change and an increase in traffic volumes or vehicle emissions that would affect air quality is not expected.

Proposed Action Alternative: The Proposed Action Alternative will remove the temporary box culvert bridge and replace it with a ConSpan Arch bridge. Construction activities will create a temporary increase in pollutant emissions due to combustion-related construction equipment usage, demolition, debris removal and earth excavation and movement. Consultation with NMED AQB on November 10, 2014, indicated that the proposed project is not anticipated to contribute negatively to air quality on a long-term basis.

The NMED AQB (2014) recommends applicable local and county regulations requiring noise or dust control and should be followed for the duration of the project. If no regulations are in effect, then dust control measures should be considered to minimize the release of particulates due to vehicular traffic, construction equipment, ground disturbances and dumping of gravel. Dust control measures would include water suppression of loose dust to prevent for the dust to become airborne. Special attention should be paid to fugitive dust minimization during high wind events, especially in the more populated areas. Areas disturbed by construction activities resulting in significant ground disturbance within and adjacent to the project should be reclaimed to avoid long-term problems with soil erosion and fugitive dust. This will involve bringing the project back to pre-construction conditions or better through reseeding of vegetation. Additionally, any asphalt, concrete, quarrying, crushing and screening facilities contracted in conjunction with the proposed project should be current and maintain proper air quality permits.

The new bridge design meets the following under the Purpose and Need objective when analyzing air quality for the Proposed Action Alternative:

Purpose and Need Objective

Minimize impacts on natural resources

How the Proposed Action Alternative meets that objective for this resource

Air quality is affected during the construction process of this alternative. Mitigation measures requested by NMED (2014) would be put into action so as to continue to minimize impacts to natural resources. Dust control measures would include water suppression of loose dust to prevent for the dust to become airborne.

4.1.3 Water Resources

Under the New Mexico Water Quality Act (NMAC 2011) and the Federal Clean Water Act (CWA) (1972), the State of New Mexico is required to adopt water quality standards to “protect the public health or welfare, enhance the quality of water, and are consistent with and serve the purposes of the New Mexico Water Quality Act and the Federal CWA” (NMAC 20.6.4, 2013). NMAC 20.6.4.209 (2013) designates the Rio Ruidoso as a perennial waterway in the Pecos River Basin. Its designated use is for “fish culture, irrigation, livestock watering, wildlife habitat, coldwater aquatic life, and secondary contact.”

The NMED issued conditional Water Quality Certificate for NWP to ensure that the NWPs are consistent with state law, comply with the state Water Quality Standards (New Mexico Administrative Code [NMAC] 20.6.4), the Water Quality Management Plan/Continuing Planning Process, including Total Maximum Daily Loads, and the Antidegradation Policy. Certification is also required to comply with General Condition 25 (Water Quality) and General Condition 27 (Regional and Case-by-Case Conditions) of the NWPs.

Section 404 of the CWA (1972) requires approval from the USACE prior to discharging dredged or fill material into waters of the US. In some cases, dredging and other excavation require approval when there is a discharge that results in more than incidental fallback (40 CFR 232.2(d)(1) [US Government Publishing Office 2011]) of dredged or excavated material. Activities requiring a permit from the USACE under Section 404 of the CWA or Section 10 of the Rivers and Harbors Act of 1899 may be permitted by General Permit or Individual Permit. Nationwide Permits (NWP) are General Permits that are issued nationally, regionally or programmatically to authorize categories of activities that would result in minimal individual and cumulative impacts to the aquatic environment. These permits are valid only if the terms and conditions applicable to the permits are met. If the terms and conditions of a NWP cannot be met, or if the USACE determines that the activity would result in more than minimal impacts, an individual permit would be required. Per consultations with Chris Parrish, USACE Senior Regulatory Project Manager/Archaeologist on August 3, 2015, the Close Road Bridge Project is located in a stretch of the Rio Ruidoso that has been designated as a Critical Resource Water (Special Trout Waters). However, the proposed bridge construction is anticipated to have minimal impacts to the Rio Ruidoso and therefore, a NWP-14 for Linear Transportation Projects will be issued by the USACE. NWP-14 is for the construction, expansion, modification, or improvement of linear transportation projects (e.g., roads, highways, railways, trails, airport runways, and taxiways) in waters of the United States. To qualify for this NWP-14 authorization, the Applicant must comply with the NWP-14 general conditions and any regional conditions, as applicable. Special conditions imposed by the USACE will include:

1. The permittee shall limit the area of disturbance in jurisdictional waters to the maximum extent practicable and should not exceed the limits shown on the permit application drawings. Any requests for modifications of work area limits shall be submitted and approved by the U.S. Army of Engineers (USACE) prior to their implementation. Additionally, the permittee shall clearly flag and/or fence the limits of the work area to avoid inadvertent impacts to the riparian vegetation/wetlands from construction equipment.
2. The permittee shall minimize the potential impact of hydrocarbon spills into the aquatic habitat by daily equipment inspections, refueling outside of the active floodplain, cleaning of equipment prior to entering the project area and keeping spill containment kits onsite during construction.
3. In order to control erosion and sedimentation, the flow diversion channel will be left in its current vegetated state. Furthermore, and depending on existing conditions during construction, it may be necessary to install rock check dams to prevent sedimentation within the adjacent wetland, located just beyond the project area. These structures would need to be regularly inspected and maintained.
4. All temporary structures and/or fills shall be removed in their entirety upon completion of the project.

5. All unsuitable/excess dredged and excavated material shall be removed from the waterway and disposed of at an upland disposal site in a manner to ensure no return or erosion to any waterway or wetland.
6. The Migratory Bird Treaty Act (MBTA) (16 USC 703 through 712) prohibits the taking of migratory birds, nests, and eggs, except as permitted by the U.S. Fish and Wildlife Service (USFWS). To minimize the likelihood of adverse impacts to all birds protected under the MBTA, the permittee shall not conduct construction within the project area during the general migratory bird nesting season of March 15 through August 31. Alternatively, areas within the arroyo (a small steep-sided watercourse or gulch that is usually dry except after heavy rains) proposed for construction during the nesting season shall be surveyed by a qualified biologist, employed by the permittee, immediately prior to construction, survey results shall be provided to the USACE Albuquerque District Office prior to construction, and, if determined necessary by the USACE, construction areas shall be avoided until nesting season is complete. (*Note: Arroyos are not known to exist in the project area*).

4.1.3.1 Affected Environment

The Village of Ruidoso's main surface water is the Rio Ruidoso (Figure 6). The Rio Ruidoso is a 30-mile river whose watershed is primarily within the Lincoln National Forest. The river starts within the Mescalero Apache Reservation and flows through the Sacramento Mountains to the Pecos River. Its headwaters are found near the top of Sierra Blanca Peak at an elevation of 12,300 ft. (3,749 meters [m]) amsl. Tributaries to the Rio Ruidoso within the Village of Ruidoso limits are Carrizo Creek and Cedar Creek. Various other streams feed into the Rio Ruidoso or fork from the Rio Ruidoso. The Rio Ruidoso is a tributary to the Pecos River, which is defined as a jurisdictional water by the US Army Corps of Engineers (USACE). Under the determinations of the USACE, those tributaries that feed into a jurisdictional water are also deemed a jurisdictional water. This means that the Rio Ruidoso is classified as a jurisdictional water. The Rio Ruidoso is also classified as a cold water fishery that supports substantial recreational use in the Village of Ruidoso and surrounding areas.



Figure 6: View of Rio Ruidoso west of Close Road Bridge.

4.1.3.2 Environmental Consequences

No Action Alternative: Under the No Action Alternative, the temporary box culvert bridge would remain as the crossing of the Rio Ruidoso. During flood events, debris flowing down the river will continue to collect at the walls of the culverts, creating an obstacle to aquatic migration. The existing culvert crossing and waterway would continue to have the potential to exacerbate flooding in the project area, leading to

overtopping or washout of the temporary box culvert bridge and accelerate embankment erosion. The collection of debris and sediment at the culverts can negatively influence the natural conditions of the river, such as temperature and pH, which could potentially impact the cold-water fishery designation of Rio Ruidoso.

Proposed Action Alternative: The Proposed Action Alternative will remove the temporary box culvert bridge and replace it with a ConSpan Arch bridge. The Proposed Action Alternative may have short-term adverse effects on water resources from mobilization of sediments and increased turbidity during ground disturbances during construction.

Consultation with NMED Surface Water Quality Bureau (SWQB) on November 10, 2014 indicated that the proposed project will require a NPDES permit, SWPPP. Consultation with the USACE indicated that a Nationwide Permit 14 is appropriate for this project. Conditions of the NPDES permit, SWPPP, and USACE 404 Permits will be followed and these efforts will minimize the potential of construction materials or other construction-related waste to enter the Rio Ruidoso. The contractor will be responsible for proper maintenance of construction equipment in accordance with the SWPPP (Zia 2014e).

The new bridge design meets the following under the Purpose and Need objective when analyzing water resources for the Proposed Action Alternative:

Purpose and Need Objective

Minimize impacts on connecting roadways and embankments

Minimize impacts associated with flooding such as soil embankment erosion, overtopping or washout

Allow for unimpeded water flow

Minimize impact on natural resources

How the Proposed Action Alternative meets that objective for this resource

The proposed bridge will facilitate water flow during flood events to minimize damage to the adjacent roadways and embankments. This will prevent any additional debris and sediment to impact the water quality.

Flood events have the potential to cause additional erosion damage as well as overtop the embankments and washout the embankment. The ConSpan Arch bridge as well as the stabilization of the embankment will reduce the likelihood of these impacts from occurring. This will prevent any additional debris and sediment to impact the water quality.

Since the ConSpan Arch bridge does not contain any structures under its arch, it can facilitate water flow water and will eliminate debris collection under the bridge.

The river quality will be maintained because the proposed project will reduce sediment and debris from entering the Rio Ruidoso.

4.1.4 Water Quality

Under the New Mexico Water Quality Act, NMAC 2011, and the Federal CWA (1972), the State of New Mexico is required to adopt water quality standards to “protect the public health or welfare, enhance the quality of water, and are consistent with and serve the purposes of the New Mexico Water Quality Act and the Federal CWA” (NMAC 20.6.4, 2013). NMAC 20.6.4.209 (2013) designates the Rio Ruidoso as a perennial waterway in the Pecos River Basin. Its designated use is for “fish culture, irrigation, livestock watering, wildlife habitat, coldwater aquatic life, and secondary contact.”

Under the CWA, Section 402 NPDES Construction General Permit (CGP), it is required that stormwater discharges from construction activities (such as clearing, grading, excavation, and stockpiling) do not disturb (or re-disturb) one or more acres, or smaller sites that are part of a larger common plan of developed or sale. The total area of disturbance includes the project construction and temporary staging areas. Prior to discharging stormwater, construction operators must obtain coverage under an NPDES permit. Among other things, this permit requires that a SWPPP be prepared for the site, including support and staging areas, and that appropriate Best Management Practices (BMPs) be installed and maintained both during and after construction to prevent, to the extent practicable, pollutants (primarily sediment, oil and grease and construction materials from constructions sites) in stormwater runoff from entering waters of the US. This permit also requires that permanent stabilization measures, re-vegetation, paving, etc., and permanent stormwater management measures (stormwater detention/retention structures, velocity dissipation devices, etc., be implemented to minimize, in the long term, pollutants in stormwater runoff from entering these waters.

The New Mexico Water Quality Control Commission (WQCC) has designated by the recommendation of the Surface Water Quality Bureau (SWQB) that the Rio Ruidoso is a high quality coldwater fishery (HQCF). A coldwater fishery is defined within NMAC 20.6.4 (2013) as “a surface water of the state where the water temperature and other characteristics are suitable for the support or propagation or both of coldwater aquatic life.” A HQCF is defined as “a perennial surface water of the State in a minimally disturbed condition which has considerable aesthetic value and is a superior coldwater fishery habitat. A surface water of the State to be so categorized must have water quality, stream bed characteristics, and other attributes of habitat sufficient to protect and maintain a propagating coldwater fishery.”

The following protection measures are associated with HQCF (NMAC 20.6.4):

Table 1: HQCF Requirements

Specific Measure	Why it is important
Dissolved oxygen 6.0 milligrams per liter (mg/L) or more	Dissolved oxygen is the amount of oxygen dissolved in a body of water to help indicate the quality water for an aquatic ecosystem. The higher the number of milligrams per liter, the more oxygen there is available to support aquatic life such as fish and/or plants.
4T3 temperature 20°C (68°F), maximum temperature 23°C (73°F)	“4T3 temperature means the temperature not to be exceeded for four or more consecutive hours in a 24-hour period on more than three consecutive days” (NMAC 20.6.4)
pH within the range of 6.6 to 8.8	This pH range allows aquatic plants to thrive so as to be not too acidic or too basic. These levels allow for the plants to uptake the appropriate nutrients from the water for survival.
Specific conductance a segment-specific limit between 300 micro-Siemens per centimeter (µS/cm) and 1,500 µS/cm depending on the natural background in the particular surface water of the State	“the intent of this criterion is to prevent excessive increases in dissolved solids which would result in changes in community structure” (NMAC 20.6.4)

4.1.4.1 Affected Environment

The Village of Ruidoso's main surface water is the Rio Ruidoso. The Rio Ruidoso is a tributary to the Pecos River, which is defined as a jurisdictional water by the USACE. The Rio Ruidoso is also classified as a HQCF that supports substantial recreational use in the Village of Ruidoso and surrounding areas.

4.1.4.2 Environmental Consequences

No Action Alternative: Under the No Action Alternative, the temporary box culvert bridge would remain as the crossing of the Rio Ruidoso. During flood events, debris flowing down the river will continue to collect at the walls of the culverts impeding water flow. The existing culvert crossing and waterway would continue have the potential to exacerbate flooding in the project area, leading to overtopping or washout of the temporary box culvert bridge and accelerating embankment erosion. The collection of debris and sediment at the culverts can negatively influence the natural conditions of the river, such as temperature and pH, which could potentially impact the cold-water fishery designation of Rio Ruidoso.

Proposed Action Alternative: The Proposed Action Alternative will remove the temporary box culvert bridge and replace it with a ConSpan Arch bridge. The Proposed Action Alternative may have short-term adverse effects on water resources from mobilization of sediments and increased turbidity during ground disturbances during construction. Consultation with NMED SWQB on November 10, 2014, indicated that the proposed project would require a NPDES Permit, SWPPP, and a USACE 404 Nationwide Permit. Conditions of the NPDES permit, SWPPP, and USACE 404 Permits and will be followed and these efforts will minimize the potential of construction materials or other construction-related waste to enter the Rio Ruidoso.

The new bridge design meets the following under the Purpose and Need objective when analyzing water resources for the Proposed Action Alternative:

<u>Purpose and Need Objective</u>	<u>How the Proposed Action Alternative meets that objective for this resource</u>
Minimize impacts on connecting roadways and embankments	The proposed bridge will facilitate water flow during flood events to minimize damage to the adjacent roadways and embankments. This will prevent any additional debris and sediment to impact the water quality.
Minimize impacts associated with flooding such as soil embankment erosion, overtopping or washout	The flood events have the potential to cause additional erosion damage as well as overtop and washout the embankments. The ConSpan Arch bridge as well as the stabilization of the embankment will reduce the likelihood of these impacts from occurring. This will prevent any additional debris and sediment to impact the water quality.
Allow for unimpeded water flow	Since the ConSpan Arch bridge does not contain any structures under its arch, it can facilitate water flow water and will eliminate debris collection under the bridge.
Minimize impact on natural resources	By reducing the ability for additional sediment and debris from entering the Rio Ruidoso, the river quality will be sustained.

4.1.5 Wetlands

Wetlands tend to occur in low-lying positions within the landscape and are often associated with hydrologic features such as rivers, lakes, and drainages. Sections 404 and 401 of the CWA (1972) provide for protection of wetlands and jurisdictional waters of the US as defined by the USACE and the EPA. Executive Order 11990 (1977b) was created to “minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands.” As a result, Federal agencies are to consider alternatives that prevent impact to wetlands or minimize damage, if possible. Implementation of Executive Order 11990 (1977b) under FEMA regulations can be found in 44 CFR Part 9: Floodplain Management and Protection of Wetlands (FEMA 2014).

4.1.5.1 Affected Environment

Per the USFWS National Wetland Inventory (NWI) Map (USFWS 2014d), the project area contains classified wetlands as Riverine (the Rio Ruidoso) (Figure 7). The path of the river follows an older stream channel. The river has since moved more north which is a natural evolution of rivers to change flow patterns.

On August 11, 2014, Zia Engineering & Environmental Consultants (Zia) conducted a Wetlands Determination and Delineation Survey (Zia 2014c, Appendix E) for the proposed bridge replacement along the Rio Ruidoso, in Ruidoso, New Mexico. The survey was completed in accordance with the *USACE Wetland Delineation Manual* (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region (Version 2.0)*. (USACE 2010) The area around Close Road Bridge was surveyed for wetlands. In total, eight sample pits were completed. Based on the USACE three-parameter method (hydrophytic plant community, hydric soils, and hydrology) the sample pits on the west side of Close Road identified a high water table, but the water table levels could not sustain water long enough for the soils to become hydric or maintain wetland vegetation. The sample pits located on the east side of Close Road were determined to still be uplands; and a ponding area was determined to be a wetland.

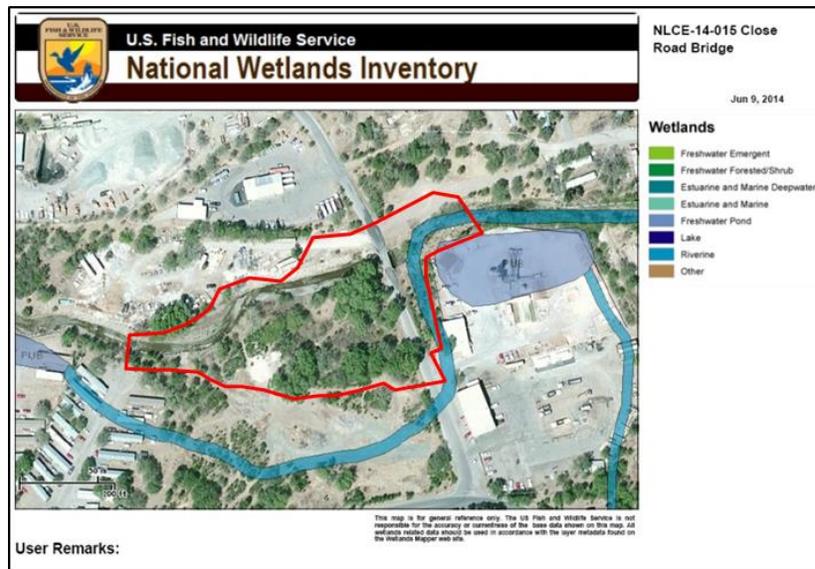


Figure 7: National Wetlands Inventory Map of the Proposed Project Area (USFWS 2014d).

4.1.5.2 Environmental Consequences

No Action Alternative: Under the No Action Alternative, the temporary box culvert bridge would remain as the crossing of the Rio Ruidoso. Direct impacts to wetlands are not expected under the No Action Alternative. During flood events, debris flowing down the river will continue to collect at the walls of the culverts impeding water flow. The existing culvert crossing and waterway would continue to have the potential during flood events to be overtopped or washed out, damage public transportation infrastructure, and accelerate soil embankment erosion.

Proposed Action Alternative: The Proposed Action Alternative will remove the temporary box culvert bridge and replace it with a ConSpan Arch bridge. The Proposed Action Alternative may have short-term adverse effects on the wetland located southeast of the bridge crossing location by an increase in temporary water during construction. The Wetland will not be impacted by additional sedimentation if the conditions of the NPDES permit, USACE 404 Nationwide Permit, and SWPPP (Zia 2014e) are followed. River base flow would be diverted around the construction area by use of a coffer dam and channel or by use of a coffer dam and drainage pipes. The existing culverts under Close Road will be cleared to allow the water to flow naturally under the roadway. The wetlands area in the immediate vicinity of construction will be impacted only by an increase in temporary water during construction. Erosion during construction will be controlled by use of straw-waddles and silt fences to stabilize exposed side slopes. Sediment berms will be used to contain staging and storage areas. Check dams will be used within the river channel to settle sediment that may be conveyed in runoff because of rainfall within the construction area. The new bridge design will minimize the potential for future damage to the public transportation infrastructure, and embankments from flooding and debris, and allow for unimpeded water flow.

The new bridge design meets the following under the Purpose and Need objective when analyzing wetlands for the Proposed Action Alternative:

Purpose and Need Objective

Minimize impacts on connecting roadways and embankments

Minimize impacts associated with flooding such as soil embankment erosion, overtopping or washout

Minimize impact on natural resources

How the Proposed Action Alternative meets that objective for this resource

The proposed bridge will facilitate water flow during flood events to minimize damage to the adjacent roadways and embankments. This will prevent any additional debris and sediment to impact the water quality and associated wetland.

The flood events have the potential to cause additional erosion damage as well as overtop and washout the embankments. The ConSpan Arch bridge as well as the stabilization of the embankment will reduce the likelihood of these impacts from occurring. This will prevent any additional debris and sediment to impact the water quality and associated wetland.

By reducing the ability for additional sediment and debris from entering the Rio Ruidoso, the river quality and associated wetland will be sustained.

4.1.6 Floodplains

Executive Order 11988 (Floodplain Management) (1977a) requires Federal agencies to avoid direct or indirect impact of identified floodplains if a practical alternative is available. The guidelines address the eight-step process that agencies should carry out as part of their decision-making on projects that have potential impacts to or within the floodplain. Flood zones are defined by FEMA as zones of flood risk. These are identified on Flood Insurance Rate Maps (FIRM), which have been created for flood management and flood insurance purposes. The floodplain of concern for this project is the 100-year floodplain. A 100-year floodplain is defined as an area that is prone to flooding with a one-percent chance of flood occurrence any given year.

4.1.6.1 Affected Environment

The proposed project area (Figure 8) is located within Zone AE (35027C2059E) which corresponds to the 1-percent annual-chance floodplains and base elevations are known (FEMA 2013b).

4.1.6.2 Environmental Consequences

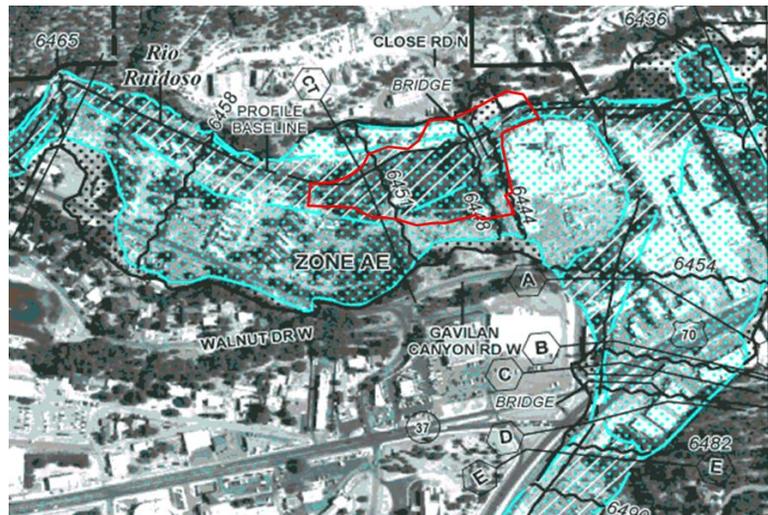


Figure 8: FEMA FIRM of the Proposed Project Area
(FEMA 2013b)

No Action Alternative: Under the No Action Alternative, the temporary box culvert bridge would remain as the crossing of the Rio Ruidoso. During flood events, debris flowing down the river will continue to collect at the walls of the culverts impeding water flow. The existing culvert crossing and waterway would continue to have the potential during flood events to be overtopped or washed out, damage public transportation infrastructure, and accelerate soil embankment erosion. The collection of debris at the culverts will affect the floodplain of the river, which has the potential of impacting the cold-water fishery designation. With the build-up of debris and sediment, the natural conditions of the river, such as temperature and pH, will change. This potentially could impact the HQCF attributes of Rio Ruidoso.

Proposed Action Alternative: The Proposed Action Alternative will remove the temporary box culvert bridge and replace it with a ConSpan Arch bridge. River base flow will be diverted around the construction area by use of a coffer dam and channel or by use of a coffer dam and drainage pipes. The existing culverts under Close Road will be cleared to allow the water to flow naturally under the roadway. The wetlands and floodplain area in the immediate vicinity of construction will be impacted only by an increase in temporary water during construction. Erosion during construction will be controlled by use of straw-waddles and silt fences to stabilize exposed side slopes. Sediment berms will be used to contain staging and storage areas. Check dams will be used within the river channel to settle sediment that may be conveyed in runoff because of rainfall within the construction area.

In October 2014, Zia completed a Drainage Analysis Report for the Close Road Bridge Replacement (Zia 2014d). The objective of this drainage analysis was to complete hydrologic analysis of the upstream watershed to identify the applicable flood frequency design storm peak flow rates at the proposed bridge structure, to design a replacement crossing structure, and modify the existing channels so that they are hydraulically equal or better than the existing temporary bridge. Based on the results of the drainage analysis, and the Executive Order 11988 eight-step process (Table 2), the new bridge design will minimize the potential for future damage to the public transportation infrastructure and embankments from flooding and debris, and allow for unimpeded water flow.

Table 2: FEMA Eight-Step Process

Step Number	Description	How the EA meets the process
1	Determine whether the Proposed Action is located in a wetland and/or the 100-year floodplain, or whether it has the potential to affect or be affected by a floodplain or wetland	The proposed project is located within the 100-year floodplain.
2	Notify public at earliest possible time of the intent to carry out an action in a floodplain or wetland, and involve the affected and interested public in the decision-making process.	Public notices were posted in the local paper and in city offices on September 10, 2014 (Appendix A). A second public notice will be published in the local newspaper and in the city offices as part of the public comment period for the EA.
3	Identify and evaluate practicable alternatives to locating the Proposed Action in a floodplain or wetland.	Due to the nature of the proposed project (bridge construction), there is no feasible alternative to locating the project outside the floodplain. Therefore, the proposed bridge is considered Functionally Dependent per 44 CFR Section 9.4, which means that it cannot fulfill its intended purpose unless it is located in close proximity to water.
4	Identify the full range of potential direct or indirect impacts associated with the occupancy or modification of floodplains and wetlands, and the potential direct and indirect support of floodplain and wetland development that could result from the Proposed Action.	The proposed project will not affect occupancy of nearby areas as it has been designed to maintain the existing hydrology of the floodplain and to facilitate stream flow. No significant changes from existing conditions are anticipated as a result of the proposed project.
5	Minimize the potential adverse impacts from work within floodplains and wetlands (identified under Step 4), restore and preserve the natural and beneficial values served by wetlands.	Both wetlands and floodplains have potential of being impacted; however, each will require mitigation measures to prevent impacts. As part of the preventative measures, impacts to wetlands will be almost negligible because construction will avoid the wetland area. Consultation with the USACE concerning the wetland has been conducted and they concur with the mitigation measures. The proposed project will not increase threats to life and property as it has been designed to maintain the existing hydrology of the floodplain. Currently existing flood levels will not be significantly altered.

Step Number	Description	How the EA meets the process
6	Re-evaluate the Proposed Action to determine: 1) if it is still practicable in light of its exposure to flood hazards; 2) the extent to which it will aggravate the hazards to others; 3) its potential to disrupt floodplain and wetland values.	Mitigation measures stated in Section 5 will reduce impacts to both wetlands and floodplains. The proposed action will not expose any segment of the population or sensitive ecological receptors to increased flood hazard as it has been designed to maintain currently existing conditions within the floodplain. Therefore, it is still practicable to construct the proposed project within the floodplain.
7	If the agency decides to take an action in a floodplain or wetland, prepare and provide the public with a finding and explanation of any final decision that the floodplain or wetland is the only practicable alternative. The explanation should include any relevant factors considered in the decision-making process.	Final notice will be given to the public after the draft EA has been accepted by FEMA and following an initial public comment period. Per 44 CFR 9.12, the final public notice will be published at least 15 days prior to any construction occurring.
8	Review the implementation and post-implementation phases of the Proposed Action to ensure that the requirements of the EOs are fully implemented. Oversight responsibility shall be integrated into existing processes.	The proposed project will be implemented once final approval has been received from all agency stakeholders and the public has been given sufficient time to comment upon the proposed action.

The new bridge design meets the following under the Purpose and Need objective when analyzing floodplains for the Proposed Action Alternative:

Purpose and Need Objective

Minimize impacts on connecting roadways and embankments

How the Proposed Action Alternative meets that objective for this resource

The proposed bridge will facilitate water flow during flood events to minimize damage to the adjacent roadways and embankments. This will prevent any additional debris and sediment to impact the water quality. In addition, the stable embankments will help maintain an intact floodplain.

Minimize impacts associated with flooding such as soil embankment erosion, overtopping or washout

The flood events have the potential to cause additional erosion damage as well as overtop and washout the embankments. The ConSpan Arch bridge as well as the stabilization of the embankment will reduce the likelihood of these impacts from occurring. This will prevent any additional debris and sediment to impact the water quality. In addition, the stable embankments will help maintain an intact floodplain.

Allow for unimpeded water flow

Since the ConSpan Arch bridge does not contain any structures under its arch, water can flow unimpeded as well as eliminate debris collecting under it.

Minimize impact on natural resources

The stable embankments will help maintain an intact floodplain.

4.2 Biological Resources

4.2.1 Threatened and Endangered Species and Critical Habitat

The Bald and Golden Eagle Protection Act (16 U.S.C. 668), enacted in 1940, and last amended 1972, provides for the protection of the bald eagle and the golden eagle by prohibiting, except under certain specified conditions, the taking, possession, and commerce of such birds. The 1972 amendments increased penalties for violating provisions of the Act or regulations issued pursuant thereto and strengthened other enforcement measures. Rewards are provided for information leading to arrest and conviction of violation of the Act.

Under the Endangered Species Act of 1973 (USFWS 1973), the New Mexico Wildlife Conservation Act of 1978 (New Mexico Statutes Annotated [NMSA] 1978), and other agency regulations, threatened, endangered, and sensitive (TES) species are subject to protection from impacts associated with construction projects. Protection varies depending upon the State or Federal listing status of each species. An endangered listing provides Federal and/or State protection for any species in danger of extinction throughout all or a significant portion of their range. A threatened listing provides protection for species that are likely to become endangered within the foreseeable future through all or a significant portion of their range. The “take” of federally listed or State-listed endangered or threatened species may result in fines and imprisonment if the action occurs without appropriate permits.

Federal Species of Concern (SOC) are included for planning purposes only and include taxa for which further information is needed to resolve their conservation status. Federal SOC are often also listed by the State or other agencies as Sensitive or SOC. Sensitive species are those for which an agency (New Mexico Department Game and Fish [NMDGF], US Forest Service [USFS], USFWS, New Mexico Rare Plant Technical Council [NMRPTC]) has conservation concerns and recommends avoidance of unnecessary impacts to the species on lands managed by that agency.

Legal protection does not extend to SOC or sensitive species, but failure to consider those species in project planning may result in project delays. Protection is warranted only to keep the population from becoming legally listed as threatened or endangered. Extirpated species (as identified by USFWS and NMDGF) are no longer known to occur in areas that they previously inhabited, but in some cases may actually occur or there is potential to re-establish them. Candidate species are those for which data has been presented to USFWS in support of their being listed as threatened or endangered, but the process of listing has not yet gone to completion, or is on hold for various reasons. USFWS, NMDGF, and New Mexico Energy, Minerals, and Natural Resources Department (NMEMNRD) Forestry Division were consulted regarding the proposed project.

4.2.1.1 Affected Environment

On April 25, 2014, Zia conducted a biological survey, for the proposed bridge replacement (Zia 2014a). The project area comprised of approximately 2.5 acres (1.0 hectares) of private lands that encompass the existing Close Road temporary bridge and surrounding area.

Zia reviewed Federal and State lists of threatened, endangered, candidate and sensitive wildlife protected under the ESA and the Bald and Golden Eagle Act (1940) known to occur in Lincoln County to identify species that could be affected by project activities (NMDGF 2014a, USFWS 2014b, NMRPTC 1999). Those having potentially suitable habitat or known presence within the project area are analyzed below. The project area is not located within a mapped or known critical habitat area (USFWS 2014c). However, the *Strix occidentalis lucida* (Mexican spotted owl) critical habitat area is located approximately 4.57 miles (7.35 kilometer [km]) west of the project area.

Plant Species: Of the plants listed for Lincoln County, no threatened and endangered plant species were identified during the pedestrian survey. This list includes *Echinocereus fendleri var. kuenzleri* (Kuenzler Hedgehog Cactus). The habitat within and immediately adjacent to the project area did not appear to be suitable for any other federally or State listed endangered or threatened plant species that may occur in Lincoln County.

Wildlife Species: The project area contained suitable habitat for the following New Mexico sensitive wildlife species: *Corynorhinus townsendii pallescens* (pale Townsend's big-eared bat), *Myotis ciliolabrum* (western small-footed myotis bat), *Myotis thysanodes* (fringed myotis bat), *Myotis velifer* (cave myotis), *Myotis volans* (long-legged myotis bat), *Myotis occultus* (Arizona myotis bat), and the *Myotis yumanensis* (Yuma myotis bat). None of these species were identified during the pedestrian survey. Impact to these species is not expected to occur from the proposed action. The habitat in the survey area did not appear suitable for any other federally or State listed endangered or threatened wildlife species that may occur in Lincoln County.

Habitats within the proposed action areas were compared with those associated with TES species listed for Lincoln County. This list includes *Tamias minimus atristriatus* (Penasco Least Chipmunk), Mexican Spotted Owl, *Falco femoralis septentrionalis* (Northern Aplomado Falcon), and *Empidonax traillii extimus* (Southwestern Willow Flycatcher). TES species were not observed within the proposed project area. Based on the current land use, the proposed project scope of work, and the surveys conducted by Zia, FEMA has determined that there will be no effect on any of the federally listed and endangered species or their associated critical habitat.

4.2.1.2 Environmental Consequences

No Action Alternative: Under the No Action Alternative, the temporary box culvert bridge would remain as the crossing of the Rio Ruidoso. During flood events, debris flowing down the river will continue to collect at the walls of the culverts, creating an obstacle to aquatic migration and accelerating stream embankment erosion. The existing culvert crossing and waterway would continue to have the potential during flood events to be overtopped or washed out, damage public transportation infrastructure, and accelerate soil embankment erosion. The influx of water in the area has the potential of altering the landscape and habitats. Habitats for TES species may be negatively impacted during flood events from the debris flowing down the river and collecting at the walls of the culverts.

Proposed Action Alternative: The Proposed Action Alternative will remove the temporary box culvert bridge and replace it with a ConSpan Arch bridge. The Proposed Action Alternative has the potential for short-term effects if construction occurs between mid-October and late-November when the brown trout spawn. The alternative has positive long-term effect on aquatic species; as debris would no longer build up along culvert walls resulting in an obstruction to aquatic migration.

USFWS Information, Planning and Conservation System (IPaC) database (USFWS 2014b) and personal communication with Mr. Wally Murphy [USFWS 2014a] regarding USFWS New Mexico Ecological Services Field Office [NMESFO] consultation policy indicated that the project area contained suitable habitat for the following New Mexico sensitive wildlife species: pale Townsend's big-eared bat, western small-footed myotis bat, fringed myotis bat, cave myotis, long-legged myotis bat, Arizona myotis bat, and the Yuma myotis bat. None of these species were identified during the pedestrian survey. Negative impact to these species is not expected to occur from the proposed action. Construction activities would occur during daylight hours, which are outside of the bats' normal foraging time. In addition, the proposed construction could result in habitat enhancement for these species, as the ConSpan Arch culvert has an overhang area within the roof of the arch pipe.

Consultations with NMDGF (2014b) provided copies of New Mexico Wildlife of Concern List. NMDGF supports the replacement as it would facilitate fish movement through Rio Ruidoso. (Appendix A).

Consultation with NMDGF Fisheries Department (NMDGF 2014c) between September 22, 2014, and October 3, 2014, indicated that wild trout species in the Rio Ruidoso is brown trout (Appendix A). Brown trout spawn during the fall from about middle October to late November, which would impact the spawning periods due to the increased water turbidity/silt loading. The Village will follow the NMDGF recommendations with the use of sediment control methods to reduce impacts to trout eggs and the monitoring this reach when the water is diverted and move any trapped fish back into the main wetted river channel.

Consultations with NMEMNRD Forestry Division (October 8, 2014) (Appendix A) indicated that there were no known endangered plant species within the proposed project area. *Cirsium wright* (marsh thistle) and *Cirsium vinaceum* (Sacramento Mountain thistle) may occur in the area. Neither species was identified during the pedestrian survey. Suitable habitat for either species was not noted within the project area; therefore, it is not anticipated that these species would be affected.

Some trees within the immediate vicinity of the proposed construction would be impacted by either removal of limbs or removal of the entire tree. Removal will be minimized to only those trees as required to allow for the installation of the new bridge. The number of trees that will be removed will be determined at time of construction. To minimize the likelihood of adverse impacts to all birds protected under the MBTA, the permittee shall not conduct construction within the project area during the general migratory bird nesting season of March 15 through August 31. Alternatively, areas proposed for construction during the nesting season shall be surveyed by a qualified biologist, employed by the permittee, immediately prior to construction, survey results shall be provided to the USACE Albuquerque District Office prior to construction, and, if determined necessary by the USACE,

construction areas shall be avoided until nesting season is complete. The new bridge design will minimize the potential for future damage to the public transportation infrastructure and embankments from flooding and debris, and allow for unimpeded water flow.

The Applicant will be responsible for coordinating with state agencies regarding state listed species during the proposed bridge construction.

The new bridge design meets the following under the Purpose and Need objective when analyzing biological resources for the Proposed Action Alternative:

Purpose and Need Objective

Allow for unimpeded water flow

How the Proposed Action Alternative meets that objective for this resource

The brown trout will not be impacted by the build-up of debris. This will allow them to migrate under the bridge without any obstructions.

Minimize impact on natural resources

The river quality has the ability to be maintained by reducing the ability for additional sediment and debris from entering the Rio Ruidoso.

4.3 Cultural Resources

4.3.1 Cultural & Historical Properties

Section 106 of the National historic Preservation Act (NHPA, as amended, and implemented by 36 CFR Part 800), requires Federal agencies to consider the effects of their actions on historic properties and provide the State Historic Preservation Office (SHPO) an opportunity to comment on Federal projects prior to implementation. Historic properties are those included in or eligible for inclusion in the Nations Register of Historic Places (NRHP), and may include archaeological sites, buildings, structures, sites, objects, and districts. The Area of Potential Effect (APE) of the federal undertaking is the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist. The APE for this project has been identified Figure 3.

The New Mexico Historic Preservation Division (NMHPD) which houses the SHPO is mandated to follow both federal and state laws for archaeological, historic, and traditional resources within New Mexico depending on the funding agency or land ownership. It is through the SHPO that regulations are enforced for all activities.

This project would include the removal and replacement of the existing box culvert bridge. The new bridge will be a pre-fabricated Con Span Arch Bridge System, approximately 48-feet wide and 60-feet long. The bridge will have gabion basket walls with wire tied riprap that ranges from 4.5 ft. to 9 ft. wide and 15 ft. tall on all sides. 10 ft. X 13 ft. concrete wing walls will be installed at the bridge abutments on both sides. Channel modifications and bank stabilization will extend approximately 175-feet upstream and 225-feet downstream of the new crossing structure. Approximately 75-feet of the channel length modified upstream of the crossing structure will have a rectangular cross-section with a constant bottom width of 60-feet with a height of 9-feet on both sides. Approximately 100-feet of the channel length modified upstream of the crossing will have a trapezoidal cross-section with a bottom width that

varies from 27-feet to 60-feet with heights of approximately 11-feet on the north side and 8-feet on the south side. The bridge footings will be replaced within the footprint of their original location with a maximum depth for ground disturbance of 18 feet.

A review of the known cultural resources in proximity to the proposed project site has been conducted. The NRHP (<http://www.nps.gov/nr/>) and the New Mexico Cultural Resource Information System (NMCRIS) were used for this records review. No historic properties or archaeological resources were identified within close proximity to the project area.

4.3.1.1 Affected Environment

On April 25, 2014, a cultural resources survey was conducted Zia, for the proposed bridge replacement (Zia 2014b). The project area comprises of approximately 2.5 acres (1.0 hectares) of private lands that encompass the existing Close Road temporary bridge and surrounding land. No archaeological sites or isolated occurrences were documented as a result of this survey. Based on the lack of cultural resource and the disturbed soil contexts, it was recommended that the project proceed with no impact to cultural resources. More detailed discussion are included in Appendix D.

Based on the results of the research performed including archival research, a review of recent aerial photography, an analysis of topographic and geological characteristics associated with the APE, and the survey conducted for the identification of previously unknown resources, FEMA has made a determination of No Historic Properties Affected. Consultation with the New Mexico SHPO and five Tribes was initiated on March 09, 2015. The following Tribes were contacted, Pueblo of Isleta, Kiowa Indian Tribe of Oklahoma, Mescalero Apache Tribe, and Ysleta del Sur Pueblo. No response was received from four of the Tribes concerning the project. Only the Comanche Nation responded with concurrence on March 10, 2015. SHPO Concurrence for this determination was received on April 8, 2015 (Appendix A).

4.3.1.2 Environmental Consequences

No Action Alternative: No construction or ground disturbing activities would occur and no cultural (historic or archaeological) resources would be affected.

Proposed Action Alternative: As there are no archaeological sites registered within or directly adjacent to the APE, and no historic properties located within or adjacent to the APE, no impacts to archaeological or cultural resources are anticipated. Concurrence from one Tribe was received on March 10, 2015. The New Mexico SHPO communicated their concurrence on April 8, 2015.

This undertaking will include the following condition should an inadvertent discovery occur: In the event that archeological deposits, including any Native American pottery, stone tools, bones, or human remains, are uncovered, the project shall be halted and the Applicant shall stop all work immediately in the vicinity of the discovery and take reasonable measures to avoid or minimize harm to the finds. All archeological findings will be secured and access to the sensitive area restricted. If unmarked graves or human remains are present on private or state land, compliance with the New Mexico Cultural

Properties Act (Article 18, Section 6, Subsection 11.2 (18-6-11.2), NMSA 1978, also known as the Unmarked Burial Statute is required. The Office of Emergency Management (OEM) will require the Applicant to stop work immediately in the vicinity of the discovery. OEM will immediately notify FEMA, and law enforcement agencies of the discovery, which shall notify the Office of the Medical Investigator (OMI) and the SHPO. To determine if the remains are associated with a crime scene or the archaeology of the site, OMI shall evaluate the remains for medicolegal significance with minimal disturbance of the remains. OMI will terminate the discovery of any non-medicolegal human remains to the SHPO, who shall proceed pursuant to the Unmarked Burial Statute and its implementing regulations found at 4.10.11 NMAC. Pursuant of CFR of 36 CFR part 800.2(c)(2)(i), FEMA will also contact all appropriate tribes.

The new bridge design meets the following under the Purpose and Need objective when analyzing cultural resources for the Proposed Action Alternative:

Purpose and Need Objective

Minimize impacts associated with flooding such as soil embankment erosion, overtopping or washout.

How the Proposed Action Alternative meets that objective for this resource

Flood events have the potential to cause additional erosion damage as well as overtop the embankments and washout the embankment. The ConSpan Arch bridge as well as the stabilization of the embankment will reduce the likelihood of these impacts from occurring and will help prevent archaeological artifacts being exposed along the stream.

Minimize impacts on cultural resources

Flood events have the potential to cause additional erosion damage as well as overtop the embankments and washout the embankment. The ConSpan Arch bridge as well as the stabilization of the embankment will reduce the likelihood of these impacts from occurring and will help prevent archaeological artifacts being exposed along the stream.

4.4 Socioeconomic Resources

4.4.1 Environmental Justice

In 1994, President Clinton signed Executive Order 12898 that mandates Federal agencies to assess environmental justice for the proposed actions as part of their mission. Executive Order 12898 (1994) tasks agencies to identify and address adverse health effects on minority and low-income communities due to a proposed action and ensures public involvement and access to information concerning any proposed action.

4.4.1.1 Affected Environment

According to US Census Bureau QuickFacts data (US Census Bureau 2015), the Village has a population of 8,027 individuals and a median household income (2008-2013) of \$47,379. Minorities make up approximately 32.1% of the population and persons living below poverty level are estimated at 12.0%.

Based on a review of the EPA EJView (EPA 2013), the population within the proposed project area is between 0 and 40 persons, with minorities making up 20-30%. Persons living below the poverty levels are estimated between 10-20%.

4.4.1.2 Environmental Consequences

No Action Alternative: Under the No Action Alternative, the temporary box culvert bridge would remain as the crossing of the Rio Ruidoso. During flood events, debris flowing down the river will continue to collect at the walls of the culverts impeding water flow. The general public could be denied access due to temporary road failure, which in turn could result in undue economic hardship for the community. Eventually, the project area would be washed away due to ongoing erosion and would result in permanent road closure. There would be no disproportionately high or adverse impact on minority or low-income portions of the population; all populations would continue to be equally affected.

Proposed Action Alternative: The Proposed Action Alternative will remove the temporary box culvert bridge and replace it with a ConSpan Arch bridge. The community would have a bridge is not susceptible to failure due to a flooding event and that would be accessible and beneficial to all members of the community. There will be no disproportionately high or adverse impact on minority or low-income portions of the populations; all populations will benefit from this project.

The new bridge design meets the following under the Purpose and Need objective when analyzing Environmental Justice resources for the Proposed Action Alternative:

Purpose and Need Objective

Minimize the potential for future damage to the public transportation infrastructure from flooding and debris

Minimize impacts on connecting roadways and embankments

How the Proposed Action Alternative meets that objective for this resource

All populations will benefit from the proposed bridge that will facilitate water flow during flood events to minimize damage to the adjacent roadways.

All populations will benefit from the proposed bridge that will facilitate water flow during flood events to minimize damage to the adjacent roadways.

4.4.2 Traffic

4.4.2.1 Affected Environment

The Close Road temporary bridge is owned and maintained by the Village and is located along an approximate 0.25-mile paved two-lane roadway. Close Road services the Village Solid Waste Department, construction yard and residences. Downstream from Close Road is Freidan Bloom Drive, which is the only other accessible bridge for these individuals.

4.4.2.2 Environmental Consequences

No Action Alternative: Under the No Action Alternative, the temporary box culvert bridge would remain as the crossing of the Rio Ruidoso. During flood events, debris flowing down the river will continue to collect at the walls of the culverts impeding water flow. The existing culvert crossing and waterway would continue to have the potential, during flood events to be overtopped or washed out, damage public transportation infrastructure, and accelerate soil embankment erosion.

Additionally, should the existing temporary structure fail the Village Solid Waste Department, construction yard, and residences north of Close Road will not be accessible during the winter months, as the roadway from Freidan Bloom Drive, is not maintained and often not passable due to snow, and mud.

Proposed Action Alternative: The Proposed Action Alternative will remove the temporary box culvert bridge and replace it with a ConSpan Arch bridge. The proposed action would temporarily disrupt local access on Close Road, including temporary road closures and traffic diversions, likely to Freidan Bloom Drive. Limited access to surrounding businesses and residences would be maintained at all times; therefore, impacts are expected to be temporary and minor.

The contractor would be responsible for determining a traffic control and reroute plan. Construction will take place during normal business hours. Construction activities will not be conducted between 10:00 PM and 7:00 AM so as not to disturb local residents. The new bridge design will minimize the potential for future damage to the public transportation infrastructure and embankments from flooding and debris and allow for unimpeded water flow.

The new bridge design meets the following under the Purpose and Need objective when analyzing traffic for the Proposed Action Alternative:

<u>Purpose and Need Objective</u>	<u>How the Proposed Action Alternative meets that objective for this resource</u>
Minimize the potential for future damage to the public transportation infrastructure from flooding and debris	All populations will benefit from the proposed bridge that will facilitate water flow during flood events to minimize damage to the adjacent roadways.
Minimize impacts on connecting roadways and embankments	All populations will benefit from the proposed bridge that will facilitate water flow during flood events to minimize damage to the adjacent roadways.

4.5 Summary Table

Table 3 summarizes, by resource topic, potential impacts associated with implementation of the alternatives.

Table 3: Summary of Potential Impacts and Mitigations Measures

Affected Environment/ Resource Area	No Action Alternative	Proposed Action Alternative	Mitigation Measures
Physical Resources			
Geology and Soils	The existing culvert crossing and waterway would continue to have the potential during flood events to be overtopped or washed out, damage public transportation infrastructure, and accelerate soil embankment erosion.	Short-term adverse effects on soils/sediments from ground disturbances and soil exposure.	A SWPPP (Zia 2014e) will be enforced by the Village during construction. Construction will take during the lowest flow of water within the Rio Ruidoso. The contractor will be responsible for proper maintenance of construction equipment.

Affected Environment/ Resource Area	No Action Alternative	Proposed Action Alternative	Mitigation Measures
Air Quality	No effect on air quality.	Short-term adverse effects, construction activities will create a temporary increase in pollutant emissions due to combustion-related construction equipment usage, demolition, debris removal and earth excavation and movement.	Applicable local and county regulations and/or project specific dust control measures should be followed. Dust control measures would include water suppression of loose dust to prevent for the dust to become airborne. Special attention should be paid to fugitive dust minimization during high wind events. Areas resulting in significant ground disturbance by construction activities will be reclaimed. This will involve bringing the project back to pre-construction conditions or better through reseeding of vegetation. Asphalt, concrete, quarrying, crushing and screening facilities contracted will have proper air quality permits.
Affected Environment/ Resource Area	No Action Alternative	Proposed Action Alternative	Mitigation Measures
Water Resources			
Water Resources	Adverse effect on water resources from debris impeding water flow. May also impact the cold water fishery status the Rio Ruidoso.	Short-term adverse effects on water resources from mobilization of sediments and increased turbidity during ground disturbances during construction.	Conditions of the NPDES, SWPPP (Zia 2014e), and USACE 404 General Permits as well as BMPs will be followed. The contractor will be responsible for proper maintenance of construction equipment in accordance with the SWPPP (Zia 2014e).
Water Quality	Adverse effect on water quality from debris impeding water flow. May also impact the cold water fishery status the Rio Ruidoso.	Short-term adverse effects on water quality from mobilization of sediments and increased turbidity during ground disturbances during construction.	
Wetlands	No effects on wetlands.	Short-term adverse effects on the wetland located southeast of the bridge crossing location by an increase in temporary water during construction. Wetlands will not be impacted by additional sedimentation.	
Floodplains	The existing culvert crossing and waterway would continue to have the potential during flood events to be overtopped or washed out, damage public transportation infrastructure, and accelerate soil embankment erosion.	Short-term adverse effects to hydrologic conditions in the Rio Ruidoso and surrounding areas such as ground disturbances during construction.	

Affected Environment/ Resource Area	No Action Alternative	Proposed Action Alternative	Mitigation Measures
Biological Resources			
<p>Threatened and Endangered Species and Critical Habitat, Including Wildlife and Fish</p>	<p>Impacts to TES species and/or their habitats may occur from a build-up of debris at the walls of the culverts during high flow events.</p> <p>Adverse effect on wildlife and fishes from debris impeding water flow.</p> <p>During flood events, debris flowing down the river will continue to collect at the walls of the culverts, creating an obstacle to aquatic migration.</p> <p>May also impact the cold-water fishery status the Rio Ruidoso.</p>	<p>No effect on threatened and endangered species or critical habitats.</p> <p>Potential short-term effects on fishes if construction happened mid-October through late-November when brown trout spawn.</p> <p>Positive long-term effect on aquatic species as debris would no longer build up along culvert walls.</p>	<p>The NMDGF Bridge and Road Construction/ Reconstruction Guidelines for Wetland and Riparian Areas (NMDGF 2012) will be followed.</p> <p>Trenching guidelines provided by the NMDGF will be followed (NMDGF 2003).</p> <p>Bridge construction will not take place between the middle of October and late November (brown trout spawning period) and sediment control methods to reduce impacts to trout eggs.</p> <p>Monitoring will be conducted in the dewatered reach of the Rio Ruidoso while the water is diverted during construction. The fish caught will be transported back into the main wetted river channel.</p> <p>To minimize the likelihood of adverse impacts to all birds protected under the MBTA, the permittee shall not conduct construction within the project area during the general migratory bird nesting season of March 15 through August 31. Alternatively, areas proposed for construction during the nesting season shall be surveyed by a qualified biologist, employed by the permittee, immediately prior to construction, survey results shall be provided to the USACE Albuquerque District Office prior to construction, and, if determined necessary by the USACE, construction areas shall be avoided until nesting season is complete.</p> <p>The Applicant will be responsible for coordinating with state agencies regarding state listed species during the proposed bridge construction.</p>

Affected Environment/ Resource Area	No Action Alternative	Proposed Action Alternative	Mitigation Measures
Cultural Resources			
<p>Cultural Resources</p>	<p>No construction or ground disturbing activities would occur and no cultural (historic or archaeological) resources would be affected.</p>	<p>As there are no archaeological sites registered within or directly adjacent to the APE, and no historic properties located within or adjacent to the APE, no impacts to archaeological or cultural resources are anticipated. Concurrence from one Tribe was received on March 10, 2015. The New Mexico SHPO communicated their concurrence on April 8, 2015.</p>	<p>In the event that archaeological deposits, including any Native American pottery, stone tools, bones, or human remains, are uncovered, the project shall be halted and the Applicant shall stop all work immediately in the vicinity of the discovery and take reasonable measures to avoid or minimize harm to the finds. All archaeological findings will be secured and access to the sensitive area restricted. If unmarked graves or human remains are present on private or state land, compliance with the New Mexico Cultural Properties Act (Article 18, Section 6, Subsection 11.2 (18-6-11.2), NMSA 1978, also known as the Unmarked Burial Statute is required. The Office of Emergency Management (OEM) will require the Applicant to stop work immediately in the vicinity of the discovery. OEM will immediately notify FEMA, and law enforcement agencies of the discovery, which shall notify the Office of the Medical Investigator (OMI) and the SHPO. To determine if the remains are associated with a crime scene or the archeology of the site, OMI shall evaluate the remains for medicolegal significance with minimal disturbance of the remains. OMI will terminate the discovery of any non-medicolegal human remains to the SHPO, who shall proceed pursuant to the Unmarked Burial Statute and its implementing regulations found at 4.10.11 NMAC. Pursuant of CFR of 36 CFR part 800.2(c)(2)(i), FEMA will also contact all appropriate tribes.</p>

Affected Environment/ Resource Area	No Action Alternative	Proposed Action Alternative	Mitigation Measures
Socioeconomic Resources			
Environmental Justice	The general public could be denied access due to temporary road failure, which in turn could result in undue economic hardship for the community. Eventually, the project area would be washed away due to ongoing erosion and would result in permanent road closure. There would be no disproportionately high or adverse impact on minority or low-income portions of the population; all populations would continue to be equally affected.	The community would have a bridge is not susceptible to failure due to a flooding event and that would be accessible and beneficial to all members of the community. There will be no disproportionately high or adverse impact on minority or low-income portions of the populations; all populations will benefit from this project.	A traffic control and reroute plan will be designed and implemented. Construction will take place during normal business hours Construction activities will not be conducted between 10:00 PM and 7:00 AM so as not to disturb local residents.
Traffic	Residences will be impacted if the temporary bridge structure fails, and traffic is diverted to Friedan Bloom Drive. The bridge at Friedan Bloom Drive is not accessible the entire year. Impacts will be greater if both bridges are inaccessible.	Short-term adverse effect including the temporarily disruption to local access on Close Road, including temporary road closures and traffic diversions.	Limited access to surrounding businesses and residences would be maintained at all times.

5 CUMULATIVE IMPACTS

Cumulative impacts are the impacts on the environment that result from the incremental impact of an action when added to other past, present, and reasonable foreseeable future actions, regardless of what agency (Federal or Non-Federal) person undertakes such actions. Cumulative impact can result from individually minor, but collectively significant, actions taking place over a period of time. The Village has no other projects in process or planned in the area of Close Road Bridge. Therefore, no Cumulative Impacts are anticipated.

6 MITIGATION MEASURES AND NWP-14 PERMIT CONDITIONS

The Village and their contractors will adhere to Federal, State, and County regulations; permits and approval conditions; agency conservation measures; and BMPs for the design, construction, and long-term maintenance of the proposed project, including, but not limited to the following mitigations measures:

A. Environmental Assessment Mitigation Measures

1. A SWPPP has been prepared and the Village will enforce it during construction, which will allow the Rio Ruidoso to maintain its HQCF classification. Additionally, construction will occur during the lowest flow of water within the Rio Ruidoso.

2. The contractor will be responsible for proper maintenance of construction equipment to eliminate potential impacts to soil and water resources.
3. Applicable local and county regulations and/or project specific dust control measures will be followed. Special attention will be paid to fugitive dust minimization during high wind events.
4. Areas resulting in significant ground disturbance by construction activities will be reclaimed. This will involve bringing the project back to pre-construction conditions or better through reseeded of vegetation.
5. Asphalt, concrete, quarrying, crushing and screening facilities contracted will have proper air quality permits.
6. The NMDGF Bridge and Road Construction/ Reconstruction Guidelines for Wetland and Riparian Areas will be followed to minimize impacts to aquatic, riparian, and wetlands habitats.
7. Regardless of the population status for wildlife species, the contractor will follow NMDGF Trenching Guidelines to minimize wildlife impacts.
8. Per NMDGF recommendations, the bridge construction will not to take place between the middle of October and late November (brown trout spawning period) and the contractor will use BMPs to reduce impacts to trout eggs. Monitoring will be conducted in the dewatered reach of the Rio Ruidoso while the water is diverted during construction. Caught fish will be transported back into the main wetted river channel.
9. The Applicant will be responsible for coordinating with state agencies regarding state listed species during the proposed bridge construction.
10. In the event that archaeological deposits, including any Native American pottery, stone tools, bones, or human remains, are uncovered, the project shall be halted and the Applicant shall stop all work immediately in the vicinity of the discovery and take reasonable measures to avoid or minimize harm to the finds. All archeological findings will be secured and access to the sensitive area restricted. If unmarked graves or human remains are present on private or state land, compliance with the New Mexico Cultural Properties Act (Article 18, Section 6, Subsection 11.2 (18-6-11.2), NMSA 1978, also known as the Unmarked Burial Statute is required. The Office of Emergency Management (OEM) will require the Applicant to stop work immediately in the vicinity of the discovery. OEM will immediately notify FEMA, and law enforcement agencies of the discovery, which shall notify the Office of the Medical Investigator (OMI) and the SHPO. To determine if the remains are associated with a crime scene or the archeology of the site, OMI shall evaluate the remains for medicolegal significance with minimal disturbance of the remains. OMI will terminate the discovery of any non-medicolegal human remains to the SHPO, who shall proceed pursuant to the Unmarked Burial Statute and its implementing regulations found at 4.10.11 NMAC. Pursuant of CFR of 36 CFR part 800.2(c)(2)(i), FEMA will also contact all appropriate tribes.

11. Construction will take place during normal business hours and will not operate between 10:00 PM and 7:00 AM, so as to minimize disturbance to residents. The contractor will be responsible for determining a traffic control and reroute plan.
12. The Applicant must ensure that the work complies with the terms and conditions of the NWP14 Permit, including the New Mexico Regional Conditions, conditions of the Water Quality Certification, and the special condition(s) listed below.

B. NWP-14 Permit Special Conditions

1. The permittee shall limit the area of disturbance in jurisdictional waters to the maximum extent practicable and should not exceed the limits shown on the permit application drawings. Any requests for modifications of work area limits shall be submitted and approved by the USACE prior to their implementation. Additionally, the permittee shall clearly flag and/or fence the limits of the work area to avoid inadvertent impacts to the riparian vegetation/wetlands from construction equipment.
2. The permittee shall minimize the potential impact of hydrocarbon spills into the aquatic habitat by daily equipment inspections, refueling outside of the active floodplain, cleaning of equipment prior to entering the project area and keeping spill containment kits onsite during construction.
3. In order to control erosion and sedimentation, the flow diversion channel will be left in its current vegetated state. Furthermore, and depending on existing conditions during construction, it may be necessary to install rock check dams to prevent sedimentation within the adjacent wetland, located just beyond the project area. These structures would need to be regularly inspected and maintained.
4. All temporary structures and/or fills shall be removed in their entirety upon completion of the project.
5. All unsuitable/excess dredged and excavated material shall be removed from the waterway and disposed of at an upland disposal site in a manner to ensure no return or erosion to any waterway or wetland.
6. The Migratory Bird Treaty Act (MBTA) (16 USC 703 through 712) prohibits the taking of migratory birds, nests, and eggs, except as permitted by the USFWS. To minimize the likelihood of adverse impacts to all birds protected under the MBTA, the permittee shall not conduct construction within the project area during the general migratory bird nesting season of March 15 through August 31. Alternatively, areas within the arroyo proposed for construction during the nesting season shall be surveyed by a qualified biologist, employed by the permittee, immediately prior to construction, survey results shall be provided to the USACE Albuquerque District Office prior to construction, and, if determined necessary by the USACE, construction areas shall be avoided until nesting season is complete.
(Note: Arroyos are not known to exist in the project area).

7 AGENCY COORDINATION, PUBLIC INVOLVEMENT AND PERMITS

7.1 Agency Coordination

Agency	Date of Response	Name of Individual who responded	Title
NMDGF Conservation Division	01 October 2014	Mark L. Watson	Terrestrial Habitat Specialist
NMDGF	30 October 2014	Eric Frey	Fisheries Biologist
NMED	10 November 2014	Morgan R. Nelson	Environmental Impact Review Coordinator
NMEMNRD NM Forestry Division	06 October 2014	Danella Roth	Botany Program Coordinator
SHPO	08 April 2015	Jeff Pappas	State Historic Preservation Officer
THPO	10 March 2015	Jimmy Arterberry,	Comanche Nation THPO
NMEMNRD Mining & Minerals Division	No Response		
NMEMNRD New Mexico State Parks	No Response		
NRCS	No Response		
EPA Region 6	No Response		
USFWS	08 October 2014 (personal communication)	Wally Murphy	NMESFO Supervisor
USACE	04 August 2015 (most recent date of multiple consultations)	Chris Parrish	Senior Regulatory Project Manager/Archaeologist

7.2 Public Involvement

FEMA is the lead agency for ensuring environmental compliance for the proposed Close Road Bridge Replacement in Ruidoso. It is the goal of the lead agency to be responsive to the needs of the community and the purpose and need of the proposed action, while meeting the intent of Federal environmental and cultural resource laws, including NEPA, and complying with all necessary provisions.

The Village has notified the public that it is in the process of planning the engineering and environmental portions for the replacement of the bridge on Close Road. The newspaper affidavit is provided in Appendix A. Public comments were not received.

This draft EA is available at both the local library and at FEMA.gov. A 30-day public comment period commenced on the initial date of the public notice. If no substantive comments are received upon the completion of the 30-day public notice period, the Draft EA will become final and a FONSI will be issued for the project.

7.3 Permits

It is the responsibility of the Village and the hired contractors to obtain the appropriate local, State, and/or Federal permits appropriate for this project prior to project initiation.

8 REFERENCES

Advisory Council on Historic Preservation

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- 2012 Trenching Guidelines. January 2012.
- 2014a Biota Information System of New Mexico (BISON-M). <http://www.bison-m.org/>. Last updated: Not published. Accessed: June 10, 2014.
- 2014b Consultation with Mark Watson, Terrestrial Habitat Specialist. October 1, 2015.
- 2014c Consultation with Eric Frey, Fisheries Department. September 30, 2014.

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- 2014 Consultation with Morgan R. Nelson, Environmental Impact Review Coordinator. November 10, 2014.

New Mexico Energy, Minerals, and Natural Resources Department (NMEMNRD)

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New Mexico Rare Plant Technical Council (NMRPTC)

- 1999 *New Mexico Rare Plants*. Albuquerque, NM: New Mexico Rare Plants Home Page. <http://nmrareplants.unm.edu>. Last Updated: January 16, 2014. Accessed June 10, 2014.

New Mexico Statutes Annotated (NMSA)

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US Census Bureau

- 2015 QuickFacts Village of Ruidoso, New Mexico.
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- 2008b *Lincoln County Area, New Mexico*. <http://websoilsurvey.nrcs.usda.gov/app/>. NRCS Web Soil Survey. Last Updated: Version 8 December 9, 2008. Accessed: October 6, 2014.
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- 2014a A Biological Resources Survey Report for a Bridge Replacement at Close Road in the Village of Ruidoso, Lincoln County, New Mexico. Zia Project Number: NLCE-14-015. June 20, 2014.
- 2014b A Cultural Resources Survey for a Proposed Bridge Replacement at Closed Road in the Village of Ruidoso, Lincoln County, New Mexico. Zia Project Number: NLCE-14-15. April 30, 2014.
- 2014c Draft Wetland Determination and Delineation Report for a Bridge Replacement at Close Road in the Village of Ruidoso, Lincoln County, New Mexico. Zia Project Number NLCC-14-019, October 27, 2014.
- 2014d Drainage Analysis Report: Close Road Bridge Replacement Village of Ruidoso, New Mexico. FEMA 1783, PW 94, REF: RUI-9C. Zia Project Number: NLCC-14-019. October, 2014.
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9 LIST OF PREPARERS

The EA was prepared by Zia Engineering & Environmental Consultants, LLC. Following are the individuals and their role in the document production:

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Role: Biological, Water Resources Contributor, Reviewer

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USFWS

Chris Parrish, USACE Senior Regulatory Project
Manager/Archaeologist



APPENDIX A
Agency Consultations Letters and Responses
Newspaper Affidavit

AFFIDAVIT OF PUBLICATION

Ruidoso, State of New Mexico, County of Lincoln. ss.

I, James Goodwin, being duly sworn that I am the Office Administrator of the RUIDOSO NEWS, a newspaper of twice weekly circulation, published and printed in the English language. At the town of Ruidoso, Lincoln County, State of New Mexico, that there is no daily paper published, in the said county, nor was there on the dates herein mentioned. That the RUIDOSO NEWS has been regularly published and issued for more than nine months prior to the dates of the first publication hereinafter mentioned.

That the attached notice was published 1, time(s) in 1 issue(s) of said newspaper and not in any supplement thereof, the last publication being on

September 10, 2014

That said notice was published in accordance with the laws of the State of New Mexico.

James Goodwin

Office Administrator, James Goodwin

Subscribed in my presence and sworn before me this 3 day of October, 2014

Erica Ramos

Notary

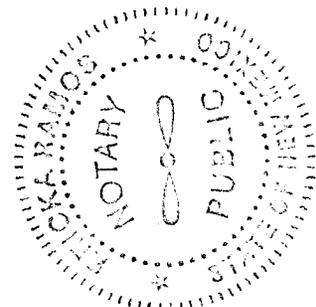
My Commission Expires: March 22, 2018

Legal Notice # NA

Requested By: Village of Ruidoso

Ad # 961767

Publication Fees: \$228.74



Village of Ruidoso
PUBLIC NOTICE
For Immediate Release

The Village of Ruidoso is in the process of planning the engineering and environmental portions for the replacement of the bridge on Close Road. As part of the environmental process, an Environmental Assessment (EA) is being completed. The EA will be completed under the auspices of the Federal Emergency Management Agency. Public scoping is a vital part of the EA completion, and the Village would like to receive public comments about the project, and those comments will be included as part of the EA considerations. Comments can be submitted to our environmental consultants, Zia Engineering & Environmental Consultants, LLC, either by phone, (575) 532-1526 ext. 702, email, Imarkiewitz@ziaeec.com, or address 755 S. Telshor Blvd., Suite F-201, Las Cruces, NM 88011. Comments will be accepted until 1:00. p.m. on September 19, 2014.

25 September 2014



Mr. Matt Wunder, Division Chief
New Mexico Department of Game and Fish
Conservation Division
P.O. Box 25112
Santa Fe, New Mexico 87505

**Re: The Village of Ruidoso and the Federal Emergency Management Agency
Environmental Assessment for the Replacement of the Close Road Bridge
Ruidoso, Lincoln County, New Mexico
Zia Project No. NLCE-14-015**

Dear Mr. Wunder,

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Water from the Rio Ruidoso will be diverted during the installation of the new bridge. Water diversion will make use of an old water channel of the river. Water will be pumped from the Rio Ruidoso to the adjacent channel. This water will flow naturally through the channel, through the existing culvert under Close Road, and follow the existing path returning to the river just east of the bridge. The existing culverts under Close Road will be cleared to allow for the water to flow naturally under the roadway. The wetlands area will be impacted only by an increase in temporary water during construction. The wetlands will not be impacted by additional sedimentation, as the existing vegetation within the diversion channel is expected to remove the sediment from the Rio Ruidoso pumped water.

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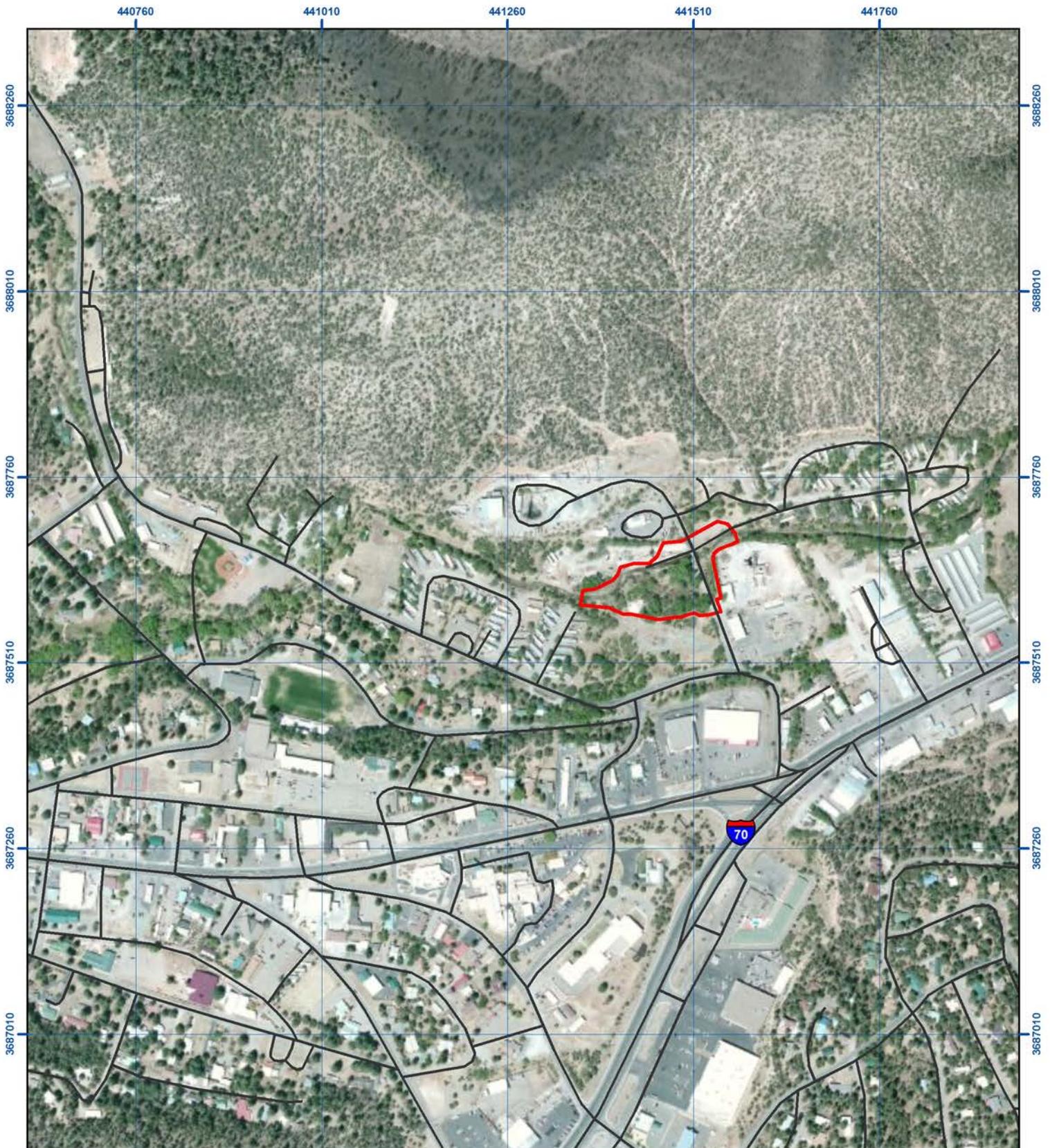
We would greatly appreciate any information or comments that should be considered as a part of the EA process. The information you provide will assist FEMA in determining the anticipated environmental impacts and appropriate environmental analysis required during project development. Please forward any questions or comments that you may have to our office by October 24, 2014. All comments received by this date will be considered in the draft EA.

Attn.: Leah Markiewitz
Zia Engineering & Environmental Consultants, LLC
755 S. Telshor Blvd., Suite F-201
Las Cruces, NM 88011
lmarkiewitz@ziaeec.com

Sincerely,


Leah Markiewitz
Project Scientist / NEPA Specialist

Enclosed: Vicinity map

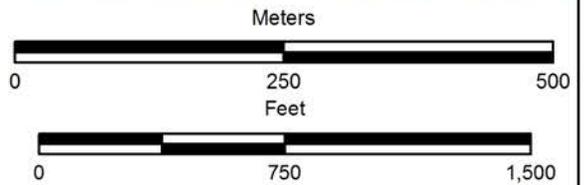


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 UTM Zone 13
 WGS 84
 1:7,000

-  Lincoln County Roads
-  Close Road Project Area



Date: 4/28/2014
 Created By: Renee Pardee
 Project No.: NLCE-14-015

Zia Engineering and Environmental Consultants, LLC.

25 September 2014



Mr. Morgan R. Nelson
Policy Analyst & Special Projects Manager
New Mexico Environment Department
1190 St. Francis Drive, P.O. Box 5469
Santa Fe, New Mexico 87502-5469

**Re: The Village of Ruidoso and the Federal Emergency Management Agency
Environmental Assessment for the Replacement of the Close Road Bridge
Ruidoso, Lincoln County, New Mexico
Zia Project No. NLCE-14-015**

Dear Mr. Nelson,

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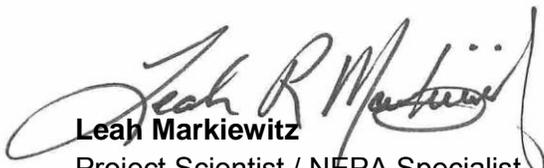
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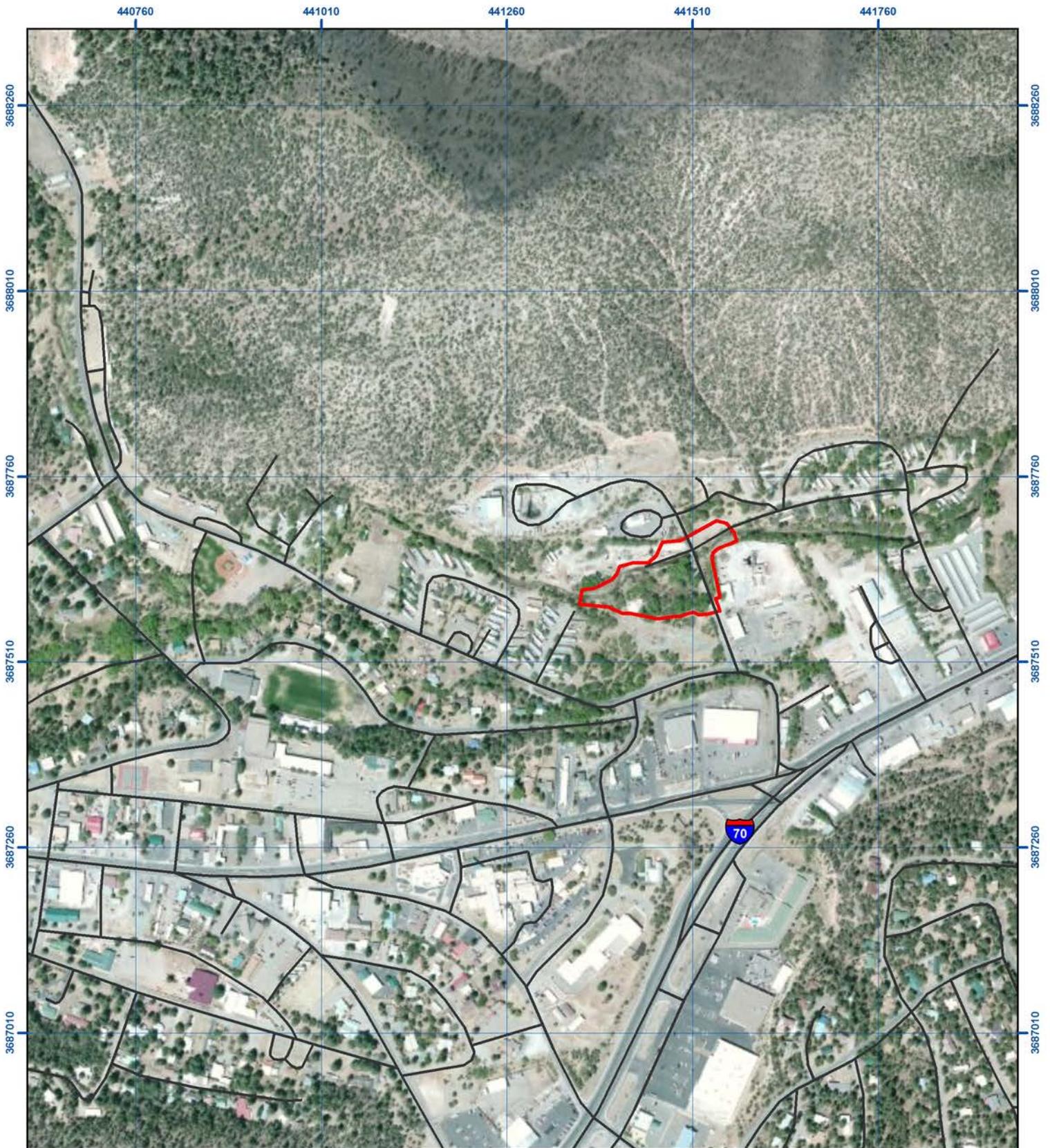
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755 S. Telshor Blvd., Suite F-201
Las Cruces, NM 88011
lmarkiewitz@ziaeec.com

Sincerely,


Leah Markiewitz
Project Scientist / NEPA Specialist

Enclosed: Vicinity map

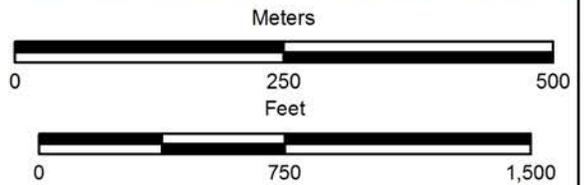


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-  Lincoln County Roads
-  Close Road Project Area



Date: 4/28/2014
 Created By: Renee Pardee
 Project No.: NLCE-14-015

Zia Engineering and Environmental Consultants, LLC.

25 September 2014



Mr. Tony Delfin, State Forester
New Mexico Forestry Division
New Mexico Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

**Re: The Village of Ruidoso and the Federal Emergency Management Agency
Environmental Assessment for the Replacement of the Close Road Bridge
Ruidoso, Lincoln County, New Mexico
Zia Project No. NLCE-14-015**

Dear Mr. Delfin,

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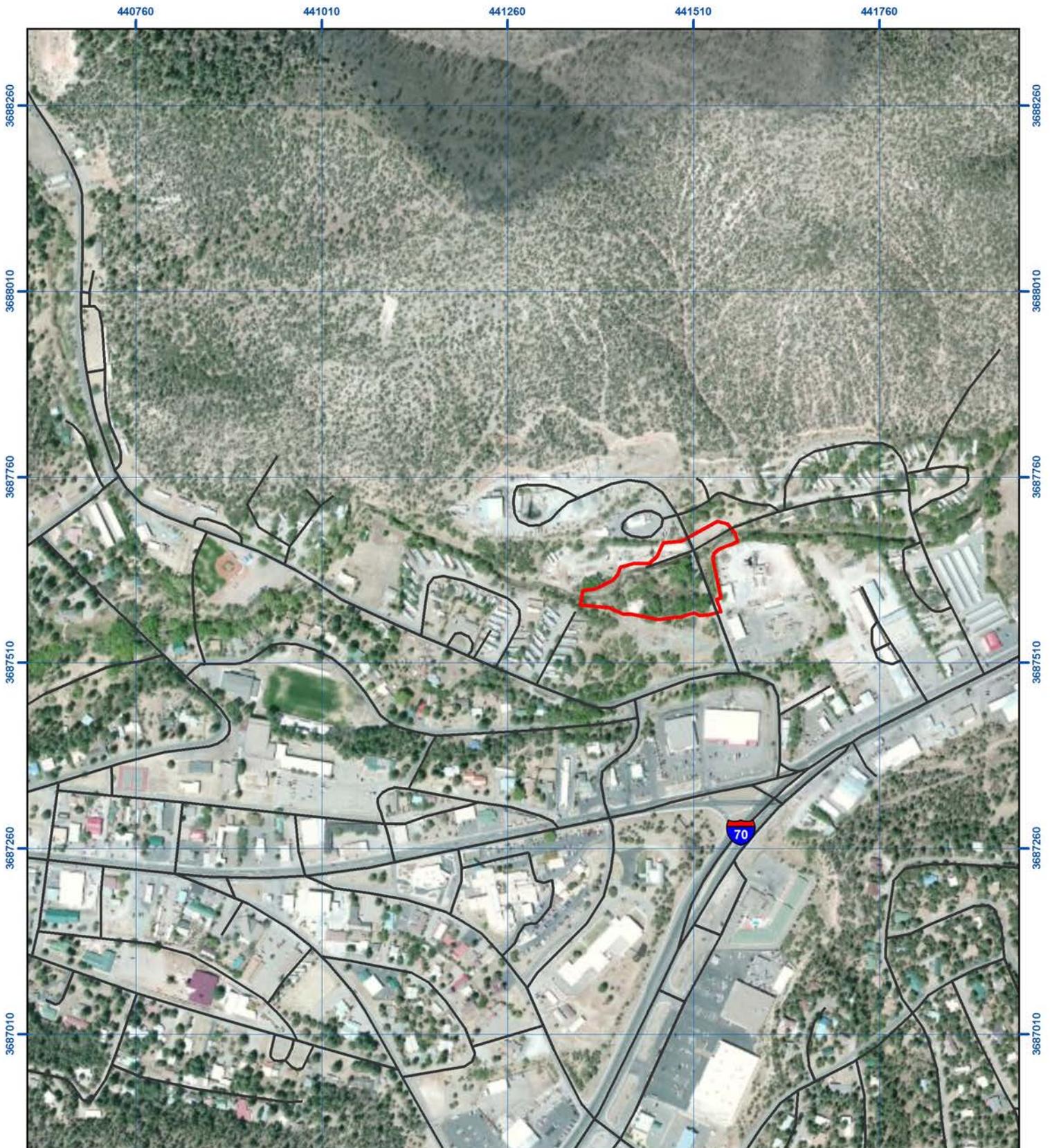
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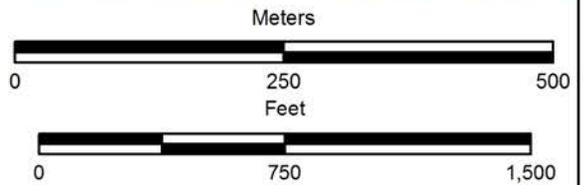


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Date: 4/28/2014
 Created By: Renee Pardee
 Project No.: NLCE-14-015

Zia Engineering and Environmental Consultants, LLC.

25 September 2014



Mr. Fernando Martinez, Division Director
Mining and Minerals Division
New Mexico Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

**Re: The Village of Ruidoso and the Federal Emergency Management Agency
Environmental Assessment for the Replacement of the Close Road Bridge
Ruidoso, Lincoln County, New Mexico
Zia Project No. NLCE-14-015**

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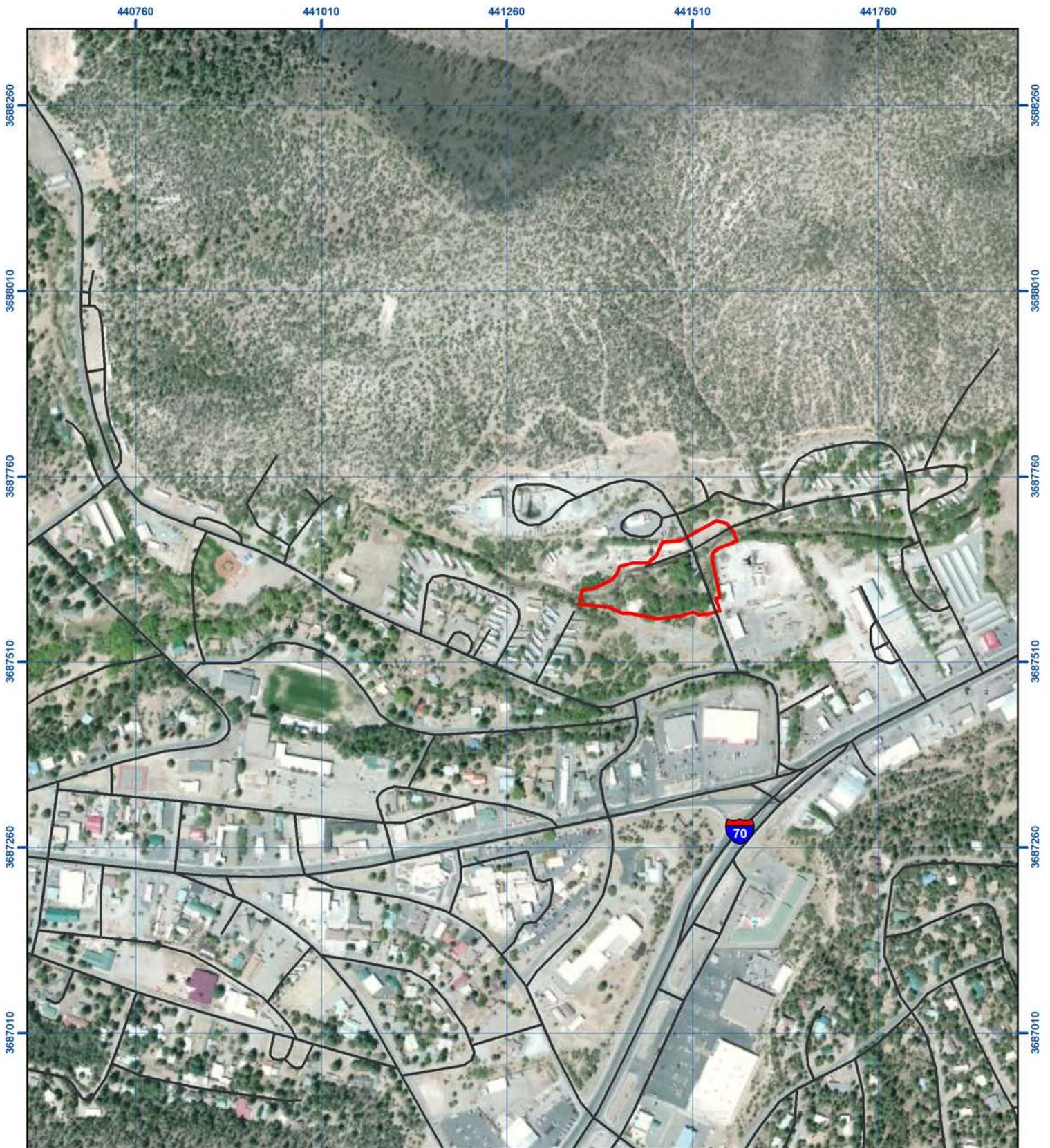
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Project Scientist / NEPA Specialist

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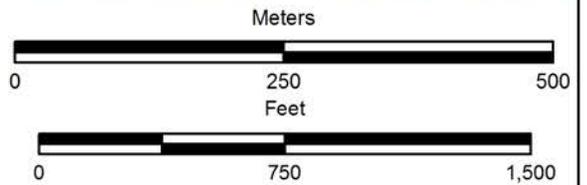


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-  Lincoln County Roads
-  Close Road Project Area



Date: 4/28/2014
 Created By: Renee Pardee
 Project No.: NLCE-14-015

Zia Engineering and Environmental Consultants, LLC.

25 September 2014



Mr. Tommy Mutz, Division Director
New Mexico State Parks
New Mexico Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

**Re: The Village of Ruidoso and the Federal Emergency Management Agency
Environmental Assessment for the Replacement of the Close Road Bridge
Ruidoso, Lincoln County, New Mexico
Zia Project No. NLCE-14-015**

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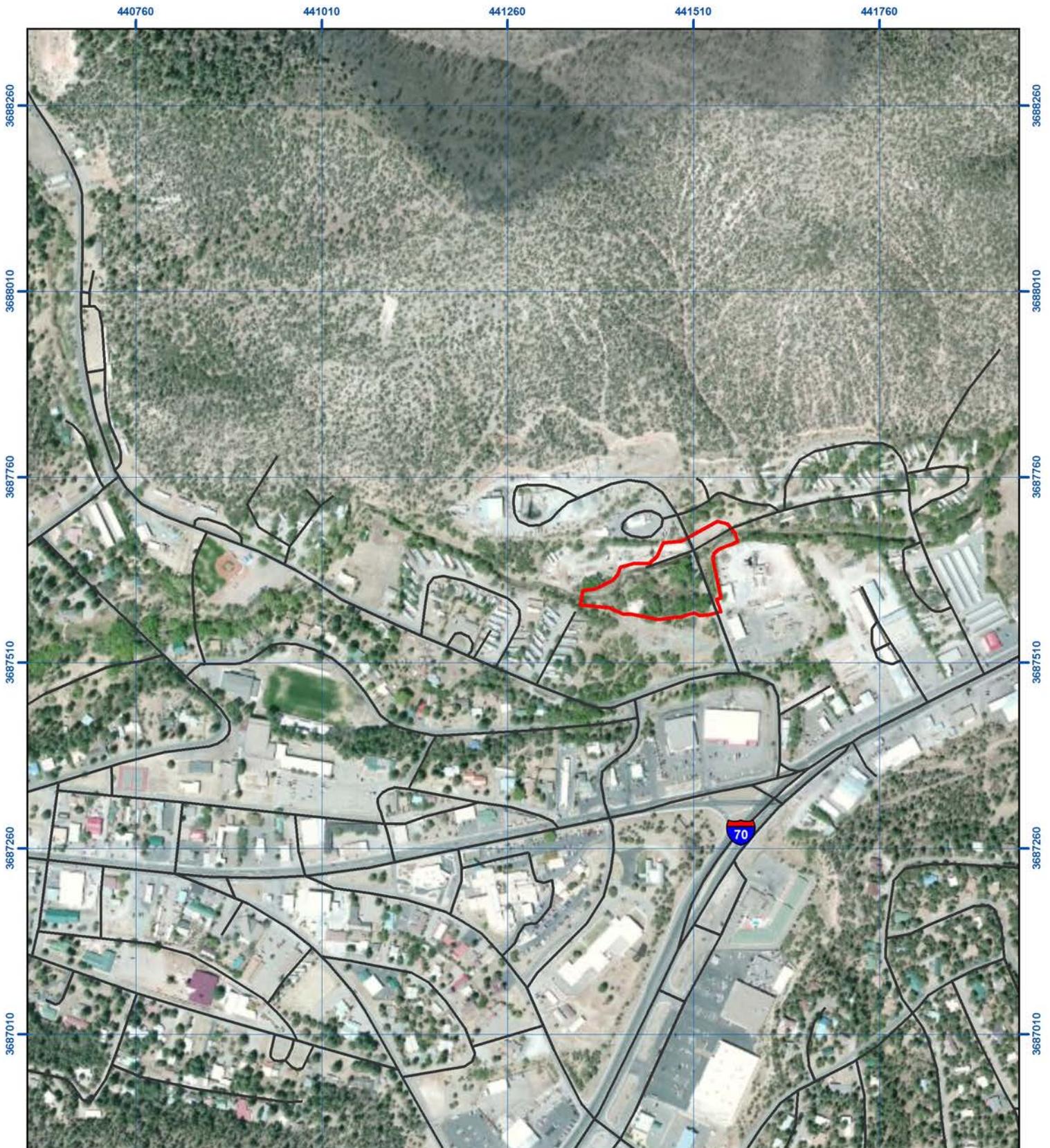
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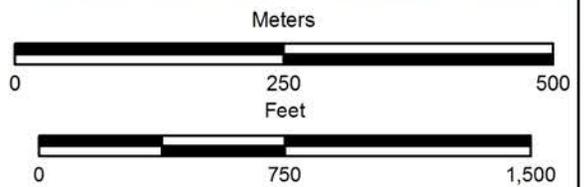


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Date: 4/28/2014
 Created By: Renee Pardee
 Project No.: NLCE-14-015

Zia Engineering and Environmental Consultants, LLC.

25 September 2014



Ms. Vicky Milne
Natural Resources Conservation Service
2920 N. White Sands Boulevard
Alamogordo, New Mexico 88310

**Re: The Village of Ruidoso and the Federal Emergency Management Agency
Environmental Assessment for the Replacement of the Close Road Bridge
Ruidoso, Lincoln County, New Mexico
Zia Project No. NLCE-14-015**

Dear Ms. Milne,

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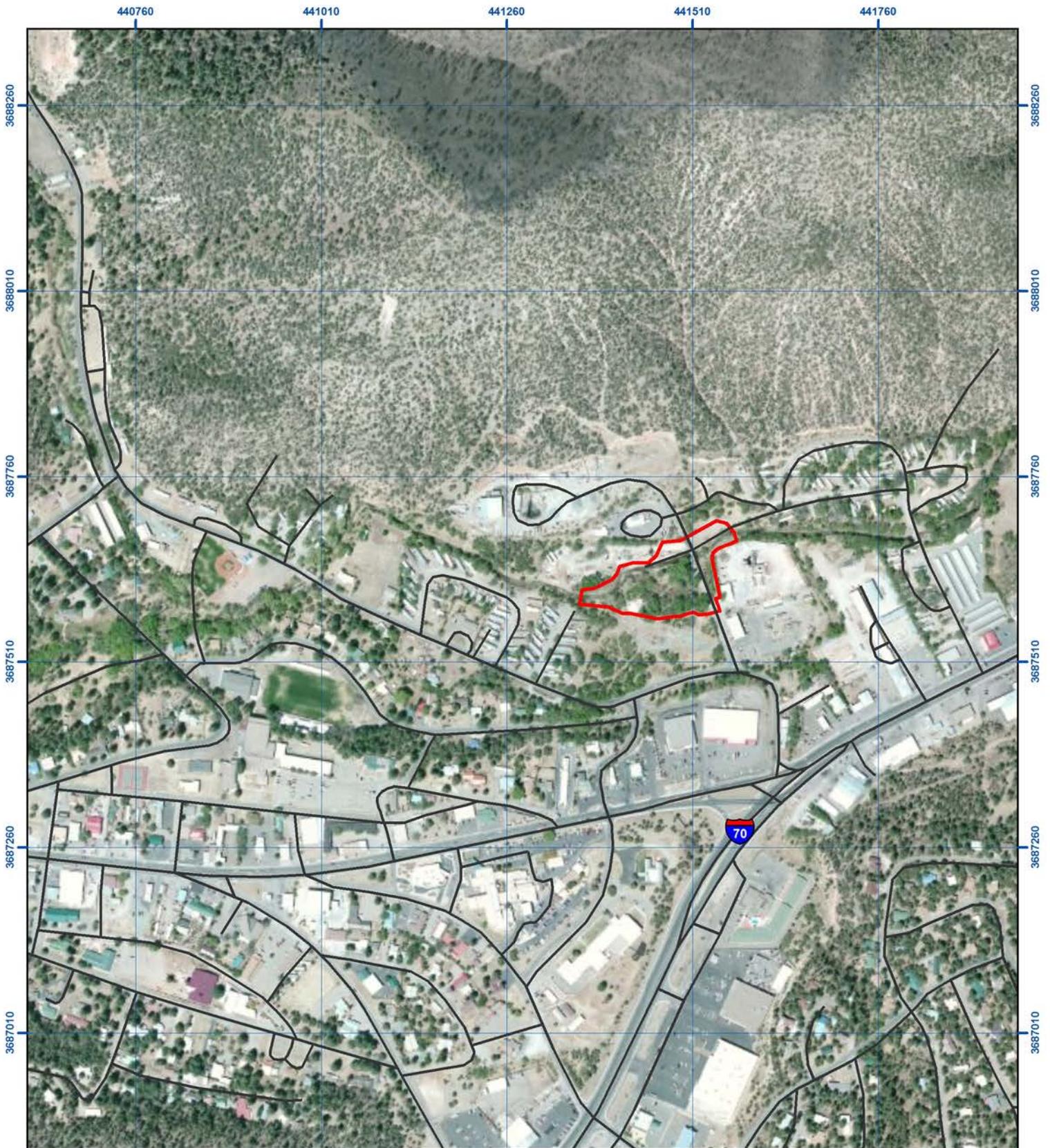
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Attn.: Leah Markiewitz
Zia Engineering & Environmental Consultants, LLC
755 S. Telshor Blvd., Suite F-201
Las Cruces, NM 88011
lmarkiewitz@ziaeec.com

Sincerely,


Leah Markiewitz
Project Scientist / NEPA Specialist

Enclosed: Vicinity map

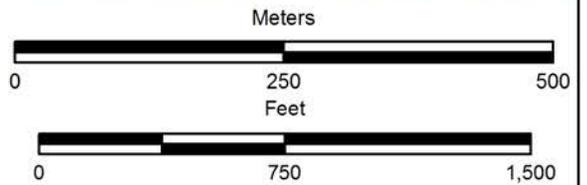


ESRI Imagery, For more information go to
http://go.to.arcgisonline.com/maps/World_Imagery
 Ruidoso Downs 7.5 Minute Topo




 UTM Zone 13
 WGS 84
 1:7,000

-  Lincoln County Roads
-  Close Road Project Area



Date: 4/28/2014
 Created By: Renee Pardee
 Project No.: NLCE-14-015

Zia Engineering and Environmental Consultants, LLC.

25 September 2014



Sam Coleman, Acting Administrator
U.S. EPA Region 6
Fountain Place 12th Floor, Suite 1200
1445 Ross Avenue
Dallas, Texas 75202-2733

**Re: The Village of Ruidoso and the Federal Emergency Management Agency
Environmental Assessment for the Replacement of the Close Road Bridge
Ruidoso, Lincoln County, New Mexico
Zia Project No. NLCE-14-015**

Dear Mr. Coleman,

The Village of Ruidoso (Village) with funding from the Federal Emergency Management Agency (FEMA) is proposing to construct a replace the box culvert bridge located at Close Road, Ruidoso, Lincoln County, New Mexico. Zia Engineering & Environmental Consultants, LLC (Zia) is assisting the Village and FEMA with the preparation of an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA). The purpose of this letter is to engage agencies and other stakeholders early in the study process so that any issues or concerns regarding the project can be addressed within the EA.

The existing box culvert bridge was built following the flooding of the Rio Ruidoso after the remnants of Hurricane Dolly passed through New Mexico in July 2008. The bridge was considered a temporary structure until funds were available to replace it.

Alternatives are being considered by the Village and FEMA include: a) no action (status quo), and b) replacing the bridge with a ConSpan Arch culvert with a 60-foot span and a 12-foot rise. These alternatives will be evaluated in the EA.

The no action alternative states that the temporary box culvert bridge will remain as the crossing of the Rio Ruidoso. During high flow events, debris flowing down the river will continue to collect at the walls of the culverts. The waterway will also still allow for the potential for high flooding effects such as embankment erosion and the potential of impacting the temporary box culvert bridge. Additionally, the existing wetlands and vegetation will remain in its current state.

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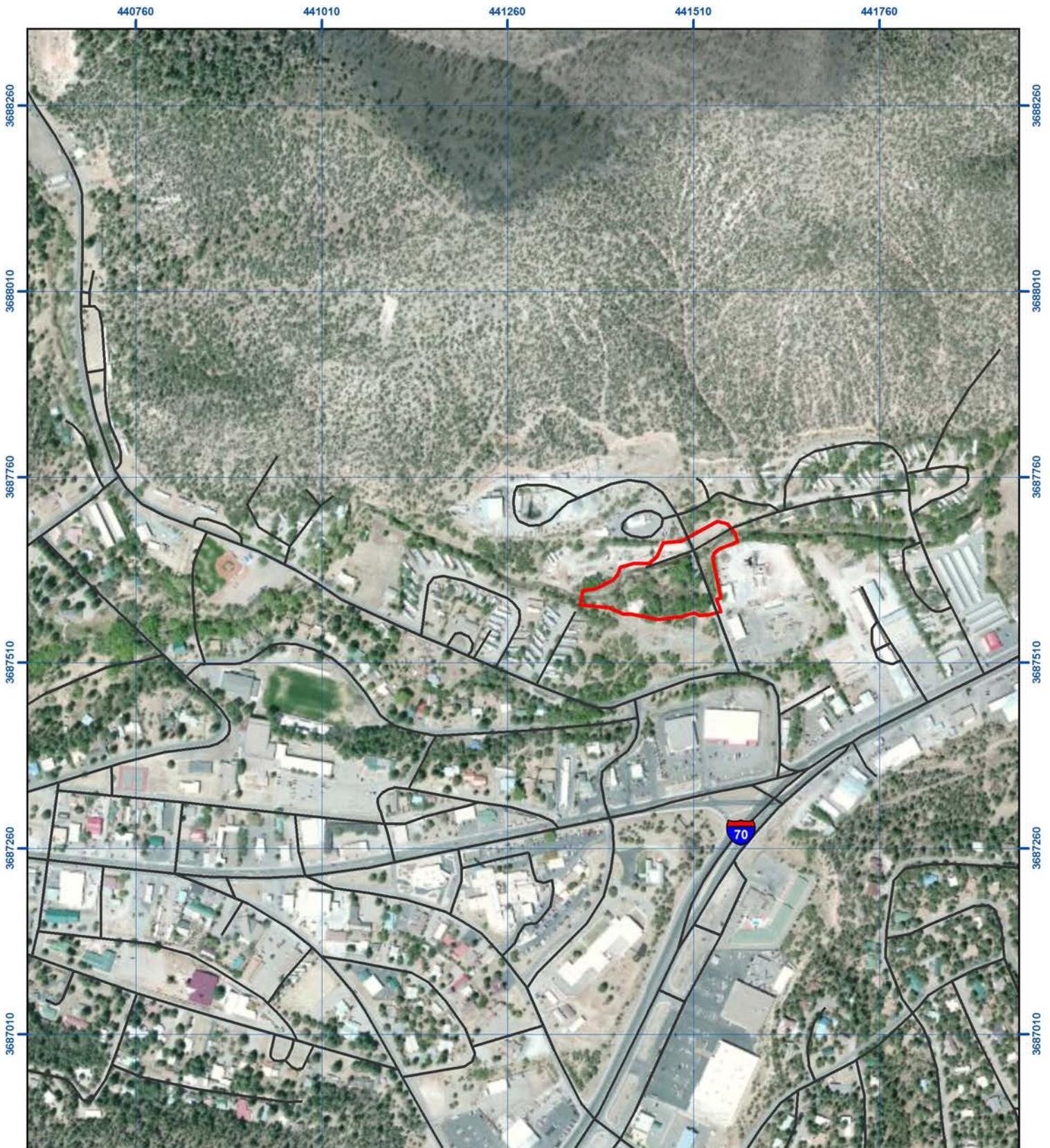
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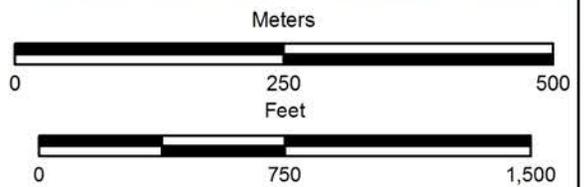


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-  Lincoln County Roads
-  Close Road Project Area



Date: 4/28/2014
 Created By: Renee Pardee
 Project No.: NLCE-14-015

Zia Engineering and Environmental Consultants, LLC.

25 September 2014



Dr. Benjamin Tuggle, Regional Director
U.S. Fish and Wildlife Services
P.O. Box 1306
Albuquerque, New Mexico 87103-1306

**Re: The Village of Ruidoso and the Federal Emergency Management Agency
Environmental Assessment for the Replacement of the Close Road Bridge
Ruidoso, Lincoln County, New Mexico
Zia Project No. NLCE-14-015**

Dear Mr. Tuggle,

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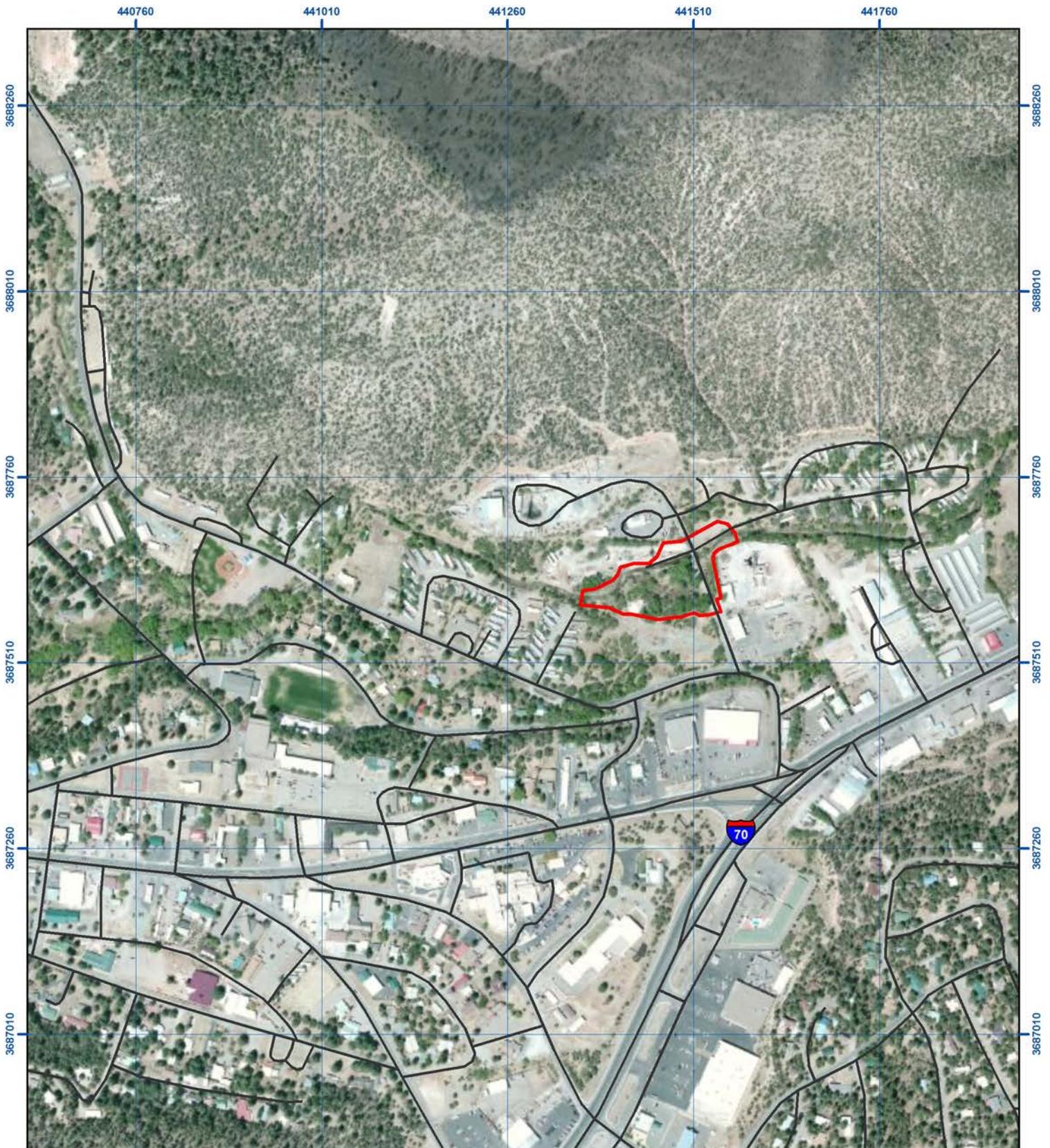
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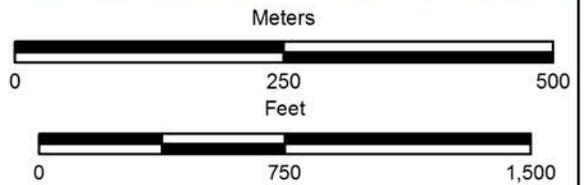


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-  Lincoln County Roads
-  Close Road Project Area



Date: 4/28/2014
 Created By: Renee Pardee
 Project No.: NLCE-14-015

Zia Engineering and Environmental Consultants, LLC.



FEMA

March 09, 2015

Mr. Jimmy Arterberry, THPO
Comanche Nation
584 NW Bingo Road
Lawton, OK 73502

RE: Section 106 Review Consultation, FEMA-1783-DR-NM
PA-06-NM-1783-PW-094, Close Drive Bridge Repair
Coordinates UTM: 33.32644, -105.62865; 13S 441489 3687652

Dear Mr. Arterberry:

Between July 26 and August 20, 2008, severe storms and flooding caused damage within Lincoln and Otero Counties. On August 14, 2008, the President of the United States declared the state of New Mexico a major disaster area and subsequently designated these two (2) counties as part of that declared disaster area. The Federal Emergency Management Agency (FEMA) will be providing funds authorized under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, P.L. 93-288, as amended, in response to the major Disaster Declaration for FEMA-1783-DR-NM, dated August 14, 2008. As a Tribe with Ancestral Interests in this county, FEMA is initiating Section 106 review for the above referenced property.

Storms and flooding completely destroyed the nearly completed Close Drive Bridge which traversed the Ruidoso River at Close Drive. Federal funding had been allocated in 2006 to replace a structure previously damaged by flooding (FEMA DR-NM-1659). During the 2008 flooding, culverts and approaches were completely undermined resulting in a total blow-out of the structure. Emergency and residential vehicular traffic have been denied access to the areas directly serviced by this structure. It is proposed that federal funding through FEMA's Public Assistance program be provided to the Village of Ruidoso in Lincoln County (Applicant) to replace the damaged bridge with a permanent in-kind structure located within the original footprint.

A contract for the bridge replacement was secured between the Village of Ruidoso and Hasse Contracting Co. Inc. (P.O. box 26808, Albuquerque NM, 87125). The contractor will place a coffer diversion dam in the waterway and use a pump to temporarily dewater the area prior to removing the old structure and constructing the new bridge. The new bridge will be a pre-fabricated Con Span Arch Bridge System approximately 48-feet wide and approximately 60-feet long. The bridge will have two 11 foot wide lanes with 1 ft. buffer between the lanes and the 4 ft. shoulders on each side. The paved shoulders are for emergency purposes. Handrails (picket handrails with W beam and type B anchorage) and guardrails will be placed on the bridge to protect pedestrian and vehicle traffic from drop off areas. The shoulders will also have signage, lights and curbs.

The bridge will also have gabion basket walls with wire tied riprap that ranges from 4.5 ft. to 9 ft. wide and 15 ft. tall on all sides. 10 X 13 ft. concrete wing walls will be installed at the bridge abutments on both sides. Rip rap and grass seeding will be used to stabilize the banks and prevent erosion from the water velocity and scour.

Mr. Jimmy Arterberry, THPO
March 9, 2015
Page 2

Channel modifications and bank stabilization will extend approximately 175-feet upstream and 225-feet downstream of the new crossing structure. Approximately 75-feet of the channel length modified upstream of the crossing structure will have a rectangular cross-section with a constant bottom width of 60-feet with a height of 9-feet on both sides. Approximately 100-feet of the channel length modified upstream of the crossing structure will have a trapezoidal cross-section with a bottom width that varies from 27-feet to 60-feet with heights of approximately 11-feet on the north side and 8-feet on the south side. The bridge footings will be replaced within the footprint of their original location with a maximum depth for ground disturbance of 18 feet.

On October 7, 2008, an initial coordination letter was sent from FEMA to the NM SHPO concerning multiple bridge repair projects including the Close Drive Bridge (called Close Road in initial correspondence). FEMA received concurrence of **No Historic Properties Affected** on October 23, 2008 (See Attachment). The scope of work, including the bridge design has been finalized at this time, instigating this second consultation. On March 9, 2015, a cultural records file search in the Archaeological Records Management Section (ARMS) of the New Mexico State Historic Preservation Division (HPD) through the New Mexico Department of Cultural Affairs, New Mexico State Historic Preservation Office (SHPO), was conducted for previously recorded archaeological sites and surveys. In 2014, Zia Engineering & Environmental Consultants conducted a 2.5 acre archaeological survey at the location of the bridge replacement titled "A Cultural Resources Survey for Proposed Bridge Replacement along the Rio Ruidoso, Lincoln County, New Mexico" (NMCRIS Activity #130409). The survey was an Intensive (100%) pedestrian survey conducted within block units. The survey results were negative for the identification or archaeological resources.

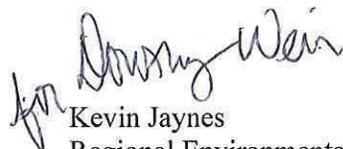
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Any information you might provide to FEMA related to this Undertaking will be kept confidential. If you provide comments now, or decline to consult at this time, FEMA recognizes that this does not preclude future opportunities to comment. However, be assured that all ground disturbing projects will be conditioned with the following requirement:

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Your timely review of this project is greatly appreciated. Should you have any questions or need additional information regarding these Undertakings, please contact me at Kevin.jaynes@fema.dhs.gov or by phone at (940) 383-7224 or Hector Abreu, Environmental and Historic Preservation Tribal Liaison, at hector.abreu@fema.dhs.gov or by phone at (940) 383-7221.

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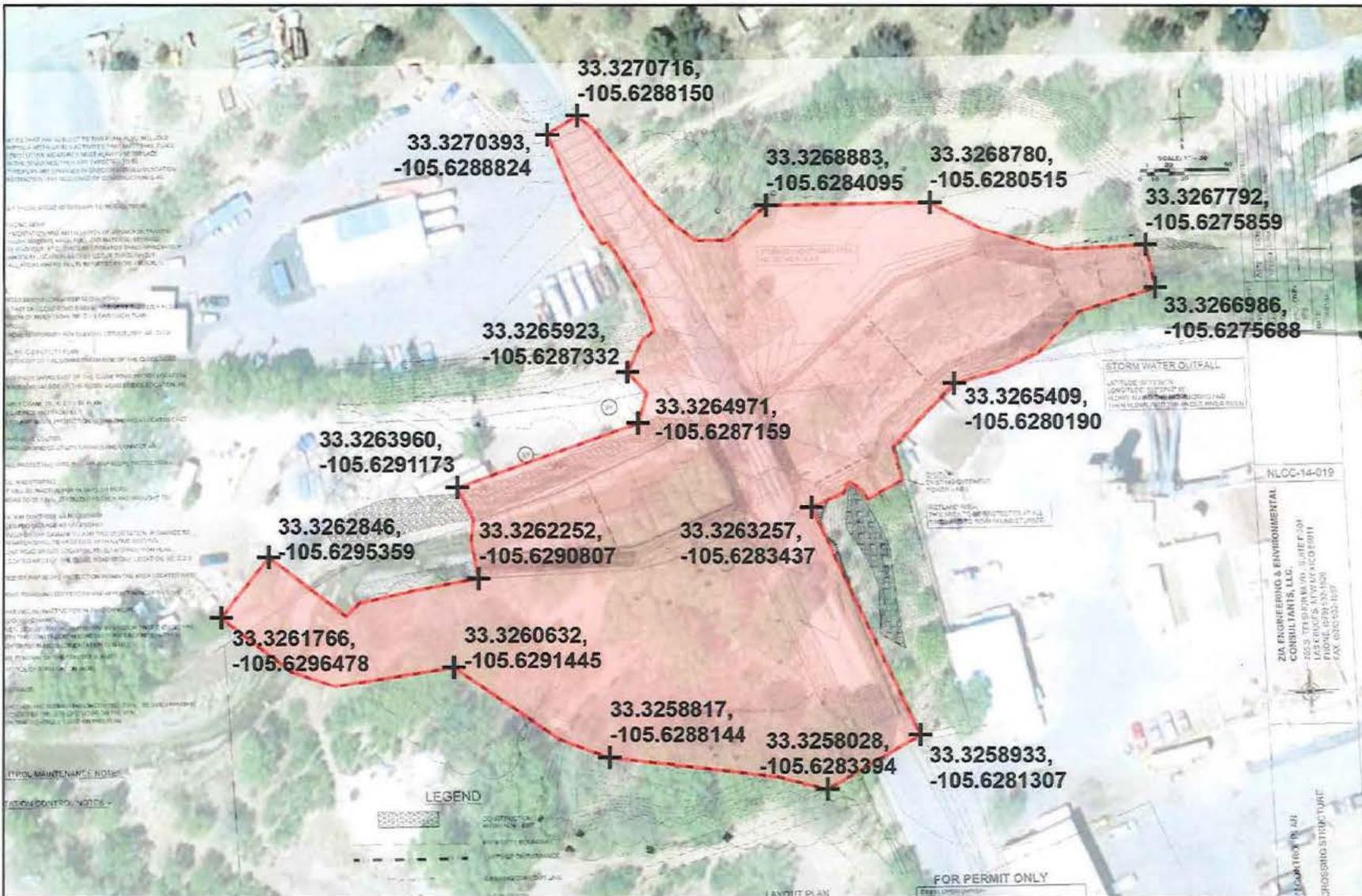
Kevin Jaynes
Regional Environmental Officer
Region VI

Enclosures

NM ARMS Map
Project Overview Map
Photos

U.S. Department of Homeland Security
Federal Emergency Management Agency
Section 106 Review: ARMS Location Map, Close Drive Bridge





PA-06-NM-1783-PW-094



Legend

Close Rd. Area of Disturbance

+ LatLong Coordinates

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



Date: 03/05/2015
 Created by: Jon Williams
 Project No.: NLCC-14-019



Photos of Damage: 2008

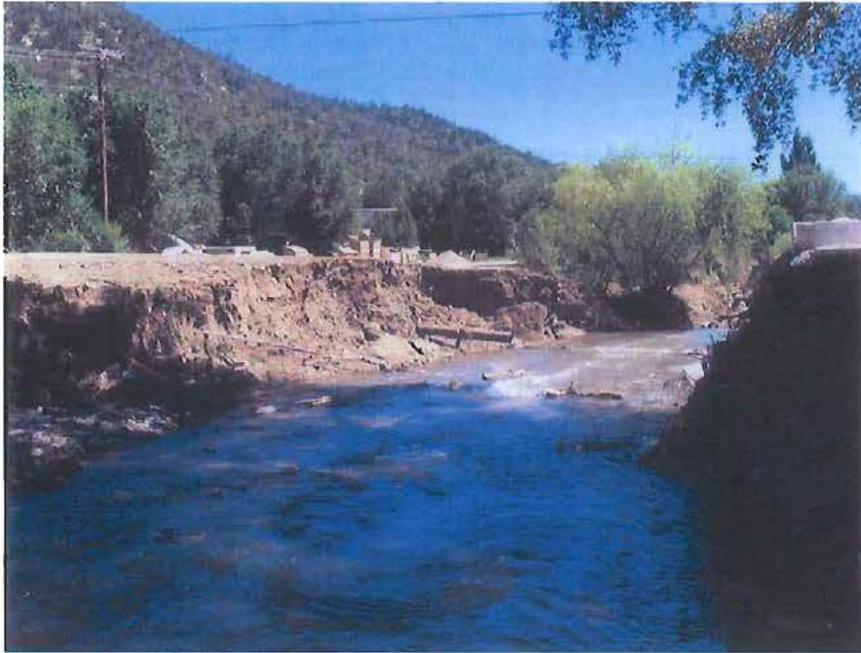


Photo 1: Looking downstream. Note brown pipe at left center of photo. The pipe is the center line of the destroyed structure.

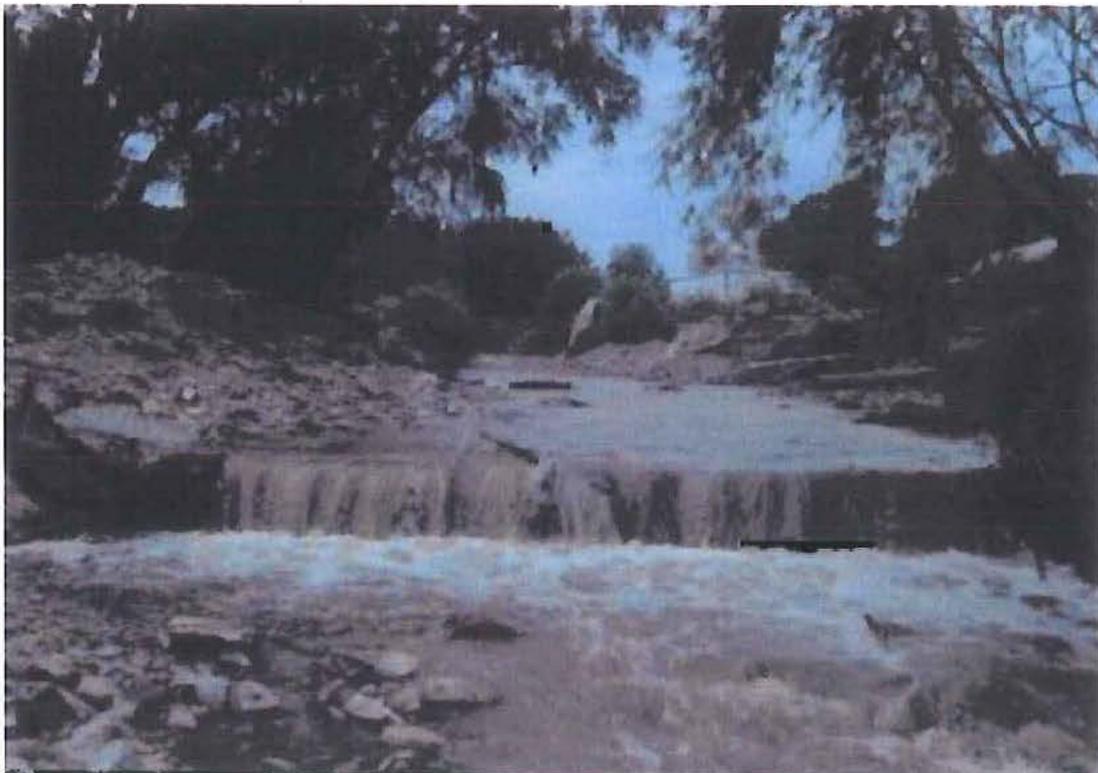
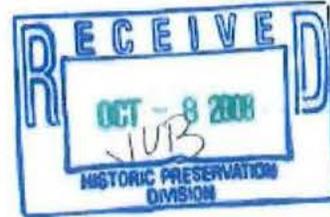


Photo 2: Looking upstream. Brown pipe can be more readily seen at right of photo just above waterfall.

Chun, Stanley

085422

From: Chun, Stanley
Sent: Tuesday, October 07, 2008 10:38 AM
To: 'Biella, Jan, DCA'
Cc: 'michelle.ensey@state.nm.us'; Barnes, Amy; Lukes, Teresa
Subject: Bridge Sites along Rio Ruidoso / corridor



Aloha Jan,

Per our discussion/meeting Oct 1, 2008; I will be sending to you via UPS, 12 bridge sites with UTM locations map with descriptive information along with before and after photos (as best available to us at this time) as some visual aid for determining the value of any remaining site resource integrity to the area surrounding the damaged bridges. Repairs to the physical damages and restoration of the lineal transportation function at the flood damaged sites will further impact the localized damaged areas where man made disturbances/improvements have occurred over the years. Our observations at this preliminary stage of review on the Rio Ruidoso stream corridor where these damages have occurred indicate a wide range of activities / changes have occurred to both the man made and natural environment.

The following is a listing of the first batch of identified structures submitted to us for review.

List of UTM bridge sites to be included in UPS shipment:

UTM:	Name:
13 441491.0E, 3687653.0N	Close Road Crossing
13 437175.0E, 3688429.0N	Grindstone Canyon Road Crossing
13 435392.0E, 3688446.0N	Coyote Lane Crossing
13 437922.0E, 3688333.0N	Country Club Drive Crossing
13 433267.0E, 3688862.0N	McDaniel Road Crossing
13 435797.0E, 3688531.0N	Main Road No. 1 Crossing
13 434855.0E, 3688534.0N	Main Road No. 2 Crossing
13 433535.0E, 3688893.0N	North Loop Road No. 2 Crossing
13 436398.0E, 3688617.0N	Sleepy Hollow Road Crossing
13 438592.0E, 3687865.0N	Robin Road Crossing
13 438075.0E, 3688118.0N	River Trail Bridge
13 437579.0E, 3688386.0N	Eagle Drive crossing

Please call me at 575.464-3214 if you have any questions on what is being sent.

Mahalo,

Stanley KS Chun, EHP Specialist
Mescalero JFO
810 White Mountain Road
P.O. Box 248
Mescalero, NM 88340

Ph. 575.464-3214
Cel. 202.870-7224

No Historic Properties Affected. 10/23/08

Michelle Ensey
for NM State Historic Preservation Officer



FEMA

March 09, 2015

Dr. Henry Walt, THPO
Pueblo of Isleta
P.O. Box 1270
Isleta, NM 87022

RE: Section 106 Review Consultation, FEMA-1783-DR-NM
PA-06-NM-1783-PW-094, Close Drive Bridge Repair
Coordinates UTM: 33.32644, -105.62865; 13S 441489 3687652

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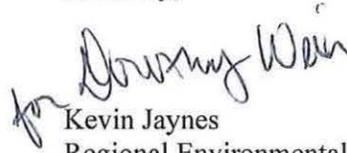
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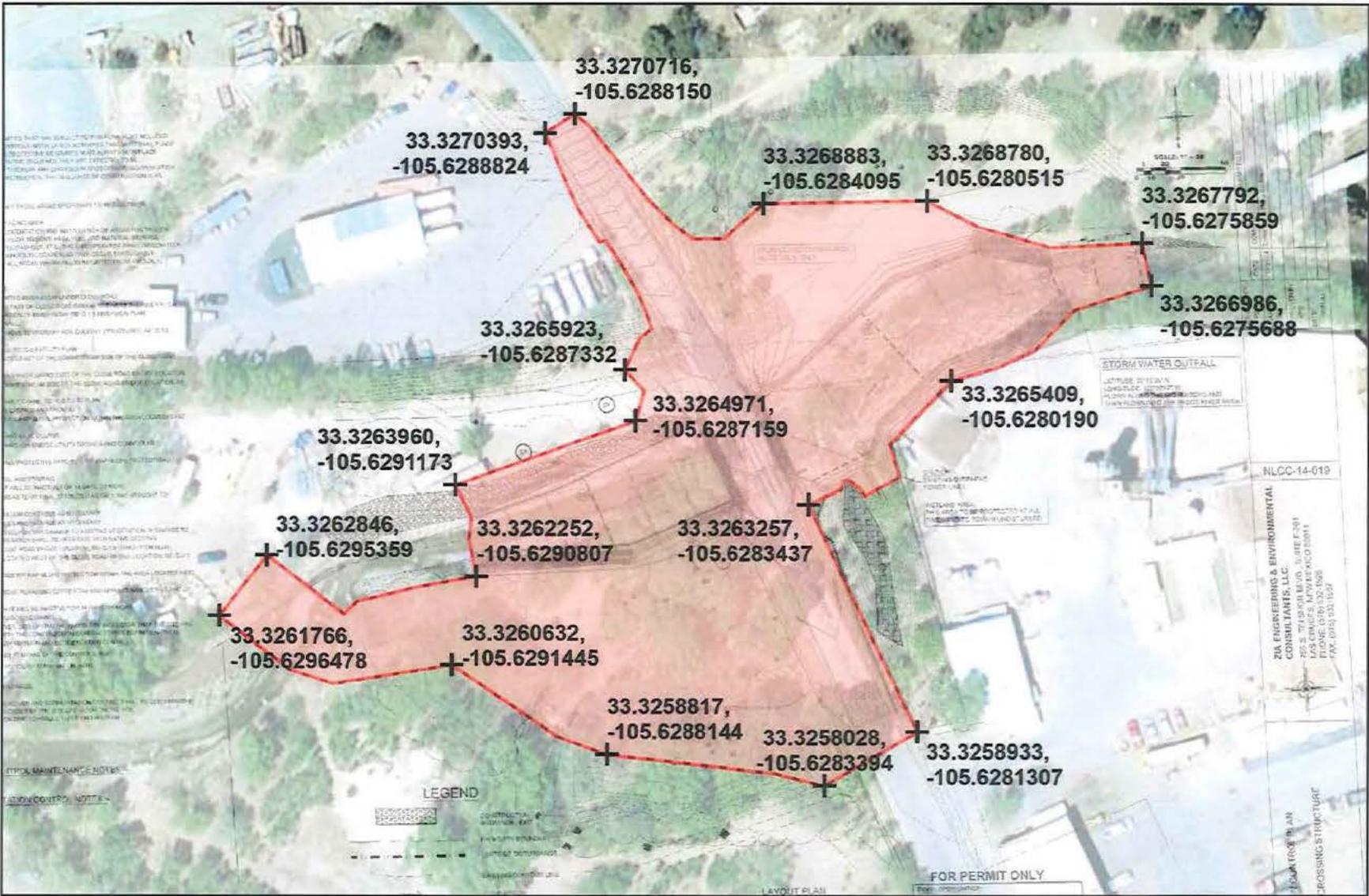

Kevin Jaynes
Regional Environmental Officer
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Project Overview Map
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U.S. Department of Homeland Security
Federal Emergency Management Agency
Section 106 Review: ARMS Location Map, Close Drive Bridge





PA-06-NM-1783-PW-094



Legend

- Close Rd. Area of Disturbance
- Lat/Long Coordinates

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



Date: 03/05/2015
 Created by: Jon Williams
 Project No.: NLCC-14-019



Photos of Damage: 2008

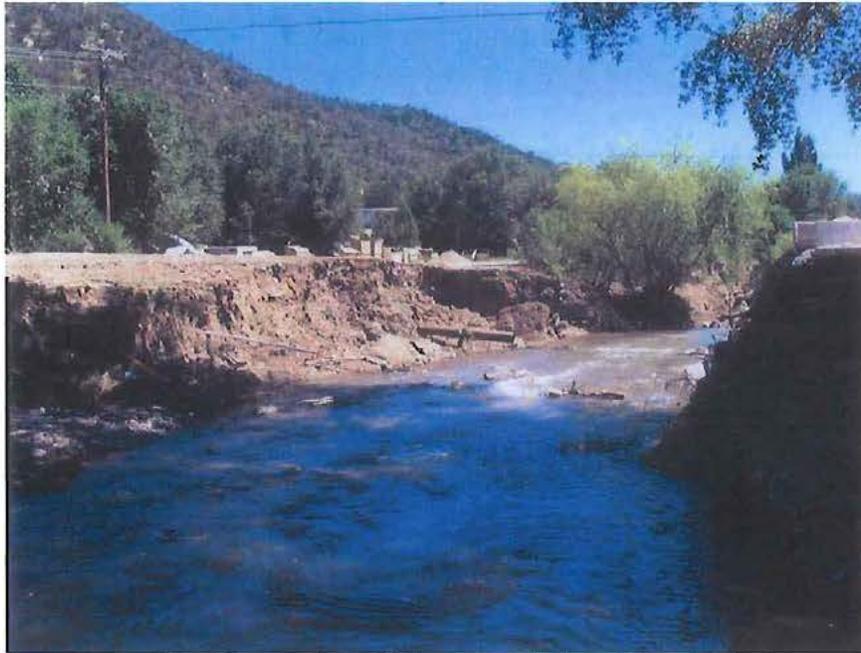


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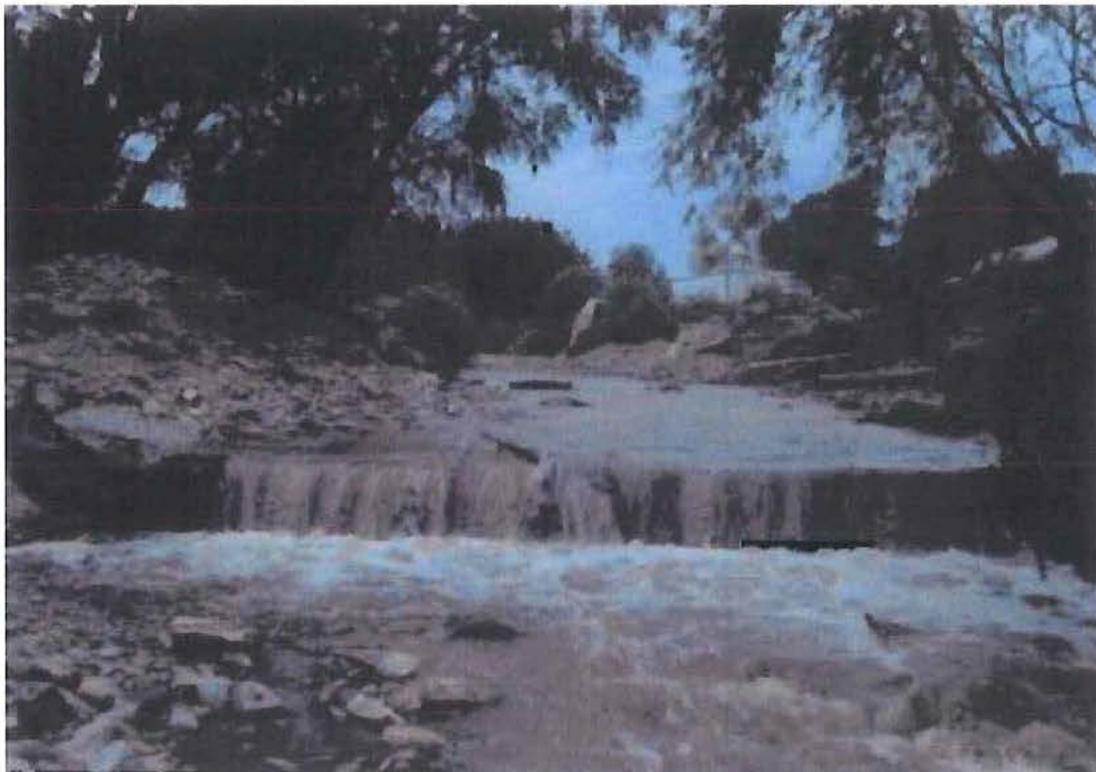
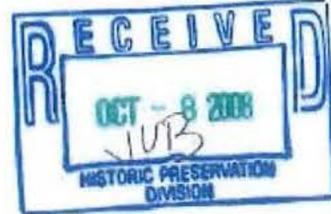


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Chun, Stanley

085422

From: Chun, Stanley
Sent: Tuesday, October 07, 2008 10:38 AM
To: 'Biella, Jan, DCA'
Cc: 'michelle.ensey@state.nm.us'; Barnes, Amy; Lukes, Teresa
Subject: Bridge Sites along Rio Ruidoso / corridor



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Per our discussion/meeting Oct 1, 2008; I will be sending to you via UPS, 12 bridge sites with UTM locations map with descriptive information along with before and after photos (as best available to us at this time) as some visual aid for determining the value of any remaining site resource integrity to the area surrounding the damaged bridges. Repairs to the physical damages and restoration of the lineal transportation function at the flood damaged sites will further impact the localized damaged areas where man made disturbances/improvements have occurred over the years. Our observations at this preliminary stage of review on the Rio Ruidoso stream corridor where these damages have occurred indicate a wide range of activities / changes have occurred to both the man made and natural environment.

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Please call me at 575.464-3214 if you have any questions on what is being sent.

Mahalo,

Stanley KS Chun, EHP Specialist
Mescalero JFO
810 White Mountain Road
P.O. Box 248
Mescalero, NM 88340

Ph. 575.464-3214
Cel. 202.870-7224

No Historic Properties Affected.

10/23/08

Michelle Ensey
for NM State Historic Preservation Officer



FEMA

March 09, 2015

Ms. Amie Tah-Bone, NAGPRA Representative
Kiowa Indian Tribe of Oklahoma
West of Carnegie on Highway 9
Carnegie, OK 73015

RE: Section 106 Review Consultation, FEMA-1783-DR-NM
PA-06-NM-1783-PW-094, Close Drive Bridge Repair
Coordinates UTM: 33.32644, -105.62865; 13S 441489 3687652

Dear Ms. Tah-Bone:

Between July 26 and August 20, 2008, severe storms and flooding caused damage within Lincoln and Otero Counties. On August 14, 2008, the President of the United States declared the state of New Mexico a major disaster area and subsequently designated these two (2) counties as part of that declared disaster area. The Federal Emergency Management Agency (FEMA) will be providing funds authorized under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, P.L. 93-288, as amended, in response to the major Disaster Declaration for FEMA-1783-DR-NM, dated August 14, 2008. As a Tribe with Ancestral Interests in this county, FEMA is initiating Section 106 review for the above referenced property.

Storms and flooding completely destroyed the nearly completed Close Drive Bridge which traversed the Ruidoso River at Close Drive. Federal funding had been allocated in 2006 to replace a structure previously damaged by flooding (FEMA DR-NM-1659). During the 2008 flooding, culverts and approaches were completely undermined resulting in a total blow-out of the structure. Emergency and residential vehicular traffic have been denied access to the areas directly serviced by this structure. It is proposed that federal funding through FEMA's Public Assistance program be provided to the Village of Ruidoso in Lincoln County (Applicant) to replace the damaged bridge with a permanent in-kind structure located within the original footprint.

A contract for the bridge replacement was secured between the Village of Ruidoso and Hasse Contracting Co. Inc. (P.O. box 26808, Albuquerque NM, 87125). The contractor will place a coffer diversion dam in the waterway and use a pump to temporarily dewater the area prior to removing the old structure and constructing the new bridge. The new bridge will be a pre-fabricated Con Span Arch Bridge System approximately 48-feet wide and approximately 60-feet long. The bridge will have two 11 foot wide lanes with 1 ft. buffer between the lanes and the 4 ft. shoulders on each side. The paved shoulders are for emergency purposes. Handrails (picket handrails with W beam and type B anchorage) and guardrails will be placed on the bridge to protect pedestrian and vehicle traffic from drop off areas. The shoulders will also have signage, lights and curbs.

The bridge will also have gabion basket walls with wire tied riprap that ranges from 4.5 ft. to 9 ft. wide and 15 ft. tall on all sides. 10 X 13 ft. concrete wing walls will be installed at the bridge abutments on both sides. Rip rap and grass seeding will be used to stabilize the banks and prevent erosion from the water velocity and scour.

Channel modifications and bank stabilization will extend approximately 175-feet upstream and 225-feet downstream of the new crossing structure. Approximately 75-feet of the channel length modified upstream of the crossing structure will have a rectangular cross-section with a constant bottom width of 60-feet with a height of 9-feet on both sides. Approximately 100-feet of the channel length modified upstream of the crossing structure will have a trapezoidal cross-section with a bottom width that varies from 27-feet to 60-feet with heights of approximately 11-feet on the north side and 8-feet on the south side. The bridge footings will be replaced within the footprint of their original location with a maximum depth for ground disturbance of 18 feet.

On October 7, 2008, an initial coordination letter was sent from FEMA to the NM SHPO concerning multiple bridge repair projects including the Close Drive Bridge (called Close Road in initial correspondence). FEMA received concurrence of **No Historic Properties Affected** on October 23, 2008 (See Attachment). The scope of work, including the bridge design has been finalized at this time, instigating this second consultation. On March 9, 2015, a cultural records file search in the Archaeological Records Management Section (ARMS) of the New Mexico State Historic Preservation Division (HPD) through the New Mexico Department of Cultural Affairs, New Mexico State Historic Preservation Office (SHPO), was conducted for previously recorded archaeological sites and surveys. In 2014, Zia Engineering & Environmental Consultants conducted a 2.5 acre archaeological survey at the location of the bridge replacement titled "A Cultural Resources Survey for Proposed Bridge Replacement along the Rio Ruidoso, Lincoln County, New Mexico" (NMCRIS Activity #130409). The survey was an Intensive (100%) pedestrian survey conducted within block units. The survey results were negative for the identification or archaeological resources.

Based on information gathered through this review process, FEMA has made a determination of **No Historic Properties Affected** as a result of the proposed undertaking. We request concurrence with this determination. An aerial map, NM ARMS map, and photos showing the project location are attached.

Any information you might provide to FEMA related to this Undertaking will be kept confidential. If you provide comments now, or decline to consult at this time, FEMA recognizes that this does not preclude future opportunities to comment. However, be assured that all ground disturbing projects will be conditioned with the following requirement:

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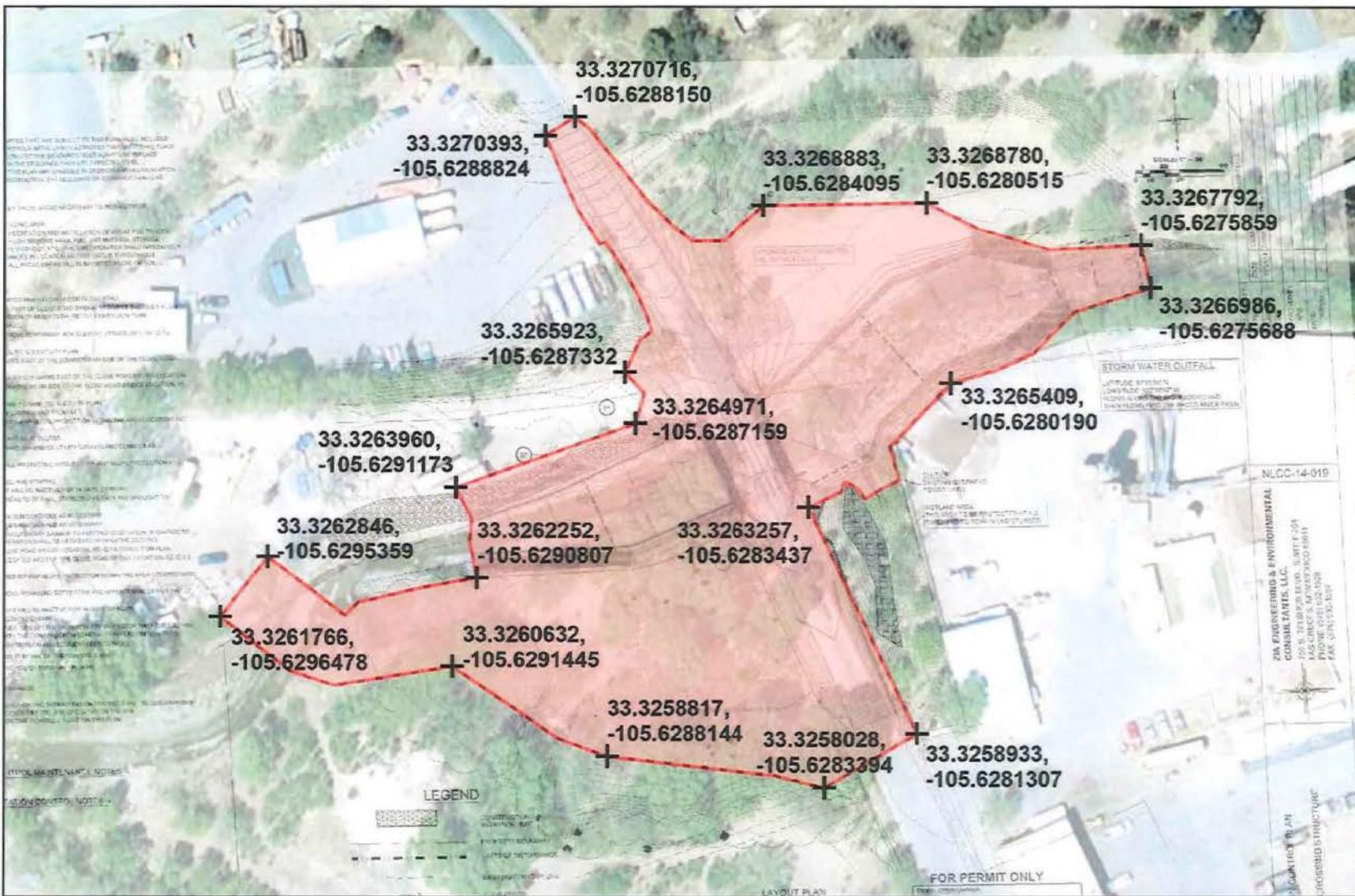

for Kevin Jaynes
Regional Environmental Officer
Region VI

Enclosures

NM ARMS Map
Project Overview Map
Photos

U.S. Department of Homeland Security
Federal Emergency Management Agency
Section 106 Review: ARMS Location Map, Close Drive Bridge





PA-06-NM-1783-PW-094



Legend

- Close Rd. Area of Disturbance
- LatLong Coordinates



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

Date: 03/05/2015
Created by: Jon Williams
Project No.: NLCC-14-019



Photos of Damage: 2008

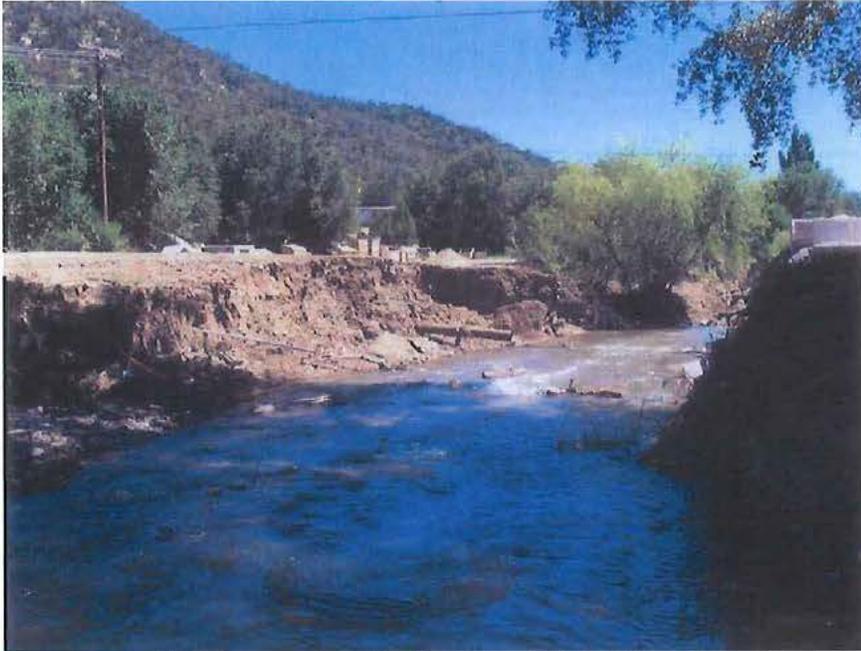


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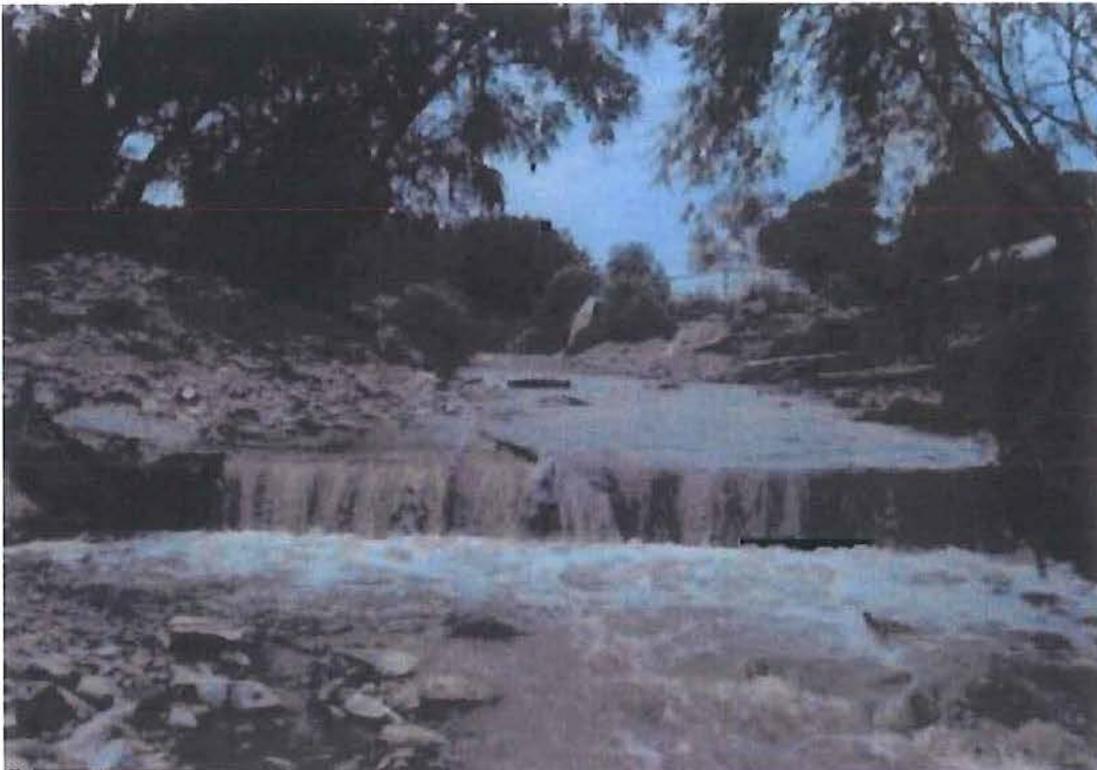
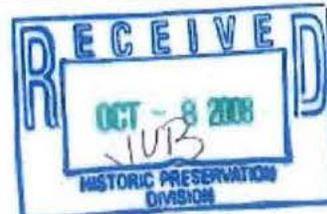


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No Historic Properties Affected. 10/23/08

Michelle Ensey
for NM State Historic Preservation Officer



FEMA

March 09, 2015

Ms. Holly Houghten, THPO
Mescalero Apache Tribe
P.O. Box 227
Mescalero, NM 88340

RE: Section 106 Review Consultation, FEMA-1783-DR-NM
PA-06-NM-1783-PW-094, Close Drive Bridge Repair
Coordinates UTM: 33.32644, -105.62865; 13S 441489 3687652

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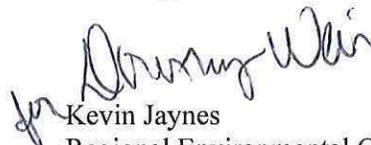
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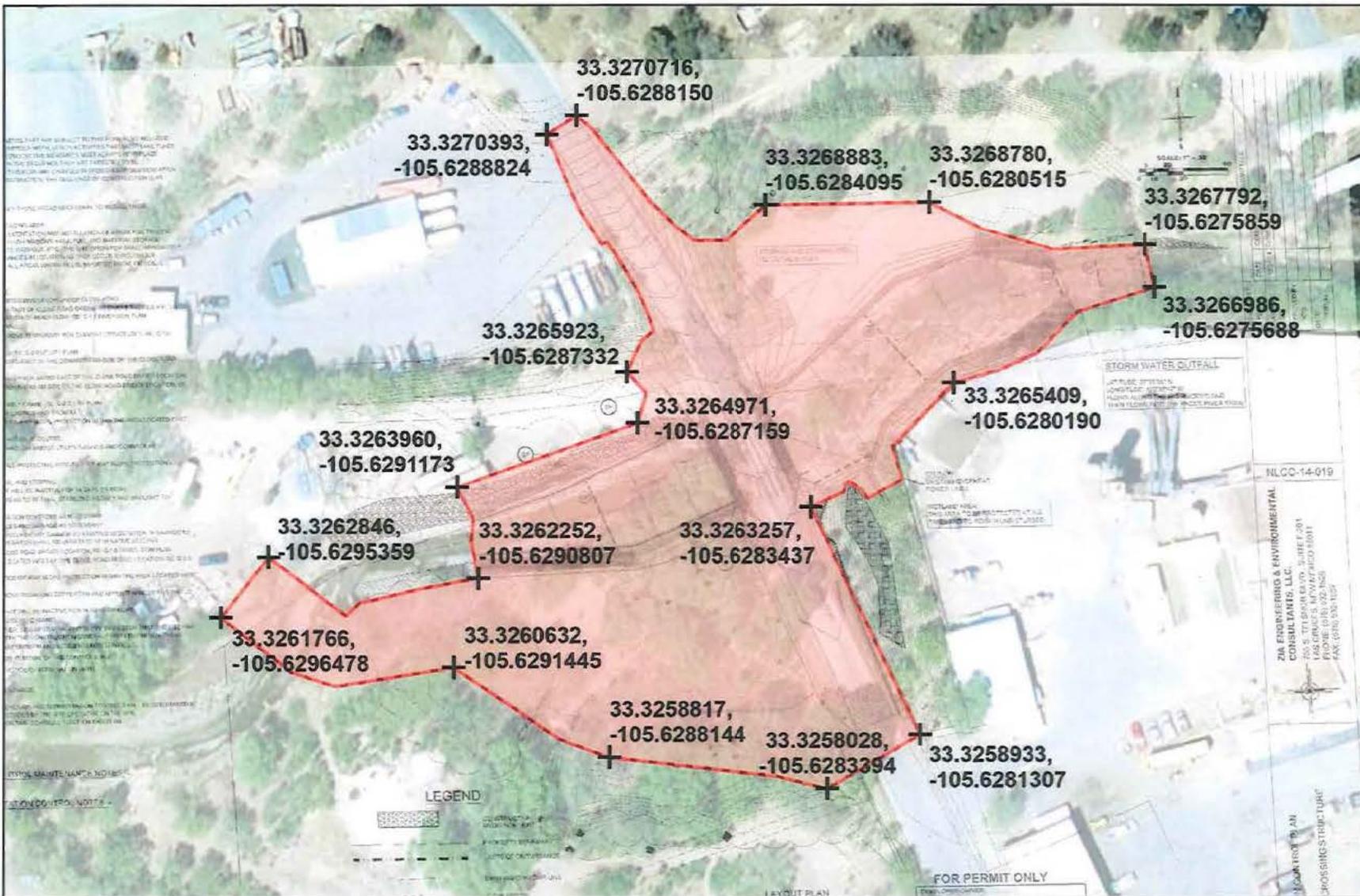

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Section 106 Review: ARMS Location Map, Close Drive Bridge





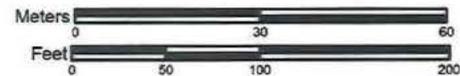
PA-06-NM-1783-PW-094



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Project No.: NLCC-14-019



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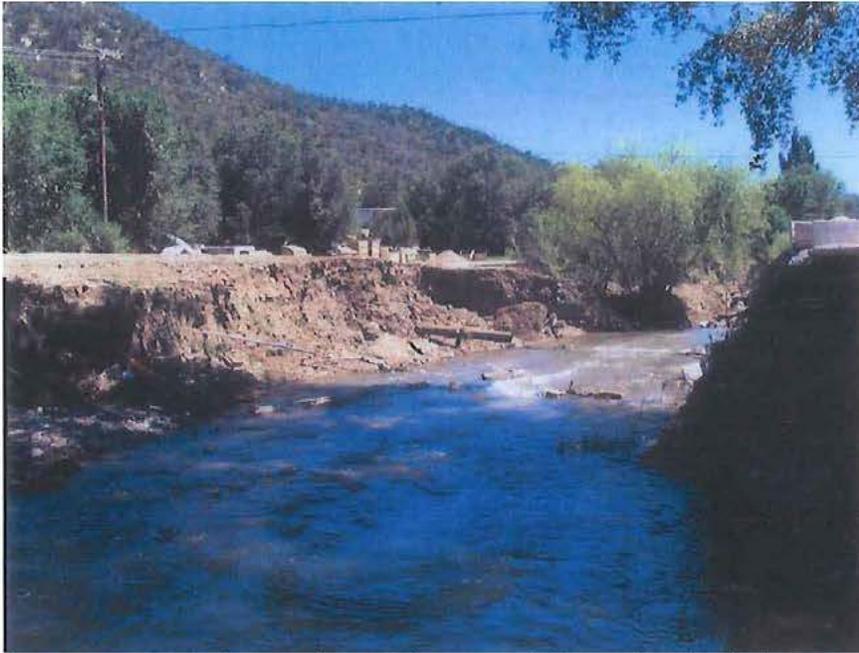


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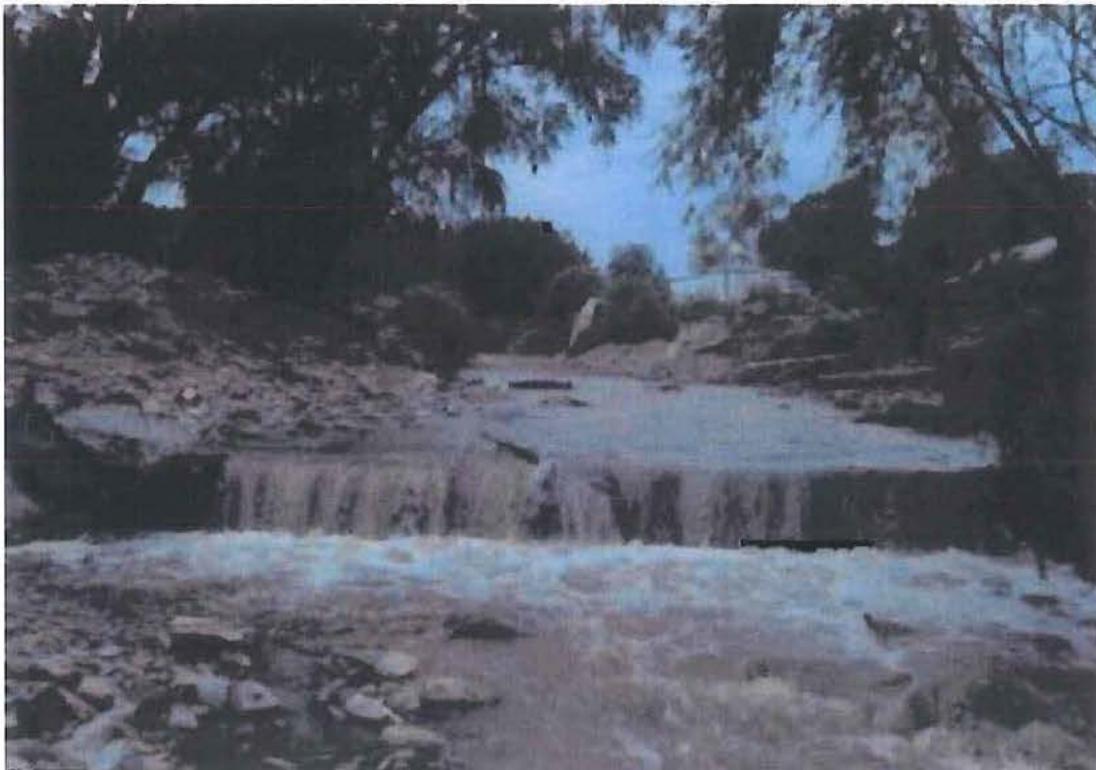
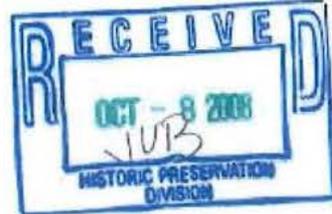


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Ph. 575.464-3214
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No Historic Properties Affected.

10/23/08

Michelle Ensey
for NM State Historic Preservation Officer



FEMA

March 09, 2015

Mr. Javier Loera, Tribal Historic Preservation Officer
Ysleta del Sur Pueblo
119 South Old Pueblo Road
El Paso, TX 79907-6644

RE: Section 106 Review Consultation, FEMA-1783-DR-NM
PA-06-NM-1783-PW-094, Close Drive Bridge Repair
Coordinates UTM: 33.32644; -105.62865; 13S 441489 3687652

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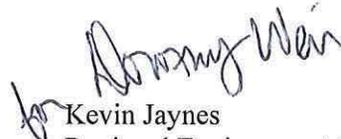
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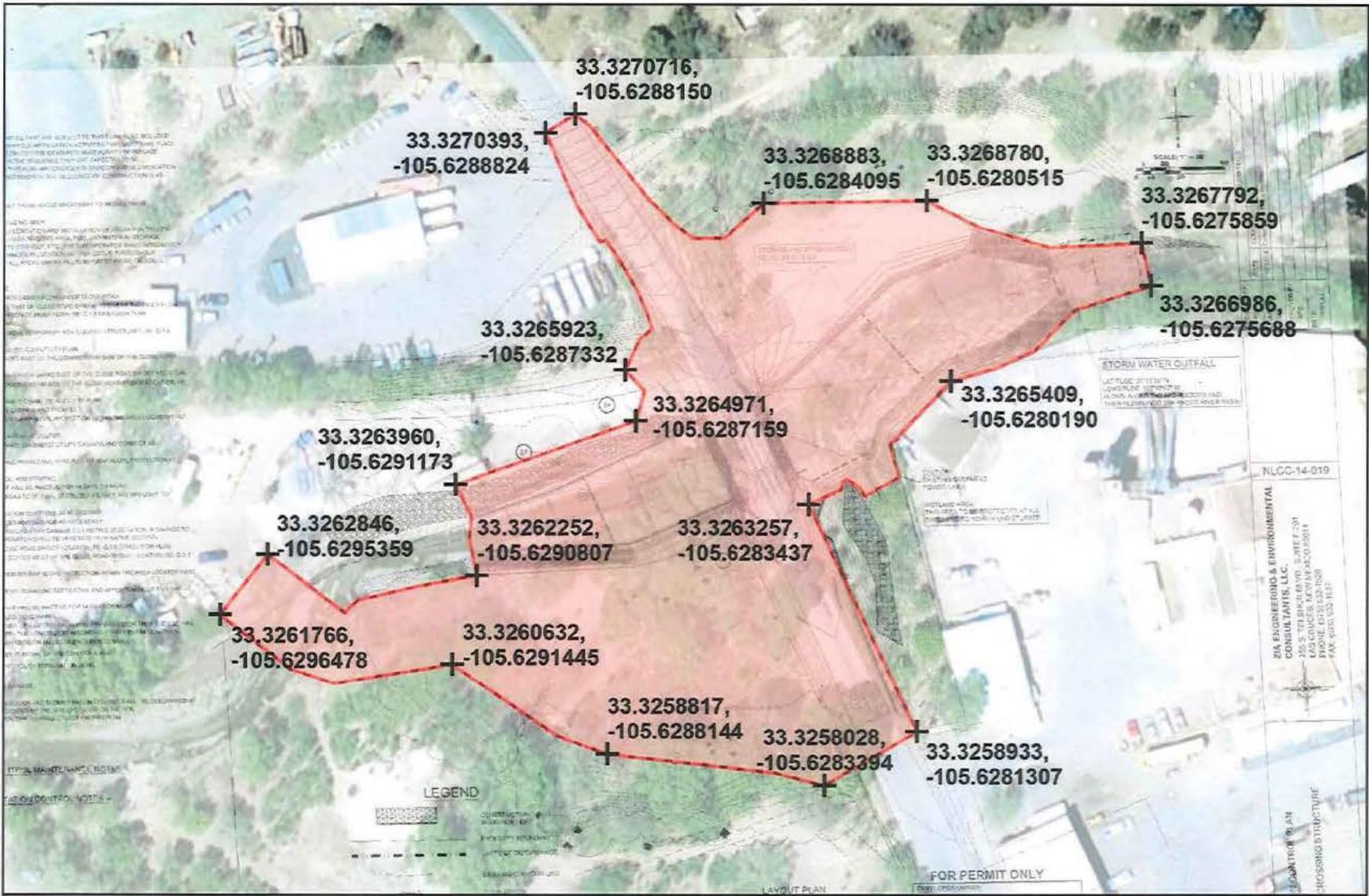
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PA-06-NM-1783-PW-094

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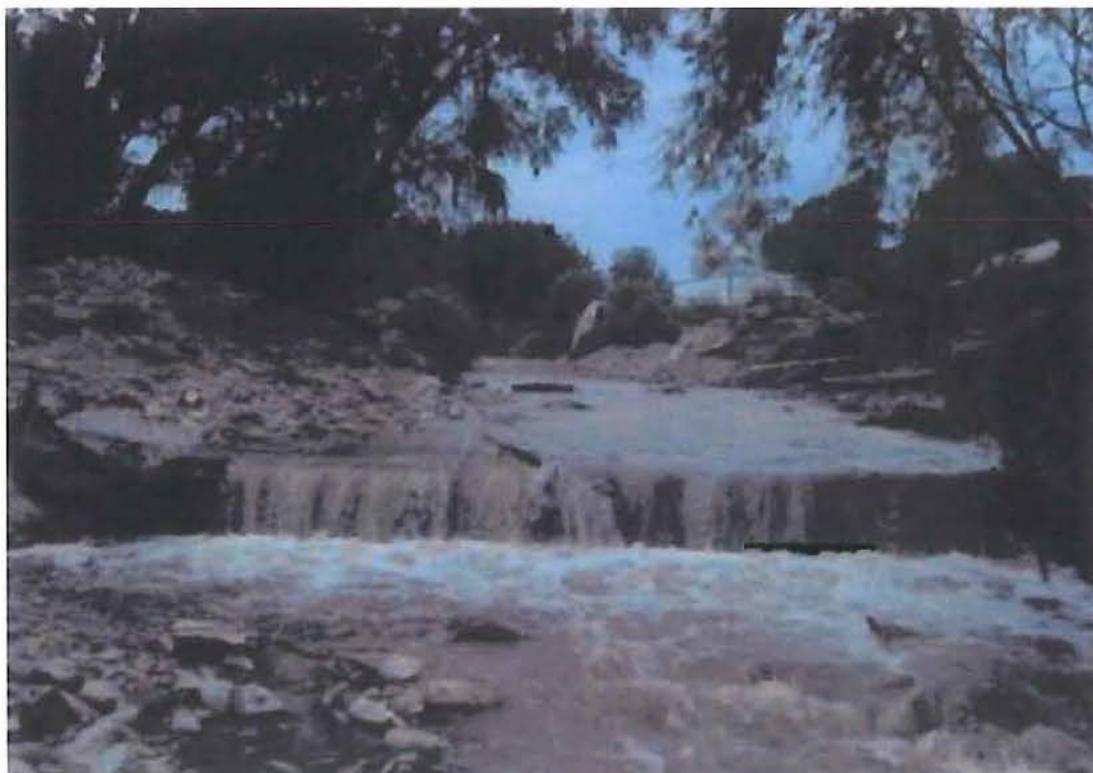
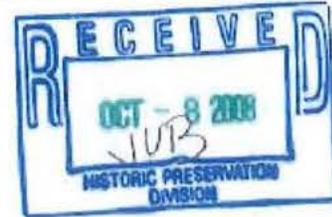


Photo 2: Looking upstream. Brown pipe can be more readily seen at right of photo just above waterfall.

Chun, Stanley

085422

From: Chun, Stanley
Sent: Tuesday, October 07, 2008 10:38 AM
To: 'Biella, Jan, DCA'
Cc: 'michelle.ensey@state.nm.us'; Barnes, Amy; Lukes, Teresa
Subject: Bridge Sites along Rio Ruidoso / corridor



Aloha Jan,

Per our discussion/meeting Oct 1, 2008; I will be sending to you via UPS, 12 bridge sites with UTM locations map with descriptive information along with before and after photos (as best available to us at this time) as some visual aid for determining the value of any remaining site resource integrity to the area surrounding the damaged bridges. Repairs to the physical damages and restoration of the lineal transportation function at the flood damaged sites will further impact the localized damaged areas where man made disturbances/improvements have occurred over the years. Our observations at this preliminary stage of review on the Rio Ruidoso stream corridor where these damages have occurred indicate a wide range of activities / changes have occurred to both the man made and natural environment.

The following is a listing of the first batch of identified structures submitted to us for review.

List of UTM bridge sites to be included in UPS shipment:

UTM:	Name:
13 441491.0E, 3687653.0N	Close Road Crossing
13 437175.0E, 3688429.0N	Grindstone Canyon Road Crossing
13 435392.0E, 3688446.0N	Coyote Lane Crossing
13 437922.0E, 3688333.0N	Country Club Drive Crossing
13 433267.0E, 3688862.0N	McDaniel Road Crossing
13 435797.0E, 3688531.0N	Main Road No. 1 Crossing
13 434855.0E, 3688534.0N	Main Road No. 2 Crossing
13 433535.0E, 3688893.0N	North Loop Road No. 2 Crossing
13 436398.0E, 3688617.0N	Sleepy Hollow Road Crossing
13 438592.0E, 3687865.0N	Robin Road Crossing
13 438075.0E, 3688118.0N	River Trail Bridge
13 437579.0E, 3688386.0N	Eagle Drive crossing

Please call me at 575.464-3214 if you have any questions on what is being sent.

Mahalo,

Stanley KS Chun, EHP Specialist
Mescalero JFO
810 White Mountain Road
P.O. Box 248
Mescalero, NM 88340

Ph. 575.464-3214
Cel. 202.870-7224

No Historic Properties Affected.

10/23/08

Michelle Ensey
for NM State Historic Preservation Officer



SUSANA MARTINEZ
Governor
JOHN A. SANCHEZ
Lieutenant Governor

State of New Mexico
ENVIRONMENT DEPARTMENT
Office of the Secretary

Harold Runnels Building
1190 Saint Francis Drive, PO Box 5469
Santa Fe, NM 87502-5469
Telephone (505) 827-2855 Fax (505) 827-2836
www.nmenv.state.nm.us



RYAN FLYNN
Cabinet Secretary
BUTCH TONGATE
Deputy Secretary

November 10, 2014

Zia Engineering & Environmental Consultants, LLC
ATTN: Leah Markiewitz
755 S. Telshor Blvd, Suite F-201
Las Cruces, NM 88011
lmarkiewitz@ziaeec.com

RESPONSE BY EMAIL

RE: Replacement of the Close Road Bridge Ruidoso

To Whom It May Concern:

Your letter regarding the above named project was received by the New Mexico Environment Department (NMED) and was sent to various bureaus for review and comment. Comments were provided by the Air Quality Bureau and Surface Water Quality Bureaus, and are as follows.

Air Quality Bureau

In conjunction with the NEPA environmental review being conducted by Zia Engineering & Environmental Consultants, LLC, the New Mexico Environment Department's Air Quality Bureau has evaluated the information submitted with respect to the The Village of Ruidoso / FEMA Environmental Assessment for the Replacement of the Close Road Bridge, located in Lincoln County. Lincoln County is currently considered to be in attainment with all New Mexico and National Ambient Air Quality Standards.

The Village of Ruidoso with funding from the Federal Emergency Management Agency (FEMA) is proposing to construct a replacement for the box culvert bridge located at Close Road. The existing box culvert bridge was built following the flooding of the Rio Ruidoso after the remnants of Hurricane Dolly passed through New Mexico in July 2008. The bridge was considered a temporary structure until funds were available to replace it.

The proposed action alternative states that the temporary box culvert bridge will be removed and replaced with a ConSpan Arch culvert with a 60-foot span and a 12-foot rise. The temporary box culverts will be removed using standard construction means. The new bridge will allow for utilities to cross over the Rio Ruidoso without having to impact the river in the future, if necessary. Water from the Rio Ruidoso will be diverted during the installation of the new bridge. Water diversion will make use of an old water channel of the river. Water will be

pumped from the Rio Ruidoso to the adjacent channel. This water will flow naturally through the channel, through the existing culvert under Close Road, and follow the existing path returning to the river just east of the bridge. The existing culverts under Close Road will be cleared to allow for the water to flow naturally under the roadway. A Storm Water Pollution Prevention Plan (SWPPP) has been created and will be enforced during construction

Construction activities identified in this proposal will create temporary increases in pollutant emissions due to combustion-related construction equipment usage, demolition, debris removal and earth excavation and movement. The proposed project may impact: residential areas and commercial areas. Care should be taken to minimize fugitive dust and equipment emissions.

To ensure air quality standards are met, applicable local and county regulations requiring noise or dust control must be followed for the duration of this project. Even if none are in effect, dust control measures should be considered to minimize the release of particulates due to vehicular traffic, construction equipment, ground disturbances and dumping of gravel. Special attention should be paid to fugitive dust minimization during high wind events, especially in the more populated areas. Areas disturbed by construction activities resulting in significant ground disturbance within and adjacent to the project should be reclaimed to avoid long-term problems with soil erosion and fugitive dust.

All asphalt, concrete, quarrying, crushing and screening facilities contracted in conjunction with the proposed project must have current and proper air quality permits. For more information on air quality permitting and modeling requirements, please refer to 20.2.72 NMAC.

Activities identified in this proposal will increase local emissions and will temporarily impact air quality in the area. Negative impacts associated with construction activities will be minimized if regulations and guidelines identified here are followed. The project as proposed is not anticipated to contribute negatively to air quality on a long-term basis.

Surface Water Quality Bureau

Clean Water Act, Section 402 NPDES Industrial Storm Water Construction General Permit (CGP)

The U.S. Environmental Protection Agency (USEPA) requires National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) coverage for storm water discharges from construction activities (such as clearing, grading, excavating, and stockpiling) that disturb (or re-disturb) one or more acres, or smaller sites that are part of a larger common plan of development or sale. The total area of disturbed soil for the pipeline and the area of soil where the material removed is placed is included in total disturbed soil footprint. Prior to discharging storm water, construction operators must obtain coverage under an NPDES permit. Among other things, this permit requires that a Storm Water Pollution Prevention Plan (SWPPP) be prepared for the site, including support and staging areas, and that appropriate Best Management Practices (BMPs) be installed and maintained both during and after construction to prevent, to the extent practicable, pollutants (primarily sediment, oil & grease and construction materials from construction sites) in storm water runoff from entering waters of the U.S. This permit also requires that permanent stabilization measures (re-vegetation, paving, etc.), and permanent storm water management measures (storm water detention/retention structures, velocity dissipation devices, etc.) be implemented post construction to minimize, in the long term, pollutants in storm water runoff from entering these waters.

The Close Road bridge replacement project at 33 19 35.17, -105 37 42.37 is in water quality unit 20.6.4.209 segment NM-2209.A_21. This segment has a Total Maximum Daily Load (TMDL) for temperature and turbidity. If you discharge to surface water that is impaired for (1) sediment or sediment related parameter, such as total suspended solids (TSS) or turbidity, and/or (2) nutrients, including impairments for nitrogen and/or phosphorus, you are required to comply with the following requirements of the CGP

3.2.1. Identify If You Discharge To Impaired Water.

If you discharge to an impaired water, you must provide the following information in your NOI: A list of all impaired waters to which you discharge; the pollutant(s) for which the surface water is impaired; and whether a TMDL has been approved or established for the waters to which you discharge.

3.2.2. Requirements for Discharges to Sediment or Nutrient-Impaired Waters.

If you discharge to surface water that is impaired for (1) sediment or sediment related parameter (e.g., total suspended solids (TSS) or turbidity) and/or (2) nutrients (e.g., nitrogen and/or phosphorus), including impaired waters for which a TMDL has been approved or established for the impairment, you are required to comply with the following stormwater control requirements, which supplement the requirements applicable to your site in other corresponding parts of the permit

3.2.2.1 Frequency of Site Inspection.

You must conduct inspections at the frequency specified in Part 4.1.3 of the CGP.

3.2.2.2 Deadline to Complete Stabilization.

You must comply with the deadlines for completing site stabilization as specified in Part 2.2.1.3c of the CGP.

3.2.2.3 State and Tribal Requirements.

You must comply with any additional state or tribal impairment-related requirements included in Part 9. EPA will also impose additional water quality-based limitations on a site-specific basis, or require you to obtain coverage under an individual permit, if it is determined that the controls in the Part will not be sufficient to control discharges consistent with the assumptions and requirements of an applicable wasteload allocation of an approved or established TMDL or to prevent the site from contributing to the impairment.

4.1.3. Increase in Inspection Frequency for Sites Discharging to Sensitive Waters.

For any portion of the site that discharges to a sediment or nutrient-impaired water (see Part 3.2) or to a water that is identified by your state, tribe, or EPA as Tier 2, Tier 2.5, or Tier 3 for antidegradation purposes (see Part 3.3), instead of the inspection frequency specified in Part 4.1.2, you must conduct inspections in accordance with the following inspection frequencies:

4.1.3.1 Once every 7 calendar days; and

4.1.3.2 Within 24 hours of the occurrence of a storm event of 0.25 inches or greater. To determine if a storm event of 0.25 inches or greater has occurred on your site, you must either keep a properly maintained rain gauge on your site, or obtain the storm event information from a weather station that is representative of your location. For any day of rainfall during normal business hours that measures 0.25 inches or greater, you must record the total rainfall measured for that day in accordance with Part 4.1.7.1d. Note:

Inspections are only required during the project's normal working hours. "Within 24 hours of the occurrence of a storm event" means that you are required to conduct an inspection within 24 hours once a storm event has produced 0.25 inches, even if the storm event is still continuing. Thus, if there is a storm event at your site that continues for multiple days, and each day of the storm produces 0.25 inches or more of rain, you are required to conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the end of the storm. Note: If you qualify for any of the reduced inspection frequencies in Part 4.1.4, you may conduct inspections in accordance with Part 4.1.4 for any portion of your site that discharges to a sensitive water. 2.2.1.3c. Deadlines for sites discharging to sensitive waters.

For any portion of the site that discharges to a sediment or nutrient-impaired water (see Part 3.2) or to a water that is identified by your state, tribe, or EPA as Tier 2, Tier 2.5, or Tier 3 for antidegradation purposes (see Part 3.3), you are required to complete the stabilization activities specified in Parts 2.2.1.2a and/or 2.2.1.2b within 7 calendar days after the temporary or permanent cessation of earth-disturbing activities.

Note: If you qualify for the deadlines for initiating and completing stabilization in Part 2.2.1.3a or b, you may comply with the stabilization deadlines in Part 2.2.1.3a or b for any portion of your site that discharges to a sensitive water.

Part 9 of the 2012 CGP includes permit conditions applicable to specific states, Indian country lands, or territories. In the State of New Mexico, except on tribal land, permittees must ensure that there is no increase in sediment yield and flow velocity from the construction site (both during and after construction) compared to pre-construction, undisturbed conditions (see Subpart 9.4.1.1 of the 2012 CGP).

USEPA requires that all "operators" (see Appendix A of the 2012 CGP) obtain NPDES permit coverage by submitting a Notice of Intent (NOI) for construction projects. Generally, this means that at least two parties will require permit coverage. The owner/developer of this construction project who has operational control over project specifications, the general contractor who has day-to-day operational control of those activities at the site, which are necessary to ensure compliance with the SWPPP and other permit conditions, and possibly other "operators" will require appropriate NPDES permit coverage for this project.

The CGP was re-issued effective February 16, 2012. The CGP, NOI, deadlines for submitting an NOI, Fact Sheet, and Federal Register notice is available at:

<http://cfpub.epa.gov/npdes/stormwater/cgp.cfm>

Clean Water Act, Section 404 USACE/Section 401 Certification

Information is provided below if the project (or associated construction support areas, if any) during construction requires discharge of dredged/fill material into Waters of the U.S., including wetlands.

Section 404 of the Clean Water Act requires approval from the U.S. Army Corp of Engineers (USACE) prior to discharging dredged or fill material into waters of the United States (U.S.). Any person, firm, or agency (including Federal, state, tribal and local governmental agencies) planning to work in waters of the United States should first contact the USACE regarding the

need to obtain a permit from the Regulatory Division. Failure to receive and implement proper permit coverage would be a violation of the Clean Water Act.

More information on the §404 permitting process, including applicability of Nationwide Permits, mitigation requirements, requirements for certification for any discharges on state, private or tribal land, can be obtained from the USACE at:

<http://www.spa.usace.army.mil/Missions/RegulatoryProgramandPermits.aspx>

NMED Surface Water Quality Bureau Watershed Protection Section coordinates the state's §401 certification of §404 dredged/fill material permits with the USACE. In response to the §404 reissued nationwide permits on April 13, 2012, a Conditional §401 Certification for discharges to State of New Mexico surface water has been issued and is available at the following web site: <ftp://ftp.nmenv.state.nm.us/www/swqb/WPS/401-404/NWPCertificationNotice04-13-2012.pdf>. For additional information, including permitting procedures and jurisdictional water determination, contact the USACE, Albuquerque District, 4101 Jefferson Plaza NE, Albuquerque, New Mexico 87109-343, 505-342-3262.

I hope you find this information helpful.

Sincerely,

Morgan R. Nelson
Environmental Impact Review Coordinator
NMED File Number: EIR 5207

Leah Markiewitz

Sent:
To:
Subject:

Dear Leah Markiewitz:

Thank you for giving me the opportunity to review and comment on the Village of Ruidoso and the Federal Emergency Management Agency Environmental Assessment for the Replacement of the Close Road Bridge in Ruidoso, Lincoln County, NM (Zia Project No. NLCE-14-015).

No state listed endangered plant species are known to occur in the described habitat in Lincoln County. However, potential habitat should be evaluated for *Cirsium wrightii* (Wright's marsh thistle) and *Cirsium vinaceum* (Sacramento Mountains thistle). Please refer to the New Mexico Rare Plants website for additional information on these species (<http://nmrareplants.unm.edu/index.html>). I recommend clearance surveys for any areas that might provide suitable habitat. Should the species be located on the project site, I recommend avoiding the plants if possible, or minimizing impacts.

Please let me know if I can be of further help.

Daniela Roth

BOTANY PROGRAM COORDINATOR
EMNRD-Forestry Division
1220 S. St. Francis Dr.
Santa Fe, NM 87505
(505)476-3347 (Phone)
(505)476-3330 (Fax)
<http://www.emnrd.state.nm.us/SFD/>

Leah Markiewitz

Sent:

To:

Cc:

Subject:

Attachments:

Hi Leah,

NMDGF has reviewed your 25 September letter regarding development of an environmental assessment for bridge replacement over the Rio Ruidoso at Close Road.

Attached is a New Mexico Wildlife of Concern list for Lincoln County. Also attached are our bridge and road construction guidelines, which we recommend be implemented to the extent practical.

The Department supports replacement of the box culvert with an arch culvert, which should facilitate fish movement through the Rio Ruidoso.

We look forward to the opportunity to review the EA for your project.

Mark Watson

Mark L. Watson
Terrestrial Habitat Specialist
Division of Ecological and Environmental Planning
NM Department of Game and Fish
P.O. Box 25112
Santa Fe, NM 87504
1 Wildlife Way
Santa Fe, NM 87507
(505) 476-8115
FAX: (505) 476-8128

For NM wildlife info, visit Biota Information System of New Mexico (BISON-M):
Species Accounts, Searches and County Lists (use the "Database Query" option): <http://www.bison-m.org/>
Habitat Handbook Project Guidelines:
http://www.wildlife.state.nm.us/conservation/habitat_handbook/index.htm
New Mexico Wildlife of Concern by Counties List:
http://www.wildlife.state.nm.us/conservation/share_with_wildlife/documents/speciesofconcern.pdf

CONSERVING NEW MEXICO'S WILDLIFE FOR FUTURE GENERATIONS

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BRIDGE AND ROAD CONSTRUCTION/RECONSTRUCTION GUIDELINES FOR WETLAND AND RIPARIAN AREAS

NEW MEXICO DEPARTMENT OF GAME AND FISH CONSERVATION SERVICES DIVISION

October 2003

BASIS

In New Mexico, a large number of bridge and road projects disturb at least small areas of aquatic, wetland, or riparian habitat. The cumulative impact of such projects on these habitats is significant. The following recommendations were developed with the intent of avoiding or minimizing adverse effects of bridge and road projects on the fragile and limited aquatic, riparian and wetland habitats of New Mexico. The Department of Game and Fish is concerned about these habitats: 1) because they are, essential for the survival of a majority of the species of wildlife found in the state; and 2) because the quantity and quality of these habitats have been significantly diminished.

Of the 867 species of vertebrates known to occur in New Mexico, approximately 479 (55%) rely wholly, or in part, on aquatic, wetland or riparian habitat for their survival¹. Surface water comprises only 0.2 percent (141,440 acres) of the surface area of New Mexico². Wetlands and riparian areas comprise another 0.6 percent (481,900 acres)³. It is estimated that fully one third of the wetlands that once existed in New Mexico have been lost³. On the main stem of the Rio Grande, the situation is worse; an 87 percent decrease in wetland acreage occurred along this river from 1918 to 1982⁴. The quality of these habitats has also been diminished. For example, of the 6,000 miles of streams in New Mexico, approximately 3,226 miles (54%) are impaired to some degree by water pollution⁵.

RECOMMENDATIONS

- A minimum notice of 30 days is requested by the Department prior to the planning deadline for the project. This lead-time is necessary for project evaluation.
- The project sponsor, to ensure that specifications are adhered to, should conduct comprehensive on-site supervision of the project contractor. Post-construction mitigation should likewise be monitored to ensure that agreed-upon measures are implemented successfully.
- Efforts must be made during construction to minimize impacts on vegetative communities. Existing roads and rights-of-way should be used for all transportation. Off-road driving should be avoided. Staging areas should be located in previously disturbed sites, where possible, and kept as small as possible. Road realignments should be designed to minimize the amount of construction in previously undisturbed areas.
- All topsoil removed for construction should be stockpiled and used as surface fill in reclamation of the project area. Following construction, disturbed areas should be re-vegetated using native species that approximate pre-disturbance plant community composition or native plant communities likely to be found in the area, whichever is more beneficial to wildlife. Other plant species may be used to provide quick establishment of ground cover on highly erodible areas. All seed mixtures should be certified as weed-free. A revegetation plan must be included as a component of the project mitigation plan.

- The revegetation plan should specify areas to be planted; species to be planted in each area; quantity of species (e.g., pounds of seed per acre, number of poles, number of saplings) to be planted at each location; monitoring and maintenance (e.g., protection from cattle, elk, beaver) of the plantings.
- All trees greater than six inches diameter at breast height that are removed should be replaced at a suitable on-site or off-site location at a 4:1 ratio, with a guarantee by the project proponent to monitor and maintain the plantings over a four-year period to ensure at least 80 percent survival at the end of that period in each planting area. This guarantee should be specified in the mitigation plan. If monitoring and maintenance cannot be guaranteed, trees should be replaced at a 10:1 ratio with cottonwood poles or saplings or appropriate native tree species. All other woody vegetation should be replaced on an acre-by-acre basis with native species.
- Mitigation should be conducted on-site. If no suitable areas occur on-site (e.g., native riparian forest already exists, stocking level precludes planting additional trees, land ownership problems), mitigation sites should be located in the immediate vicinity, where possible. Consideration should be given to restoring areas dominated by non-native species such as salt cedar, Russian olive and Siberian elm to native vegetation.
- Erosion control measures must be implemented during construction to prevent introduction of sediment-laden runoff into surface waters (e.g., hay bales, silt screens, settling basins, sediment traps). No material excavated for bridge approaches should be introduced into the stream.
- Exposed soils, particularly on slopes, must be stabilized with vegetation as soon as possible to prevent excessive erosion.
- Drainage control features of the project should be designed to prevent soil erosion and impacts to surface water quality. These measures should include, but not be limited to, the following:
 - a) culvert inverts should be level with the existing channel bottom at the inflow and outflow;
 - b) the slope of the culvert should match the gradient of the stream channel;
 - c) in watercourses with high stream flow velocity, the outlet of the culvert should be armored to prevent stream bed degradation;
 - d) bar ditches and roadside drainage features should be designed to prevent excessive flow velocity and gully formation through consideration of slope and incorporation of energy dissipation features;
 - e) settling basins should be installed in areas where runoff contains high sediment loads, to prevent sedimentation of receiving waters;
 - f) based on site-specific conditions, raised culverts at road crossings of ephemeral streams may be employed to raise the water table upgradient and promote development of mesic or wetland habitat. The Department should be consulted during the planning stage to determine if a raised culvert is appropriate.
- No net loss of wetland habitat quantity or quality should occur. If losses are unavoidable, mitigation should be designed to replace lost wetland area and value through in-kind (i.e., same type of wetland habitat type), on-site measures. The next option is to mitigate in-kind, off-site, preferably at an existing wetland where the result of mitigation would be expansion or enhancement.
- A wetland creation/restoration/enhancement plan should be included as a component of the project mitigation plan if wetland impacts are unavoidable. This plan should include the following features, which will provide information necessary to evaluate the potential for success:

- a) a description of the desired biological and hydrological values and functions of the wetland creation/restoration/enhancement is necessary to establish the objectives of the mitigation;
- b) scale plans that describe the location, configuration, areal extent, side slopes and depth contours of proposed wetland creation/restoration sites;
- c) profiles of proposed wetland creation/restoration sites, including adjacent river bed elevation (where applicable), should be provided to allow for assessment of the capacity of the proposed wetland to accommodate fluctuations in size (i.e., expansion and contraction) that may result, from fluctuating hydrologic conditions;
- d) characterization of ground water hydrology and quality at wetland creation/restoration sites, including temporal variations in ground water level and relationships between river stage (where applicable) and ground water level;
- e) a presentation of soil characteristics (e.g., salinity, permeability, organic matter content) at proposed wetland creation/restoration sites;
- f) a description of proposed plantings, including quantities and locations, should be presented along with the proposed sources of the plants or plant propagules;
- g) a monitoring and maintenance program, which includes consideration of trash removal, human-use monitoring and control, and vegetation management to maintain the stated wetland function and value goals.

This information should be used as the basis for wetland mitigation design. It will also enable reviewing agencies to adequately evaluate the mitigation plan.

- Boulders and rootwads dislodged during project activities should be placed within the stream to provide fish habitat. This activity should be planned and coordinated with the Department and other natural resource agencies to maximize effectiveness and prevent detrimental impacts, such as accelerated bank erosion and channel destabilization.
- Instream equipment activity is to be minimized, with no refueling, maintenance or cleaning of equipment (e.g., cement trucks) in or near the watercourse. All construction equipment shall be inspected daily to ensure that leaks or discharges of lubricants, fuels, or hydraulic fluids does not occur. All fuels, lubricants, and hydraulic fluids must be stored and dispensed at least 200 feet away from the stream bank or outside of the 100-year floodplain. Contain any poured concrete in forms and prevent introduction of uncured concrete into surface waters. The Department must be notified in the event of any spills of toxic material into the stream or if sediments are introduced into the stream at levels above State Water Quality Standards.
- When instream equipment activity cannot be avoided, it is recommended that this activity take place during the fall and winter months, during low flow. This is generally when the least amount of biological damage to the system will be incurred. However, scheduling may be affected by the presence of fall-spawning fish or wintering wildlife (e.g., bald eagles, waterfowl) or site-specific environmental constraints. The Department should be contacted for recommendations under these circumstances.
- Minimize disturbance of stream substrate to only that necessary for placing abutments or pilings. To preserve channel equilibrium and stability, stream channels should not be realigned, constricted, widened, changed in bed elevation or otherwise altered.
- Cofferdams should be constructed of material that cannot be brought into suspension by flowing water (e.g., water bag barriers or concrete highway dividers). All instream work should be conducted “in the dry”.

- Gravel for surfacing, riprap and other bank stabilizing materials, including all temporary and permanent structures placed into the watercourse, must be free of fines and chemical contaminants.
- Tarpaulins or other catchment devices should be slung under the bridge in order to prevent debris, wastes and toxic compounds from entering the stream. The New Mexico Environment Department must be notified for disposal of any toxic compounds.
- Sandblasting operations should include vacuum systems or the bridge should be completely “bagged” to ensure collection of all lead paint and concrete debris.

¹ New Mexico Department of Game and Fish. 2002. Threatened and Endangered Species of New Mexico: *Biennial Review Recommendations*.
http://www.gmfsh.state.nm.us/PageMill_TExt/NonGame/swwh.html

² U.S. Department of the Interior, Geological Survey. 1970. The National Atlas of the United States of America. Washington, D.C. 417 pages.

³ Dahl, T.E. 1990. Wetlands losses in the United States, 1780's to 1980's. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. 21 pages.

⁴ Hink, V.C. and R.D. Ohmart. 1984. Middle Rio Grande biological survey. Report submitted to the U.S. Army Corps of Engineers, Albuquerque, New Mexico. Contract Number DACW47-81-C-0015. 58 pages.

⁵ Water Quality Control Commission. 1992. Water quality and water pollution control in New Mexico, 1992. A report prepared for submission to the Congress of the United States by the State of New Mexico pursuant to section 305(b) of the Federal Clean Water Act. NMED/SWQ-92/1. New Mexico Environment Department, Santa Fe, New Mexico. 263 pages.

1. Go to the report sheet. Type the name of the county before the word "COUNTY" at the top of the page.
2. Go to NMWOC sheet. Click on the arrow in the box that says "Counties". Select (custom). Select "contains" from the drop-down list for the upper-left box, then type the 2-letter code for the county you want in the upper-right box. Click "OK".
3. Click the first box under "Common Name", hold the shift button and click the last box under "Critical Habitat" (whether or not it is blank). Right-click and select "copy".
4. Go back to the report sheet. Click in box A9. Right-click and select "paste".

<u>Taxon</u>	<u>Common Name</u>	<u>Scientific Name</u>	<u>NMGF</u>	<u>US FWS</u>	<u>critical</u> <u>habitat</u>	<u>Counties</u>
Fish	Rio Grande Chub	Gila pandora	s			BE,CH,CI,CO,ED,GU,LI,LA,MO,OT,RA,SA,SM,SF,SI,SO,TA,
Fish	White Sands Pupfish	Cyprinodon tularosa	T			LI,OT,SI,
Amph	Sacramento Mountain Salamander	Aneides hardii	T			LI,OT,
Bird	Brown Pelican	Pelecanus occidentalis	E			BE,CH,CO,DA,DB,ED,GR,LI,LU,OT,QU,RA,SA,SJ,SM,SO,SI,
Bird	Bald Eagle	Haliaeetus leucocephalus	T			BE,CA,CH,CI,CO,CU,DB,DA,ED,GR,GU,HA,HI,LE,LI,LA,LU,MK,MO,OT,QU,RA
Bird	Northern Goshawk	Accipiter gentilis	s			BE,CA,CH,CI,CO,DA,ED,GR,HI,LE,LI,LA,LU,MK,MO,OT,QU,RA,SA,SJ,SM,SF,
Bird	Common Black-Hawk	Buteogallus anthracinus	T			BE,CA,CH,CO,DA,ED,GR,GU,HI,LI,LU,OT,RA,SA,SM,SI,SO,TA,VA
Bird	Peregrine Falcon	Falco peregrinus	T			BE,CA,CH,CI,CO,CU,DB,DA,ED,GR,GU,HA,HI,LE,LI,LA,LU,MK,MO,OT,QU,RA
Bird	Mountain Plover	Charadrius montanus	s			BE,CA,CH,CI,CO,CU,DB,DA,ED,GR,GU,HA,HI,LE,LI,LU,MK,MO,OT,QU,RA,RC
Bird	Yellow-billed Cuckoo (western)	Coccyzus americanus	s	P		BE,CA,CI,DA,GR,HI,LA,LI,LU,MK,MO,OT,RA,SA,SF,SJ,SI,SM,SO,TA,TO,VA
Bird	Yellow-billed Cuckoo	Coccyzus americanus	s			CH,CO,CU,DB,ED,GU,HA,LE,LI,OT,QU,RO,TO,UN,
Bird	Mexican Spotted Owl	Strix occidentalis lucida	s	T	Y	BE,CA,CH,CI,CO,DA,ED,GR,HI,LI,LA,LU,MK,MO,OT,RA,SA,SJ,SM,SF,SI,SO,T
Bird	Broad-billed Hummingbird	Cynanthus latirostris	T			BE,DA,ED,GR,HI,LA,LE,LI,OT,SA,SJ,SI,SM,VA,
Bird	Southwestern Willow Flycatcher	Empidonax traillii extimus	E	E	Y	BE,CA,CH,CI,CO,DB,DA,ED,GR,GU,HA,HI,LI,LA,LU,MK,MO,OT,QU,RA,SA,SJ
Bird	Loggerhead Shrike	Lanius ludovicianus	s			BE,CA,CH,CI,CO,CU,DB,DA,ED,GR,GU,HA,HI,LE,LI,LA,LU,MK,MO,OT,QU,RA
Bird	Gray Vireo	Vireo vicinior	T			BE,CA,CH,CI,DA,ED,GR,GU,HI,LI,LA,LU,MK,OT,QU,RA,SA,SJ,SM,SF,SI,SO,T
Bird	Baird's Sparrow	Ammodramus bairdii	T			BE,CA,CH,CO,CU,DB,DA,ED,GR,GU,HA,HI,LE,LI,LU,MO,OT,QU,RA,RO,SA,S.
Bird	Sprague's Pipit	Anthus spragueii			C	BE,CA,CH,CI,CO,CU,DB,DA,ED,GR,GU,HA,HI,LE,LI,LU,MO,OT,QU,RO,SJ,SM
Mammal	Western Small-footed Myotis Bat	Myotis ciliolabrum melanorhinus	s			BE,CA,CH,CI,DA,ED,GR,GU,HI,LI,LA,MK,OT,QU,RA,SA,SJ,SM,SF,SI,SO,TA,T
Mammal	Yuma Myotis Bat	Myotis yumanensis yumanensis	s			BE,CA,CH,CI,DA,ED,GR,HI,LI,MO,RA,SA,SJ,SM,SF,SI,SO,TA,UN,VA
Mammal	Arizona Myotis Bat	Myotis occultus	s			BE,CA,CI,CO,DA,GR,LI,MK,OT,SA,SJ,SM,SI,SO,TA,UN
Mammal	Cave Myotis Bat	Myotis velifer	s			CA,CH,ED,GR,HI,LE,LI,OT,
Mammal	Long-legged Myotis Bat	Myotis volans interior	s			BE,CH,CI,CO,DA,ED,GR,HI,LI,LA,LU,MK,MO,OT,RA,SA,SJ,SM,SF,SI,SO,TA,T
Mammal	Fringed Myotis Bat	Myotis thysanodes thysanodes	s			BE,CA,CH,CI,CO,DA,ED,GR,HI,LI,LU,MK,MO,OT,RA,SA,SJ,SM,SF,SI,SO,TA,T
Mammal	Pale Townsend's Big-eared Bat	Corynorhinus townsendii pallescens	s			BE,CA,CH,CI,DA,ED,GR,HI,LI,LA,LU,MO,OT,RA,SA,SJ,SM,SF,SI,SO,TA,UN,
Mammal	Penasco Least Chipmunk	Neotamias minimus atristriatus			C	LI,OT,
Mammal	Oscura Mountains Colorado Chipmunk	Neotamias quadrivittatus oscuraensis	T			SO,LI
Mammal	Gray-footed Chipmunk	Neotamias canipes sacramentoensis	s			LI,OT,
Mammal	Black-tailed Prairie Dog	Cynomys ludovicianus ludovicianus	s			CH,CO,CU,DB,ED,GU,HA,HI,LE,LI,MO,OT,QU,RO,UN,
Mammal	Red Squirrel	Tamiasciurus hudsonicus lynchuchus	s			LI,OT,
Mammal	Desert Pocket Gopher	Geomys arenarius	s			DA,LI,LU,OT,SI,SO,
Mammal	Tularosa Rock Pocket Mouse	Chaetodipus intermedius	s			LI,OT,
Mammal	Pecos River Muskrat	Ondatra zibethicus ripensis	s			CH,DA,ED,GU,LI,SM,SI,SO,VA
Mammal	Ringtail	Bassariscus astutus	s			BE,CA,CH,CI,CO,CU,DA,DB,ED,GR,HI,LI,LU,OT,RA,RO,SF,SI,SO,TA
Mammal	Black-footed Ferret	Mustela nigripes		E		BE,CA,CH,CI,CO,CU,DB,GR,GU,HA,LE,LI,LA,MK,MO,QU,RA,RO,SA,SJ,SM,SI
Mammal	Western Spotted Skunk	Spilogale gracilis	s			BE,CA,CH,CO,DA,ED,GR,GU,HI,LE,LI,LU,MK,OT,QU,RA,RO,SI,SJ,SF,SO,TO,
Mammal	Common Hog-nosed Skunk	Conepatus leuconotus	s			BE,CA,CH,CI,DA,DB,ED,GR,GU,HI,LE,LI,LU,QU,OT,SI,SM,SO,TO,VA
Invert	Socorro Mountainsnail	Oreohelix neomexicana	s			BE,CI,GR,LI,OT,RA,SA,SM,SF,SO,TO,

.,RO,SA,SJ,SM,SF,SI,SO,TA,TO,UN,VA
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.SM,SF,SI,SO,TA,TO,VA
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I,SA,SI,SO,TO,UN,VA
O,UN,VA

O,UN,VA
TO,UN,VA

F,SO,TA,UN,VA
UN,VA

Taxon	Common Name	Scientific Name	NMGF	US FWS	critical habitat	Counties
Extinct	Rio Grande Bluntnose Shiner	Notropis simus simus				BE,DA,RA,SA,SF,SO,VA
Extinct	Phantom Shiner	Notropis orca				BE,SO,VA
Extinct	Hot Springs Cotton Rat	Sigmodon fulviventris goldmani				SL
Extinct	Merriam's Elk	Cervus elaphus merriami				BE,CA,CH,CI,CJ,CU,DB,ED,GR,GU,HI,LE,LI,LOT,OU,RO,SI,SO,TO,VA
Extinct	Tampico Pearly Mussel	Cyrtornais tampicoensis				ED
Extinct	Washboard	Megalaniais nervosa				ED
Extinct	Invertebrate	Potamilus metrecktayi				ED
Extinct	Rio Grande Monkeyface	Quadrula couchiana				ED
Extinct	Falls Spike	Quincunidia mitchelli				ED
Extinct	Mexican Fawnfoot	Truncilla cognata				ED
Extinct	Pondhorn	Uniomorus tetralasmus				QU,SM
Extinct	Blade Vertigo	Vertigo milium				ED,LI,SJ
Extinct	Florida Mountansnail	Oreohelix florida	E	SOC		GR,HI,LU
Extinct	Invertebrate	Oreohelix caballoensis				SI
Extinct	Invertebrate	Oreohelix olerana olerana				LI,LOT
Extinct	Invertebrate	Oreohelix olerana angulata				LI
Extinct	Invertebrate	Oreohelix olerana tendomis				LI
Extinct	Invertebrate	Oreohelix penascana				OT
Extinct	Invertebrate	Radicecentrum ferrissi cadavaer				HI
Extinct	Invertebrate	Radicecentrum ferrissi morticinum				HI
Extinct	Invertebrate	Ashmunella ruidosana				LI
Extinct	Invertebrate	Ashmunella tularosana				OT
Extinct	Invertebrate	Ashmunella jamesensis				OT
Extinct	Invertebrate	Ashmunella tegillum				OT
Extinct	Invertebrate	Ashmunella hawleyi				DA
Extirp	Showtrose Sturgeon	Scaphirhynchus platyrhynchus				BE,SA
Extirp	Spotted Gar	Lepisosteus oculatus				ED
Extirp	Colorado River Cutthroat T	Onchorhynchus clarki pleuriticus				RA,SJ
Extirp	American Eel	Anguilla rostrata				DA,ED,SA,SM,SF,SI,SO,TA
Extirp	Bonytail Chub	Gila elegans				MK,SJ
Extirp	Beautiful Shiner	Cyprinella formosa	E			GR,LU
Extirp	Palomas Pupfish	Cyprinodon sp.		SOC		LU
Extirp	Freshwater Drum	Aplodinotus grunniens				BE,SA
Extirp	Whooping Crane	Grus americana	E	E		RO
Extirp	Sharp-tailed Grouse	Tympanuchus phasianellus hueyi				CO,UN
Extirp	Gunnison Sage Grouse	Centrocercus minimus				C
Extirp	Thick-billed Parrot	Rhyncopetta pachyrhyncha				E
Extirp	Grizzly Bear	Ursus arctos				BE,CA,CH,CI,CO,DA,ED,GR,HI,LI,LA,MK,MO,OT,RA,SA,SJ,SM,SF,SI,SO,TA,TO,VA
Extirp	Black-footed Ferret	Mustela nigripes				BE,CA,CH,CI,CO,CJ,CU,DB,GR,GU,HA,LE,LI,LA,MK,MO,QU,RA,RO,SA,SJ,SM,SF,SO,TA,UN,VA
Extirp	Mink	Mustela vison energumens				BE,CO,MO,RA,SJ,SM,SF,SO,TA,VA
Extirp	Southwestern River Otter	Lontra canadensis sonorae	s	SOC		GR,HA,HI,MO,RA,SM,TA
Extirp	Lynx (possible)	Lynx canadensis				RA,TA
Extirp	Volverine (possible)	Gulo gulo				RA,TA
Extirp	Gray Wolf	Canis lupus				BE,CH,CO,CU,DB,ED,GU,HA,LA,MK,MO,QU,RA,RO,SA,SJ,SF,TA,TO,UN,VA
Co Extirp	Jaguar	Panthera onca arizonensis	R	E		CA,CO,DA,OT,SM,SF,SI,SO
Co Extirp	American Bison	Bos bison				CH,CO,CU,DB,DA,ED,GU,HA,LE,MO,OU,RO,SM,SI,UN
Co Extirp	Longnose Gar	Lepisosteus osseus				BE,SO
Co Extirp	Speckled Chub	Macrhybopsis aestivalis aestivalis				BE,SF,SI,SO,VA
Co Extirp	Canadian Speckled Chub	Macrhybopsis aestivalis tetranemus				HA
Co Extirp	Roundtail Chub	Gila robusta				CI,MK
Co Extirp	Rio Grande Chub	Gila pandora				DA,VA
Co Extirp	Gila Chub	Xyrauchen texanus				HI
Co Extirp	Chihuahua Chub	Gila nigrescens				LU
Co Extirp	Rio Grande Shiner	Notropis jemezianus				BE,DA,GU,RA,SF,VA
Co Extirp	Arkansas River Shiner	Notropis girardi				HA
Co Extirp	Pecos Bluntnose Shiner	Notropis simus peccosensis				GU
Co Extirp	Speckled Dace	Rhinichthys ocellus				CI
Co Extirp	Blue Catfish	Ictalurus furcatus				BE,GU,VA
Co Extirp	Blue Sucker	Cycleptus elongatus				BE,CH,DB,DA,LA,SA,SF,SI,SO,VA
Co Extirp	Razorback Sucker	Xyrauchen texanus				GR,HI
Co Extirp	Rio Grande Sucker	Catostomus plebeius				VA
Co Extirp	River Carpsucker	Carpilodes carpio carpio				LI
Co Extirp	Gray Redhorse	Moxostoma congestum				BE,DA,LI,LA,SA,SF,SI,SO,VA
Co Extirp	Gila Topminnow	Poeciliopsis occidentalis occidentalis				CA
Co Extirp	Colorado Pikeminnow	Ptychocheilus lucius				RA
Co Extirp	Rio Grande Silvery Minnow	Hybognathus amarus				CH,DB,DA,ED,GU,LA,RA,SF,SI
Co Extirp	Loach Minnow	Rhinichthys cobitis				SI
Co Extirp	Mexican Tetra	Astyanax mexicanus				DB,DA
Co Extirp	Pecos Gambusia	Gambusia nobilis				DB
Co Extirp	Flathead Catfish	Pylodictis olivaris				DA
Co Extirp	Blue Catfish	Ictalurus furcatus				SM
Co Extirp	Red Shiner	Cyprinella lutrensis				ED
Co Extirp	Pecos Pupfish	Moxostoma congestum				LI
Co Extirp	Gizzard Shad	Dorosoma cepedianum				SA,SM
Co Extirp	Longear Sunfish	Lepomis megalotis				SM
Co Extirp	Rio Grande Cutthroat Trout	Oncorhynchus clarki				SM,SF
Co Extirp	Western River Cooter	Pseudemys gorzugi				CH
Co Extirp	Milksnake	Lampropeltis triangulum				SM
Co Extirp	Colorado River Toad	Bufo alvarius				CA
Co Extirp	AZ Black-tailed Prairie Dog	Cynomys ludovicianus arizonensis				BE,CA,DA,GR,HI,LU,SI,SO,VA
Co Extirp	Black-tailed Prairie Dog	Cynomys ludovicianus				TO
Co Extirp	Banner-tailed Kangaroo Ra	Dipodomys spectabilis				SJ
Co Extirp	Meadow Vole	Microtus pennsylvanicus modestus				CA,CJ,UN
Co Extirp	Swift Fox	Vulpes velox velox				DA
Co Extirp	Mexican Gray Wolf	Canis lupus baileyi				CL,DA,ED,LE,LI,LU,OT,SI,SO
Co Extirp	Common Hog-nosed Skunk	Conepatus leuconotus				BE
Co Extirp	Ovate Vertigo Snail	Vertigo ovata				BE,CI,DA,GR,SJ
Co Extirp	Desert Bighorn Sheep	Ovis canadensis mexicana				CA,ED,LI,LU,OT
Co Extirp	Rocky Mountain Bighorn S	Ovis canadensis				LA
Co Extirp	Pronghorn Antelope	Antilocapra americana				LA
Co Extirp	Texas Hornshell	Pogonias poppei				CH
Co Extirp	Wrinkled Marshsnail	Stagnicola caperatus				CH
Co Extirp	Crayfish	Procambarus simulans simulans				CH
Co Extirp	New Mexico Frillary Butter	Speyeria hydaspe conquista				CO,SF
Co Extirp	New Mexico Ramahorn Sni	Pecosia kansasensis				DA,GU
Co Extirp	Long Fingernail Clam	Musculum transversum				ED
Co Extirp	Shortneck Snaggletooth Sni	Gastrocopta dalliana dalliana				GU
Co Extirp	Sangre de Cristo Woodland	Ashmunella thomsoniana				SF
Co Extirp	Whooping Crane	Grus americana	E	E		BE,DA,LA,RA,SA,SF,SO,TA,VA

NEW MEXICO WILDLIFE OF CONCERN LINCOLN COUNTY

For complete up-dated information on federal-listed species, including plants, see the US Fish & Wildlife Service Planning website at <http://ecos.fws.gov/ipac/>. For information on state-listed plants, contact the NM Energy, Minerals and Natural Resources Department, Division of Forestry, or go to <http://nmrareplants.unm.edu/>. If your project is on Bureau of Land Management, contact the local BLM Field Office for information on species of particular concern. If your project is on a National Forest, contact the Forest Supervisor's office for species information. E = Endangered; T = Threatened; s = sensitive; C = Candidate; Exp = Experimental non-essential population; P = Proposed

<u>Common Name</u>	<u>Scientific Name</u>	<u>NMGF</u>	<u>US FWS</u>	<u>critical habitat</u>
Rio Grande Chub	<i>Gila pandora</i>	s		
White Sands Pupfish	<i>Cyprinodon tularosa</i>	T		
Sacramento Mountain Salamander	<i>Aneides hardii</i>	T		
Brown Pelican	<i>Pelecanus occidentalis</i>	E		
Bald Eagle	<i>Haliaeetus leucocephalus</i>	T		
Northern Goshawk	<i>Accipiter gentilis</i>	s		
Common Black-Hawk	<i>Buteogallus anthracinus</i>	T		
Peregrine Falcon	<i>Falco peregrinus</i>	T		
Mountain Plover	<i>Charadrius montanus</i>	s		
Yellow-billed Cuckoo (western)	<i>Coccyzus americanus</i>	s	P	
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	s		
Mexican Spotted Owl	<i>Strix occidentalis lucida</i>	s	T	Y
Broad-billed Hummingbird	<i>Cyananthus latirostris</i>	T		
Southwestern Willow Flycatcher	<i>Empidonax traillii extimus</i>	E	E	Y
Loggerhead Shrike	<i>Lanius ludovicianus</i>	s		
Gray Vireo	<i>Vireo vicinior</i>	T		
Baird's Sparrow	<i>Ammodramus bairdii</i>	T		
Sprague's Pipit	<i>Anthus spragueii</i>		C	
Western Small-footed Myotis Bat	<i>Myotis ciliolabrum melanorhinus</i>	s		
Yuma Myotis Bat	<i>Myotis yumanensis yumanensis</i>	s		
Arizona Myotis Bat	<i>Myotis occultus</i>	s		
Cave Myotis Bat	<i>Myotis velifer</i>	s		
Long-legged Myotis Bat	<i>Myotis volans interior</i>	s		
Fringed Myotis Bat	<i>Myotis thysanodes thysanodes</i>	s		
Pale Townsend's Big-eared Bat	<i>Corynorhinus townsendii pallescens</i>	s		
Penasco Least Chipmunk	<i>Neotamias minimus atristriatus</i>	E	C	
Oscura Mountains Colorado Chipmunk	<i>Neotamias quadrivittatus oscuraensis</i>	T		
Gray-footed Chipmunk	<i>Neotamias canipes sacramentoensis</i>	s		
Black-tailed Prairie Dog	<i>Cynomys ludovicianus ludovicianus</i>	s		
Red Squirrel	<i>Tamiasciurus hudsonicus lychnuchus</i>	s		
Desert Pocket Gopher	<i>Geomys arenarius</i>	s		
Tularosa Rock Pocket Mouse	<i>Chaetodipus intermedius</i>	s		
Pecos River Muskrat	<i>Ondatra zibethicus ripensis</i>	s		
Ringtail	<i>Bassariscus astutus</i>	s		
Black-footed Ferret	<i>Mustela nigripes</i>		E	
Western Spotted Skunk	<i>Spilogale gracilis</i>	s		
Common Hog-nosed Skunk	<i>Conepatus leuconotus</i>	s		
Socorro Mountainsnail	<i>Oreohelix neomexicana</i>	s		

Leah Markiewitz

Sent:
To:
Cc:
Subject:

Victoria and Leah,

The wild trout species in the Rio Ruidoso is brown trout. Brown trout spawn during the fall from about middle October to late November. One of the major negative impacts of construction during spawning periods would be increased water turbidity/silt loading. Silt can cover and suffocate trout eggs in redds (gravel spawning beds). As long as you are using sediment control methods (which is likely in your Best Management Practices) this will reduce impacts to trout eggs. Also, there will likely be fish trapped in the 225' dewatered reach. We recommend monitoring this reach when the water is diverted and move any trapped fish back into the main wetted river channel.

Please let me know if you have any questions.

From: Victoria Brown [mailto:vbrown@ziaeec.com]
Sent: Tuesday, September 30, 2014 9:56 AM
To: Frey, Eric, DGF
Cc: Leah Markiewitz
Subject: RE: [Fwd: RE: Mitigation measures for preventing impact to fish]

Eric,

They were thinking somewhere between October and March. Not the entire time, but in that range.

Thanks

Victoria

From: Frey, Eric, DGF [mailto:eric.frey@state.nm.us]
Sent: Monday, September 29, 2014 12:14 PM
To: Victoria Brown
Subject: RE: [Fwd: RE: Mitigation measures for preventing impact to fish]

Thanks Victoria. Do you know what time of year the construction phase will take place?

From: Victoria Brown [mailto:vbrown@ziaeec.com]
Sent: Friday, September 26, 2014 1:58 PM
To: Frey, Eric, DGF
Subject: FW: [Fwd: RE: Mitigation measures for preventing impact to fish]

Eric,

Leah asked me to forward this to you. She is out on maternity leave and I will be coordinating while she is away. If you have any other questions please let me know.

Thanks

Victoria

Victoria T. Brown, Project Scientist

Zia Engineering & Environmental Consultants, LLC

QUALITY, COMMITMENT, SERVICE

755 South Telshor Boulevard, Suite F 201

Las Cruces NM, 88011

v: 575-532-1526 ext 749 or

direct line: 575-680-2321

f: 575-532-1587

email: vbrown@ziaeec.com

www.ziaeec.com

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-----Original Message-----

From: Patricia Bolliger [<mailto:pbolliger@ziaeec.com>]

Sent: Friday, September 26, 2014 9:54 AM

To: 'Leah Markiewitz'

Cc: vbrown@ziaeec.com

Subject: RE: [Fwd: RE: Mitigation measures for preventing impact to fish]

The length of the river that will be diverted, or dry, during construction is 225' and it will be dry for approximately 3-4 months, the duration of construction. Thanks!

Patricia Bolliger, E.I., Civil Project Engineer Zia Engineering & Environmental Consultants, LLC

QUALITY, COMMITMENT, SERVICE

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-----Original Message-----

From: Leah Markiewitz [<mailto:lmarkiewitz@ziaeec.com>]

Sent: Tuesday, September 23, 2014 1:47 PM

To: pbolliger@ziaeec.com

Cc: vbrown@ziaeec.com

Subject: [Fwd: RE: Mitigation measures for preventing impact to fish]

Patricia,

I have been in contact with the New Mexico Department of Game and Fish to try and figure out how to mitigate the fish from the Rio Ruidoso during construction. They have come back with a few more questions. Can you provide the answer to Eric's questions below, please?

Thanks!

Leah

----- Original Message -----

Subject: RE: Mitigation measures for preventing impact to fish

From: "Frey, Eric, DGF" <eric.frey@state.nm.us>

Date: Tue, September 23, 2014 7:09 am

To: "Leah Markiewitz" <lmarkiewitz@ziaeec.com>

Leah,

How much of the river (length) will be diverted or dry? Also, what is the estimated construction time line (i.e., duration it will be diverted)?

-----Original Message-----

From: Leah Markiewitz [<mailto:lmarkiewitz@ziaeec.com>]

Sent: Monday, September 22, 2014 1:33 PM

To: Patten, Kirk, DGF

Cc: Sloane, Michael B., DGF; Leah Markiewitz; Frey, Eric, DGF

Subject: RE: Mitigation measures for preventing impact to fish

Kirk,

Below is the proposed action for the proposed project. I am only missing what will be done concerning the fish. I have also included a map of the location of the bridge replacement. If you need anything else, please let me know.

Leah

~~~~~

#### Proposed Action

The proposed action alternative states that the temporary box culvert bridge will be removed and replaced with a ConSpan Arch culvert with a 60-foot span and a 12-foot rise. The temporary box culverts will be removed using standard construction means to the overall construction sequence of the project. The new bridge will allow for utilities to cross over the Rio Ruidoso without having to impact the river in the future, if necessary.

Removal of trees will be minimized to only those trees that require removal to allow for the installation of the new bridge. The number of trees that will be removed will be determined at time of construction. The trees will be inspected prior to removal for nests if removal is conducted during migratory bird breeding season. A biological survey was conducted and determined that the area is not suitable for the endangered Mexican spotted owl.

Water from the Rio Ruidoso will be diverted during the installation of the new bridge. Water diversion will make use of an old water channel of the river. Water will be pumped from the Rio Ruidoso to the adjacent channel.

This water will flow naturally through the channel, through the existing culvert under Close Road, and follow the existing path returning to the river just east of the bridge. The existing culverts under Close Road will be cleared to allow for the water to flow naturally under the roadway. The wetlands area will be impacted only by an increase in temporary water during construction. The wetlands will not be impacted by additional sedimentation, as the existing vegetation within the diversion channel is expected to remove the sediment from the Rio Ruidoso pumped water.

A Stormwater Pollution Prevention Plan (SWPPP) has been created and will be enforced during construction which will allow for the Rio Ruidoso to maintain its Cold Water Fishery classification. As part of the SWPPP, construction activities will take place in stages which will prevent sedimentation from increasing

downstream. By making use of hay bales and/or rock check dams, sedimentation will be captured and removed upstream and not allow for the river to be polluted by construction activities. Additionally, construction will take place immediately following monsoon season and before the snow melt. This will allow for construction to take place during the lowest flow of water within the Rio Ruidoso.

On Mon, September 22, 2014 10:30 am, Patten, Kirk, DGF wrote:

> Leah,

>

>

> Could you pass along more information about the project and we can

> then provide some input? Thanks.

>

> Kirk

>

>

> -----Original Message-----

> From: Sloane, Michael B., DGF

> Sent: Monday, September 22, 2014 11:03 AM

> To: Leah Markiewitz; Patten, Kirk, DGF; Frey, Eric, DGF

> Subject: Re: Mitigation measures for preventing impact to fish

>

>

> Leah - I am certain we have some advice and would like to be involved

> in the project. I have copied Kirk Patten and Eric Frey as they are

> the best initial contacts.

>

> Thank you for contacting us regarding these projects.

>

>

>

> Mike

>

>

>

> Michael B. Sloane

> Chief of Fisheries

> New Mexico Department of Game and Fish PO Box 25112 Santa Fe, NM

> 87504

>

>

> Ph.: 505/476-8055

> Fax: 505/476-8131

>

>

>

> Conserving New Mexico's Wildlife for Future Generations.

>

>

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> From: Leah Markiewitz

> Sent: Monday, September 22, 2014 12:57 PM

> To: Sloane, Michael B., DGF

> Subject: Mitigation measures for preventing impact to fish

>

>

>

> Mr. Sloan,

>

>

> I am working with the Village of Ruidoso for the replacement of the

> Close Road Bridge; however, this is one of several bridges that are

> proposed to be replaced within the Village limits. The Rio Ruidoso

> contains several species of fish which will have to be mitigated to

> prevent impact. The construction of the bridges will require water to

> be diverted away from the construction site thus creating a temporary

> dam near the diversion site, and water would be pumped around the

> bridge. I was wondering if the NMDGF had any suggestions or

> regulations for conducting such mitigation measures to prevent impact

> to

these fish.

>

> Thank you so much for your time!

>

>

> Leah Markiewitz

>

>

>

> Project Scientist / NEPA Specialist

> Zia Engineering & Environmental Consultants, LLC

>

>

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Project Scientist / NEPA Specialist

Zia Engineering & Environmental Consultants, LLC

Project Scientist / NEPA Specialist

Zia Engineering & Environmental Consultants, LLC

U.S. Department of Homeland Security  
Federal Emergency Management Agency  
FEMA-1783-DR-NM  
800 North Loop 288  
Denton, Texas, 76209



FEMA

March 09, 2015

10/058

RECEIVED

Bob

MAR 18 2015

HISTORIC PRESERVATION DIVISION

Jeff Pappas, PhD  
State Historic Preservation Officer  
Attention Bob Estes, Archaeologist  
Department of Cultural Affairs  
Bataan Memorial Building  
407 Galisteo Street, Suite 236  
Santa Fe, New Mexico 87501

RE: Section 106 Review Consultation, FEMA-1783-DR-NM  
PA-06-NM-1783-PW-094, Close Drive Bridge Repair  
Coordinates UTM: 33.32644, -105.62865; 13S 441489 3687652

Dear Dr. Pappas:

Between July 26 and August 20, 2008, severe storms and flooding caused damage within Lincoln and Otero Counties. On August 14, 2008, the President of the United States declared the state of New Mexico a major disaster area and subsequently designated these two (2) counties as part of that declared disaster area. The Federal Emergency Management Agency (FEMA) will be providing funds authorized under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, P.L. 93-288, as amended, in response to the major Disaster Declaration for FEMA-1783-DR-NM, dated August 14, 2008. FEMA is initiating Section 106 review for the above referenced property.

Storms and flooding completely destroyed the nearly completed Close Drive Bridge which traversed the Ruidoso River at Close Drive. Federal funding had been allocated in 2006 to replace a structure previously damaged by flooding (FEMA DR-NM-1659). During the 2008 flooding, culverts and approaches were completely undermined resulting in a total blow-out of the structure. Emergency and residential vehicular traffic have been denied access to the areas directly serviced by this structure. It is proposed that federal funding through FEMA's Public Assistance program be provided to the Village of Ruidoso in Lincoln County (Applicant) to replace the damaged bridge with a permanent in-kind structure located within the original footprint.

A contract for the bridge replacement was secured between the Village of Ruidoso and Hasse Contracting Co. Inc. (P.O. box 26808, Albuquerque NM, 87125). The contractor will place a coffer diversion dam in the waterway and use a pump to temporarily dewater the area prior to removing the old structure and constructing the new bridge. The new bridge will be a pre-fabricated Con Span Arch Bridge System approximately 48-feet wide and approximately 60-feet long. The bridge will have two 11 foot wide lanes with 1 ft. buffer between the lanes and the 4 ft. shoulders on each side. The paved shoulders are for emergency purposes. Handrails (picket

handrails with W beam and type B anchorage) and guardrails will be placed on the bridge to protect pedestrian and vehicle traffic from drop off areas. The shoulders will also have signage, lights and curbs.

The bridge will also have gabion basket walls with wire tied riprap that ranges from 4.5 ft. to 9 ft. wide and 15 ft. tall on all sides. 10 X 13 ft. concrete wing walls will be installed at the bridge abutments on both sides. Rip rap and grass seeding will be used to stabilize the banks and prevent erosion from the water velocity and scour.

Channel modifications and bank stabilization will extend approximately 175-feet upstream and 225-feet downstream of the new crossing structure. Approximately 75-feet of the channel length modified upstream of the crossing structure will have a rectangular cross-section with a constant bottom width of 60-feet with a height of 9-feet on both sides. Approximately 100-feet of the channel length modified upstream of the crossing structure will have a trapezoidal cross-section with a bottom width that varies from 27-feet to 60-feet with heights of approximately 11-feet on the north side and 8-feet on the south side. The bridge footings will be replaced within the footprint of their original location with a maximum depth for ground disturbance of 18 feet.

On October 7, 2008, an initial coordination letter was sent from FEMA to the NM SHPO concerning multiple bridge repair projects including the Close Drive Bridge (called Close Road in initial correspondence). FEMA received concurrence of **No Historic Properties Affected** on October 23, 2008 (See Attachment). The scope of work, including the bridge design has been finalized at this time, instigating this second consultation. On March 9, 2015, a cultural records file search in the Archaeological Records Management Section (ARMS) of the New Mexico State Historic Preservation Division (HPD) through the New Mexico Department of Cultural Affairs, New Mexico State Historic Preservation Office (SHPO), was conducted for previously recorded archaeological sites and surveys. In 2014, Zia Engineering & Environmental Consultants conducted a 2.5 acre archaeological survey at the location of the bridge replacement titled "A Cultural Resources Survey for Proposed Bridge Replacement along the Rio Ruidoso, Lincoln County, New Mexico" (NMCRIIS Activity #130409). The survey was an Intensive (100%) pedestrian survey conducted within block units. The survey results were negative for the identification or archaeological resources.

Based on information gathered through this review process, FEMA has made a determination of **No Historic Properties Affected** as a result of the proposed undertaking. We request concurrence with this determination. An aerial map, NM ARMS map, and photos showing the project location are attached.

This undertaking will include the following condition should an inadvertent discovery occur:

*In the event that archeological deposits, including any Native American pottery, stone tools, bones, or human remains, are uncovered, the project shall be halted and the applicant shall stop all work immediately in the vicinity of the discovery and take reasonable measures to avoid or minimize harm to the finds. All archeological findings will be secured and access to the sensitive area restricted. If unmarked graves or human remains are present on private or state land, compliance with the New Mexico Cultural Properties Act (Article 18, Section 6, Subsection 11.2 (18-6-11.2), NMSA 1978, also known as the Unmarked Burial Statute is required. OEM will require the applicant to stop work immediately in the vicinity of the discovery. OEM will immediately notify FEMA, and law enforcement agencies of the discovery, which shall notify the Office of the Medical Investigator (OMI) and the SHPO. OMI shall evaluate the remains for medicolegal significance with minimal disturbance of the remains. OMI will terminate the discovery of any non-medicolegal human remains to the SHPO, who shall proceed pursuant to the Unmarked Burial Statute and its implementing regulations found at 4.10.11 NMAC. Pursuant of CFR of 36 CFR part 800.2(c)(2)(i), FEMA will also contact all appropriate tribes. For any questions for human remains on state or private land, contact State Archeologist, Bob Estes, (505) 827-4225, Fax (505) 827-6338, [bob.estes@state.nm.us](mailto:bob.estes@state.nm.us)*

100033

Dr. Jeff Pappas  
March 9, 2015  
Page 3

Your timely review of this project is greatly appreciated. Should you need additional information please contact Emily Benz, FEMA Archaeologist, at 940-218-0883 or [Emily.j.benz@fema.dhs.gov](mailto:Emily.j.benz@fema.dhs.gov).

Sincerely,

  
Kevin Jaynes  
Regional Environmental Officer  
Region VI

**Enclosures**

NM ARMS Map  
Project Overview Map  
Photos

Concur with recommendations as proposed.

 April 9, 2015  
for NM State Historic Preservation Officer

U.S. Department of Homeland Security  
Federal Emergency Management Agency  
Section 106 Review: ARMS Location Map, Close Drive Bridge



**From:** [Jimmy Arterberry](#)  
**To:** [Abreu, Hector](#)  
**Subject:** RE: FEMA-DR-1783-NM, PW094  
**Date:** Tuesday, March 10, 2015 10:35:31 AM

---

In response to your request, the above referenced project has been reviewed by staff of this office. Based on the information provided and a search within the Comanche Nation Site Files, we have determined that there are ***no properties*** affected by the proposed undertaking.

If you require additional information or are in need of further assistance, please contact this office at (580) 595-9960 or 9618.

This review is performed in order to identify and preserve the Comanche Nation and State's cultural heritage, in conjunction with the State Historic Preservation Office.

Jimmy W. Arterberry, THPO  
Comanche Nation  
#6 SW 'D' Avenue, Suite C  
Lawton, Oklahoma 73502  
(580) 595-9960 or 9618  
(580) 595-9733 FAX

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**From:** Abreu, Hector [hector.abreu@fema.dhs.gov]  
**Sent:** Tuesday, March 10, 2015 10:14 AM  
**To:** Jimmy Arterberry  
**Subject:** FEMA-DR-1783-NM, PW094

Jimmy,  
Sorry in last email I called you "Jerry". Busy Day!  
Thanks

Hector M. Abreu, AIC PA  
EHP Tribal Liaison  
Environmental and Historic Preservation (EHP) Branch  
FEMA Region 6  
800 North Loop 288  
Denton, TX 76209  
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Cel: 940.435.5382  
Fax: 940-297-0152  
[Hector.abreu@fema.dhs.gov](mailto:Hector.abreu@fema.dhs.gov)

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**APPENDIX B**  
NMDGF 2012 Bridge and Road Construction/Reconstruction  
Guidelines for Wetland and Riparian Areas  
NMDGF 2003 Trenching Guidelines

## BRIDGE AND ROAD CONSTRUCTION/RECONSTRUCTION GUIDELINES FOR WETLAND AND RIPARIAN AREAS

### NEW MEXICO DEPARTMENT OF GAME AND FISH CONSERVATION SERVICES DIVISION

JANUARY 2012

#### BACKGROUND

In New Mexico, a large number of bridge and road projects disturb at least small areas of aquatic, wetland, or riparian habitat. The cumulative impact of such projects on these habitats is significant. The following recommendations were developed with the intent of avoiding or minimizing adverse effects of bridge and road projects on the fragile and limited aquatic, riparian and wetland habitats of New Mexico. The Department of Game and Fish (Department) is concerned about these habitats because 1) they are essential for the survival of a majority of the species of wildlife found in the state, and 2) the quantity and quality of these habitats have been significantly diminished.

Of the 867 species of vertebrates known to occur in New Mexico, approximately 479 (55%) rely wholly, or in part, on aquatic, wetland or riparian habitat for their survival (NMDGF 2006). Surface water comprises only 0.2 percent (141,440 acres) of the surface area of New Mexico (USGS 1970). Wetlands and riparian areas comprise another 0.6 percent (481,900 acres) (Dahl 1990). It is estimated that fully one third of the wetlands that once existed in New Mexico have been lost (Dahl 1990). On the main stem of the Rio Grande, the situation is worse. An 87 percent decrease in wetland acreage occurred along this river from 1918 to 1982 (Hink and Ohmart 1984). The quality of these habitats has also been diminished. Of the approximately 7,000 primarily perennial stream miles, almost 2,763 assessed miles, or 39%, have identified impaired designated or attainable uses while approximately 60,500 out of 94,000 acres, or 64%, publically-owned lake, reservoir, or playa do not fully support designated uses (waters are impaired). Heavy metal contamination, stream bottom deposits (sedimentation/siltation), high water temperature, nutrient/eutrophication, and *E. coli* are the major causes of surface water impairment in rivers (WQCC 2010). Mercury in fish tissue, PCBs in fish tissue, and dissolved oxygen are the major causes of impairment in lakes and reservoirs. The State of New Mexico has issued fish consumption advisories for twenty-eight lakes and reservoirs and three rivers due to elevated concentrations of various contaminants including mercury, dichlorodiphenyltrichloroethane (DDT), and polychlorinated biphenyls (PCBs).

#### RECOMMENDATIONS

- Statewide transportation planning should involve NMGF as early as possible to meet requirements of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), which became law on August 10, 2005, regarding consideration of NMGF conservation plans, maps and inventories of natural resources, and discussion of potential environmental mitigation activities and potential areas to carry out these activities.
- For specific transportation project development, Department involvement as early as possible with the Project Development Team will insure that project designs incorporate environmental constraints and enhancements. Not taking into consideration natural resource concerns early in project design often results in having to redo project designs in later stages of development.
- The project sponsor, to ensure that specifications are adhered to, should conduct comprehensive on-site supervision of the project contractor. Post-construction mitigation should likewise be monitored to ensure that agreed-upon measures are implemented successfully.
- Efforts must be made during construction to minimize impacts on vegetative communities. Existing roads and rights-of-way should be used for all transportation. Off-road driving should be avoided. Staging areas should be located in previously disturbed sites, where possible, and kept as small as possible. Road realignments should be designed to minimize the amount of construction in previously undisturbed areas.
- All topsoil removed for construction should be stockpiled and used as surface fill in reclamation of the project area. Following construction, disturbed areas should be re-vegetated using native

species that approximate pre-disturbance plant community composition or native plant communities likely to be found in the area, whichever is more beneficial to wildlife.

- Short-term erosion control seed mixes are available for temporary control of surface erosion during project implementation. These plant species provide quick establishment of ground cover on disturbed areas. Following final grading, permanent seed mixes should be used for revegetation of ground cover. All seed mixtures should be certified as weed-free. New Mexico grass ecotypes are available commercially for seeding in the bosque that were developed by the Los Lunas Plant Materials Center and New Mexico State University. Seeding guidelines are available from NRCS (2005), Monsen et al. (2004), and Colorado Natural Areas Program (1998).
- A revegetation plan must be included as a component of project mitigation plan. The revegetation plan should specify areas to be planted; species to be planted; quantity of species (e.g., pounds of seed per acre, number of poles, number of saplings) to be planted at each location; monitoring and maintenance (e.g., protection from cattle, elk, beaver) of the plantings.
- The Los Lunas Plant Materials Center can provide guidelines for revegetation of wetland and riparian areas where irrigation is not available during plant establishment.
- Army Corps of Engineers (Corps) and Environmental Protection Agency (EPA) regulations governing compensatory mitigation for projects permitted under the Clean Water Act recommend locating mitigation sites on a watershed basis (71 FR 15520; 28 March 2006). A watershed approach recognizes the limitations of traditional on-site, in-kind project siting, supports the fact that wetland functions are best understood from a watershed perspective, which allows siting mitigation projects where restoration of wetland functions can be maximized. On-site mitigation may not be appropriate if no suitable areas occur (e.g., native riparian forest already exists, stocking level precludes planting additional trees, land ownership problems).
- Areas dominated by non-native species such as salt cedar, Russian olive, and Siberian elm should be restored to native vegetation.
- Erosion control measures must be in place prior to construction to prevent introduction of sediment-laden runoff into surface waters (e.g., hay bales, silt screens, settling basins, sediment traps). No material excavated for bridge approaches should be introduced into the stream.
- Exposed soils, particularly on slopes, must be stabilized with vegetation as soon as possible to prevent excessive erosion.
- Drainage control features of the project should be designed to prevent soil erosion and impacts to surface water quality. These measures should include, but not be limited to, the following:
  - a) Culvert inverts should be level with the existing channel bottom at the inflow and outflow.
  - b) If fish passage is required, culverts should be countersunk to simulate a natural bottom and provide optimal hydraulic conditions for passage.
  - c) The slope of the culvert should match the gradient of the stream channel.
  - d) In watercourses with high stream flow velocity, the outlet of the culvert should be armored to prevent stream bed degradation.
  - e) Bar ditches and roadside drainage features should be designed to prevent excessive flow velocity and gully formation through consideration of slope and incorporation of energy dissipation features.
  - f) Settling basins should be installed in areas where runoff contains high sediment loads, to prevent sedimentation of receiving waters.
  - g) Based on site-specific conditions, raised culverts at road crossings of ephemeral streams may be employed to raise the water table upgradient and promote development of mesic or wetland habitat. The Department should be consulted during the planning stage to determine if a raised culvert is appropriate.
- No net loss of wetland habitat functions should result. If losses are unavoidable, mitigation should be designed to replace lost wetland functions using a recognized accounting method such as hydrogeomorphic (HGM) assessment models (Smith et al. 1995). The HGM model approach to assessing wetland functions is the method recommended by the Corps and EPA to account for functional losses and to determine the amount and type of compensatory mitigation required. Other recognized methods can also be used; whatever method is used should be fully explained and the procedures documented.

- A wetland creation/restoration/enhancement plan should be included as a component of the project mitigation plan if wetland impacts are unavoidable. This plan should include the following features, which will provide information necessary to evaluate the potential for success:
  - a) A description of the desired biological and hydrological values and functions of the wetland creation/restoration/enhancement is necessary to establish the objectives of the mitigation.
  - b) Scale plans that describe the location, configuration, areal extent, side slopes and depth contours of proposed wetland creation/restoration sites.
  - c) Profiles of proposed wetland creation/restoration sites, including adjacent river bed elevation (where applicable), should be provided to allow for assessment of the capacity of the proposed wetland to accommodate fluctuations in size (i.e., expansion and contraction) that may result, from fluctuating hydrologic conditions.
  - d) Characterization of ground water hydrology and quality at wetland creation/restoration sites, including temporal variations in ground water level and relationships between river stage (where applicable) and ground water level.
  - e) A presentation of soil characteristics (e.g., salinity, permeability, organic matter content) at proposed wetland creation/restoration sites.
  - f) A description of proposed plantings, including quantities and locations, should be presented along with the proposed sources of the plants or plant propagules.
  - g) A monitoring and maintenance program, which includes consideration of trash removal, human-use monitoring and control, and vegetation management to maintain the stated wetland function and value goals. This information should be used as the basis for wetland mitigation design. It will also enable reviewing agencies to adequately evaluate the mitigation plan.
- Boulders and rootwads removed during project activities should be placed within the stream to provide fish habitat. This activity should be planned and coordinated with the Department and other natural resource agencies to maximize effectiveness and prevent detrimental impacts, such as accelerated bank erosion and channel destabilization.
- Instream equipment activity should be minimized, with no refueling, maintenance or cleaning of equipment (e.g., ready-mix concrete trucks) in or near the watercourse. All construction equipment shall be inspected daily to ensure that leaks or discharges of lubricants, fuels, or hydraulic fluids do not occur. All fuels, lubricants, and hydraulic fluids must be stored and dispensed at least 200 feet away from the stream bank or outside of the 100-year floodplain. Contain any poured concrete in forms and prevent introduction of uncured concrete into surface waters. The Department must be notified in the event of any spills of toxic material into the stream or if sediments are introduced into the stream at levels above State Water Quality Standards.
- Complete all in-water work in fish-bearing streams during the appropriate in-water work window (that period of time when fish are least likely to be present, or when the least adverse impacts to fish would be likely to occur) for specific streams and lakes as identified by the Department. Contact the Department and identify location of project, duration, and in-water work activities to be done. For project planning purposes in most streams in New Mexico, in-water work completed during late fall and winter would result in the least adverse impacts to fish.
- When instream equipment activity cannot be avoided, it is recommended that this activity take place during base flows and be done "in the dry" using such devices as coffer dams. This is generally when the least amount of biological damage to the system will be incurred. However, scheduling may be affected by the presence of fall-spawning fish or wintering wildlife (e.g., bald eagles, waterfowl) or site-specific environmental constraints. The Department should be contacted for recommendations under these circumstances.
- Cofferdams should be constructed of material that cannot be brought into suspension by flowing water (e.g., water bag barriers or concrete highway dividers). All instream work should be conducted "in the dry".
- Minimize disturbance of stream substrate to only that necessary for placing abutments or pilings. To preserve channel equilibrium and stability, stream channels should not be realigned, constricted, widened, changed in bed elevation or otherwise altered.

- Gravel for surfacing, riprap and other bank stabilizing materials, including all temporary and permanent structures placed into the watercourse, must be free of fines and chemical contaminants.
- Tarpaulins or other catchment devices should be slung under the bridge in order to prevent debris, wastes and toxic compounds from entering the stream.
- Sandblasting operations should include vacuum systems or the bridge should be completely “bagged” to ensure collection of all lead paint and concrete debris.
- All native trees greater than six inches diameter at breast height that are removed should be replaced at a suitable on-site or off-site location at a 4:1 ratio, with a guarantee by the project proponent to monitor and maintain the plantings over a four-year period to ensure at least 80 percent survival at the end of that period in each planting area. This guarantee should be specified in the mitigation plan. If monitoring and maintenance cannot be guaranteed, trees should be replaced at a 10:1 ratio with cottonwood poles or saplings or appropriate native tree species. All other woody vegetation should be replaced on an acre-by-acre basis with native species. Performance standards for establishment of replacement vegetation should be based on local knowledge and experience regarding site potential and growing conditions. The Department recommends that realistic performance standards be established prior to project design and implementation. Martin et al. (2005) discuss useful approaches to development of realistic performance standards. In the State of New Mexico, particularly along the Rio Grande, extensive monitoring of completed aquatic habitat restoration projects (including in-channel, riparian, and bosque habitats) has produced considerable information on what constitutes realistic performance standards for aquatic resource mitigation. This monitoring information should be applicable to specification of performance standards for restoration, establishment, enhancement, and preservation activities. In addition, the NRCS Plant Materials Center in Los Lunas is able to provide advice on performance standards based on years of experience doing bosque, riparian, and upland habitat restoration. Where no information is available to guide specification of performance standards, adaptive management principles should be used to observe project outcomes, determine appropriate levels of maintenance (replanting), modify performance standards (up or down) for the monitored project if appropriate, and modify project designs for future projects if necessary. Reducing performance standards would be appropriate if monitoring determined that the site could not support levels of growth and survival required in the performance standards. This is important to account for harsh growing conditions that exist in parts of New Mexico. How soon mitigation project performance standards are met will vary depending on whether the mitigation project involves restoration, establishment, enhancement, or preservation activities. Preservation projects should require the least amount of monitoring, primarily to determine if the project was implemented successfully. Enhancement project monitoring should take less time than restoration or establishment project monitoring. If establishment means creation, then restoration of functions, services, and values may take many years.

Types of compensatory mitigation projects where monitoring periods of less than five years is appropriate include projects that plant wetland or riparian species that become established in less than five years, assuming a stable and adequate water supply. In the floodplain of the Rio Grande in New Mexico, floodplain wetland and riparian species typically become established in two years where distance to groundwater is optimal. If groundwater availability at planting sites is marginal and irrigation is not possible, then establishment may take more than two years. Establishment periods aside, how soon restoration of function and services occurs is hard to predict. Restoration of values is probably more closely tied to plant establishment than is restoration of function or services. Since growth potential of the site influences habitat development, it should also influence how long monitoring is required.

If plant establishment fails and remedial planting is required, then longer monitoring periods will be required. Monitoring requirements should be based on adaptive management where it would be difficult to predict establishment periods or success. In such cases, requiring a specific number of years of monitoring is unrealistic.

The length of time monitoring is required is a function of mitigation project performance standards. Since restoration of aquatic habitat functions requires successional growth and development beyond plant

establishment, determining whether habitat functions have been restored may require more than five years. For example, along the Rio Grande in New Mexico, studies of Southwestern willow flycatcher habitat use have shown that newly regenerated riparian shrubs and trees begin to provide suitable habitat in about five years. If mitigation project performance standards are tied to flycatcher habitat suitability, then more than five years of monitoring is probably required. If performance standards are tied more generally to riparian or wetland health, less monitoring is probably required. If performance standards for lentic or lotic aquatic habitats are tied to presence of a target species or taxonomic structure, monitoring will take longer than just monitoring the development of lentic or lotic conditions.

Mitigation performance standards and monitoring requirements should reflect regional ecosystem processes and influences, such as climate, hydrologic processes, evapotranspiration, and soil moisture dynamics. Mitigation performance standards and monitoring requirements should also account for altered ecosystem processes such as modified flow regimes. Flow regulation, infrastructure, channelization, regular channel clearing, and emergency flood control measures implemented in the 20th century has prevented the Rio Grande from forming the kinds of environments that are associated with dynamic channels. The four primary flow control measures that have been implemented on the Rio Grande include flow regulation, channelization, structural controls (e.g., bridges, diversions, levees), and channel maintenance (island and bar clearing) (TetraTech 2004 - Habitat Restoration Plan for the MRG). Floodplain functions have been lost or severely reduced following the loss of the natural flow regime necessary for spring flood pulses and overbank flooding. These functions have been lost due to damming and flow regulation, construction of levees, and placement of jetty jacks. Loss of connectivity of the channel to the floodplain and constriction of floodplain width by levees has reduced the availability of floodplain features. Loss of connectivity has reduced the capacity of the system for nutrient cycling, has reduced primary productivity, and has reduced the diversity of invertebrate taxa preferred as food by riverine fishes. Reaches of the Rio Grande below dams are undergoing channel degradation and incision, transport of smaller substrate particles downstream, and channel armoring as wash load and bedload is washed downstream and non-native phreatophytes invade the floodplain. Reservoirs, arroyo dams, bank stabilization (e.g., levees), and non-native vegetation have all contributed to starvation of sediment. Diversions, storage of flows, regulated flows, drains that cause loss of channel flows through seepage, and groundwater pumping all result in a cumulative loss of river flow and un-natural channel drying.

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## TRENCHING GUIDELINES

### NEW MEXICO DEPARTMENT OF GAME AND FISH

September 2003

Open trenches and ditches can trap small mammals, amphibians and reptiles and can cause injury to large mammals. Periods of highest activity for many of these species include nighttime, summer months and wet weather. Implementing the following recommendations can minimize loss of wildlife.

- Keep trenching and back-filling crews close together, to minimize the amount of open trenches at any given time.
- Trench during the cooler months (October – March). However, there may be exceptions (e.g., critical wintering areas) that need to be assessed on a site-specific basis.
- Avoid leaving trenches open overnight. Where trenches cannot be back-filled immediately, escape ramps should be constructed at least every 90 meters. Escape ramps can be short lateral trenches or wooden planks sloping to the surface. The slope should be less than 45 degrees (1:1). Trenches that have been left open overnight should be inspected and animals removed prior to backfilling, especially where endangered species occur.

On a statewide basis there are numerous threatened, endangered or sensitive species potentially at risk by trenching operations. Project initiators should seek county species list to evaluate potential impact of projects. Risk to these species depends upon a wide variety of conditions at the trenching site, such as trench depth, side slope, soil characteristics, season, and precipitation events.

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**APPENDIX C**  
Biological Resources Survey Report

NLCE-14-015-14-196

# FINAL BIOLOGICAL RESOURCES SURVEY REPORT

FOR A BRIDGE REPLACEMENT AT CLOSE ROAD  
IN THE VILLAGE OF RUIDOSO,  
LINCOLN COUNTY, NEW MEXICO

JUNE 2014



755 S. Telshor Blvd.,  
Suite F-201  
Las Cruces, NM 88011  
(575) 532-1526 voice  
(575) 532-1587 fax

**FINAL**  
**BIOLOGICAL RESOURCES SURVEY REPORT**  
FOR A BRIDGE REPLACEMENT AT CLOSE ROAD IN THE  
VILLAGE OF RUIDOSO, LINCOLN COUNTY, NEW MEXICO

Zia Project No. NLCE-14-015  
Document No. NLCE-14-015-14-196  
Report Date: 20 June 2014

Prepared for:

**Village of Ruidoso**  
313 Cree Meadows Dr.  
Ruidoso, NM 88345  
(575) 258-4343

Submitted by:

Author(s):



755 S. Telshor Blvd., Suite F-201  
Las Cruces, New Mexico  
(575) 532-1526 voice  
(575) 532-1587 fax

\_\_\_\_\_  
*Leah R. Martin*  
-----  
Project Manager / NEPA Specialist

QA Review

\_\_\_\_\_  
*Victoria J. Brown*  
-----  
Victoria T. Brown  
Project Scientist

QC Review

\_\_\_\_\_  
*Anna J. [Signature]*  
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Zia Engineering & Environmental Consultants, LLC (Zia) under Zia Project Number NLCE-14-015, prepared the biological resources survey report. Zia's point of contact with the Village of Ruidoso was Debi Lee. Zia employees and their role in the survey and document production are indicated in Table 1.

*Table 1. Zia Project Staffing*

|                                              |                     |
|----------------------------------------------|---------------------|
| <b>Leah R. Markiewitz</b>                    | <b>Renee Pardee</b> |
| Project Scientist / NEPA Specialist          | GIS Specialist      |
| Role: Surveyor, Main Author, Project Manager | Role: Figures       |
| <b>Victor R. Gibbs</b>                       | <b>Tara Parra</b>   |
| Senior Scientist                             | Publications        |
| Role: Surveyor                               | Role: QA/QC         |
| <b>Victoria T. Brown</b>                     | <b>Emma Jones</b>   |
| Project Scientist                            | Admin               |
| Role: Reviewer                               | Role: QA/QC         |

## TABLE OF CONTENTS

|            |                                                                                  |           |
|------------|----------------------------------------------------------------------------------|-----------|
| <b>1.0</b> | <b>INTRODUCTION .....</b>                                                        | <b>1</b>  |
| <b>2.0</b> | <b>METHODS.....</b>                                                              | <b>5</b>  |
| 2.1        | IDENTIFICATION OF PLANT AND WILDLIFE SPECIES .....                               | 7         |
| 2.2        | IDENTIFICATION OF LISTED SPECIES.....                                            | 7         |
| 2.3        | WETLANDS AND WATERWAYS.....                                                      | 7         |
| <b>3.0</b> | <b>EXISTING ENVIRONMENTAL CONDITIONS.....</b>                                    | <b>8</b>  |
| 3.1        | CLIMATE .....                                                                    | 8         |
| 3.2        | SOILS .....                                                                      | 8         |
| 3.3        | VEGETATION .....                                                                 | 8         |
| 3.4        | NOXIOUS WEEDS .....                                                              | 12        |
| 3.5        | WILDLIFE .....                                                                   | 12        |
| 3.6        | MIGRATORY BIRDS.....                                                             | 12        |
| 3.7        | WETLANDS AND WATERS OF THE U.S. ....                                             | 12        |
| <b>4.0</b> | <b>FEDERAL AND STATE LISTED SPECIES AND HABITATS FOR<br/>LINCOLN COUNTY.....</b> | <b>16</b> |
| 4.1        | SPECIES ELIMINATED FROM FURTHER ANALYSIS .....                                   | 17        |
| 4.1.1      | Threatened and Endangered Plant Species .....                                    | 17        |
| 4.1.2      | Threatened and Endangered Wildlife Species.....                                  | 18        |
| 4.2        | SPECIES IMPACT EVALUATIONS .....                                                 | 20        |
| 4.2.1      | Plants.....                                                                      | 20        |
| 4.2.2      | Wildlife .....                                                                   | 20        |
| <b>5.0</b> | <b>CONCLUSIONS AND RECOMMENDATIONS.....</b>                                      | <b>21</b> |
| 5.1        | GENERAL VEGETATION AND WILDLIFE.....                                             | 21        |
| 5.1.1      | Vegetation.....                                                                  | 21        |
| 5.1.2      | Wildlife .....                                                                   | 21        |
| 5.2        | MIGRATORY BIRDS.....                                                             | 22        |
| 5.3        | WETLANDS AND WATERS OF THE U.S. ....                                             | 22        |
| 5.4        | FEDERAL AND STATE LISTED SPECIES AND HABITATS.....                               | 22        |
| 5.4.1      | Threatened and Endangered Plant Species .....                                    | 22        |
| 5.4.2      | Threatened and Endangered Wildlife Species.....                                  | 22        |
| <b>6.0</b> | <b>REFERENCES .....</b>                                                          | <b>23</b> |

### **List of Figures**

|                                                                                        |    |
|----------------------------------------------------------------------------------------|----|
| Figure 1. Project Area Vicinity Map.....                                               | 2  |
| Figure 2. Project Area Topographic Map .....                                           | 3  |
| Figure 3. Project Area Aerial Map.....                                                 | 4  |
| Figure 4. Project Area Ecoregion Map.....                                              | 9  |
| Figure 5. Close Road bridge facing south.....                                          | 9  |
| Figure 6. View from the center of the bridge facing west.....                          | 10 |
| Figure 7. View from center of the bridge facing east .....                             | 10 |
| Figure 8. Close Road bridge facing north .....                                         | 11 |
| Figure 9. National Wetland Inventory Map of the Project Area.....                      | 13 |
| Figure 10. Culvert located on the west side of Close Road facing southeast .....       | 13 |
| Figure 11. Culvert on the east side of Close Road facing northwest.....                | 14 |
| Figure 12. Waterway on the east side of Close Road looking upstream facing south ..... | 14 |
| Figure 13. Water at approximately 8 inches below the surface .....                     | 15 |
| Figure 14. Water seeping to the surface.....                                           | 15 |
| Figure 15. Critical Habitat Map .....                                                  | 16 |

### **List of Tables**

|                                                         |    |
|---------------------------------------------------------|----|
| Table 1. Zia Project Staffing.....                      | ii |
| Table 2. Qualitative Estimate of Species Abundance..... | 7  |
| Table 3. Soils within the Project Area .....            | 8  |
| Table 4. Identified Plant Species .....                 | 11 |
| Table 5. Identified Wildlife Species .....              | 12 |
| Table 6. Wetland Plants .....                           | 16 |

### **Appendices**

- APPENDIX A. Threatened, Endangered, and Sensitive Species Resources
- APPENDIX B. New Mexico Department of Agriculture Noxious Weed List
- APPENDIX C. New Mexico Department of Game and Fish Guidelines

# **FINAL**

# **BIOLOGICAL RESOURCES SURVEY REPORT**

## **1.0 INTRODUCTION**

Zia Engineering & Environmental Consultants, LLC (Zia) was requested by the Village of Ruidoso to conduct a biological resources survey of the area surrounding the Close Road bridge. The project area is located on private land.

The Federal Emergency Management Agency (FEMA) provides funding through Federal sources. The biological survey is proposed to be used to support the completion of an environmental assessment (EA). The EA will be applied to the completion of a U.S. Army Corps of Engineers (USACE) Clean Water Act (CWA) permit.

On July 27, 2008, the remnants of Hurricane Dolly passed through Ruidoso, New Mexico area. The Village of Ruidoso received 2.46 inches of precipitation with some reports of up to 9 inches in the area, which resulted in the flooding of the Rio Ruidoso. Following the flooding, temporary bridges were placed in crosses such as the Close Road bridge; however, the Village is seeking additional funding from the FEMA to replace the bridge with a permanent structure. The project area comprises of approximately 2.5 acres (1.0 hectares) of private lands that encompass the existing Close Road temporary bridge and surrounding land.

The project area is identified within the following legal descriptions and located within the US Geological Survey area Ruidoso Downs (33105-C5) 1:24,000 scale. The project boundaries are identified in Figures 1 - 3.

T 11S, R, 12E; Section 25; NE, NW, SE;  
T 11S, R, 12E; Section 25; NW, NE, SE

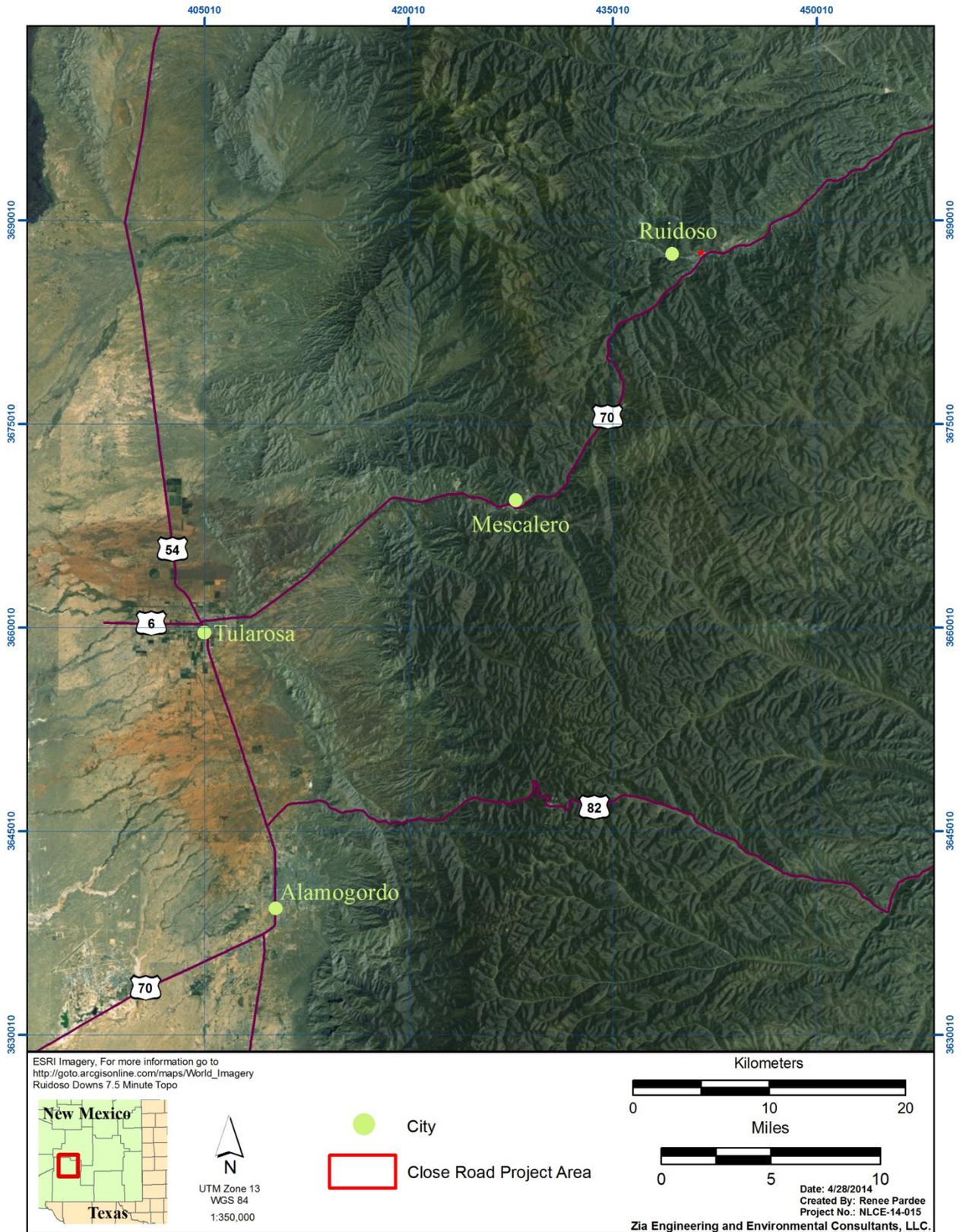


Figure 1. Project Area Vicinity Map

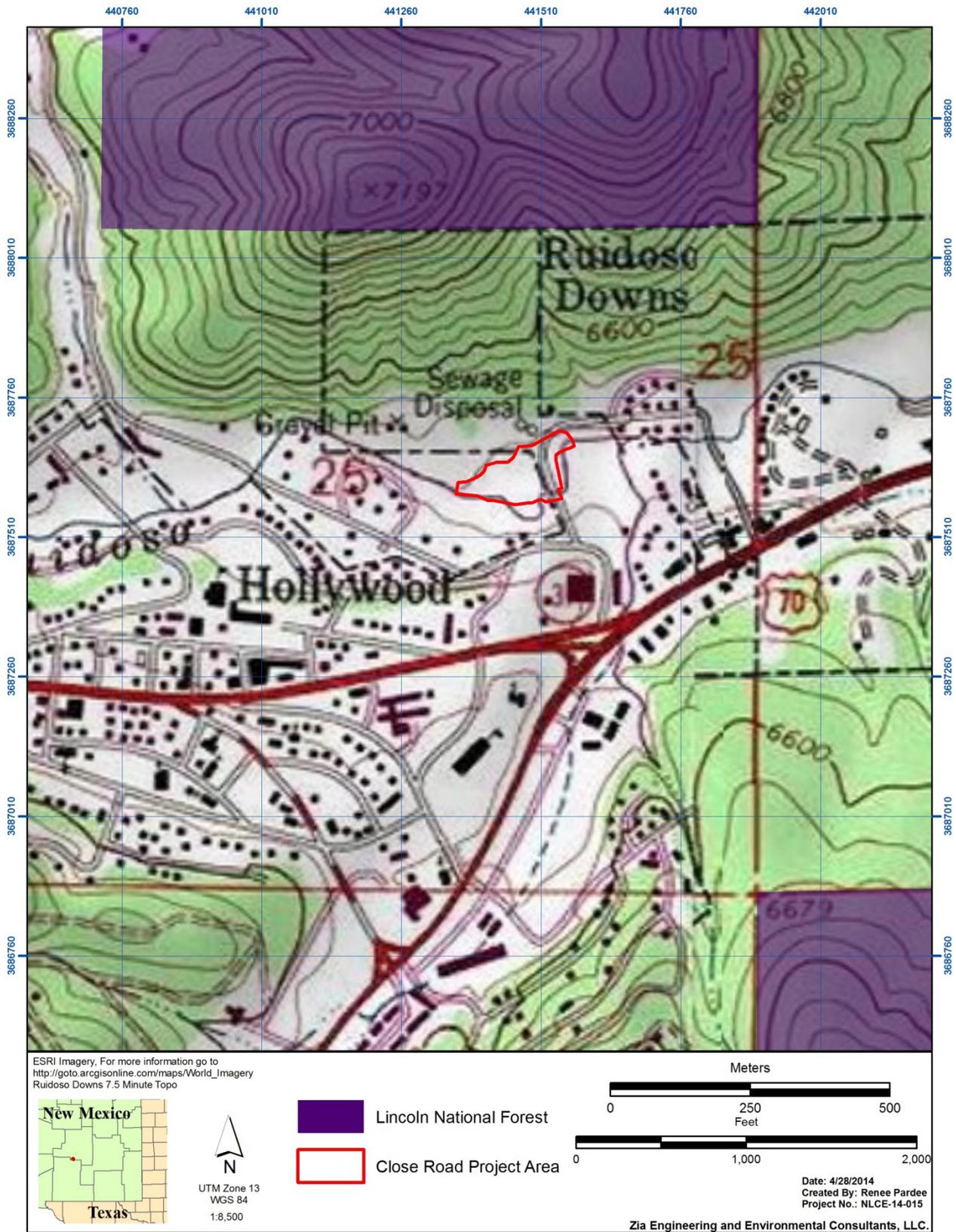


Figure 2. Project Area Topographic Map

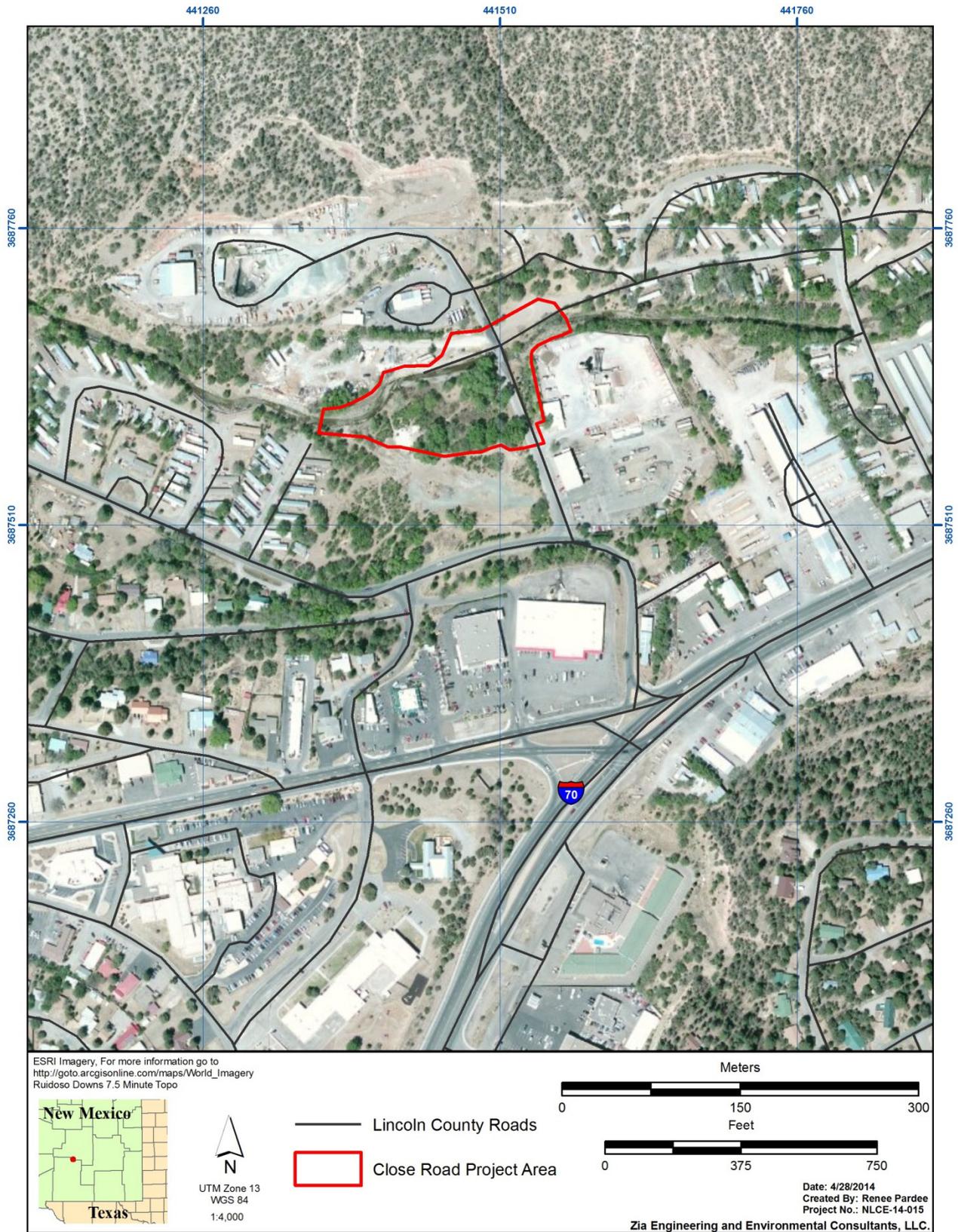


Figure 3. Project Area Aerial Map

## 2.0 METHODS

The purpose of this assessment was to provide a biological survey of the project area to determine whether the project area contained plant and wildlife species, sensitive habitats, or wetlands and jurisdictional waters protected by the following governing acts.

### **Endangered Species Act of 1973, New Mexico Wildlife Conservation Act of 1978, and other agency regulations, as applicable**

The United States Fish and Wildlife Service (USFWS) has direct responsibility for implementing the Endangered Species Act (ESA), officially listing species as threatened or endangered and protecting such listed species. Protection varies depending upon the listing status of each species.

- An **endangered** listing provides federal protection for any species in danger of extinction throughout all or a significant portion of its range.
- A **threatened** listing provides protection for species which are likely to become endangered within the foreseeable future through all or a significant portion of their range.
- A **candidate** listing is designated to those species for which sufficient information exists to warrant an endangered or threatened designation, but the listing action is precluded by other priorities. Candidate species receive no protection under ESA.
- A **proposed designation** is used when a notice has been published in the Federal Register to list a specific species as either threatened or endangered under ESA.
- An **under review** designation is used when the USFWS is completing a status review of a particular species to determine whether it warrants protection under ESA. Any species that is proposed or under review is not afforded protection until it receives a designation as either a threatened or endangered species.
- Federal **species of concern** (SOC) are also not afforded legal protection under the ESA and are included for planning purposes only. These are taxa for which further information is needed to resolve their conservation status. The USFWS does not provide consultation for species not protected under ESA.

Other federal agencies (i.e., United States Forest Service [USFS] and the Bureau of Land Management [BLM]) also list species as sensitive or as species of concern, and the New Mexico Department of Game and Fish [NMDGF] lists species as endangered, threatened, or sensitive under the New Mexico Wildlife Conservation Act.

## Migratory Bird Treaty Act of 1918

Section 703 of the Migratory Bird Treaty Act (MBTA) states,

Unless and except as permitted by regulations made as hereinafter provided in this subchapter, it shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess, offer for sale, sell, offer to barter, barter, offer to purchase, purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export, any migratory bird, any part, nest, or eggs of any such bird, or any product, whether or not manufactured, which consists, or is composed in whole or part, of any such bird or any part, nest, or egg thereof, included in the terms of the conventions between the United States and Great Britain for the protection of migratory birds concluded August 16, 1916 (39 Stat. 1702), the United States and the United Mexican States for the protection of migratory birds and game mammals concluded February 7, 1936, the United States and the Government of Japan for the protection of migratory birds and birds in danger of extinction, and their environment concluded March 4, 1972 and the convention between the United States and the Union of Soviet Socialist Republics for the conservation of migratory birds and their environments concluded November 19, 1976.

### Key Points of MBTA

Do Not.....

- Pursue
- Hunt
- Take
- Capture
- Kill
- Possess
- Sell

any migratory bird, any part, nest, or eggs of any such bird.

## Clean Water Act

The CWA provides for protection of wetlands and jurisdictional waters of the United States by the USACE and the Environmental Protection Agency (EPA) as defined in Sections 404 and 401.

## Noxious Weed Act of 1963

Under the New Mexico Territorial Laws Chapter 76 Article 7, the Noxious Weed Act of 1963 maintains how noxious weeds are to be managed throughout the state. Noxious weeds within New Mexico are distinguished within a class ranking system:

- **Class A** – those species currently not present or having a limited distribution in the state,
- **Class B** – those species limited to portions of the state, and
- **Class C** – those species that are widespread throughout the state.

Management decisions differ between the classes and range from eradication to prevention to control. The New Mexico Department of Agriculture (NMDA) will provide best management practices if consulted.

Zia professional staff, as indicated previously in Table 1, completed a 100-percent pedestrian survey of the 2.5-acre (1.0 hectare) project area and assessed impacts to the natural environment on April 25, 2014. Location data was collected using a Garmin handheld GPS unit with 1-meter (m) precision. Photographs of important features were taken with a 12.1 megapixel digital camera. Leah R. Markiewitz prepared this report with contributions from GIS technician Renee Pardee.

## 2.1 IDENTIFICATION OF PLANT AND WILDLIFE SPECIES

Surveys were conducted for both plant and wildlife species. As part of the field investigations, species lists were compiled and a qualitative estimate of abundance (Table 2) or frequency of species occurrence in the project area (Tables 4 and 5) was developed.

*Table 2. Qualitative Estimate of Species Abundance*

| Category | Plants                                                                       | Wildlife                                                                                                                        |
|----------|------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Abundant | Present in large numbers over most or all of the project area                | Species or sign seen in great numbers throughout the entire project area.                                                       |
| Common   | Easily found in most of the project area, or in high numbers in select areas | Species or sign easily found in most of the project area, or in appropriate habitat.                                            |
| Uncommon | Present in isolated patches or small numbers                                 | Species or sign present occasionally in appropriate habitat                                                                     |
| Few      | 1 or 2 individuals present.                                                  | Species sighted only once; is expected to inhabit area only very briefly; or is suspected to occur only in a very limited area. |

The investigations included a survey for noxious weeds as designated by the NMDA and United States Department of Agriculture (USDA), and an evaluation of potential impacts to nesting birds protected under the MBTA.

## 2.2 IDENTIFICATION OF LISTED SPECIES

Federal and state lists of threatened, endangered, and sensitive wildlife and plant species in Lincoln County were examined within this report (USFWS 2014a, NMDGF 2014; New Mexico Rare Plant Technical Council [NMRPTC] 1999). Locations of designated critical habitat for listed species were also examined (USFWS 2014b). The habitat requirements of listed species were compared to the habitat available at the proposed project location to identify potentially affected species.

- Species considered unlikely to occur and for which suitable habitat did not exist within the proposed project area were removed from further consideration.
- If potential habitat for any listed species occurred within the survey area, further evaluation of the potential impacts of the proposed project on the species was conducted and recommendations made for impact avoidance.

## 2.3 WETLANDS AND WATERWAYS

The investigation included an evaluation of potential CWA, Section 404 jurisdictional waters, as defined by the USACE, which could be impacted by the proposed project. If potential wetlands were identified (USFWS 2014c), Zia preliminarily defined these wetlands according to the USACE Wetland Delineation Manual (USACE 1987) and the appropriate regional supplement.

## 3.0 EXISTING ENVIRONMENTAL CONDITIONS

### 3.1 CLIMATE

Ruidoso, New Mexico, tends to be semi-arid with average annual rainfall measuring approximately 22.7 inches (57.7 centimeters [cm]). Most rainfall occurs in August with approximately 4.4 inches (11.2 cm) of precipitation. Maximum average temperatures are in the 80's° Fahrenheit (F) (26.7 – 32.2° Celsius [C]) and average minimum temperature is in the teens (-12.2 - -6.7°C). (IDcide.com 2014)

On April 25, 2014, the air temperature ranged between 60 and 69°F (16 and 21°C). Wind speeds ranged from 10 to 31 miles per hour (16 to 50 kilometers [km] per hour). Visibility was good (wunderground.com 2014).

### 3.2 SOILS

The project area consisted of one soil mapped by the Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA 2009). The specific soil type is noted in Table 3 and is described below.

*Table 3. Soils within the Project Area*

| Soil Name                               | Special Notes                                             |
|-----------------------------------------|-----------------------------------------------------------|
| 7 – Cumulic Haplustolls, gently sloping | Neither farmland of statewide importance or a hydric soil |

#### 7 – Cumulic Haplustolls, gently sloping

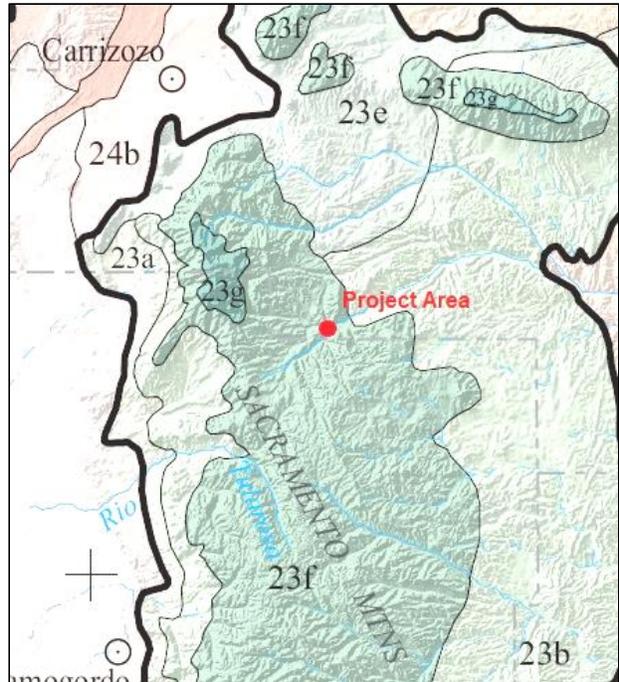
The Cumulic Haplustolls, gently sloping soil is alluvium derived from igneous and sedimentary rock and is found on valley floors. It is located at elevations of 6,300 to 7,100 feet (ft.) (1,920 to 2,164 m) and slopes are 0 to 8 percent. Cumulic Haplustolls is classified as well drained and does not pond but occasionally floods. It has a depth of more than 80 inches (in.) (203 cm) to a restrictive layer. The available water capacity within this component is low (approximately 5.4 in. [13.7 cm]). The soil is not classified as prime farmlands or a hydric soil. The ecological site that defines this soil is Bottomland (R070CY103NM).

### 3.3 VEGETATION

The project area is located within the Rocky Mountain Conifer Forests ecoregion of the Arizona / New Mexico Mountains region (Figure 4, Griffith et al. 2006). The area contains elevations from about 7,000 to 9,600 ft. (2,134 to 2,926 m) with ponderosa pines and Gambel oak being the predominant vegetation. The area is geologically diverse with volcanic, sedimentary, and some intrusive and crystalline rocks (Griffith et al. 2006).

Dick-Peddie (1993) categorized the general vegetation of the project area as coniferous and mixed woodlands. The project area is indicative mixed woodlands with disturbances from the Rio Ruidoso that runs through the project area as well as commercial buildings within the close proximity to the project area (Figures 5 - 8).

During the pedestrian survey, vegetation within the surveyed area was dominated by narrowleaf willow (*Salix exigua*) and saltgrass (*Sistichlis spicata*). The survey area also contained disturbances such as trash, a paved roadway, and commercial properties neighboring the project area. Other vegetation identified are noted in Table 4.



**Figure 4. Project Area Ecoregion Map**  
(Griffith et al. 2006)



**Figure 5. Close Road bridge facing south**



**Figure 6. View from the center of the bridge facing west**



**Figure 7. View from center of the bridge facing east**



Figure 8. Close Road bridge facing north

Table 4. Identified Plant Species

| Scientific Name                 | Common Name                 | Abundance |
|---------------------------------|-----------------------------|-----------|
| <b>Forbs</b>                    |                             |           |
| <i>Aquilegia formosa</i>        | western columbine           | Few       |
| <i>Brasica rapa</i>             | field mustard               | Few       |
| <i>Castilleja integra</i>       | wholeleaf indian paintbrush | Uncommon  |
| <i>Grindelia squarrosa</i>      | curlycup gumweed            | Uncommon  |
| <i>Gutierrezia sarothrae</i>    | broom snakeweed             | Common    |
| <i>Nasturtium officinale</i>    | watercress                  | Common    |
| <i>Salsola sp.</i>              | thistle                     | Few       |
| <i>Sphaeralcea sp.</i>          | globemallow                 | Few       |
| <i>Taraxacum officinale</i>     | common dandelion            | Abundant  |
| <i>Tragopogon porrifolius</i>   | salsify                     | Uncommon  |
| <i>Verbascum thapsus</i>        | moth mullien                | Uncommon  |
| <i>Veronica americana</i>       | americana speedwell         | Uncommon  |
| <b>Shrubs</b>                   |                             |           |
| <i>Krascheninnidovia lanata</i> | winterfat                   | Uncommon  |
| <b>Grasses</b>                  |                             |           |
| <i>Equisetum laevigatum</i>     | smooth horsetail            | Uncommon  |
| <i>Festuca arundinacea</i>      | tall fescue                 | Uncommon  |
| <i>Hordeum jubatum</i>          | foxtail barley              | Common    |
| <i>Sistichlis spicata</i>       | saltgrass                   | Abundant  |
| <b>Trees</b>                    |                             |           |
| <i>Pinus edulis</i>             | twoneedle pinyon            | Few       |
| <i>Populus fremontii</i>        | Fremont cottonwood          | Common    |
| <i>Salix exigua</i>             | narrowleaf willow           | Abundant  |
| <i>Salix gooddingii</i>         | Gooding's willow            | Common    |

### 3.4 NOXIOUS WEEDS

Species listed on the NMDA Noxious Weed List (2009) were not observed within the project area during the pedestrian survey.

### 3.5 WILDLIFE

Wildlife species observed within the project area are noted in Table 5. Activity indicators included small mammal burrows.

*Table 5. Identified Wildlife Species*

| Scientific Name           | Common Name    | Abundance |
|---------------------------|----------------|-----------|
| <b>Birds</b>              |                |           |
| <i>Corvus corax</i>       | common raven   | Few       |
| <i>Turdus migratorius</i> | American robin | Few       |

### 3.6 MIGRATORY BIRDS

Historically, migratory birds are known to pass through and nest within and adjacent to the project area. Individual birds and nests were not observed during the pedestrian survey.

### 3.7 WETLANDS AND WATERS OF THE U.S.

Per the USFWS National Wetland Inventory (NWI) Map (USFWS 2014b), the project area contains classified wetlands as Riverine (the Rio Ruidoso) (Figure 9). The path of the riverine follows an older stream channel. The river has since moved more north. However, the water table is still high within the area mapped in Figure 11. During the pedestrian survey, water was observed to be moving downslope on the east side of Close Road between the roadway and the commercial property. Culverts were located under the road (Figures 10-12). On the west side of the road, Zia dug a hole and noted that the water level was approximately 8 in. (20 cm) from the surface (Figure 13). Other areas showed water sitting at the surface (Figure 14). It appeared that the high water table allowed water to pass under the roadway, through the metal culverts and then down slope east of the road to where it continued to feed the current Rio Ruidoso channel.

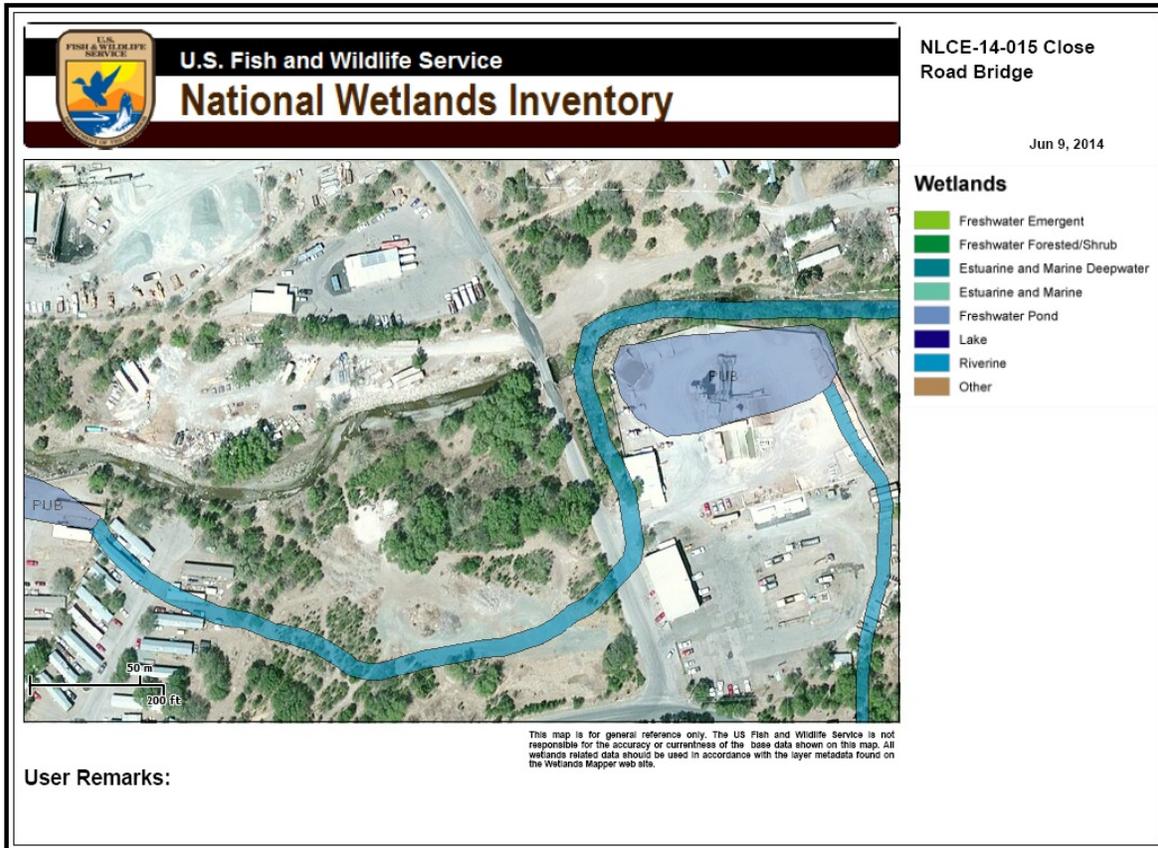


Figure 9. National Wetland Inventory Map of the Project Area (USFWS 2014c)



Figure 10. Culvert located on the west side of Close Road facing southeast



**Figure 11. Culvert on the east side of Close Road facing northwest**



**Figure 12. Waterway on the east side of Close Road looking upstream facing south**



**Figure 13. Water at approximately 8 inches below the surface**



**Figure 14. Water seeping to the surface**

Vegetation observed within or adjacent to the proposed project area was reviewed for inclusion on the USDA Wetland Indicator Status List for the Western Mountains, Valley, and Coast (USDA 2012). Plant species observed within the project area were included on the 2012 National Wetland Plant List. Only those with the status of Facultative Wetland (FACW) or Obligate (OBL) are noted in Table 6. Both these classifications are necessary of plants known to grow within wetlands.

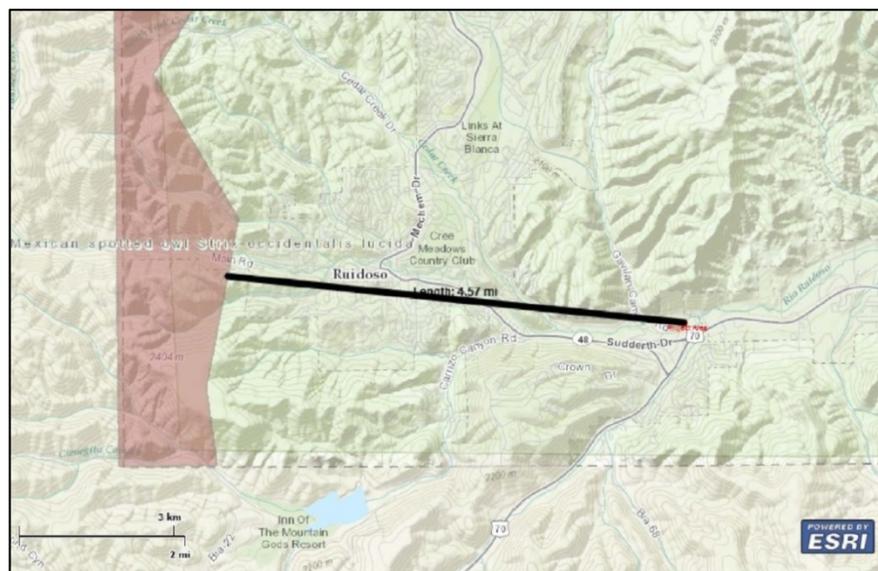
**Table 6. Wetland Plants**

|                    |      |
|--------------------|------|
| American speedwell | OBL  |
| Gooding's willow   | FACW |
| narrowleaf willow  | FACW |
| saltgrass          | FACW |
| smooth horsetail   | FACW |
| watercress         | OBL  |

## 4.0 FEDERAL AND STATE LISTED SPECIES AND HABITATS FOR LINCOLN COUNTY

Zia reviewed federal and state lists of threatened, endangered, and sensitive wildlife known to occur in Lincoln County to identify species that could be affected by project activities (Appendix A; NMDGF 2014, USFWS 2014a, NMRPTC 1999). Those having potentially suitable habitat or known presence within the project area are analyzed below. Species unlikely to occur due to lack of suitable habitat are not discussed in detail in this report.

Lincoln County contains designate critical habitat areas (Figure 15; USFWS 2014b). The project area is not located within a mapped or known critical habitat area. However, the Mexican spotted owl critical habitat area is located approximately 4.57 miles (7.35 km) west of the project area.



**Figure 15. Critical Habitat Map**

If critical habitat were present, areas would be shaded in red. (USFWS 2014b)

## 4.1 SPECIES ELIMINATED FROM FURTHER ANALYSIS

Of the USFWS and state listed species occurring in Lincoln County, the following taxa have been eliminated from further evaluation because appropriate habitat is not present within the project area.

### 4.1.1 Threatened and Endangered Plant Species

*Table 7. Threatened and Endangered Plant Species*

| Scientific Name                                          | Common Name                   | Status             | Potentially Suitable Habitat Present? | Known Occupied Habitat Present? | Species Impacted by Action? |
|----------------------------------------------------------|-------------------------------|--------------------|---------------------------------------|---------------------------------|-----------------------------|
| <b>Plants</b>                                            |                               |                    |                                       |                                 |                             |
| <i>Astragalus kerrii</i>                                 | Kerr's milkvetch              | FWS-SOC;<br>NM-SOC | No                                    | No                              | No                          |
| <i>Astragalus neomexicanus</i>                           | New Mexico milkvetch          | FWS-SOC;<br>NM-SOC | No                                    | No                              | No                          |
| <i>Cirsium inornatum</i>                                 | plain thistle                 | FWS-SOC;<br>NM-SOC | No                                    | No                              | No                          |
| <i>Crataegus wootoniana</i>                              | Wooton's hawthorn             | FWS-SOC;<br>NM-SOC | No                                    | No                              | No                          |
| <i>Delphinium novomexicanum</i>                          | New Mexico larkspur           | FWS-SOC;<br>NM-SOC | No                                    | No                              | No                          |
| <i>Echinocereus fendleri</i> var. <i>kuenzleri</i>       | Kuenzler's hedgehog           | FWS-E;<br>NM-E     | No                                    | No                              | No                          |
| <i>Erigeron rybius</i>                                   | Sacramento Mountains fleabane | FWS-SOC;<br>NM-SOC | No                                    | No                              | No                          |
| <i>Eriogonum wootonii</i>                                | Wooton's wild buckwheat       | FWS-SOC;<br>NM-SOC | No                                    | No                              | No                          |
| <i>Geranium dodecatheoides</i>                           | shootingstar geranium         | FWS-SOC;<br>NM-SOC | No                                    | No                              | No                          |
| <i>Hedeoma pulcherrima</i>                               | Mescalero pennyroyal          | FWS-SOC;<br>NM-SOC | No                                    | No                              | No                          |
| <i>Heuchera woodsiaephila</i>                            | Capitan Peak alumroot         | FWS-SOC;<br>NM-SOC | No                                    | No                              | No                          |
| <i>Heuchera wootonii</i>                                 | Wooton's alumroot             | FWS-SOC;<br>NM-SOC | No                                    | No                              | No                          |
| <i>Hymenoxys brachyactis</i>                             | tall bitterweed               | FWS-SOC;<br>NM-SOC | No                                    | No                              | No                          |
| <i>Ionactis elegans</i>                                  | Sierra Blanca cliff daisy     | FWS-SOC;<br>NM-SOC | No                                    | No                              | No                          |
| <i>Lupinus sierrae-blancae</i>                           | Sierra Blanca lupine          | FWS-SOC;<br>NM-SOC | No                                    | No                              | No                          |
| <i>Penstemon alamosensis</i>                             | Alamo beardtongue             | FWS-SOC;<br>NM-SOC | No                                    | No                              | No                          |
| <i>Penstemon cardinalis</i> ssp. <i>cardinalis</i>       | scarlet penstemon             | FWS-SOC;<br>NM-SOC | No                                    | No                              | No                          |
| <i>Penstemon neomexicanus</i>                            | New Mexico beardtongue        | FWS-SOC;<br>NM-SOC | No                                    | No                              | No                          |
| <i>Philadelphus microphyllus</i> var. <i>argyrocalyx</i> | silvercup philadelphus        | FWS-SOC;<br>NM-SOC | No                                    | No                              | No                          |

| Scientific Name                                           | Common Name               | Status                           | Potentially Suitable Habitat Present? | Known Occupied Habitat Present? | Species Impacted by Action? |
|-----------------------------------------------------------|---------------------------|----------------------------------|---------------------------------------|---------------------------------|-----------------------------|
| <i>Physaria aurea</i>                                     | golden bladderpod         | FWS-SOC;<br>NM-SOC               | No                                    | No                              | No                          |
| <i>Physaria lata</i>                                      | Lincoln County bladderpod | FWS-SOC;<br>NM-SOC               | No                                    | No                              | No                          |
| <i>Potentilla sierrae-blancae</i>                         | Sierra Blanca cinquefoil  | FWS-SOC;<br>NM-SOC               | No                                    | No                              | No                          |
| <i>Ribes mescalerium</i>                                  | Mescalero black currant   | FWS-SOC;<br>NM-SOC               | No                                    | No                              | No                          |
| <i>Sedum integrifolium ssp. neomexicanum</i>              | New Mexico stonecrop      | FWS-SOC;<br>NM-SOC               | No                                    | No                              | No                          |
| <i>Senecio sacramentanus</i>                              | Sacramento groundsel      | FWS-SOC;<br>NM-SOC               | No                                    | No                              | No                          |
| <i>Synthris oblongifolia</i>                              | Sierra Blanca kittentails | FWS-SOC;<br>NM-SOC               | No                                    | No                              | No                          |
| <i>Valeriana texana</i>                                   | Texas tobacco-root        | FWS-SOC;<br>NM-SOC               | No                                    | No                              | No                          |
| FWS ~ USFWS<br>E ~ Endangered<br>SOC ~ Species of Concern |                           | NM ~ New Mexico<br>S ~ Sensitive |                                       | (NMRPTC 1999;<br>USFWS 2014a)   |                             |

#### 4.1.2 Threatened and Endangered Wildlife Species

*Table 8. Threatened and Endangered Wildlife Species*

| Scientific Name                            | Common Name                    | Status | Potentially Suitable Habitat Present? | Known Occupied Habitat Present? | Species Impacted by Action? |
|--------------------------------------------|--------------------------------|--------|---------------------------------------|---------------------------------|-----------------------------|
| <b>Invertebrates</b>                       |                                |        |                                       |                                 |                             |
| <i>Oreohelix neomexicana</i>               | Socorro mountainsnail          | NM-S   | No                                    | No                              | No                          |
| <b>Fish</b>                                |                                |        |                                       |                                 |                             |
| <i>Cyprinodon tularosa</i>                 | White Sands pupfish            | NM-T   | No                                    | No                              | No                          |
| <i>Gila pandora</i>                        | Rio Grande chub                | NM-S   | No                                    | No                              | No                          |
| <b>Amphibians and Reptiles</b>             |                                |        |                                       |                                 |                             |
| <i>Aneides hardii</i>                      | Sacramento Mountain Salamander | NM-T   | No                                    | No                              | No                          |
| <b>Birds</b>                               |                                |        |                                       |                                 |                             |
| <i>Accipiter gentilis</i>                  | northern goshawk               | NM-S   | No                                    | No                              | No                          |
| <i>Ammodramus bairdii</i>                  | Baird's sparrow                | NM-T   | No                                    | No                              | No                          |
| <i>Buteocallus anthracinus anthracinus</i> | common black-hawk              | NM-T   | No                                    | No                              | No                          |
| <i>Charadrius montanus</i>                 | mountain plover                | NM-S   | No                                    | No                              | No                          |

| Scientific Name                                                                                                                          | Common Name                         | Status           | Potentially Suitable Habitat Present? | Known Occupied Habitat Present?                                                                                                             | Species Impacted by Action? |                              |  |
|------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|------------------------------|--|
| <i>Coccyzus americanus occidentalis</i>                                                                                                  | yellow-billed cuckoo (eastern pop.) | NM-S             | No                                    | No                                                                                                                                          | No                          |                              |  |
| <i>Cyananthus latirostris</i>                                                                                                            | broad-billed hummingbird            | NM-T             | No                                    | No                                                                                                                                          | No                          |                              |  |
| <i>Empidonax traillii extimus</i>                                                                                                        | southwestern willow flycatcher      | FWS- CH, E; NM-E | No                                    | No                                                                                                                                          | No                          |                              |  |
| <i>Falco peregrinus anatum</i>                                                                                                           | peregrine falcon                    | NM-T             | No                                    | No                                                                                                                                          | No                          |                              |  |
| <i>Falco peregrinus tundrius</i>                                                                                                         | Arctic peregrine falcon             | NM-T             | No                                    | No                                                                                                                                          | No                          |                              |  |
| <i>Haliaeetus leucocephalus alascanus</i>                                                                                                | bald eagle                          | NM-T             | No                                    | No                                                                                                                                          | No                          |                              |  |
| <i>Lanius ludovicianus excubitorides</i>                                                                                                 | loggerhead shrike                   | NM-S             | No                                    | No                                                                                                                                          | No                          |                              |  |
| <i>Pelecanus occidentalis</i>                                                                                                            | brown pelican                       | NM-E             | No                                    | No                                                                                                                                          | No                          |                              |  |
| <i>Strix occidentalis lucida</i>                                                                                                         | Mexican spotted owl                 | FWS- CH, T; NM-S | No                                    | No                                                                                                                                          | No                          |                              |  |
| <i>Vireo vicinior</i>                                                                                                                    | gray vireo                          | NM-T             | No                                    | No                                                                                                                                          | No                          |                              |  |
| <b>Mammals</b>                                                                                                                           |                                     |                  |                                       |                                                                                                                                             |                             |                              |  |
| <i>Bassariscus astutus arizonensis; flavus</i>                                                                                           | ringtail                            | NM-S             | No                                    | No                                                                                                                                          | No                          |                              |  |
| <i>Chaetodipus intermedius ater</i>                                                                                                      | rock pocket mouse                   | NM-S             | No                                    | No                                                                                                                                          | No                          |                              |  |
| <i>Conepatus leuconotus</i>                                                                                                              | common hog-nosed skunk              | NM-S             | No                                    | No                                                                                                                                          | No                          |                              |  |
| <i>Cynomys ludovicianus ludovicianus</i>                                                                                                 | black-tailed prairie dog            | NM-S             | No                                    | No                                                                                                                                          | No                          |                              |  |
| <i>Cynomys ludovicianus arizonensis</i>                                                                                                  | Arizona black-tailed prairie dog    | NM-S             | No                                    | No                                                                                                                                          | No                          |                              |  |
| <i>Geomys arenarius brevirostris</i>                                                                                                     | desert pocket gopher                | NM-S             | No                                    | No                                                                                                                                          | No                          |                              |  |
| <i>Ondatra zibethicus ripensis</i>                                                                                                       | Pecos River muskrat                 | NM-S             | No                                    | No                                                                                                                                          | No                          |                              |  |
| <i>Spilogale gracilis</i>                                                                                                                | western spotted skunk               | NM-S             | No                                    | No                                                                                                                                          | No                          |                              |  |
| <i>Tamias quadrivittatus oscuraensis</i>                                                                                                 | Oscura Mountains Colorado chipmunk  | NM-T             | No                                    | No                                                                                                                                          | No                          |                              |  |
| <i>Tamias canipes sacramentoensis</i>                                                                                                    | gray-footed chipmunk                | NM-S             | No                                    | No                                                                                                                                          | No                          |                              |  |
| <i>Tamiasciurus hudsonicus lychnuchus</i>                                                                                                | red squirrel                        | NM-S             | No                                    | No                                                                                                                                          | No                          |                              |  |
| <i>Tamias minimus atristriatus</i>                                                                                                       | Peñasco least chipmunk              | FWS-C; NM-E      | No                                    | No                                                                                                                                          | No                          |                              |  |
| NM ~ New Mexico<br>S ~ Sensitive<br>FWS ~ U.S. Fish and Wildlife Service<br>SOC ~ Species of Concern<br>CH ~ Critical Habitat designated |                                     |                  |                                       | E ~ Endangered<br>C ~ Candidate<br>T ~ Threatened<br>UR ~ Under Review<br>BLM ~ Bureau of Land Management<br>EXPN ~ Experimental Population |                             | (NMDGF 2013;<br>USFWS 2013a) |  |

## 4.2 SPECIES IMPACT EVALUATIONS

For analysis purposes, this report has adopted the USFWS effect determinations and rationale for all federal and state listed plant and wildlife species which could utilize the project area. Effect determinations for each potential species were made utilizing the following definitions:

**No effect** – This determination is used when it is deemed that there will be no effect on the species in question as a result of the proposed action. It has been determined that either “no suitable habitat” exists within the proposed project area for this species and/or no individuals were observed. In this situation, no further contact with responsible management agencies is required.

**May affect, not likely to adversely affect** – This determination is used when the proposed action includes effects that are beneficial (b), insignificant (i) or discountable (d). This type of effect requires informal Section 7 consultation with the USFWS and concurrence with the determination for federally listed species. This effect may also require informal consultation with NMDGF or New Mexico Division of Forestry (NMDF) for state listed species.

**May affect, likely to adversely affect** – This determination is used when adverse effects cannot be avoided by the proposed action either directly or indirectly. In the event the overall effect of the proposed action is beneficial to the listed species, but also is likely to cause some adverse effects, the proper effect determination for the proposed action is “likely to adversely affect” the listed species. A “likely to adversely affect” determination requires formal Section 7 consultation with the USFWS and will require consultation with NMDGF or NMDF.

Potentially suitable habitat for seven state listed species is present within the project area. However, none of these species or signs of their presence were observed in the project area during the pedestrian survey.

### 4.2.1 Plants

No sensitive plants contain suitable habitat within the project area.

### 4.2.2 Wildlife

*Table 9. Effect Determination of Threatened and Endangered  
Wildlife Species*

| Scientific Name                           | Common Name                     | Status | Effect Determination |
|-------------------------------------------|---------------------------------|--------|----------------------|
| <b>Mammals</b>                            |                                 |        |                      |
| <i>Corynorhinus townsendii pallescens</i> | pale Townsend’s big-eared bat   | NM-S   | No effect            |
| <i>Myotis ciliolabrum</i>                 | western small-footed myotis bat | NM-S   | No effect            |
| <i>Myotis thysanodes</i>                  | fringed myotis bat              | NM-S   | No effect            |
| <i>Myotis velifer</i>                     | cave myotis                     | NM-S   | No effect            |

| Scientific Name                  | Common Name            | Status | Effect Determination         |
|----------------------------------|------------------------|--------|------------------------------|
| <i>Myotis volans</i>             | long-legged myotis bat | NM-S   | No effect                    |
| <i>Myotis occultus</i>           | Arizona myotis bat     | NM-S   | No effect                    |
| <i>Myotis yumanensis</i>         | Yuma myotis bat        | NM-S   | No effect                    |
| NM ~ New Mexico<br>S ~ Sensitive |                        |        | (NMDGF 2014;<br>USFWS 2014a) |

**Mammals**

The project area may contain suitable foraging habitat for the seven above mentioned bat species; however, the project area does not contain suitable roosting habitat. These species will likely avoid the project area during construction activities and not be impacted by the proposed action.

## 5.0 CONCLUSIONS AND RECOMMENDATIONS

### 5.1 GENERAL VEGETATION AND WILDLIFE

#### 5.1.1 Vegetation

The project area comprises approximately 2.5 acres (1.0 hectares) of private lands that encompass the Close Road bridge and surrounding area. The survey area was heavily disturbed by trash, a paved roadway, and commercial properties neighboring the project area.

Noxious weeds were not identified during the pedestrian survey. However, equipment that is used during construction should be cleaned prior to work to prevent the spread of noxious weeds.

#### 5.1.2 Wildlife

Impact to wildlife would be temporary during construction activities. Wildlife is expected to return as soon as construction has been completed. If fish are found during the construction of the bridge, efforts should be made to capture the fish in buckets and move them downstream away from the construction zone.

The NMDGF recommends following their trenching guidelines (2003) during the construction of open trenches that could potentially trap small mammals, amphibians, and reptiles or could potentially cause injury to larger mammals. Periods of highest activity for many of these species include night time, summer months, and wet weather. Below is an excerpt of the guidelines from the NMDGF (Appendix C).

- To minimize the amount of open trenches at any given time, keep trenching and back-filling crews close together.
- Trench during the cooler months (October – March). However, there may be exceptions (e.g., critical wintering areas) which need to be assessed on a site-specific basis.

- Avoid leaving trenches open overnight. Where trenches cannot be back-filled immediately, escape ramps should be constructed at least every 90 m. Escape ramps can be short lateral trenches sloping to the surface or wooden planks extending to the surface. The slope should be less than 45 degrees (100%). Trenches that have been left open overnight, especially where endangered species occur, should be inspected and animals removed prior to back-filling.

If construction efforts complied with these guidelines, where they apply, impacts to wildlife species would be reduced.

## **5.2 MIGRATORY BIRDS**

Migratory birds were not observed within and/or adjacent to the project area during the pedestrian survey; however, migratory birds would be expected to occupy the project area. The proposed action should adhere to the regulations stipulated by the MBTA and USFWS to prevent impacts. These regulations identify that pre-construction surveys should be conducted for active nests within the project area, if construction occurs during the nesting season (March through September). Removal of any tree should be checked for nesting birds prior to the tree removal.

Any active nests found should be marked and avoided until young have successfully fledged and left the nest. If mitigation measures are conducted, construction efforts are not expected to impact bird species or nesting habitat.

## **5.3 WETLANDS AND WATERS OF THE U.S.**

Wetlands, as defined by the USACE, were identified during the survey or on the USACE NWI maps (USFWS 2013c). A wetland delineation has been recommended by the USACE per consultation with them in February 2014 for the high water table area.

## **5.4 FEDERAL AND STATE LISTED SPECIES AND HABITATS**

### **5.4.1 Threatened and Endangered Plant Species**

Of the plants listed for Lincoln County, no threatened and endangered plant species were identified. The habitat within and immediately adjacent to the project area did not appear to be suitable for any other state or federally listed endangered or threatened plant species that may occur in Lincoln County.

### **5.4.2 Threatened and Endangered Wildlife Species**

The project area contained suitable habitat for the following New Mexico sensitive wildlife species: pale Townsend's big-eared bat, western small-footed myotis bat, fringed myotis bat, cave myotis, long-legged myotis bat, Arizona myotis bat, and the Yuma myotis bat. None of these species were identified during the pedestrian survey. Impact to these species is not expected to occur from the proposed action. The habitat in the survey area did not appear suitable for any other state or federally listed endangered or threatened wildlife species that may occur in Lincoln County.

## **6.0 REFERENCES**

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# **APPENDIX A**

## **Threatened, Endangered, and Sensitive Species Resources**



# Biota Information System Of *New Mexico*

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## Database Query

Your **search terms** were as follows:

**37 species returned.**

| Taxonomic Group | # Species | Taxonomic Group | # Species |
|-----------------|-----------|-----------------|-----------|
| Fish            | 2         | Mammals         | 19        |
| Amphibians      | 1         | Molluscs        | 1         |
| Birds           | 14        |                 |           |

[Export to Excel](#)

| Species ID | Common Name                                        | Scientific Name                  | Habitat Map | Photo                                                                                | County  | Status                              |
|------------|----------------------------------------------------|----------------------------------|-------------|--------------------------------------------------------------------------------------|---------|-------------------------------------|
| 010140     | <a href="#">Rio Grande Chub</a>                    | Gila pandora                     | Yes         |  | Lincoln | State NM: Sensitive taxa (informal) |
| 010360     | <a href="#">White Sands Pupfish</a>                | Cyprinodon tularosa              | Yes         | no photo                                                                             | Lincoln | State NM: Threatened                |
| 020065     | <a href="#">Sacramento Mtn. Salamander</a>         | Aneides hardii                   | Yes         |  | Lincoln | State NM: Threatened                |
| 040040     | <a href="#">Common Black-Hawk</a>                  | Buteogallus anthracinus          | Yes         |  | Lincoln | State NM: Threatened                |
| 040251     | <a href="#">Yellow-billed Cuckoo (eastern pop)</a> | Coccyzus americanus occidentalis |             | no photo                                                                             | Lincoln | State NM: Sensitive taxa (informal) |
| 040370     | <a href="#">Bald Eagle</a>                         | Haliaeetus leucocephalus         | Yes         |  | Lincoln | State NM: Threatened                |
| 040384     | <a href="#">Peregrine Falcon</a>                   | Falco peregrinus anatum          | Yes         |  | Lincoln | State NM: Threatened                |

|        |                                       |                            |     |                                                                                      |         |                                                                                                      |
|--------|---------------------------------------|----------------------------|-----|--------------------------------------------------------------------------------------|---------|------------------------------------------------------------------------------------------------------|
| 040385 | <b>Arctic Peregrine Falcon</b>        | Falco peregrinus tundrius  | Yes | no photo                                                                             | Lincoln | State NM: Threatened                                                                                 |
| 040521 | <b>Southwestern Willow Flycatcher</b> | Empidonax traillii extimus | Yes |    | Lincoln | Federal: Critical Hab. Designated (NM)<br>Federal: Endangered<br>State NM: Endangered                |
| 040610 | <b>Northern Goshawk</b>               | Accipiter gentilis         |     | no photo                                                                             | Lincoln | State NM: Sensitive taxa (informal)                                                                  |
| 040905 | <b>Broad-billed Hummingbird</b>       | Cynanthus latirostris      | Yes |    | Lincoln | State NM: Threatened                                                                                 |
| 041375 | <b>Mexican Spotted Owl</b>            | Strix occidentalis lucida  | Yes |    | Lincoln | Federal: Critical Hab. Designated (NM)<br>Federal: Threatened<br>State NM: Sensitive taxa (informal) |
| 041400 | <b>Brown Pelican</b>                  | Pelecanus occidentalis     | Yes |    | Lincoln | State NM: Endangered                                                                                 |
| 041500 | <b>Mountain Plover</b>                | Charadrius montanus        | Yes |    | Lincoln | State NM: Sensitive taxa (informal)                                                                  |
| 041750 | <b>Loggerhead Shrike</b>              | Lanius ludovicianus        |     |   | Lincoln | State NM: Sensitive taxa (informal)                                                                  |
| 041785 | <b>Baird's Sparrow</b>                | Ammodramus bairdii         | Yes |  | Lincoln | State NM: Threatened                                                                                 |
| 042200 | <b>Gray Vireo</b>                     | Vireo vicinior             | Yes |  | Lincoln | State NM: Threatened                                                                                 |
| 050025 | <b>Pale Townsend's Big-eared Bat</b>  | Corynorhinus townsendii    | Yes | no photo                                                                             | Lincoln | State NM: Sensitive taxa (informal)                                                                  |
| 050032 | <b>Arizona Myotis</b>                 | Myotis occultus            | Yes | no photo                                                                             | Lincoln | State NM: Sensitive taxa (informal)                                                                  |
| 050035 | <b>Cave Myotis</b>                    | Myotis velifer             | Yes | no photo                                                                             | Lincoln | State NM: Sensitive taxa (informal)                                                                  |
| 050047 | <b>Fringed Myotis</b>                 | Myotis thysanodes          | Yes | no photo                                                                             | Lincoln | State NM: Sensitive taxa (informal)                                                                  |
| 050059 | <b>Long-legged Myotis</b>             | Myotis volans              | Yes | no photo                                                                             | Lincoln | State NM: Sensitive taxa (informal)                                                                  |
| 050093 | <b>Western Small-footed Myotis</b>    | Myotis ciliolabrum         | Yes |  | Lincoln | State NM: Sensitive taxa (informal)                                                                  |

|        |                                       |                                    |     |                                                                                     |         |                                            |
|--------|---------------------------------------|------------------------------------|-----|-------------------------------------------------------------------------------------|---------|--------------------------------------------|
| 050103 | <b>Yuma Myotis</b>                    | Myotis yumanensis                  | Yes |   | Lincoln | State NM: Sensitive taxa (informal)        |
| 050148 | <b>Oscura Mtns. Colorado Chipmunk</b> | Tamias quadrivittatus oscuraensis  | Yes | no photo                                                                            | Lincoln | State NM: Threatened                       |
| 050156 | <b>Gray-footed Chipmunk</b>           | Tamias canipes sacramentoensis     | Yes | no photo                                                                            | Lincoln | State NM: Sensitive taxa (informal)        |
| 050161 | <b>Penasco Least Chipmunk</b>         | Tamias minimus atristriatus        | Yes | no photo                                                                            | Lincoln | Federal: Candidate<br>State NM: Endangered |
| 050200 | <b>Black-tailed Prairie Dog</b>       | Cynomys ludovicianus ludovicianus  |     |   | Lincoln | State NM: Sensitive taxa (informal)        |
| 050201 | <b>AZ Black-tailed Prairie Dog</b>    | Cynomys ludovicianus arizonensis   |     | no photo                                                                            | Lincoln | State NM: Sensitive taxa (informal)        |
| 050260 | <b>Desert Pocket Gopher</b>           | Geomys arenarius brevirostris      | Yes | no photo                                                                            | Lincoln | State NM: Sensitive taxa (informal)        |
| 050467 | <b>Rock Pocket Mouse</b>              | Chaetodipus intermedius ater       | Yes | no photo                                                                            | Lincoln | State NM: Sensitive taxa (informal)        |
| 050496 | <b>Pecos River Muskrat</b>            | Ondatra zibethicus ripensis        | Yes | no photo                                                                            | Lincoln | State NM: Sensitive taxa (informal)        |
| 050670 | <b>Ringtail</b>                       | Bassariscus astutus                |     |  | Lincoln | State NM: Sensitive taxa (informal)        |
| 050735 | <b>Common Hog-nosed Skunk</b>         | Conepatus leuconotus               | Yes | no photo                                                                            | Lincoln | State NM: Sensitive taxa (informal)        |
| 050747 | <b>Western Spotted Skunk</b>          | Spilogale gracilis                 | Yes | no photo                                                                            | Lincoln | State NM: Sensitive taxa (informal)        |
| 050812 | <b>Red Squirrel</b>                   | Tamiasciurus hudsonicus lychnuchus | Yes | no photo                                                                            | Lincoln | State NM: Sensitive taxa (informal)        |
| 060076 | <b>Socorro Mountainsnail</b>          | Oreohelix neomexicana              |     | no photo                                                                            | Lincoln | State NM: Sensitive taxa (informal)        |

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U.S. Fish and Wildlife Service

## Natural Resources of Concern

**This resource list is to be used for planning purposes only — it is not an official species list.**

**Endangered Species Act species list information for your project is available online and listed below for the following FWS Field Offices:**

New Mexico Ecological Services Field Office  
2105 OSUNA ROAD NE  
ALBUQUERQUE, NM 87113  
(505) 346-2525  
<http://www.fws.gov/southwest/es/NewMexico/>

***Project Name:***

NLCE-14-015

***Project Counties:***

Lincoln, NM

***Project Type:***

Bridge Construction / Maintenance

***Endangered Species Act Species List ([USFWS Endangered Species Program](#))***

There are a total of 6 threatened, endangered, or candidate species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fishes may appear on the species list because a project could cause downstream effects on the species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section below for critical habitat that lies within your project area. Please contact the designated FWS office if you have questions.

**Species that should be considered in an effects analysis for your project:**

| Birds | Status |  | Has Critical Habitat | Contact |
|-------|--------|--|----------------------|---------|
|-------|--------|--|----------------------|---------|



## Natural Resources of Concern

|                                                                                                      |                                        |                              |                                                   |                                             |
|------------------------------------------------------------------------------------------------------|----------------------------------------|------------------------------|---------------------------------------------------|---------------------------------------------|
| Mexican Spotted owl<br>( <i>Strix occidentalis lucida</i> )<br>Population: Entire                    | Threatened                             | <a href="#">species info</a> | <a href="#">Final designated critical habitat</a> | New Mexico Ecological Services Field Office |
| northern aplomado falcon<br>( <i>Falco femoralis septentrionalis</i> )<br>Population: U.S.A (AZ, NM) | Experimental Population, Non-Essential | <a href="#">species info</a> |                                                   | New Mexico Ecological Services Field Office |
| Southwestern Willow flycatcher<br>( <i>Empidonax traillii extimus</i> )<br>Population: Entire        | Endangered                             | <a href="#">species info</a> | <a href="#">Final designated critical habitat</a> | New Mexico Ecological Services Field Office |
| Fishes                                                                                               |                                        |                              |                                                   |                                             |
| Rio Grande Cutthroat trout<br>( <i>Oncorhynchus clarkii virginalis</i> )                             | Candidate                              | <a href="#">species info</a> |                                                   | New Mexico Ecological Services Field Office |
| Flowering Plants                                                                                     |                                        |                              |                                                   |                                             |
| Kuenzler Hedgehog cactus<br>( <i>Echinocereus fendleri</i> var. <i>kuenzleri</i> )                   | Endangered                             | <a href="#">species info</a> |                                                   | New Mexico Ecological Services Field Office |
| Mammals                                                                                              |                                        |                              |                                                   |                                             |
| Penasco least chipmunk<br>( <i>Tamias minimus atristriatus</i> )                                     | Candidate                              | <a href="#">species info</a> |                                                   | New Mexico Ecological Services Field Office |

**Critical habitats within your project area:** [\(View all critical habitats within your project area on one map\)](#)

The following critical habitats lie fully or partially within your project area.

| Birds | Critical Habitat Type |
|-------|-----------------------|
|-------|-----------------------|



## Natural Resources of Concern

|                                                                                |                                                   |
|--------------------------------------------------------------------------------|---------------------------------------------------|
| Mexican Spotted owl ( <i>Strix occidentalis lucida</i> )<br>Population: Entire | <a href="#">Final designated critical habitat</a> |
|--------------------------------------------------------------------------------|---------------------------------------------------|

### ***FWS National Wildlife Refuges ([USFWS National Wildlife Refuges Program](#))***

*There are no refuges found within the vicinity of your project.*

### ***FWS Migratory Birds ([USFWS Migratory Bird Program](#))***

Most species of birds, including eagles and other raptors, are protected under the Migratory Bird Treaty Act (16 U.S.C. 703). Bald eagles and golden eagles receive additional protection under the [Bald and Golden Eagle Protection Act](#) (16 U.S.C. 668). The Service's [Birds of Conservation Concern \(2008\)](#) report identifies species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become listed under the Endangered Species Act as amended (16 U.S.C 1531 et seq.).

*Migratory bird information is not available for your project location.*

### ***NWI Wetlands ([USFWS National Wetlands Inventory](#))***

The U.S. Fish and Wildlife Service is the principal Federal agency that provides information on the extent and status of wetlands in the U.S., via the National Wetlands Inventory Program (NWI). In addition to impacts to wetlands within your immediate project area, wetlands outside of your project area may need to be considered in any evaluation of project impacts, due to the hydrologic nature of wetlands (for example, project activities may affect local hydrology within, and outside of, your immediate project area). It may be helpful to refer to the USFWS National Wetland Inventory website. The designated FWS office can also assist you. Impacts to wetlands and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes. Project Proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate [U.S. Army Corps of Engineers District](#).

***IPaC is unable to display wetland information at this time.***



[Home](#)

[About  
NMRPTC](#)

[Contacts](#)

[Rare Plant List](#)

[County List](#)

[Agency Status](#)

[Photo List](#)

[About the List](#)

[History of  
Changes](#)

[Species  
Considered,  
but dropped](#)

[Photographers,  
Illustrators and  
Authors](#)

[Image Usage  
Guidelines](#)

[Sponsors](#)

[Discussion  
Group](#)

[Useful  
Literature](#)

[Links](#)

## Results of County Search

| LINCOLN                                                  |                              |
|----------------------------------------------------------|------------------------------|
| Scientific name                                          | County-NM                    |
| <i>Astragalus kerrii</i>                                 | Lincoln                      |
| <i>Astragalus neomexicanus</i>                           | Chaves, Lincoln, Otero       |
| <i>Cirsium inornatum</i>                                 | Lincoln, Otero               |
| <i>Crataegus wootoniana</i>                              | Catron, Grant, Lincoln       |
| <i>Delphinium novomexicanum</i>                          | Lincoln, Otero               |
| <i>Echinocereus fendleri</i> var. <i>kuenzleri</i>       | Chaves, Eddy, Lincoln, Otero |
| <i>Erigeron rybius</i>                                   | Lincoln, Otero               |
| <i>Eriogonum wootonii</i>                                | Lincoln, Otero               |
| <i>Geranium dodecatheoides</i>                           | Lincoln                      |
| <i>Hedeoma pulcherrima</i>                               | Lincoln, Otero               |
| <i>Heuchera woodsiaephila</i>                            | Lincoln                      |
| <i>Heuchera wootonii</i>                                 | Catron, Lincoln, Otero       |
| <i>Hymenoxys brachyactis</i>                             | Lincoln, Socorro, Torrance   |
| <i>Ionactis elegans</i>                                  | Lincoln                      |
| <i>Lupinus sierrae-blancae</i>                           | Lincoln, Otero               |
| <i>Penstemon alamosensis</i>                             | Doña Ana, Lincoln, Otero     |
| <i>Penstemon cardinalis</i> ssp. <i>cardinalis</i>       | Lincoln, Otero               |
| <i>Penstemon neomexicanus</i>                            | Lincoln, Otero               |
| <i>Philadelphus microphyllus</i> var. <i>argyrocalyx</i> | Lincoln, Otero               |
| <i>Physaria aurea</i>                                    | Lincoln, Otero               |
| <i>Physaria lata</i>                                     | Lincoln                      |
| <i>Potentilla sierrae-blancae</i>                        | Lincoln, Otero               |
| <i>Ribes mescalerium</i>                                 | Lincoln, Otero               |
| <i>Sedum integrifolium</i> ssp. <i>neomexicanum</i>      | Lincoln, Otero               |

|                               |                      |
|-------------------------------|----------------------|
| <i>Senecio sacramentanus</i>  | Lincoln, Otero       |
| <i>Synthyris oblongifolia</i> | Lincoln, Otero       |
| <i>Valeriana texana</i>       | Eddy, Lincoln, Otero |

Photo credits in header *Peniocereus greggii* var. *greggii* © T. Todsén,  
*Lepidospartum burgessii* © M. Howard, *Argemone pleiacantha* ssp. *pinnatisecta* © R. Sivin  
©2005 New Mexico Rare Plant Technical Council

# **APPENDIX B**

## **New Mexico Department of Agriculture Noxious Weed List**



April 1, 2009

## New Mexico Department of Agriculture

Office of the Director/Secretary  
MSC 3189  
New Mexico State University  
P.O. Box 30005  
Las Cruces, NM 88003-8005  
Phone: (575) 646-3007

### MEMORANDUM

TO: General Public

FROM: I. Miley Gonzales, Ph.D.

SUBJECT: New Mexico Noxious Weed List Update

The Director of the New Mexico Department of Agriculture has selected the following plant species (*see attached New Mexico Noxious Weed List*) to be targeted as noxious weeds for control or eradication pursuant to the Noxious Weed Management Act of 1998.

Petitions to add new plant species to the state noxious weed list were solicited and received by the New Mexico Department of Agriculture (NMDA) from Cooperative Weed Management Areas, individuals, agencies and organizations. The petitions were reviewed by the New Mexico Weed List Advisory Committee using ecological, distribution, impact, and legal status criteria within the State of New Mexico and adjoining states.

During its review the committee recommended the establishment of a new “watch list” category. This category contains plant species that have the potential to be problematic. More data is needed in order to determine if the species should be listed. Placing a plant species on the watch list will raise awareness of the species, and promote data collection and reporting efforts statewide. This will provide the data needed to determine if the plant should be listed.

This list does not include every plant species with the potential to negatively impact the state’s environment or economy. Landowners and land managers are encouraged to recognize plant species listed on the federal noxious weed list and other western states’ noxious weed lists as potentially having negative impacts and to manage them accordingly.

attachment: New Mexico Noxious Weed List

IMG/jm/jw

# New Mexico Noxious Weed List

Update April 2009

## Class A Species

Class A species are currently not present in New Mexico, or have limited distribution. Preventing new infestations of these species and eradicating existing infestations is the highest priority.

| <u>Common Name</u>    | <u>Scientific Name</u>         |
|-----------------------|--------------------------------|
| Alfombrilla           | <i>Drymaria arenariodes</i>    |
| Black henbane         | <i>Hyoscyamus niger</i>        |
| Camelthorn            | <i>Alhagi psuedalhagi</i>      |
| Canada thistle        | <i>Cirsium arvense</i>         |
| Dalmation toadflax    | <i>Linaria dalmatica</i>       |
| Diffuse knapweed      | <i>Centaurea diffusa</i>       |
| Dyer's woad           | <i>Isatis tinctoria</i>        |
| Eurasian watermilfoil | <i>Myriophyllum spicatum</i>   |
| Giant salvinia        | <i>Salvinia molesta</i>        |
| Hoary cress           | <i>Cardaria spp.</i>           |
| Hydrilla              | <i>Hydrilla verticillata</i>   |
| Leafy spurge          | <i>Euphorbia esula</i>         |
| Oxeye daisy           | <i>Leucanthemum vulgare</i>    |
| Parrotfeather         | <i>Myriophyllum aquaticum</i>  |
| Purple loosestrife    | <i>Lythrum salicaria</i>       |
| Purple starthistle    | <i>Centaurea calcitrapa</i>    |
| Ravenna grass         | <i>Saccharum ravennae</i>      |
| Scotch thistle        | <i>Onopordum acanthium</i>     |
| Spotted knapweed      | <i>Centaurea biebersteinii</i> |
| Yellow starthistle    | <i>Centaurea solstitialis</i>  |
| Yellow toadflax       | <i>Linaria vulgaris</i>        |

## Class B Species

Class B Species are limited to portions of the state. In areas with severe infestations, management should be designed to contain the infestation and stop any further spread.

| <u>Common Name</u>   | <u>Scientific Name</u>      |
|----------------------|-----------------------------|
| African rue          | <i>Peganum harmala</i>      |
| Chicory              | <i>Cichorium intybus</i>    |
| Halogeton            | <i>Halogeton glomeratus</i> |
| Malta starthistle    | <i>Centaurea melitensis</i> |
| Musk thistle         | <i>Carduus nutans</i>       |
| Perennial pepperweed | <i>Lepidium latifolium</i>  |

|                  |                            |
|------------------|----------------------------|
| Russian knapweed | <i>Acroptilon repens</i>   |
| Poison hemlock   | <i>Conium maculatum</i>    |
| Teasel           | <i>Dipsacus fullonum</i>   |
| Tree of heaven   | <i>Ailanthus altissima</i> |

### **Class C Species**

Class C species are wide-spread in the state. Management decisions for these species should be determined at the local level, based on feasibility of control and level of infestation.

| <b><u>Common Name</u></b> | <b><u>Scientific Name</u></b> |
|---------------------------|-------------------------------|
| Bull thistle              | <i>Cirsium vulgare</i>        |
| Cheatgrass                | <i>Bromus tectorum</i>        |
| Jointed goatgrass         | <i>Aegilops cylindrica</i>    |
| Russian olive             | <i>Elaeagnus angustifolia</i> |
| Saltcedar                 | <i>Tamarix spp.</i>           |
| Siberian elm              | <i>Ulmus pumila</i>           |

### **Watch List Species**

Watch List species are species of concern in the state. These species have the potential to become problematic. More data is needed to determine if these species should be listed. When these species are encountered please document their location and contact appropriate authorities.

| <b><u>Common Name</u></b> | <b><u>Scientific Name</u></b> |
|---------------------------|-------------------------------|
| Crimson fountaingrass     | <i>Pennisetum setaceum</i>    |
| Giant cane                | <i>Arundo donax</i>           |
| Meadow knapweed           | <i>Centaurea pratensis</i>    |
| Pampas grass              | <i>Cortaderia sellonana</i>   |
| Quackgrass                | <i>Elytrigia repens</i>       |
| Sahara mustard            | <i>Brassica tournefortii</i>  |
| Spiny cocklebur           | <i>Xanthium spinosum</i>      |
| Wall rocket               | <i>Diploaxis tenuifolia</i>   |

# **APPENDIX C**

## **New Mexico Department of Game and Fish Guidelines**

# TRENCHING GUIDELINES

## NEW MEXICO DEPARTMENT OF GAME AND FISH

September 2003

Open trenches and ditches can trap small mammals, amphibians and reptiles and can cause injury to large mammals. Periods of highest activity for many of these species include nighttime, summer months and wet weather. Implementing the following recommendations can minimize loss of wildlife.

- Keep trenching and back-filling crews close together, to minimize the amount of open trenches at any given time.
- Trench during the cooler months (October – March). However, there may be exceptions (e.g., critical wintering areas) that need to be assessed on a site-specific basis.
- Avoid leaving trenches open overnight. Where trenches cannot be back-filled immediately, escape ramps should be constructed at least every 90 meters. Escape ramps can be short lateral trenches or wooden planks sloping to the surface. The slope should be less than 45 degrees (1:1). Trenches that have been left open overnight should be inspected and animals removed prior to backfilling, especially where endangered species occur.

On a statewide basis there are numerous threatened, endangered or sensitive species potentially at risk by trenching operations. Project initiators should seek county species list to evaluate potential impact of projects. Risk to these species depends upon a wide variety of conditions at the trenching site, such as trench depth, side slope, soil characteristics, season, and precipitation events.

---

**APPENDIX D**  
Cultural Resources Survey Report

## NMCRI INVESTIGATION ABSTRACT FORM (NIAF)

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                              |                                                                          |                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| <b>1. NMCRI Activity No.:</b><br>130409                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>2a. Lead (Sponsoring) Agency:</b><br>FEMA | <b>2b. Other Permitting Agency(ies):</b>                                 | <b>3. Lead Agency Report No.:</b>                                                                                         |
| <b>4. Title of Report:</b> A Cultural Resources Survey for a Bridge Replacement at Close Road in the Village of Ruidoso, Lincoln County, New Mexico<br><br><b>Author(s):</b> Victor Gibbs                                                                                                                                                                                                                                                                                                                                                                             |                                              |                                                                          | <b>5. Type of Report:</b><br><input checked="" type="checkbox"/> <b>Negative</b> <input type="checkbox"/> <b>Positive</b> |
| <b>6. Investigation Type</b><br><input type="checkbox"/> Research Design <input checked="" type="checkbox"/> Survey/Inventory <input type="checkbox"/> Test Excavation <input type="checkbox"/> Excavation <input type="checkbox"/> Collection/Non-Field Study<br><input type="checkbox"/> Overview/Lit. Review <input type="checkbox"/> Monitoring <input type="checkbox"/> Ethnographic study <input type="checkbox"/> Site specific visit <input type="checkbox"/> Other:                                                                                          |                                              |                                                                          |                                                                                                                           |
| <b>7. Description of Undertaking</b> (what does the project entail?):<br>On July 27, 2008, the remnants of Hurricane Dolly passed through Ruidoso, New Mexico, area. Following the flooding, temporary bridges were placed in crosses such as the Close Road bridge; however, the Village is seeking additional funding from the FEMA to replace the temporary bridge with a permanent structure. The project area comprises of approximately 2.5 acres (1.0 hectares) of private lands that encompass the existing Close Road temporary bridge and surrounding land. |                                              | <b>8. Dates of Investigation:</b><br>(from 25 APR 2014 to: 25 APR 2014 ) |                                                                                                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                              | <b>9. Report Date:</b><br>30 APR 2014                                    |                                                                                                                           |
| <b>10. Performing Agency/ Consultant:</b><br>Zia Engineering & Environmental Consultants, LLC.<br><b>Principal Investigator:</b> Victor Gibbs<br><b>Field Supervisor:</b> Victor Gibbs<br><b>Field Personnel Names:</b> Victor Gibbs, Leah Markiewitz                                                                                                                                                                                                                                                                                                                 |                                              | <b>11. Performing Agency/ Consultant Report No.:</b><br>NLCE-14-015      |                                                                                                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                              | <b>12. Applicable Cultural Resources Permit No(s):</b><br>NM-14-155-S    |                                                                                                                           |
| <b>13. Client/ Customer (project proponent):</b><br>Village of Ruidoso<br><br><b>Contact:</b> Debi Lee<br><b>Address:</b> 313 Cree Meadows Drive, Ruidoso, NM 88345<br><b>Phone:</b> 575.258.4343                                                                                                                                                                                                                                                                                                                                                                     |                                              | <b>14. Client/Customer Project No.:</b>                                  |                                                                                                                           |
| <b>15. Land Ownership Status</b> ( <i>Must</i> be indicated on project map) :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                              |                                                                          |                                                                                                                           |
| <b>Land Owner</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                              | <b>Acres Surveyed</b>                                                    | <b>Acres in APE</b>                                                                                                       |
| Village of Ruidoso                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                              | 2.5                                                                      | 2.5                                                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                              |                                                                          |                                                                                                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                              |                                                                          |                                                                                                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                              |                                                                          |                                                                                                                           |
| <b>TOTALS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                              | <b>2.5</b>                                                               | <b>2.5</b>                                                                                                                |
| <b>16. Records Search(es):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                              |                                                                          |                                                                                                                           |
| <b>Date(s) of ARMS File Review:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 4/23/2014                                    | <b>Name of Reviewer(s):</b>                                              | Victor Gibbs                                                                                                              |
| <b>Date(s) of NR/SR File Review:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 4/23/2014                                    | <b>Name of Reviewer(s):</b>                                              | Victor Gibbs                                                                                                              |
| <b>Date(s) of Other Agency File Review:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                              | <b>Name of Reviewer(s):</b>                                              |                                                                                                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                              |                                                                          | <b>Agency:</b>                                                                                                            |
| <b>17. Survey Data:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                              |                                                                          |                                                                                                                           |
| <b>a. Source Graphics:</b> <input type="checkbox"/> NAD 27 <input checked="" type="checkbox"/> NAD 83                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                              |                                                                          |                                                                                                                           |
| <input type="checkbox"/> USGS 7.5" (1:24,000) Topo Map <input type="checkbox"/> Other topo map: <b>Scale:</b><br><input checked="" type="checkbox"/> GPS Unit <b>Accuracy</b> <input type="checkbox"/> <1.0m <input checked="" type="checkbox"/> 1-10m <input type="checkbox"/> 10-100m <input type="checkbox"/> >100m                                                                                                                                                                                                                                                |                                              |                                                                          |                                                                                                                           |
| <b>b.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                              | <b>USGS 7.5' Topographic Map Name</b>                                    | <b>USGS Quad Code</b>                                                                                                     |
| Ruidoso Downs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                              |                                                                          | 33105-C5                                                                                                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                              |                                                                          |                                                                                                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                              |                                                                          |                                                                                                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                              |                                                                          |                                                                                                                           |
| <b>c. County(ies):</b> Lincoln                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                              |                                                                          |                                                                                                                           |

## NMCRIS INVESTIGATION ABSTRACT FORM (NIAF)

(Continued)

**17. Survey Data (continued) :**

**d. Nearest City or Town:** Ruidoso Downs

**e. Legal Description:**

| Township (N/S) | Range (E/W) | Section | 1/4 | 1/4 | 1/4 |
|----------------|-------------|---------|-----|-----|-----|
| 11S            | 12E         | 25      | NE  | NW  | SE  |
| 11S            | 12E         | 25      | NW  | NE  | SE  |

See attached sheet for complete legal description table.

**Projected legal description:**       Yes       No       Unplatted

**f. Other Description (e.g. well pad footages, mile markers, plats, land grant names, etc.):**

**18. Survey Field Methods:**

**Intensity:**       100% coverage       <100% coverage

**Configuration:**       Block survey units       Linear survey units (l x w):       Other survey units (specify):

**Scope:**       non-selective (all sites recorded)       Selective/thematic (selected sites recorded)

**Coverage Method:**       Systematic pedestrian coverage       Other method (describe):

**Survey Interval (m):** 15      **Crew Size:** 2      **Fieldwork Dates:** 4/25/2014

**Survey Person Hours:** 3      **Recording Person Hours:** 0      **Total Hours:** 3

**Additional Narrative:** Both sides of the river in the vicinity of the proposed bridge replacement, as well as an old river drainage channel were surveyed for cultural resources

**19. Environmental Settings (NRCS soil designation; vegetative community; elevation; etc.):**

Geology of this area is within the Yeso formation (Py) and includes sedimentary rocks. Elevation of the project area is 6,500 feet above mean sea level (amsl). Soils include Cumulic Haplustolls, gently sloping which is alluvium derived from igneous and sedimentary rock and is found on valley floors. The project area is located within the Rocky Mountain Conifer Forests ecoregion of the Arizona / New Mexico Mountains region (Griffith et al. 2006) and includes a riparian habitat, with tall grasses, cottonwood trees, coyote willow, and one seed juniper. During the pedestrian survey, vegetation within the surveyed area was dominated by narrowleaf willow (*Salix exigua*) and saltgrass (*Sistichlis spicata*). The survey area also contained disturbances such as trash, a paved roadway, and commercial properties neighboring the project area.

**20. a. Percent Ground Visibility:** 30-100

**b. Condition of Survey Area** (grazed, bladed, undisturbed, etc.): The majority of the project area has been impacted by flooding. The southernmost area is an old river channel, which contains dense grasses. Modern intrusions including dumping of sediment, dead trees, and recent -age refuse are prevalent within the project area.

**21. CULTURAL RESOURCES FINDINGS**       Yes, See Page 3       No, Discuss Why: The project area has been disturbed by flooding, earth moving activities, and dumping.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>22. Required Attachments (check all appropriate boxes):</b></p> <p><input checked="" type="checkbox"/> USGS 7.5 Topographic Map with sites, isolates, and survey area clearly drawn</p> <p><input checked="" type="checkbox"/> Copy of NMCRIS Mapserver Map Check</p> <p><input type="checkbox"/> LA Site Forms - new sites (<u>with sketch map &amp; topographic map</u>)</p> <p><input type="checkbox"/> LA Site Forms (update) - previously recorded &amp; un-relocated sites (<u>first 2 pages minimum</u>)</p> <p><input type="checkbox"/> Historic Cultural Property Inventory (HCPI) Forms</p> <p><input type="checkbox"/> List and Description of isolates, if applicable</p> <p><input type="checkbox"/> List and Description of Collections, if applicable</p> | <p><b>23. Other Attachments:</b></p> <p><input type="checkbox"/> Photographs and Log</p> <p><input type="checkbox"/> Other Attachments (Describe):</p> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|

**24. I certify the information provided above is correct and accurate and meets all applicable agency standards.**

**Principal Investigator/ Responsible Archaeologist:** Victor Gibbs

**Signature**  **Date** 30 APR 2014 **Title (if not PI)** \_\_\_\_\_

|                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>25. Reviewing Agency:</b></p> <p><b>Reviewer's Name/ Date:</b> _____</p> <p><input type="checkbox"/> Accepted      <input type="checkbox"/> Rejected</p> <p><b>Tribal Consultation (if applicable):</b>      <input type="checkbox"/> Yes      <input type="checkbox"/> No</p> | <p><b>26. SHPO</b></p> <p><b>Reviewer's Name/ Date:</b> _____</p> <p><b>HPD Log No.:</b> _____</p> <p><b>SHPO File Location:</b> _____</p> <p><b>Date sent to ARMS:</b> _____</p> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## CULTURAL RESOURCE FINDINGS

*[fill in appropriate section(s)]*

|                                          |                                             |                                   |
|------------------------------------------|---------------------------------------------|-----------------------------------|
| <b>1. NMCRIS Activity No.:</b><br>130409 | <b>2. Lead (Sponsoring) Agency:</b><br>FEMA | <b>3. Lead Agency Report No.:</b> |
|------------------------------------------|---------------------------------------------|-----------------------------------|

**SURVEY RESULTS:**

**Sites discovered and registered:** 0  
**Sites discovered and NOT registered:** 0  
**Previously recorded sites revisited** (*site update form required*): 0  
**Previously recorded sites not relocated** (*site update form required*): 0  
**TOTAL SITES VISITED:** 0  
**Total isolated recorded** 0  Non-selective isolate recording.  
**Total structures recorded** (*new and previously recorded, including acequias*): 0

**MANAGEMENT SUMMARY:**

On April 25, 2014, a cultural resources survey was conducted by Zia Engineering & Environmental Consultants, LLC (Zia), for a proposed bridge replacement along the Rio Ruidoso, in Ruidoso Downs, New Mexico. On July 27, 2008, the remnants of Hurricane Dolly passed through Ruidoso, New Mexico, area. The Village of Ruidoso received 2.46 inches of precipitation with some reports of up to 9 inches in the area, which resulted in the flooding of the Rio Ruidoso. Following the flooding, temporary bridges were placed in crosses such as the Close Road bridge; however, the Village is seeking additional funding from the FEMA to replace the temporary bridge with a permanent structure. The project area comprises of approximately 2.5 acres (1.0 hectares) of private lands that encompass the existing Close Road temporary bridge and surrounding land. The project was conducted for the Village of Ruidoso. The lead agency for the project is the Federal Emergency Management Agency (FEMA). The project was conducted under New Mexico State Lands permit NM-14-155-S. The Zia project number for this survey is NLCE-14-015. The NMCRIS activity number for this project is 130409. Zia's Principal Investigator for the project was Victor Gibbs and the field crew consisted of Victor Gibbs and Leah Markiewitz. No archaeological sites or isolated occurrences were documented. Based on the lack of cultural resource and the disturbed soil contexts, it is recommended that the project proceed with no impact to cultural resources.

**IF THE REPORT IS NEGATIVE YOU ARE DONE AT THIS POINT.**

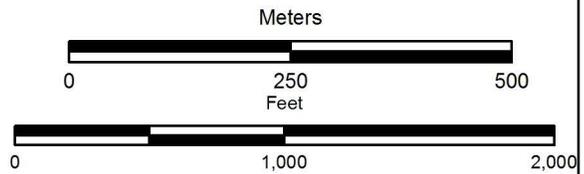


ESRI Imagery, For more information go to [http://gto.arcgis.com/maps/World\\_Imagery](http://gto.arcgis.com/maps/World_Imagery)  
 Ruidoso Downs 7.5 Minute Topo



UTM Zone 13  
 WGS 84  
 1:8,500

-  Lincoln National Forest
-  Close Road Project Area



Date: 4/28/2014  
 Created By: Renee Pardee  
 Project No.: NLCE-14-015





**APPENDIX E**  
Draft Wetland Determination and Delineation Report

NLCC-14-019-14-222

# WETLAND DETERMINATION AND DELINEATION REPORT

FOR A BRIDGE REPLACEMENT AT CLOSE ROAD  
IN THE VILLAGE OF RUIDOSO,  
LINCOLN COUNTY, NEW MEXICO

NOVEMBER 2014



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Zia Project No. NLCC-14-019  
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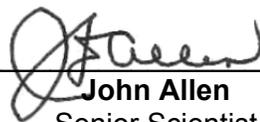
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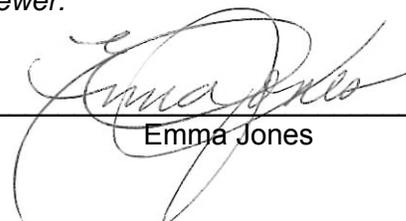
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**Table 1. Zia Project Staffing**

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## TABLE OF CONTENTS

|            |                                               |          |
|------------|-----------------------------------------------|----------|
| <b>1.0</b> | <b>INTRODUCTION .....</b>                     | <b>1</b> |
| <b>2.0</b> | <b>METHODS.....</b>                           | <b>5</b> |
| 2.1        | SOILS .....                                   | 5        |
| 2.2        | HYDROLOGY .....                               | 6        |
| 2.3        | VEGETATION .....                              | 6        |
| <b>3.0</b> | <b>EXISTING ENVIRONMENTAL CONDITIONS.....</b> | <b>6</b> |
| 3.1        | CLIMATE .....                                 | 6        |
| 3.2        | SOILS .....                                   | 7        |
| 3.3        | VEGETATION .....                              | 7        |
| <b>4.0</b> | <b>WETLANDS AND WATERS OF THE U.S.....</b>    | <b>8</b> |
| 4.1        | SAMPLE PIT 1 .....                            | 11       |
| 4.1.1      | Sample Pit 1 Soils.....                       | 11       |
| 4.1.2      | Sample Pit 1 Hydrology .....                  | 12       |
| 4.1.3      | Sample Pit 1 Vegetation .....                 | 13       |
| 4.2        | SAMPLE PIT 2 .....                            | 13       |
| 4.2.1      | Sample Pit 2 Soils.....                       | 14       |
| 4.2.2      | Sample Pit 2 Hydrology .....                  | 14       |
| 4.2.3      | Sample Pit 2 Vegetation .....                 | 14       |
| 4.3        | SAMPLE PIT 3 .....                            | 15       |
| 4.3.1      | Sample Pit 3 Soils.....                       | 15       |
| 4.3.2      | Sample Pit 3 Hydrology .....                  | 16       |
| 4.3.3      | Sample Pit 3 Vegetation .....                 | 16       |
| 4.4        | SAMPLE PIT 4 .....                            | 17       |
| 4.4.1      | Sample Pit 4 Soils.....                       | 17       |
| 4.4.2      | Sample Pit 4 Hydrology .....                  | 18       |
| 4.4.3      | Sample Pit 4 Vegetation .....                 | 18       |
| 4.5        | SAMPLE PIT 5 .....                            | 19       |
| 4.5.1      | Sample Pit 5 Soils.....                       | 19       |
| 4.5.2      | Sample Pit 5 Hydrology .....                  | 20       |
| 4.5.3      | Sample Pit 5 Vegetation .....                 | 20       |
| 4.6        | SAMPLE PIT 6 .....                            | 20       |
| 4.6.1      | Sample Pit 6 Soils.....                       | 21       |
| 4.6.2      | Sample Pit 6 Hydrology .....                  | 22       |
| 4.6.3      | Sample Pit 6 Vegetation .....                 | 22       |
| 4.7        | SAMPLE PIT 7 .....                            | 22       |
| 4.7.1      | Sample Pit 7 Soils.....                       | 23       |
| 4.7.2      | Sample Pit 7 Hydrology .....                  | 24       |
| 4.7.3      | Sample Pit 7 Vegetation .....                 | 24       |

|            |                               |           |
|------------|-------------------------------|-----------|
| 4.8        | SAMPLE PIT 8 .....            | 24        |
| 4.8.1      | Sample Pit 8 Soils .....      | 25        |
| 4.8.2      | Sample Pit 8 Hydrology .....  | 26        |
| 4.8.3      | Sample Pit 8 Vegetation ..... | 26        |
| 4.9        | WETLAND AREA .....            | 26        |
| <b>5.0</b> | <b>CONCLUSIONS .....</b>      | <b>31</b> |
| <b>6.0</b> | <b>REFERENCES .....</b>       | <b>31</b> |

**List of Figures**

|            |                                                             |    |
|------------|-------------------------------------------------------------|----|
| Figure 1.  | Project Area Vicinity Map .....                             | 2  |
| Figure 2.  | Project Area Topographic Map .....                          | 3  |
| Figure 3.  | Project Area Aerial Map .....                               | 4  |
| Figure 4.  | Project Area Ecoregion Map .....                            | 7  |
| Figure 5.  | National Wetland Inventory Map of the Project Area .....    | 8  |
| Figure 6.  | View of water flow under Close Road bridge on 4-25-14 ..... | 9  |
| Figure 7.  | View of water flow under Close Road bridge on 8-11-14 ..... | 9  |
| Figure 8.  | Sample Pit Locations .....                                  | 10 |
| Figure 9.  | Soil Pit 1 .....                                            | 11 |
| Figure 10. | Sample Pit 1 Soil Sample .....                              | 12 |
| Figure 11. | Sample Pit 1 Hydrology .....                                | 12 |
| Figure 12. | Sample Pit 2 .....                                          | 13 |
| Figure 13. | Sample Pit 2 Soil Sample .....                              | 14 |
| Figure 14. | Sample Pit 3 .....                                          | 15 |
| Figure 15. | Sample Pit 3 Soil Sample .....                              | 16 |
| Figure 16. | Sample Pit 4 .....                                          | 17 |
| Figure 17. | Sample Pit 4 Soil Sample .....                              | 18 |
| Figure 18. | Sample Pit 5 .....                                          | 19 |
| Figure 19. | Sample Pit 6 .....                                          | 21 |
| Figure 20. | Sample Pit 6 Soil Sample .....                              | 21 |
| Figure 21. | Sample Pit 7 .....                                          | 23 |
| Figure 22. | Sample Pit 7 Soil Sample .....                              | 23 |
| Figure 23. | Sample Pit 8 .....                                          | 25 |
| Figure 24. | Sample Pit 8 Soil Sample .....                              | 25 |
| Figure 25. | Waterway facing south .....                                 | 27 |
| Figure 26. | Waterway facing northwest .....                             | 27 |
| Figure 27. | Mapped Wetland Area .....                                   | 28 |
| Figure 28. | NWI Area with Mapped Wetland Area .....                     | 29 |
| Figure 29. | USDA Soils with Mapped Wetland Area .....                   | 30 |

**List of Tables**

|          |                                              |    |
|----------|----------------------------------------------|----|
| Table 1. | Zia Project Staffing .....                   | ii |
| Table 2. | Soils within the Project Area .....          | 7  |
| Table 3. | Summary of Sample Locations .....            | 9  |
| Table 4. | Sample Pit 1 Soil Profile Descriptions ..... | 11 |
| Table 5. | Sample Pit 1 Vegetation .....                | 13 |
| Table 6. | Sample Pit 2 Soil Profile Descriptions ..... | 14 |

|                                                       |    |
|-------------------------------------------------------|----|
| Table 7. Sample Pit 2 Vegetation .....                | 15 |
| Table 8. Sample Pit 3 Soil Profile Descriptions.....  | 16 |
| Table 9. Sample Pit 3 Vegetation .....                | 17 |
| Table 10. Sample Pit 4 Soil Profile Descriptions..... | 18 |
| Table 11. Sample Pit 4 Vegetation .....               | 19 |
| Table 12. Sample Pit 5 Soil Profile Descriptions..... | 20 |
| Table 13. Sample Pit 5 Vegetation .....               | 20 |
| Table 14. Sample Pit 6 Soil Profile Descriptions..... | 22 |
| Table 15. Sample Pit 6 Vegetation .....               | 22 |
| Table 16. Sample Pit 7 Soil Profile Descriptions..... | 24 |
| Table 17. Sample Pit 7 Vegetation .....               | 24 |
| Table 18. Sample Pit 8 Soil Profile Descriptions..... | 26 |
| Table 19. Sample Pit 8 Vegetation .....               | 26 |

**Appendices**

- APPENDIX A Wetland Determination Data Forms
- APPENDIX B USDA Soil Survey

# **WETLAND DETERMINATION AND DELINEATION REPORT**

## **1.0 INTRODUCTION**

Zia Engineering & Environmental Consultants, LLC (Zia) was requested by the Village of Ruidoso (Village) to conduct a wetland determination and delineation of the area surrounding the Close Road bridge. The Village was requested by the U.S. Army Corps of Engineers (USACE). The project area is located on private land.

The Federal Emergency Management Agency (FEMA) provides funding through Federal sources. The wetland determination and delineation is proposed to be used to support the completion of an environmental assessment (EA) as well as receive the appropriate USACE Clean Water Act (CWA) permit.

On July 27, 2008, the remnants of Hurricane Dolly passed through Ruidoso, New Mexico area. The Village of Ruidoso received 2.46 inches of precipitation with some reports of up to 9 inches in the area, which resulted in the flooding of the Rio Ruidoso. Following the flooding, temporary bridges were placed in crosses such as the Close Road bridge; however, the Village is seeking additional funding from the FEMA to replace the bridge with a permanent structure. The project area comprises approximately 2.5 acres (1.0 hectares) of private lands that encompass the existing Close Road temporary bridge and surrounding land.

The project area is identified within the following legal descriptions and located within the US Geological Survey area Ruidoso Downs (33105-C5) 1:24,000 scale. The project boundaries are identified in Figures 1 - 3.

T 11S, R, 12E; Section 25; NE, NW, SE;  
T 11S, R, 12E; Section 25; NW, NE, SE

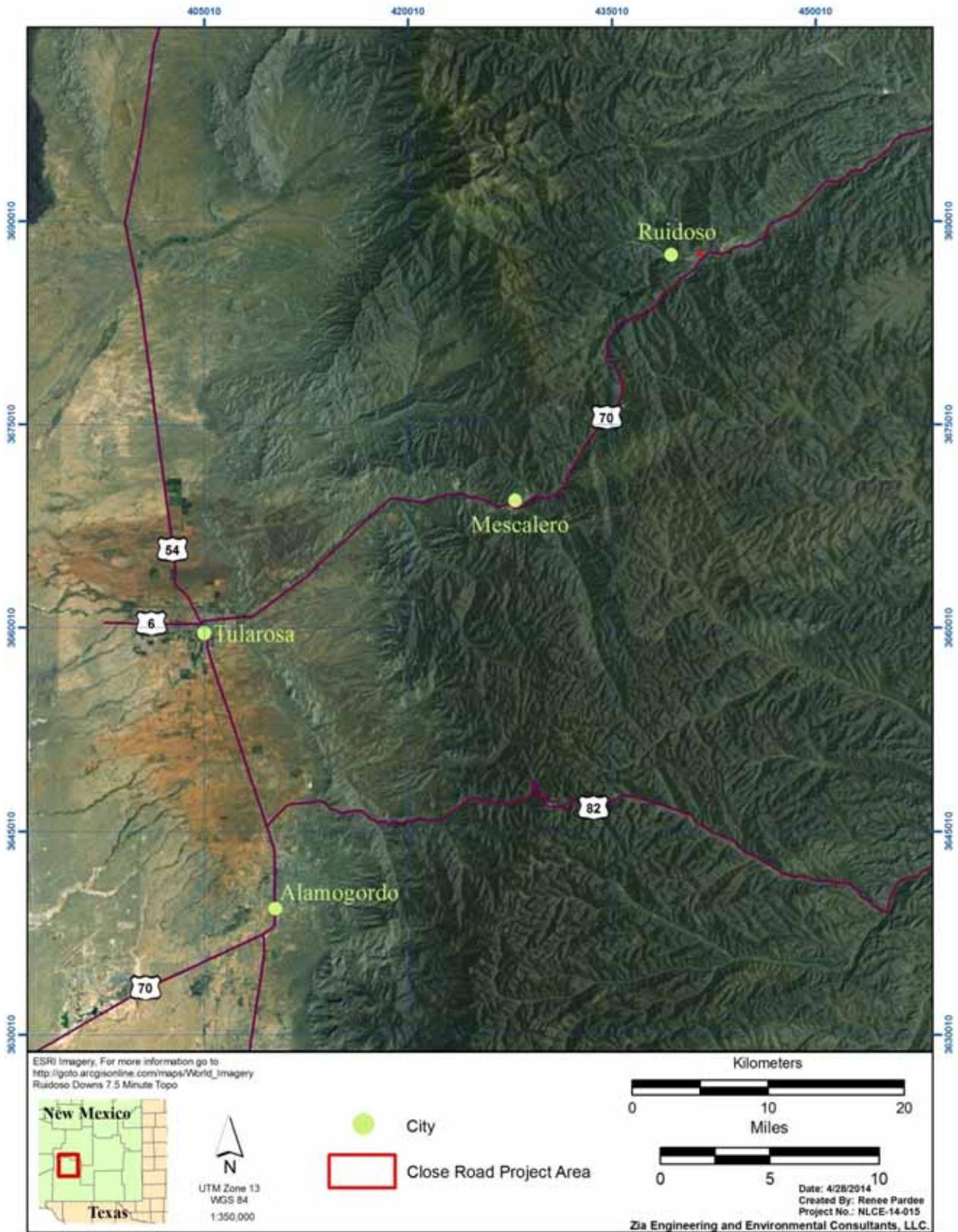


Figure 1. Project Area Vicinity Map

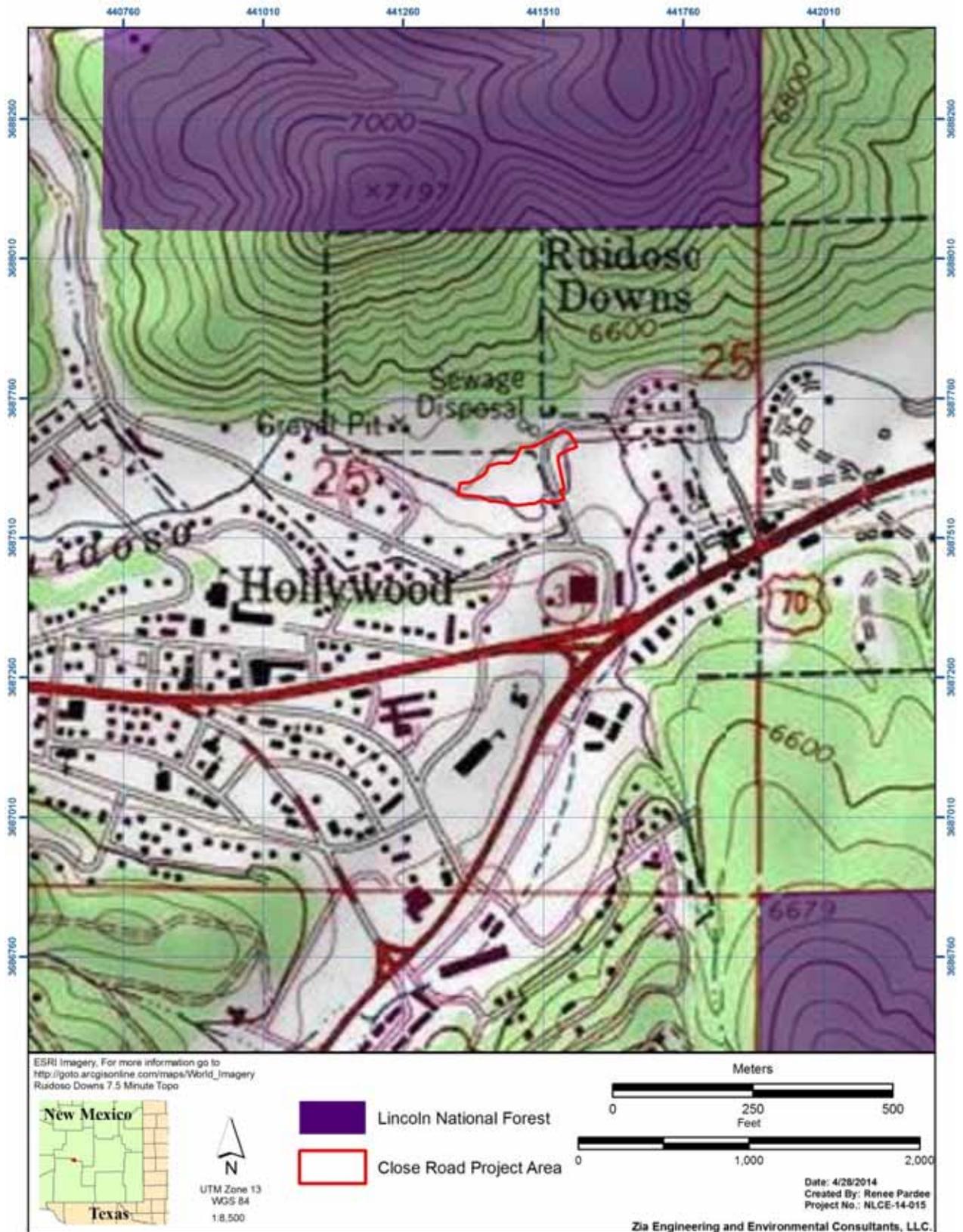


Figure 2. Project Area Topographic Map

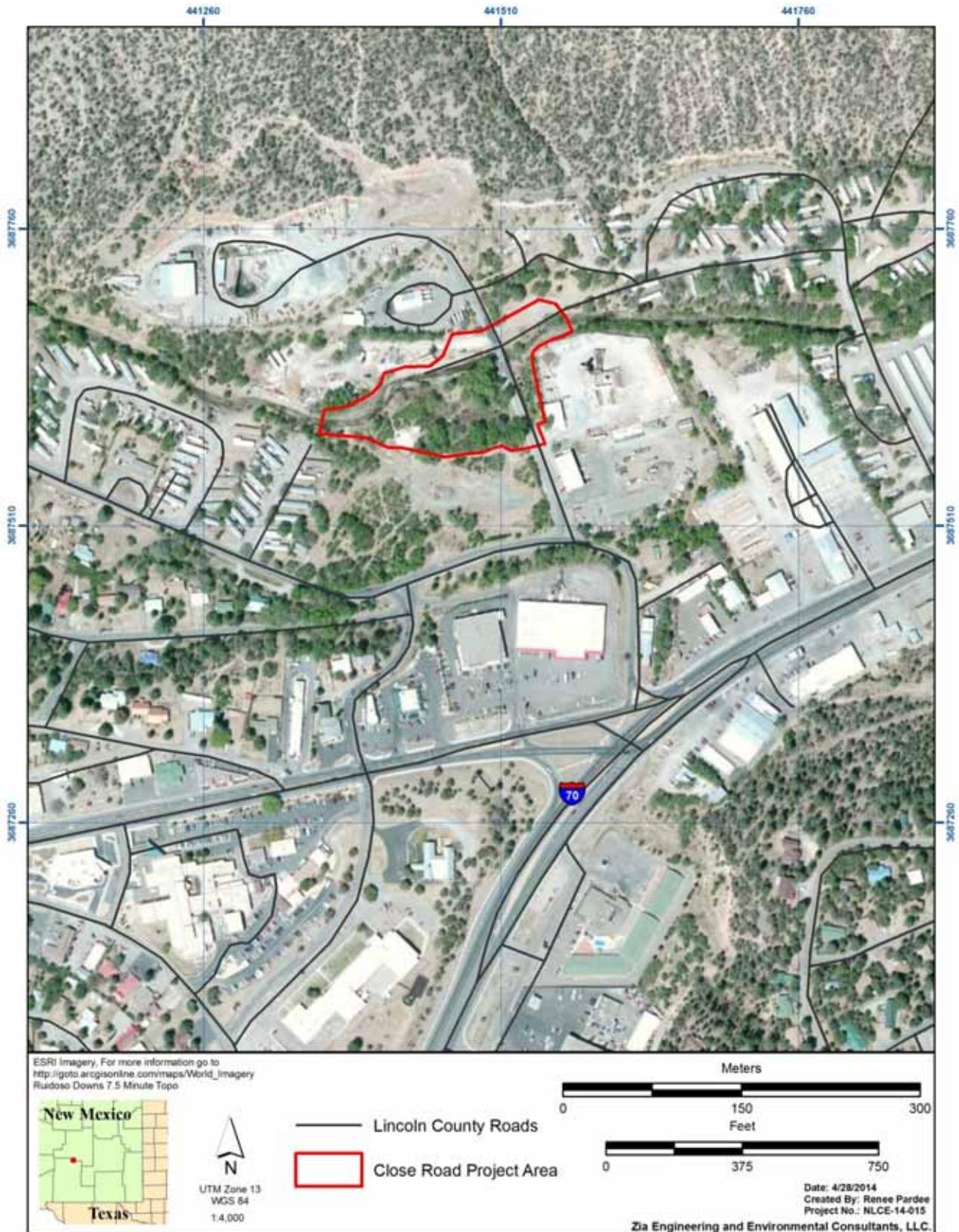


Figure 3. Project Area Aerial Map

## 2.0 METHODS

The purpose of this assessment was to provide a wetland determination and delineation of the project area to determine whether the project area contained wetlands and jurisdictional waters protected by the following governing act.

### Clean Water Act

The CWA provides for protection of wetlands and jurisdictional waters of the United States by the USACE and the Environmental Protection Agency (EPA) as defined in Sections 404 and 401.

Zia performed a pedestrian survey and field assessment of the proposed project area and evaluated the entire site for potential Clean Water Act Section 404 jurisdictional wetlands in accordance with the USACE Wetland Delineation Manual (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region* (Version 2.0) (USACE 2010a).

Prior to the pedestrian survey, Zia examined the following sources for background information related to potential jurisdictional wetlands:

- United States Geological Survey (USGS) topographic map and aerial photographs for the proposed project area, Ruidoso Downs (33105-C5) 1:24,000 scale;
- USFWS National Wetland Inventory (NWI) map for the area (USFWS 2014)
- USACE 2014 National Wetland Plant List (USACE 2014), and
- USDA Soils Lincoln County Area, New Mexico (USDA 2013).

Zia professional staff, as indicated previously in Table 1, completed a 100-percent pedestrian survey of the 2.5-acre (1.0 hectare) project area and assessed the area for wetlands on August 11, 2014. Location data was collected using a Trimble Geo XT handheld GPS unit with sub-meter (m) precision. Photographs of important features were taken with a 12.1 megapixel digital camera. This report was prepared by Leah R. Markiewitz with contributions from GIS technician Renee Pardee and Bob Sabie.

### 2.1 SOILS

Soils of the proposed project area were determined based on information from the Natural Resources Conservation Service (NRCS) Web Soil Survey for Lincoln County, New Mexico (Appendix B). On-site verification of wetland criteria was done through the placement of soil pits. Data collection involved soil auger to a depth of 10-12 inches, if possible, within each sample plot and evaluating sample plot soils for hydric soil indicators (e.g. low chroma or gleyed colors, mottles, sulfidic odors, concretions, organic streaking).

## **2.2 HYDROLOGY**

Hydrologic analysis and data collection involved surveying the sample plot for evidence of wetland hydrology (e.g. inundation, soil saturation, wetland drainage patterns, drift lines, watermarks, sediment deposition). Soil pits were augered to determine the areas that would meet the hydrology requirements for a wetland according to the USACE Wetland Delineation Manual (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region* (Version 2.0) (USACE 2010a).

## **2.3 VEGETATION**

Vegetation identified in the proposed project area was described and classified according to 1) physiognomic classes developed by Dick-Peddie (1993), 2) physical disturbance levels, as recommended by the United States Fish and Wildlife Service (USFWS) (1980), and 3) status as wetland indicators (USACE 2014).

Vegetation analysis and data collection involved identification and comparison of each species observed within the sample plot to the 2014 State of New Mexico 2014 Wetland Plant List (USACE 2014) to establish the occurrence of wetland plant species within the sample plot. Vegetation plots were taken from within a 0.5 meter diameter ring.

The vegetation was classified according to the species' wetland indicator status (e.g. OBL, FACW, FAC, FACU and UPL). Some species did not have a wetland indicator status designation in either the national plant list or the Region 7 plant list. These plants were classified as UPL per the instructions in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Version 2.0) (2010a). The vegetation for each area is identified and classified as shown in the following sections.

## **3.0 EXISTING ENVIRONMENTAL CONDITIONS**

### **3.1 CLIMATE**

Ruidoso, New Mexico, tends to be semi-arid with average annual rainfall measuring approximately 22.7 inches (57.7 centimeters [cm]). Most rainfall occurs in August with approximately 4.4 inches (11.2 cm) of precipitation. Maximum average temperatures are in the 80's° Fahrenheit (F) (26.7 – 32.2° Celsius [C]) and average minimum temperature is in the teens (-12.2 - -6.7°C). (IDcide.com 2014)

On August 11, 2014, the air temperature ranged between 63 and 71°F (17.2 and 21.7°C). Wind speeds ranged from 7 to 16 miles per hour (11 to 26 kilometers [km] per hour). Visibility was good (wunderground.com 2014).

### 3.2 SOILS

The project area consisted of one soil mapped by the Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA 2009). The specific soil type is noted in Table 2 and is described below.

**Table 2. Soils within the Project Area**

|                                         |                                                           |
|-----------------------------------------|-----------------------------------------------------------|
|                                         |                                                           |
| 7 – Cumulic Haplustolls, gently sloping | Neither farmland of statewide importance or a hydric soil |

7 – Cumulic Haplustolls, gently sloping

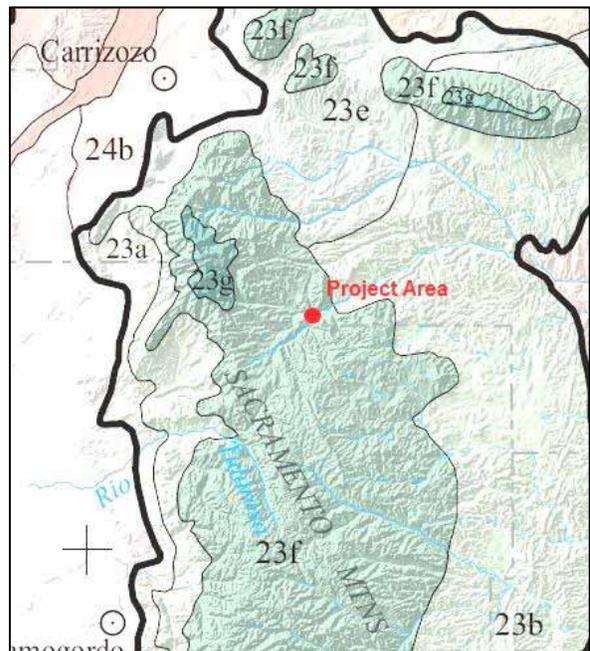
The Cumulic Haplustolls, gently sloping soil is alluvium derived from igneous and sedimentary rock and is found on valley floors. It is located at elevations of 6,300 to 7,100 feet (ft.) (1,920 to 2,164 m) and slopes are 0 to 8 percent. Cumulic Haplustolls is classified as well drained and does not pond but occasionally floods. It has a depth of more than 80 inches (in.) (203 cm) to a restrictive layer. The available water capacity within this component is low (approximately 5.4 in. [13.7 cm]). The soil is not classified as prime farmlands or a hydric soil. The ecological site that defines this soil is Bottomland (R070CY103NM).

### 3.3 VEGETATION

The project area is located within the Rocky Mountain Conifer Forests ecoregion of the Arizona / New Mexico Mountains region (Figure 4, Griffith et al. 2006). The area contains elevations from about 7,000 to 9,600 ft. (2,134 to 2,926 m) with ponderosa pines and Gambel oak being the predominant vegetation. The area is geologically diverse with volcanic, sedimentary, and some intrusive and crystalline rocks (Griffith et al. 2006).

Dick-Peddie (1993) categorized the general vegetation of the project area as coniferous and mixed woodlands. The project area is indicative mixed woodlands with disturbances from the Rio Ruidoso that runs through the project area as well as commercial buildings within the close proximity to the project area (Figures 5 - 8).

During the pedestrian survey, vegetation within the surveyed area was dominated by narrowleaf willow (*Salix exigua*) and saltgrass (*Sistichlis spicata*). The survey area also contained disturbances such as trash, a paved roadway, and commercial properties neighboring the project area. Other vegetation identified are noted in Table 4.



## 4.0 WETLANDS AND WATERS OF THE U.S.

Wetlands tend to occur in low-lying positions within the landscape and are often associated with hydrologic features such as rivers, lakes and drainages. Since these landscape features occur on and adjacent to the proposed project area, Zia evaluated the site for wetlands. Criteria required for an area to be determined to be a wetland include hydric soil indicators (e.g. low chroma or gleyed colors, mottles, sulfidic odors, concretions, organic streaking in sandy soils, listed on hydric soils list), indicators of wetland hydrology (e.g. inundation, soil saturation, wetland drainage patterns, drift lines, watermarks, sediment deposition), and a dominance of wetland vegetation (species listed as obligate, facultative wetland, or facultative on the State of New Mexico 2014 Wetland Plant List (USACE 2014).

Per the USFWS National Wetland Inventory (NWI) Map (USFWS 2014), the project area contains classified wetlands as Riverine (the Rio Ruidoso) (Figure 5). The path of the riverine follows an older stream channel. The river has since moved more north.

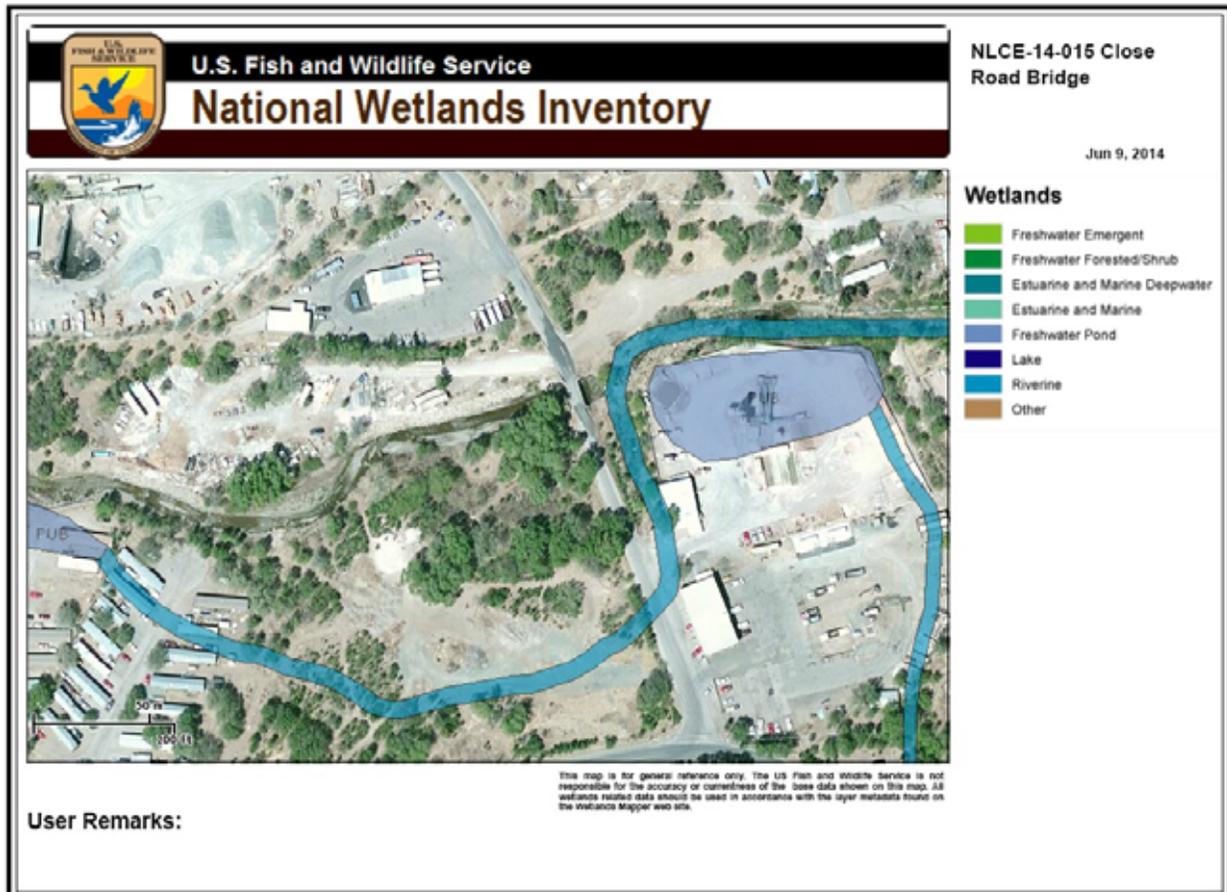


Figure 5. National Wetland Inventory Map of the Project Area (USFWS 2014)

On August 11, 2014, initial field observations were made, and it was very apparent that the project area had received immense amounts of rain recently (Figures 6 and 7). This was indicated by very damp soils and heavy vegetation growth. Additionally, there was a heavy amount of debris built up at the culvert bridge, and vegetation in the river was bent over or damaged indicating a heavy flow of water in the river.



**Figure 6. View of water flow under Close Road bridge on 4-25-14**



**Figure 7. View of water flow under Close Road bridge on 8-11-14**

For the wetland delineation, the area is classified as not being in a normal situation; thus field results are altered. For example, the determination of the colors of the soils within each testing location was moist when they should have been dry which alters color variations. To solve that issue, the soils were left to dry for a few minutes before color was determined. Eight sample pits (SP) were identified within the parcel, and eight soil samples were taken within each area (Figure 8). These locations encompass wetlands as well as upland regions within the parcel. Table 3 summarizes the findings of the sample locations, and then each location is described within the following sections.

***Table 3. Summary of Sample Locations***

| <b>Sample Pits</b> | <b>Soils</b> | <b>Vegetation</b> | <b>Hydrology</b> | <b>Wetlands?<br/>(yes/no)</b> |
|--------------------|--------------|-------------------|------------------|-------------------------------|
| SP 1               | No           | No                | Yes              | No                            |
| SP 2               | No           | No                | Yes              | No                            |
| SP 3               | No           | No                | No               | No                            |
| SP 4               | No           | No                | No               | No                            |
| SP 5               | No           | No                | No               | No                            |
| SP 6               | No           | No                | No               | No                            |
| SP 7               | No           | No                | Yes              | No                            |
| SP 8               | Yes          | No                | Yes              | No*                           |

\*SP 8 was located immediately adjacent to a wetland area.

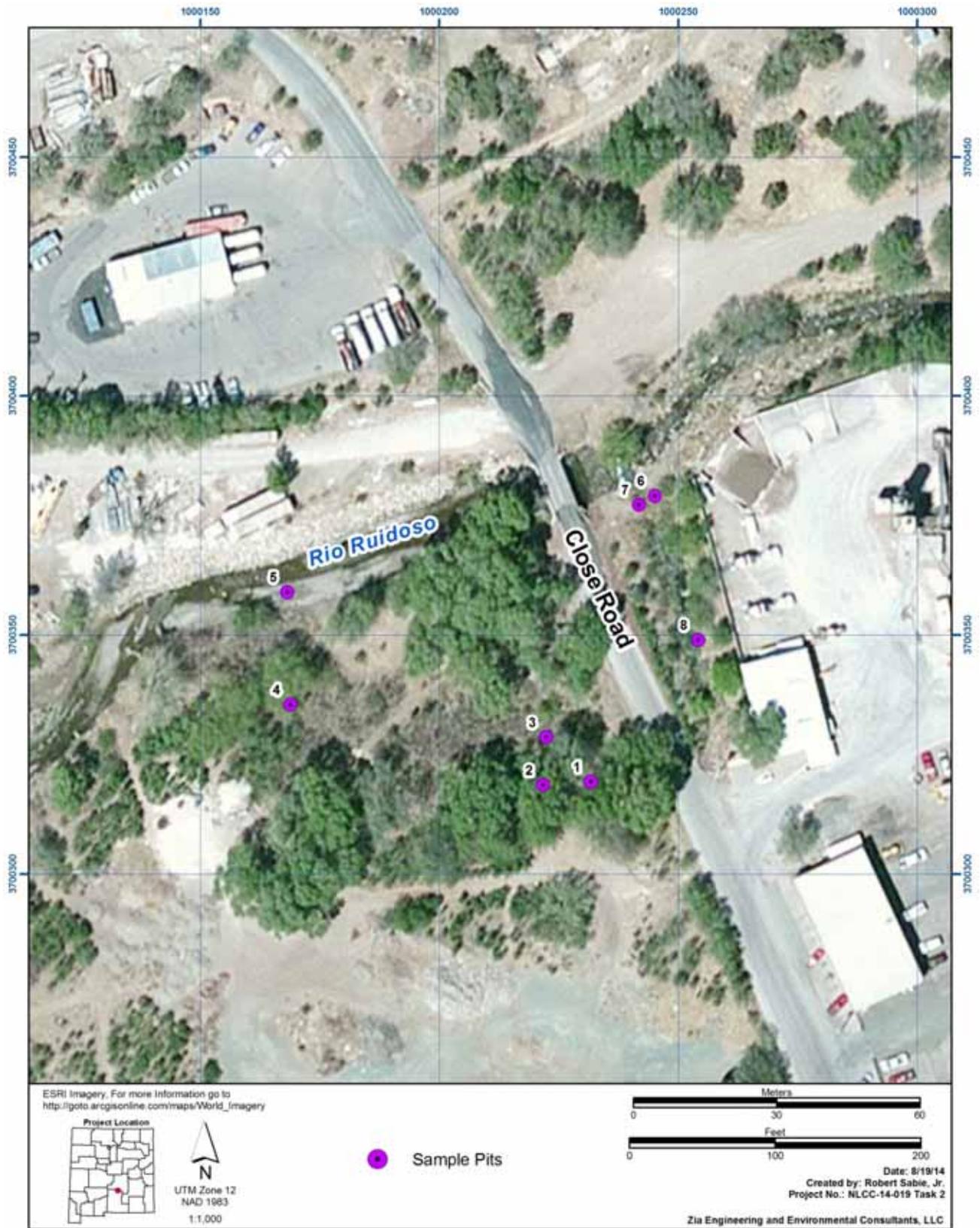


Figure 8. Sample Pit Locations

## 4.1 SAMPLE PIT 1

Sample Pit Location 1 was chosen since it was located in a low lying area on the east side of Close Road near the culvert that ran under the roadway. At the time of the survey, water was observed at the surface in the vicinity. Of the three criteria for wetlands, only the hydrology was met within this area. The findings are described in the following sections. This area encompasses data sheet with sampling point designated SP 1. The data sheet describing the designated area is found in Appendix A.



Figure 9. Soil Pit 1

### 4.1.1 Sample Pit 1 Soils

Visual observations, as well as, the observations from a soil pit dug within the lowest elevation of this area, confirmed the presence of the soil, Cumulic Haplustolls, gently sloping soil (Table 4). Hydric soils were not present in this area.

*Table 4. Sample Pit 1 Soil Profile Descriptions*

| Depth<br>(inches) | Matrix Color | Redox  |                  |
|-------------------|--------------|--------|------------------|
|                   |              | Colors | Texture          |
| 0-4               | 10YR 2/2     | None   | Clay             |
| 3.5-4             | -            | -      | Organic Material |
| 4-8.5             | 10YR 3/2     | None   | Clay             |
| 8.5-10            | 10YR 3/2     | None   | Saturated Clay   |



**Figure 10. Sample Pit 1 Soil Sample**

#### **4.1.2 Sample Pit 1 Hydrology**

Visual observations of the area showed that surface water was present in SP 1. Upon evaluation, wetland hydrology indicators were present in the upper 10 inches of the soil pit. Since saturation did occur at 10 inches or less, the wetland hydrology was met within this area.



**Figure 11. Sample Pit 1 Hydrology**

### 4.1.3 Sample Pit 1 Vegetation

One plant community was determined within this sampling location. Only one soil pit was established for the sample location. The site selected for a soil pit was the lowest elevation of the topography for this location. The plant species identified at the location of the pit as well as their stratum and indicator are listed in Table 5. At the location of the soil pit the plants that were sampled did not pass the dominance test for hydrophytic vegetation indicators. Hydrophytic vegetation was not met for this sample location. Only the herb stratum vegetation was identified.

*Table 5. Sample Pit 1 Vegetation*

| Stratum | Scientific Name            | Common Name       | Indicator Status |
|---------|----------------------------|-------------------|------------------|
| Herb    | <i>Ericameria nauseosa</i> | rubber rabbitbush | UPL*             |
| Herb    | <i>Festuca arundinacea</i> | tall fescue       | UPL*             |

\*Species that did not have an Indicator Status listed in the National plant list or was designated as an UPL per the Regional Supplement to the Corps of Engineers Wetland Delineation Manual.

## 4.2 SAMPLE PIT 2

Sample Pit Location 2 was chosen since it was located in a low lying area on the east side of Close Road located further east but surface water is seen nearby. Of the three criteria for wetlands, only the hydrology was met within this area. The area also contains fill material from the side banks. The findings are described in the following sections. This area encompasses data sheet with sampling point designated SP 2. The data sheet describing the designated area is found in Appendix A.



**Figure 12. Sample Pit 2**

### 4.2.1 Sample Pit 2 Soils

Visual observations, as well as, the observations from a soil pit dug within the lowest elevation of this area confirmed the presence of the soil, Cumulic Haplustolls, gently sloping soil (Table 6). Hydric soils were not present in this area.



Figure 13. Sample Pit 2 Soil Sample

*Table 6. Sample Pit 2 Soil Profile Descriptions*

| Depth (inches) | Matrix Color | Redox  |            |
|----------------|--------------|--------|------------|
|                |              | Colors | Texture    |
| 0-8.5          | 2.5Y 3/3     | None   | Silty Clay |
| 8.5-10.0       | 2.5Y 3/3     | None   | Clay       |

### 4.2.2 Sample Pit 2 Hydrology

Visual observations of the area showed that surface water was present in SP 2. Upon evaluation, wetland hydrology indicators were present in the upper 10 inches of the soil pit. Since saturation did occur at 10 inches or less, the wetland hydrology was met within this area.

### 4.2.3 Sample Pit 2 Vegetation

One plant community was determined within this sampling location. Only one soil pit was established for the sample location. The site selected for a soil pit was the lowest elevation of the topography for this location. The plant species identified at the location of the pit as well as

their stratum and indicator are listed in Table 7. At the location of the soil pit the plants that were sampled did not pass the dominance test for hydrophytic vegetation indicators. Hydrophytic vegetation was not met for this sample location. Only the herb stratum vegetation was identified.

**Table 7. Sample Pit 2 Vegetation**

| Stratum | Scientific Name            | Common Name | Indicator Status |
|---------|----------------------------|-------------|------------------|
| Herb    | <i>Festuca arundinacea</i> | tall fescue | UPL*             |

\*Species that did not have an Indicator Status listed in the National plant list or was designated as an UPL per the Regional Supplement to the Corps of Engineers Wetland Delineation Manual.

### 4.3 SAMPLE PIT 3

Sample Pit Location 3 was chosen since it was located in what appeared to be previous waterway on the east side of Close Road located further east but surface water is seen nearby. Of the three criteria for wetlands, none were within this area. The findings are described in the following sections. This area encompasses data sheet with sampling point designated SP 3. The data sheet describing the designated area is found in Appendix A.



**Figure 14. Sample Pit 3**

#### 4.3.1 Sample Pit 3 Soils

Visual observations, as well as, the observations from a soil pit dug within the lowest elevation of this area confirmed the presence of the soil, Cumulic Haplustolls, gently sloping soil (Table 8). Hydric soils were not present in this area.



Figure 15. Sample Pit 3 Soil Sample

**Table 8. Sample Pit 3 Soil Profile Descriptions**

| Depth<br>(inches) | Matrix Color | Redox  |              |
|-------------------|--------------|--------|--------------|
|                   |              | Colors | Texture      |
| 0.0-3.0           | 10YR 2/2     | None   | Silt         |
| 3.0-3.5           | 10YR 3/4     | None   | Silty Clay   |
| 3.5-5.5           | 10YR 2/2     | None   | Silty Clay   |
| 5.5-6.0           | 10YR 2/2     | None   | Loose gravel |
| 6.0-9.0           | 10YR 2/2     | None   | Clay         |

#### 4.3.2 Sample Pit 3 Hydrology

Visual observations of the area showed no surface water within or in the vicinity of SP 3. Upon evaluation, wetland hydrology indicators were not present in the upper 10 inches of the soil pit. The water table was not reached during sampling. Since saturation did not occur at 10 inches or less, the wetland hydrology was not met within this area.

#### 4.3.3 Sample Pit 3 Vegetation

One plant community was determined within this sampling location. The plant species identified at the location of the pit as well as their stratum and indicator are listed in Table 9. At the location of the soil pit the plants that were sampled did not pass the dominance test for hydrophytic vegetation indicators. Hydrophytic vegetation was not met for this sample location. Only the herb stratum vegetation was identified.

**Table 9. Sample Pit 3 Vegetation**

| Stratum | Scientific Name             | Common Name      | Indicator Status |
|---------|-----------------------------|------------------|------------------|
| Herb    | <i>Equisetum laevigatum</i> | smooth horsetail | FACW             |
| Herb    | <i>Festuca arundinacea</i>  | tall fescue      | UPL*             |
| Herb    | <i>Sistichlis spicata</i>   | saltgrass        | FACW             |

\*Species that did not have an Indicator Status listed in the National plant list or was designated as an UPL per the Regional Supplement to the Corps of Engineers Wetland Delineation Manual.

#### 4.4 SAMPLE PIT 4

Sample Pit Location 4 was chosen since it was located in what appeared to be a previous waterway on the east side of Close Road located further east but surface water is seen nearby. Of the three criteria for wetlands, none were met within this area. The findings are described in the following sections. This area encompasses data sheet with sampling point designated SP 4. The data sheet describing the designated area is found in Appendix A.



**Figure 16. Sample Pit 4**

##### 4.4.1 Sample Pit 4 Soils

Visual observations, as well as, the observations from a soil pit dug within the lowest elevation of this area confirmed the presence of the soil, Cumulic Haplustolls, gently sloping soil (Table 10). Hydric soils were not present in this area.



Figure 17. Sample Pit 4 Soil Sample

*Table 10. Sample Pit 4 Soil Profile Descriptions*

| Depth<br>(inches) | Matrix Color | Redox  |                            |
|-------------------|--------------|--------|----------------------------|
|                   |              | Colors | Texture                    |
| 0-5.5             | 10YR 2/1     | None   | Clay with organic material |
| 5.5-9.0           | 10YR 3/2     | None   | Silty Clay                 |
| 9.0-10.0          | 10YR 4/6     | None   | Sand with Clay             |

#### 4.4.2 Sample Pit 4 Hydrology

Visual observations of the area showed no surface water within or in the vicinity of SP 4. Upon evaluation, wetland hydrology indicators were not present in the upper 10 inches of the soil pit. The water table was not reached during sampling. Since saturation did not occur at 10 inches or less, the wetland hydrology was not met within this area.

#### 4.4.3 Sample Pit 4 Vegetation

One plant community was determined within this sampling location. The plant species identified at the location of the pit as well as their stratum and indicator are listed in Table 11. At the location of the soil pit the plants that were sampled did not pass the dominance test for hydrophytic vegetation indicators. Hydrophytic vegetation was not met for this sample location. Only the herb stratum vegetation was identified.

**Table 11. Sample Pit 4 Vegetation**

| Stratum | Scientific Name            | Common Name  | Indicator Status |
|---------|----------------------------|--------------|------------------|
| Herb    | <i>Festuca arundinacea</i> | tall fescue  | UPL*             |
| Herb    | <i>Verbascum thapsus</i>   | moth mullien | FACU             |

\*Species that did not have an Indicator Status listed in the National plant list or was designated as an UPL per the Regional Supplement to the Corps of Engineers Wetland Delineation Manual.

## 4.5 SAMPLE PIT 5

Sample Pit Location 5 was chosen since it was alongside the Rio Ruidoso. Vegetation and water pathways alluded to the potential wetlands adjacent to the river. Of the three criteria for wetlands, none were met within this area. The findings are described in the following sections. This area encompasses data sheet with sampling point designated SP 5. The data sheet describing the designated area is found in Appendix A.



**Figure 18. Sample Pit 5**

### 4.5.1 Sample Pit 5 Soils

Visual observations, as well as, the observations from a soil pit dug within the lowest elevation of this area confirmed the presence of the soil, Cumulic Haplustolls, gently sloping soil (Table 12). Soil sample could not go past three inches due to large cobbles. It appears that the area was part of the river bottom but does not stay regularly wet due to the lack of hydric components. Hydric soils were not present in this area.

**Table 12. Sample Pit 5 Soil Profile Descriptions**

| Depth (inches) | Matrix Color | Redox  |         |
|----------------|--------------|--------|---------|
|                |              | Colors | Texture |
| 0-3.0          | 2.5YR 3/2    | None   | Sandy   |

#### 4.5.2 Sample Pit 5 Hydrology

Visual observations of the area showed no surface water within SP 5; however the river flows approximately three feet to the north of SP 5. Upon evaluation, wetland hydrology indicators were not present in the soil pit. The water table was not reached during sampling due to the presence of large cobbles that prevented tools from going past three inches. Since saturation did not occur, the wetland hydrology was not met within this area.

#### 4.5.3 Sample Pit 5 Vegetation

Two plant communities were determined within this sampling location. The plant species identified at the location of the pit as well as their stratum and indicator are listed in Table 13. At the location of the soil pit the plants that were sampled did not pass the dominance test for hydrophytic vegetation indicators. Hydrophytic vegetation was not met for this sample location. Only the herb stratum vegetation was identified.

**Table 13. Sample Pit 5 Vegetation**

| Stratum | Scientific Name            | Common Name       | Indicator Status |
|---------|----------------------------|-------------------|------------------|
| Herb    | <i>Ericameria nauseosa</i> | rubber rabbitbush | UPL*             |
| Herb    | <i>Verbascum thapsus</i>   | moth mullien      | FACU             |
| Tree    | <i>Salix exigua</i>        | coyote willow     | FACW             |

\*Species that did not have an Indicator Status listed in the National plant list or was designated as an UPL per the Regional Supplement to the Corps of Engineers Wetland Delineation Manual.

## 4.6 SAMPLE PIT 6

Sample Pit Location 6 was chosen since it was located on the east side of Close Road next to a flowing waterway. Of the three criteria for wetlands, none were met within this area. The findings are described in the following sections. This area encompasses data sheet with sampling point designated SP 6. The data sheet describing the designated area is found in Appendix A.



**Figure 19. Sample Pit 6**

#### **4.6.1 Sample Pit 6 Soils**

Visual observations, as well as, the observations from a soil pit dug within the lowest elevation of this area confirmed the presence of the soil, Cumulic Haplustolls, gently sloping soil (Table 14). Hydric soils were not present in this area.



**Figure 20. Sample Pit 6 Soil Sample**

**Table 14. Sample Pit 6 Soil Profile Descriptions**

| Depth<br>(inches) | Matrix Color | Redox  |                                             |
|-------------------|--------------|--------|---------------------------------------------|
|                   |              | Colors | Texture                                     |
| 0-10.0            | 2.5Y 3/2     | None   | Silty Clay with organic material throughout |

#### 4.6.2 Sample Pit 6 Hydrology

Visual observations of the area showed no surface water within SP 6; however water was flowing approximately 1 foot from the sample pit. Upon evaluation, wetland hydrology indicators were not present in the upper 10 inches of the soil pit. The water table was not reached during sampling. Since saturation did not occur at 10 inches or less, the wetland hydrology was not met within this area.

#### 4.6.3 Sample Pit 6 Vegetation

Two plant communities were determined within this sampling location. The plant species identified at the location of the pit as well as their stratum and indicator are listed in Table 15. At the location of the soil pit the plants that were sampled did not pass the dominance test for hydrophytic vegetation indicators. Hydrophytic vegetation was not met for this sample location. Only the herb stratum vegetation was identified.

**Table 15. Sample Pit 6 Vegetation**

| Stratum | Scientific Name            | Common Name   | Indicator Status |
|---------|----------------------------|---------------|------------------|
| Herb    | <i>Festuca arundinacea</i> | tall fescue   | UPL*             |
| Tree    | <i>Salix exigua</i>        | coyote willow | FACW             |

\*Species that did not have an Indicator Status listed in the National plant list or was designated as an UPL per the Regional Supplement to the Corps of Engineers Wetland Delineation Manual.

### 4.7 SAMPLE PIT 7

Sample Pit Location 7 was chosen since it was located on the east side of Close Road next to a flowing waterway. Of the three criteria for wetlands, none were met within this area. The findings are described in the following sections. This area encompasses data sheet with sampling point designated SP 7. The data sheet describing the designated area is found in Appendix A.



**Figure 21. Sample Pit 7**

#### **4.7.1 Sample Pit 7 Soils**

Visual observations, as well as, the observations from a soil pit dug within the lowest elevation of this area confirmed the presence of the soil, Cumulic Haplustolls, gently sloping soil (Table 16). Soil sample could not go past three inches due to large cobbles. It appears that the area was part of the river bottom but does not stay regularly wet due to the lack of hydric components. Hydric soils were not present in this area.



**Figure 22. Sample Pit 7 Soil Sample**

**Table 16. Sample Pit 7 Soil Profile Descriptions**

| Depth (inches) | Matrix Color | Redox  |            |
|----------------|--------------|--------|------------|
|                |              | Colors | Texture    |
| 0-3.0          | 2.5Y 2.5/1   | None   | Sandy Clay |

#### 4.7.2 Sample Pit 7 Hydrology

Visual observations of the area showed no surface water within SP 7; however water was flowing approximately 1 foot from the sample pit. Upon evaluation, wetland hydrology indicators were not present in the upper 10 inches of the soil pit. The water table was not reached during sampling. Since saturation did not occur at 10 inches or less, the wetland hydrology was not met within this area.

#### 4.7.3 Sample Pit 7 Vegetation

Two plant communities were determined within this sampling location. The plant species identified at the location of the pit as well as their stratum and indicator are listed in Table 17. At the location of the soil pit the plants that were sampled did not pass the dominance test for hydrophytic vegetation indicators. Hydrophytic vegetation was not met for this sample location. Only the herb stratum vegetation was identified.

**Table 17. Sample Pit 7 Vegetation**

| Stratum | Scientific Name            | Common Name   | Indicator Status |
|---------|----------------------------|---------------|------------------|
| Herb    | <i>Festuca arundinacea</i> | tall fescue   | UPL*             |
| Tree    | <i>Salix exigua</i>        | coyote willow | FACW             |

\*Species that did not have an Indicator Status listed in the National plant list or was designated as an UPL per the Regional Supplement to the Corps of Engineers Wetland Delineation Manual.

### 4.8 SAMPLE PIT 8

Sample pit location 8 was chosen since it was located on the east side of Close Road next to a flowing waterway and a ponding area was observed. Of the three criteria for wetlands, only two criteria were met within this area; however this was used to confirm that the edge of the wetland area was achieved. The findings are described in the following sections. This area encompasses data sheet with sampling point designated SP 8. The data sheet describing the designated area is found in Appendix A.



**Figure 23. Sample Pit 8**

#### **4.8.1 Sample Pit 8 Soils**

Visual observations, as well as the observations from a soil pit dug within the lowest elevation of this area confirmed the presence of the soil, Cumulic Haplustolls, gently sloping soil (Table 16). Soil sample only went down to four inches since the auger hit water. The soil also displayed gleyed colors which are indicative of hydric soils.



**Figure 24. Sample Pit 8 Soil Sample**

**Table 18. Sample Pit 8 Soil Profile Descriptions**

| Depth (inches) | Matrix Color | Redox  |         |
|----------------|--------------|--------|---------|
|                |              | Colors | Texture |
| 0-2.5          | 2.5Y 3/2     | None   | Clay    |
| 2.5-3.0        | 2.5Y 4/3     | None   | Clay    |
| 3.0-4.0        | 3/10Y        | Gleyed | Clay    |

#### 4.8.2 Sample Pit 8 Hydrology

Visual observations of the area showed surface water within SP 8. Upon evaluation, wetland hydrology indicators were present in the upper 10 inches of the soil pit. The water table was reached during sampling at four inches. Since saturation did occur at 10 inches or less, the wetland hydrology was met within this area.

#### 4.8.3 Sample Pit 8 Vegetation

One plant community was determined within this sampling location. The plant species identified at the location of the pit as well as their stratum and indicator are listed in Table 19. At the location of the soil pit the plants that were sampled did not pass the dominance or prevalence test for hydrophytic vegetation indicators. Hydrophytic vegetation was not met for this sample location. Only the herb stratum vegetation was identified.

**Table 19. Sample Pit 8 Vegetation**

| Stratum | Scientific Name            | Common Name | Indicator Status |
|---------|----------------------------|-------------|------------------|
| Herb    | <i>Festuca arundinacea</i> | tall fescue | UPL*             |

\*Species that did not have an Indicator Status listed in the National plant list or was designated as an UPL per the Regional Supplement to the Corps of Engineers Wetland Delineation Manual.

### 4.9 WETLAND AREA

Immediately adjacent to SP 8, a wetland area was identified. The area consists of a slow-moving shallow pond with steep banks on either side. Gleyed soils were visible in the shallow water, which also contained wetlands vegetation. The area mapped is approximately 0.06 acres (0.3 hectares), roughly 20 feet wide by 115 feet long.

Vegetation observed within or adjacent to the proposed project area was reviewed for inclusion on the USDA Wetland Indicator Status List for the Western Mountains, Valley, and Coast (USDA 2012). Plant species observed within the project area were included on the 2012 National Wetland Plant List. Only those with the status of Facultative Wetland (FACW) or Obligate (OBL) are noted in Table 6. Both these classifications are necessary for plants known to grow within wetlands.

**Table 20. Wetland Plants**

| Common Name        | Indicator Classification |
|--------------------|--------------------------|
| American speedwell | OBL                      |
| Gooding's willow   | FACW                     |
| narrowleaf willow  | FACW                     |
| saltgrass          | FACW                     |
| smooth horsetail   | FACW                     |
| watercress         | OBL                      |

The upland area was determined from SP 8 and the wetland area was identified (Figures 25 and 26) and mapped (Figures 27-29).



**Figure 25. Waterway facing south**



**Figure 26. Waterway facing northwest**

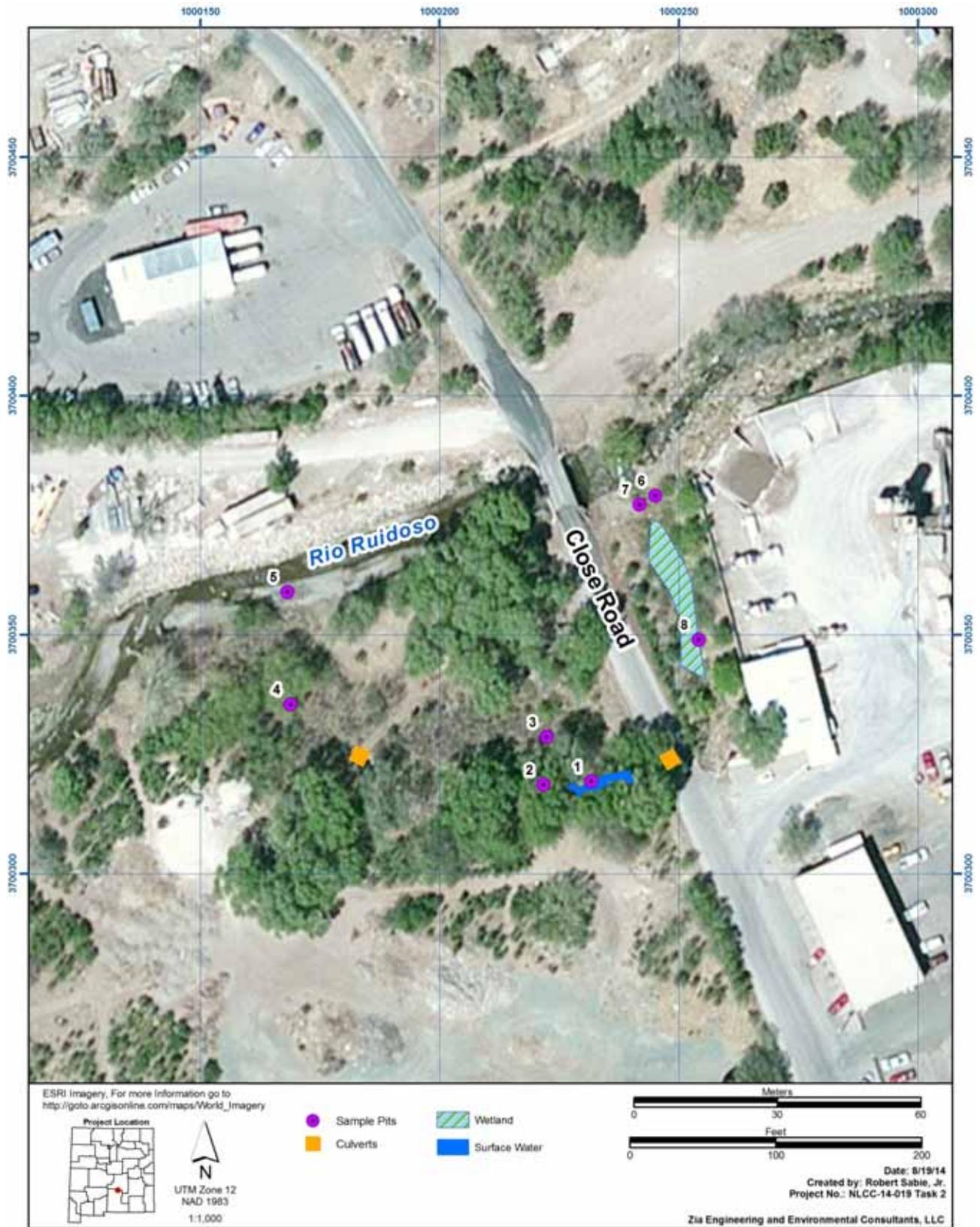


Figure 27. Mapped Wetland Area

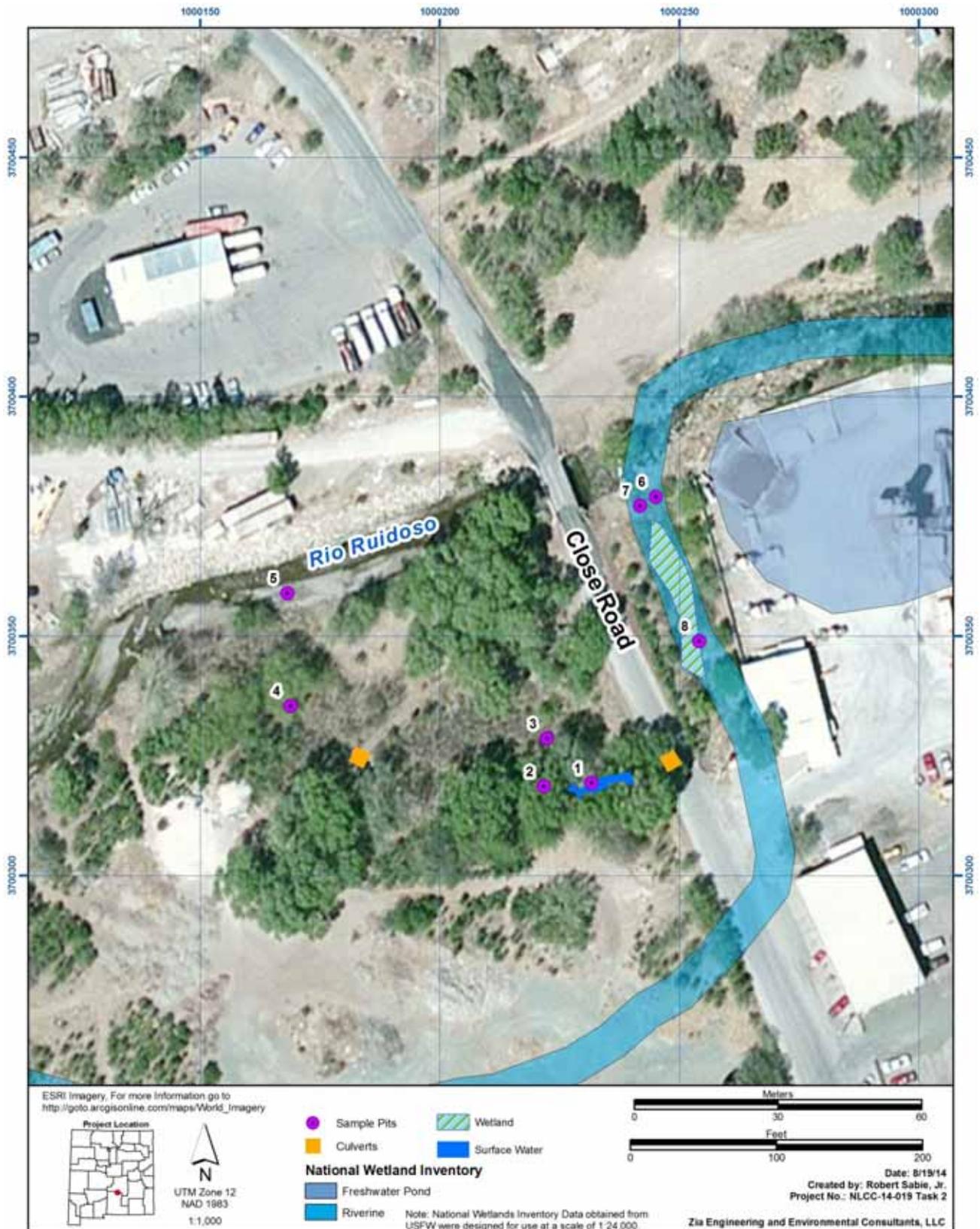


Figure 28. NWI Area with Mapped Wetland Area

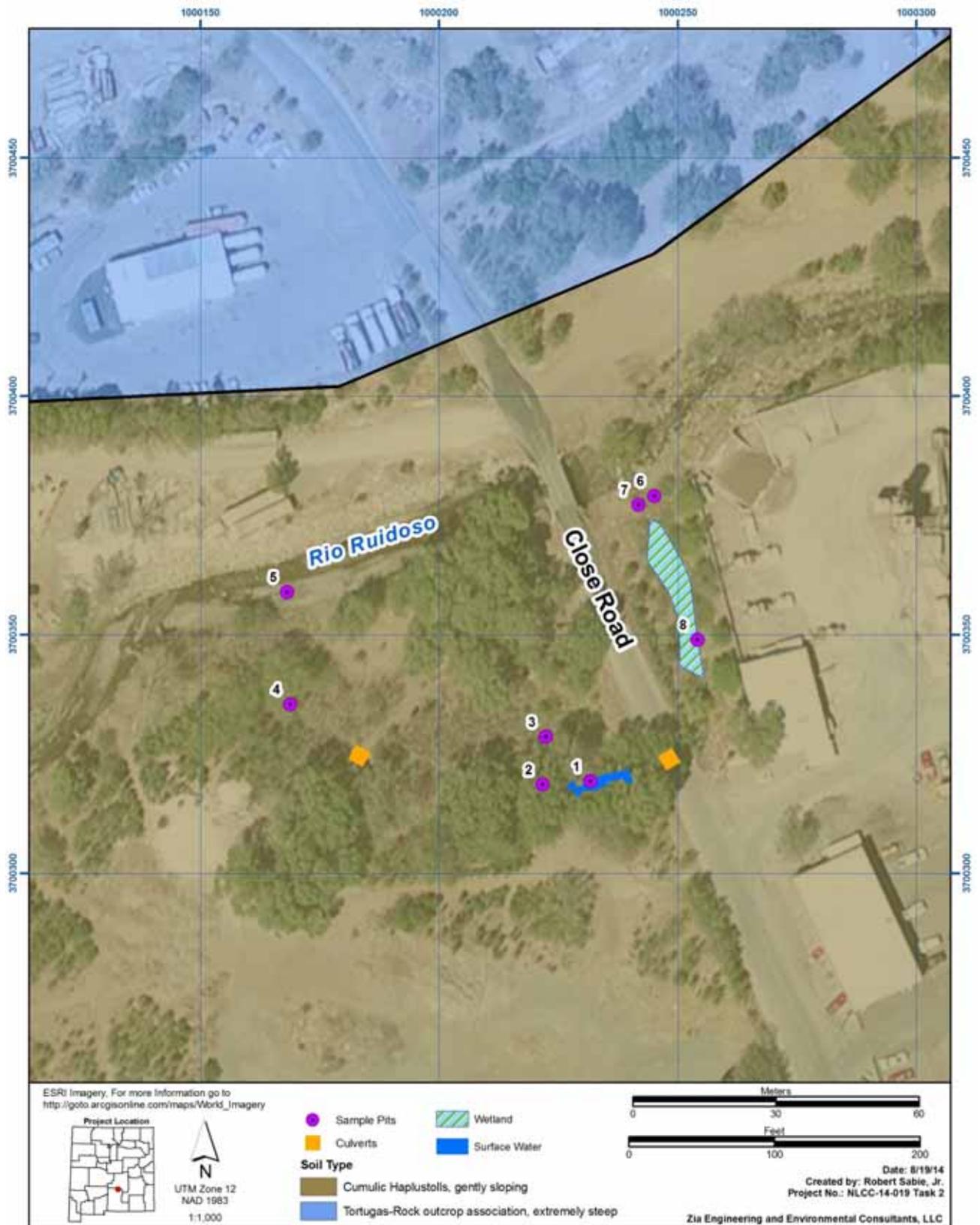


Figure 29. USDA Soils with Mapped Wetland Area

## 5.0 CONCLUSIONS

The area around Close Road bridge was surveyed for wetlands. In total, eight sample pits were taken. Those sample pits on the west side of Close Road identified a high water table, but the water table levels must decrease over time since it could not sustain water long enough for the soils to become hydric or maintain wetland vegetation. The sample pits located on the east side of Close Road were determined to still be uplands; however, SP 8 did contain hydric soils and was located next to a ponding area.

This ponding area was determined to be wetlands, and SP 8 was determined to be the upland boundary of the wetland area. The area was thus mapped for purposes of identifying the area to mitigate during the construction of the Close Road bridge.

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# **APPENDIX A**

## **Threatened, Endangered, and Sensitive Species Resources**

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Close Road City/County: Ruidoso / Lincoln Sampling Date: 08/11/2014  
 Applicant/Owner: Village of Ruidoso State: NM Sampling Point: SP 1  
 Investigator(s): L. Markiewitz & V. Gibbs Section, Township, Range: Section 25, T 11S, R 12E  
 Landform (hillslope, terrace, etc.): Riverside Local relief (concave, convex, none): None Slope (%): 5-10  
 Subregion (LRR): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Cumulic Haplustolls, gently sloping NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No X  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                        |              |             |                                       |           |             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------|---------------------------------------|-----------|-------------|
| Hydrophytic Vegetation Present?                                                                                                                                        | Yes _____    | No <u>X</u> | Is the Sampled Area within a Wetland? | Yes _____ | No <u>X</u> |
| Hydric Soil Present?                                                                                                                                                   | Yes _____    | No <u>X</u> |                                       |           |             |
| Wetland Hydrology Present?                                                                                                                                             | Yes <u>X</u> | No _____    |                                       |           |             |
| Remarks:<br>Although the area was surveyed during monsoon season, the area had received recently a lot more rain than typical for the area leaving the area saturated. |              |             |                                       |           |             |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)          | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------------------------|------------------|-------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                 | _____            | _____             | _____            | Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)                                                                                                                                                                                                                                                                                                                |
| 2. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| _____ = Total Cover                      |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species <u>60</u> x 5 = <u>300</u><br>Column Totals: <u>60</u> (A) <u>300</u> (B)<br><br>Prevalence Index = B/A = <u>5</u>                                                                                                                                                                           |
| Sapling/Shrub Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| _____ = Total Cover                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Herb Stratum (Plot size: <u>0.5 m</u> )  | Absolute % Cover | Dominant Species? | Indicator Status | <b>Hydrophytic Vegetation Indicators:</b><br>___ 1 - Rapid Test for Hydrophytic Vegetation<br>___ 2 - Dominance Test is >50%<br>___ 3 - Prevalence Index is ≤3.0 <sup>1</sup><br>___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ 5 - Wetland Non-Vascular Plants <sup>1</sup><br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>tall fescue</u>                    | <u>30</u>        | <u>x</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. <u>rubber rabbitbush</u>              | <u>30</u>        | _____             | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 6. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 7. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 8. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 9. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 10. _____                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 11. _____                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>60</u> = Total Cover                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Woody Vine Stratum (Plot size: _____)    | Absolute % Cover | Dominant Species? | Indicator Status | <b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| _____ = Total Cover                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| % Bare Ground in Herb Stratum <u>40</u>  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Remarks:                                 |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |



## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Close Road City/County: Ruidoso / Lincoln Sampling Date: 08/11/2014  
 Applicant/Owner: Village of Ruidoso State: NM Sampling Point: SP 2  
 Investigator(s): L. Markiewitz & V. Gibbs Section, Township, Range: Section 25, T 11S, R 12E  
 Landform (hillslope, terrace, etc.): Riverside Local relief (concave, convex, none): None Slope (%): 5-10  
 Subregion (LRR): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Cumulic Haplustolls, gently sloping NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No X  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                        |              |             |                                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------|-------------------------------------------------------------|
| Hydrophytic Vegetation Present?                                                                                                                                        | Yes _____    | No <u>X</u> | Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> |
| Hydric Soil Present?                                                                                                                                                   | Yes _____    | No <u>X</u> |                                                             |
| Wetland Hydrology Present?                                                                                                                                             | Yes <u>X</u> | No _____    |                                                             |
| Remarks:<br>Although the area was surveyed during monsoon season, the area had received recently a lot more rain than typical for the area leaving the area saturated. |              |             |                                                             |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)          | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet:                                                                                                       |
|------------------------------------------|------------------|-------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                 | _____            | _____             | _____            | Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)                                                                |
| 2. _____                                 | _____            | _____             | _____            | Total Number of Dominant Species Across All Strata: _____ (B)                                                                   |
| 3. _____                                 | _____            | _____             | _____            | Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)                                                             |
| 4. _____                                 | _____            | _____             | _____            |                                                                                                                                 |
| _____ = Total Cover                      |                  |                   |                  |                                                                                                                                 |
| Sapling/Shrub Stratum (Plot size: _____) |                  |                   |                  | Prevalence Index worksheet:                                                                                                     |
| 1. _____                                 | _____            | _____             | _____            | Total % Cover of: _____ Multiply by: _____                                                                                      |
| 2. _____                                 | _____            | _____             | _____            | OBL species _____ x 1 = _____                                                                                                   |
| 3. _____                                 | _____            | _____             | _____            | FACW species _____ x 2 = _____                                                                                                  |
| 4. _____                                 | _____            | _____             | _____            | FAC species _____ x 3 = _____                                                                                                   |
| 5. _____                                 | _____            | _____             | _____            | FACU species _____ x 4 = _____                                                                                                  |
| _____ = Total Cover                      |                  |                   |                  | UPL species <u>100</u> x 5 = <u>500</u>                                                                                         |
|                                          |                  |                   |                  | Column Totals: <u>100</u> (A) <u>500</u> (B)                                                                                    |
|                                          |                  |                   |                  | Prevalence Index = B/A = <u>5</u>                                                                                               |
| Herb Stratum (Plot size: <u>0.5 m</u> )  |                  |                   |                  | Hydrophytic Vegetation Indicators:                                                                                              |
| 1. <u>tall fescue</u>                    | <u>100</u>       | <u>X</u>          | <u>UPL</u>       | <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation                                                              |
| 2. _____                                 | _____            | _____             | _____            | <input type="checkbox"/> 2 - Dominance Test is >50%                                                                             |
| 3. _____                                 | _____            | _____             | _____            | <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup>                                                              |
| 4. _____                                 | _____            | _____             | _____            | <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) |
| 5. _____                                 | _____            | _____             | _____            | <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup>                                                           |
| 6. _____                                 | _____            | _____             | _____            | <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)                                              |
| 7. _____                                 | _____            | _____             | _____            | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.                  |
| 8. _____                                 | _____            | _____             | _____            |                                                                                                                                 |
| 9. _____                                 | _____            | _____             | _____            |                                                                                                                                 |
| 10. _____                                | _____            | _____             | _____            |                                                                                                                                 |
| 11. _____                                | _____            | _____             | _____            |                                                                                                                                 |
| <u>100</u> = Total Cover                 |                  |                   |                  |                                                                                                                                 |
| Woody Vine Stratum (Plot size: _____)    |                  |                   |                  | Hydrophytic Vegetation Present? Yes _____ No <u>X</u>                                                                           |
| 1. _____                                 | _____            | _____             | _____            |                                                                                                                                 |
| 2. _____                                 | _____            | _____             | _____            |                                                                                                                                 |
| _____ = Total Cover                      |                  |                   |                  |                                                                                                                                 |
| % Bare Ground in Herb Stratum _____      |                  |                   |                  |                                                                                                                                 |
| Remarks:                                 |                  |                   |                  |                                                                                                                                 |



## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Close Road City/County: Ruidoso / Lincoln Sampling Date: 08/11/2014  
 Applicant/Owner: Village of Ruidoso State: NM Sampling Point: SP 3  
 Investigator(s): L. Markiewitz & V. Gibbs Section, Township, Range: Section 25, T 11S, R 12E  
 Landform (hillslope, terrace, etc.): Riverside Local relief (concave, convex, none): None Slope (%): 5-10  
 Subregion (LRR): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Cumulic Haplustolls, gently sloping NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No X  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                        |           |             |                                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------------|-------------------------------------------------------------|
| Hydrophytic Vegetation Present?                                                                                                                                        | Yes _____ | No <u>X</u> | Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> |
| Hydric Soil Present?                                                                                                                                                   | Yes _____ | No <u>X</u> |                                                             |
| Wetland Hydrology Present?                                                                                                                                             | Yes _____ | No <u>X</u> |                                                             |
| Remarks:<br>Although the area was surveyed during monsoon season, the area had received recently a lot more rain than typical for the area leaving the area saturated. |           |             |                                                             |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)          | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet:                                                                                                       |
|------------------------------------------|------------------|-------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                 | _____            | _____             | _____            | Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)                                                                |
| 2. _____                                 | _____            | _____             | _____            | Total Number of Dominant Species Across All Strata: _____ (B)                                                                   |
| 3. _____                                 | _____            | _____             | _____            | Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)                                                             |
| 4. _____                                 | _____            | _____             | _____            |                                                                                                                                 |
| _____ = Total Cover                      |                  |                   |                  |                                                                                                                                 |
| Sapling/Shrub Stratum (Plot size: _____) |                  |                   |                  | Prevalence Index worksheet:                                                                                                     |
| 1. _____                                 | _____            | _____             | _____            | Total % Cover of: _____ Multiply by: _____                                                                                      |
| 2. _____                                 | _____            | _____             | _____            | OBL species _____ x 1 = _____                                                                                                   |
| 3. _____                                 | _____            | _____             | _____            | FACW species <u>25</u> x 2 = <u>50</u>                                                                                          |
| 4. _____                                 | _____            | _____             | _____            | FAC species _____ x 3 = _____                                                                                                   |
| 5. _____                                 | _____            | _____             | _____            | FACU species _____ x 4 = _____                                                                                                  |
| _____ = Total Cover                      |                  |                   |                  | UPL species <u>20</u> x 5 = <u>100</u>                                                                                          |
|                                          |                  |                   |                  | Column Totals: <u>45</u> (A) <u>150</u> (B)                                                                                     |
|                                          |                  |                   |                  | Prevalence Index = B/A = <u>3.33</u>                                                                                            |
| Herb Stratum (Plot size: <u>0.5 m</u> )  |                  |                   |                  | Hydrophytic Vegetation Indicators:                                                                                              |
| 1. <u>smooth horsetail</u>               | <u>5</u>         |                   | <u>FACW</u>      | <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation                                                              |
| 2. <u>tall fescue</u>                    | <u>20</u>        |                   | <u>UPL</u>       | <input type="checkbox"/> 2 - Dominance Test is >50%                                                                             |
| 3. <u>saltgrass</u>                      | <u>20</u>        |                   | <u>FACW</u>      | <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup>                                                              |
| 4. _____                                 | _____            | _____             | _____            | <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) |
| 5. _____                                 | _____            | _____             | _____            | <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup>                                                           |
| 6. _____                                 | _____            | _____             | _____            | <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)                                              |
| 7. _____                                 | _____            | _____             | _____            | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.                  |
| 8. _____                                 | _____            | _____             | _____            |                                                                                                                                 |
| 9. _____                                 | _____            | _____             | _____            |                                                                                                                                 |
| 10. _____                                | _____            | _____             | _____            |                                                                                                                                 |
| 11. _____                                | _____            | _____             | _____            |                                                                                                                                 |
| <u>45</u> = Total Cover                  |                  |                   |                  |                                                                                                                                 |
| Woody Vine Stratum (Plot size: _____)    |                  |                   |                  | Hydrophytic Vegetation Present? Yes _____ No <u>X</u>                                                                           |
| 1. _____                                 | _____            | _____             | _____            |                                                                                                                                 |
| 2. _____                                 | _____            | _____             | _____            |                                                                                                                                 |
| _____ = Total Cover                      |                  |                   |                  |                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>55</u>  |                  |                   |                  |                                                                                                                                 |
| Remarks:                                 |                  |                   |                  |                                                                                                                                 |

**SOIL**

Sampling Point: SP 3

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |   |                |   |                   |                  |              |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|---|----------------|---|-------------------|------------------|--------------|---------|
| Depth (inches)                                                                                                      | Matrix        |   | Redox Features |   |                   |                  | Texture      | Remarks |
|                                                                                                                     | Color (moist) | % | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |              |         |
| 0-3                                                                                                                 | 10YR 2/2      |   |                |   |                   |                  | Silt         |         |
| 3-3.5                                                                                                               | 10YR 3/4      |   |                |   |                   |                  | Silt Clay    |         |
| 3.5-5.5                                                                                                             | 10YR 2/2      |   |                |   |                   |                  | Silt Clay    |         |
| 5.5-6                                                                                                               | 10YR 2/2      |   |                |   |                   |                  | Loose Gravel |         |
| 6-9                                                                                                                 | 10YR 2/2      |   |                |   |                   |                  | Clay         |         |
|                                                                                                                     |               |   |                |   |                   |                  |              |         |
|                                                                                                                     |               |   |                |   |                   |                  |              |         |
|                                                                                                                     |               |   |                |   |                   |                  |              |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) |                                                                   |                                                                                                                           | Indicators for Problematic Hydric Soils <sup>3</sup> : |  |  |
|---------------------------------------------------------------------------|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|--|--|
| <input type="checkbox"/> Histosol (A1)                                    | <input type="checkbox"/> Sandy Redox (S5)                         | <input type="checkbox"/> 2 cm Muck (A10)                                                                                  |                                                        |  |  |
| <input type="checkbox"/> Histic Epipedon (A2)                             | <input type="checkbox"/> Stripped Matrix (S6)                     | <input type="checkbox"/> Red Parent Material (TF2)                                                                        |                                                        |  |  |
| <input type="checkbox"/> Black Histic (A3)                                | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) | <input type="checkbox"/> Very Shallow Dark Surface (TF12)                                                                 |                                                        |  |  |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                 | <input type="checkbox"/> Other (Explain in Remarks)                                                                       |                                                        |  |  |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                | <input type="checkbox"/> Depleted Matrix (F3)                     | <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. |                                                        |  |  |
| <input type="checkbox"/> Thick Dark Surface (A12)                         | <input type="checkbox"/> Redox Dark Surface (F6)                  |                                                                                                                           |                                                        |  |  |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                         | <input type="checkbox"/> Depleted Dark Surface (F7)               |                                                                                                                           |                                                        |  |  |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                         | <input type="checkbox"/> Redox Depressions (F8)                   |                                                                                                                           |                                                        |  |  |

|                                                                                |                                                      |
|--------------------------------------------------------------------------------|------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: _____<br>Depth (inches): _____ | <b>Hydric Soil Present?</b> Yes _____    No <u>X</u> |
|--------------------------------------------------------------------------------|------------------------------------------------------|

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:                                      |                                                                                   |                                                                            |
|--------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply) |                                                                                   | Secondary Indicators (2 or more required)                                  |
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) | <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Salt Crust (B11)                                         | <input type="checkbox"/> Drainage Patterns (B10)                           |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Aquatic Invertebrates (B13)                              | <input type="checkbox"/> Dry-Season Water Table (C2)                       |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                               | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)         |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)            | <input type="checkbox"/> Geomorphic Position (D2)                          |
| <input type="checkbox"/> Drift Deposits (B3)                       | <input type="checkbox"/> Presence of Reduced Iron (C4)                            | <input type="checkbox"/> Shallow Aquitard (D3)                             |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)               | <input type="checkbox"/> FAC-Neutral Test (D5)                             |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)                  | <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)                    |
| <input type="checkbox"/> Surface Soil Cracks (B6)                  | <input type="checkbox"/> Other (Explain in Remarks)                               | <input type="checkbox"/> Frost-Heave Hummocks (D7)                         |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) |                                                                                   |                                                                            |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   |                                                                                   |                                                                            |

|                                                                                                                                                                                                                                                                                          |                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| <b>Field Observations:</b><br>Surface Water Present?    Yes _____    No <u>X</u> Depth (inches): _____<br>Water Table Present?    Yes _____    No <u>X</u> Depth (inches): _____<br>Saturation Present?    Yes _____    No <u>X</u> Depth (inches): _____<br>(includes capillary fringe) | <b>Wetland Hydrology Present?</b> Yes _____    No <u>X</u> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Close Road City/County: Ruidoso / Lincoln Sampling Date: 08/11/2014  
 Applicant/Owner: Village of Ruidoso State: NM Sampling Point: SP 4  
 Investigator(s): L. Markiewitz & V. Gibbs Section, Township, Range: Section 25, T 11S, R 12E  
 Landform (hillslope, terrace, etc.): Riverside Local relief (concave, convex, none): None Slope (%): 5-10  
 Subregion (LRR): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Cumulic Haplustolls, gently sloping NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No X  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                        |           |             |                                          |           |             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------------|------------------------------------------|-----------|-------------|
| Hydrophytic Vegetation Present?                                                                                                                                        | Yes _____ | No <u>X</u> | Is the Sampled Area<br>within a Wetland? | Yes _____ | No <u>X</u> |
| Hydric Soil Present?                                                                                                                                                   | Yes _____ | No <u>X</u> |                                          |           |             |
| Wetland Hydrology Present?                                                                                                                                             | Yes _____ | No <u>X</u> |                                          |           |             |
| Remarks:<br>Although the area was surveyed during monsoon season, the area had received recently a lot more rain than typical for the area leaving the area saturated. |           |             |                                          |           |             |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)          | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------------------------|------------------|-------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                 | _____            | _____             | _____            | Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)                                                                                                                                                                                                                                                                                                                   |
| 2. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| _____ = Total Cover                      |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species <u>5</u> x 3 = <u>15</u><br>FACU species _____ x 4 = _____<br>UPL species <u>95</u> x 5 = <u>475</u><br>Column Totals: <u>100</u> (A) <u>490</u> (B)<br><br>Prevalence Index = B/A = <u>4.9</u>                                                                                                                                                                 |
| Sapling/Shrub Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| _____ = Total Cover                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Herb Stratum (Plot size: <u>0.5 m</u> )  | Absolute % Cover | Dominant Species? | Indicator Status | <b>Hydrophytic Vegetation Indicators:</b><br>___ 1 - Rapid Test for Hydrophytic Vegetation<br>___ 2 - Dominance Test is >50%<br>___ 3 - Prevalence Index is ≤3.0 <sup>1</sup><br>___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ 5 - Wetland Non-Vascular Plants <sup>1</sup><br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>moth mullien</u>                   | <u>5</u>         | _____             | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. <u>tall fescue</u>                    | <u>95</u>        | <u>X</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 6. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 7. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 8. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 9. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 10. _____                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 11. _____                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| _____ = Total Cover                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Woody Vine Stratum (Plot size: _____)    | Absolute % Cover | Dominant Species? | Indicator Status | <b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| _____ = Total Cover                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| % Bare Ground in Herb Stratum _____      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Remarks:                                 |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

**SOIL**

Sampling Point: SP 4

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |   | Redox Features |   |                   |                  | Texture                    | Remarks |
|-------------------|---------------|---|----------------|---|-------------------|------------------|----------------------------|---------|
|                   | Color (moist) | % | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |                            |         |
| 0-5.5             | 10YR 2/1      |   |                |   |                   |                  | Clay with Organic Material |         |
| 5.5-9             | 10YR 3/2      |   |                |   |                   |                  | Silty Clay                 |         |
| 9-10              | 10 YR 4/6     |   |                |   |                   |                  | Sand with Clay             |         |
|                   |               |   |                |   |                   |                  |                            |         |
|                   |               |   |                |   |                   |                  |                            |         |
|                   |               |   |                |   |                   |                  |                            |         |
|                   |               |   |                |   |                   |                  |                            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) (**except MLRA 1**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No X

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

- Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (**LRR A**)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (**LRR A**)
- Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
 Saturation Present? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
 (includes capillary fringe)

Wetland Hydrology Present? Yes \_\_\_\_\_ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Close Road City/County: Ruidoso / Lincoln Sampling Date: 08/11/2014  
 Applicant/Owner: Village of Ruidoso State: NM Sampling Point: SP 5  
 Investigator(s): L. Markiewitz & V. Gibbs Section, Township, Range: Section 25, T 11S, R 12E  
 Landform (hillslope, terrace, etc.): Riverside Local relief (concave, convex, none): None Slope (%): 5-10  
 Subregion (LRR): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Cumulic Haplustolls, gently sloping NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No X  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                 |           |             |                                                             |
|---------------------------------|-----------|-------------|-------------------------------------------------------------|
| Hydrophytic Vegetation Present? | Yes _____ | No <u>X</u> | Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> |
| Hydric Soil Present?            | Yes _____ | No <u>X</u> |                                                             |
| Wetland Hydrology Present?      | Yes _____ | No <u>X</u> |                                                             |

Remarks:  
 Although the area was surveyed during monsoon season, the area had received recently a lot more rain than typical for the area leaving the area saturated.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>0.5 m</u> )  | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet:                                                                                                       |
|------------------------------------------|------------------|-------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------|
| 1. <u>coyote willow</u>                  | 5                |                   | FACW             | Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)                                                                |
| 2. _____                                 |                  |                   |                  | Total Number of Dominant Species Across All Strata: _____ (B)                                                                   |
| 3. _____                                 |                  |                   |                  | Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)                                                             |
| 4. _____                                 |                  |                   |                  |                                                                                                                                 |
| 5 = Total Cover                          |                  |                   |                  |                                                                                                                                 |
| Sapling/Shrub Stratum (Plot size: _____) |                  |                   |                  | Prevalence Index worksheet:                                                                                                     |
| 1. _____                                 |                  |                   |                  | Total % Cover of: _____ Multiply by: _____                                                                                      |
| 2. _____                                 |                  |                   |                  | OBL species _____ x 1 = _____                                                                                                   |
| 3. _____                                 |                  |                   |                  | FACW species <u>15</u> x 2 = <u>30</u>                                                                                          |
| 4. _____                                 |                  |                   |                  | FAC species _____ x 3 = _____                                                                                                   |
| 5. _____                                 |                  |                   |                  | FACU species _____ x 4 = _____                                                                                                  |
| _____ = Total Cover                      |                  |                   |                  | UPL species <u>10</u> x 5 = <u>50</u>                                                                                           |
|                                          |                  |                   |                  | Column Totals: <u>25</u> (A) <u>80</u> (B)                                                                                      |
|                                          |                  |                   |                  | Prevalence Index = B/A = <u>3.2</u>                                                                                             |
| Herb Stratum (Plot size: <u>0.5 m</u> )  |                  |                   |                  | Hydrophytic Vegetation Indicators:                                                                                              |
| 1. <u>rubber rabbitbush</u>              | 10               | X                 | UPL              | <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation                                                              |
| 2. <u>moth mullien</u>                   | 10               | X                 | FACW             | <input type="checkbox"/> 2 - Dominance Test is >50%                                                                             |
| 3. _____                                 |                  |                   |                  | <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup>                                                              |
| 4. _____                                 |                  |                   |                  | <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) |
| 5. _____                                 |                  |                   |                  | <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup>                                                           |
| 6. _____                                 |                  |                   |                  | <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)                                              |
| 7. _____                                 |                  |                   |                  | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.                  |
| 8. _____                                 |                  |                   |                  |                                                                                                                                 |
| 9. _____                                 |                  |                   |                  |                                                                                                                                 |
| 10. _____                                |                  |                   |                  |                                                                                                                                 |
| 11. _____                                |                  |                   |                  |                                                                                                                                 |
| 20 = Total Cover                         |                  |                   |                  |                                                                                                                                 |
| Woody Vine Stratum (Plot size: _____)    |                  |                   |                  | Hydrophytic Vegetation Present? Yes _____ No <u>X</u>                                                                           |
| 1. _____                                 |                  |                   |                  |                                                                                                                                 |
| 2. _____                                 |                  |                   |                  |                                                                                                                                 |
| _____ = Total Cover                      |                  |                   |                  |                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>75</u>  |                  |                   |                  |                                                                                                                                 |

Remarks:







# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Close Road City/County: Ruidoso / Lincoln Sampling Date: 08/11/2014  
 Applicant/Owner: Village of Ruidoso State: NM Sampling Point: SP 7  
 Investigator(s): L. Markiewitz & V. Gibbs Section, Township, Range: Section 25, T 11S, R 12E  
 Landform (hillslope, terrace, etc.): Riverside Local relief (concave, convex, none): None Slope (%): 5-10  
 Subregion (LRR): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Cumulic Haplustolls, gently sloping NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No X  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                 |              |             |                                                             |
|---------------------------------|--------------|-------------|-------------------------------------------------------------|
| Hydrophytic Vegetation Present? | Yes _____    | No <u>X</u> | Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> |
| Hydric Soil Present?            | Yes _____    | No <u>X</u> |                                                             |
| Wetland Hydrology Present?      | Yes <u>X</u> | No _____    |                                                             |

Remarks:  
 Although the area was surveyed during monsoon season, the area had received recently a lot more rain than typical for the area leaving the area saturated.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>0.5 m</u> )  | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet:                                                                                                       |
|------------------------------------------|------------------|-------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------|
| 1. <u>coyote willow</u>                  | 30               |                   | FACW             | Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)                                                                |
| 2. _____                                 |                  |                   |                  | Total Number of Dominant Species Across All Strata: _____ (B)                                                                   |
| 3. _____                                 |                  |                   |                  | Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)                                                             |
| 4. _____                                 |                  |                   |                  |                                                                                                                                 |
|                                          | 30               | = Total Cover     |                  |                                                                                                                                 |
| Sapling/Shrub Stratum (Plot size: _____) |                  |                   |                  | Prevalence Index worksheet:                                                                                                     |
| 1. _____                                 |                  |                   |                  | Total % Cover of: _____ Multiply by: _____                                                                                      |
| 2. _____                                 |                  |                   |                  | OBL species _____ x 1 = _____                                                                                                   |
| 3. _____                                 |                  |                   |                  | FACW species <u>30</u> x 2 = <u>60</u>                                                                                          |
| 4. _____                                 |                  |                   |                  | FAC species _____ x 3 = _____                                                                                                   |
| 5. _____                                 |                  |                   |                  | FACU species _____ x 4 = _____                                                                                                  |
|                                          |                  |                   |                  | UPL species <u>50</u> x 5 = <u>250</u>                                                                                          |
|                                          |                  |                   |                  | Column Totals: <u>80</u> (A) <u>310</u> (B)                                                                                     |
|                                          |                  |                   |                  | Prevalence Index = B/A = <u>3.875</u>                                                                                           |
| Herb Stratum (Plot size: <u>0.5 m</u> )  |                  |                   |                  | Hydrophytic Vegetation Indicators:                                                                                              |
| 1. <u>tall fescue</u>                    | 50               | X                 | UPL              | <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation                                                              |
| 2. _____                                 |                  |                   |                  | <input type="checkbox"/> 2 - Dominance Test is >50%                                                                             |
| 3. _____                                 |                  |                   |                  | <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup>                                                              |
| 4. _____                                 |                  |                   |                  | <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) |
| 5. _____                                 |                  |                   |                  | <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup>                                                           |
| 6. _____                                 |                  |                   |                  | <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)                                              |
| 7. _____                                 |                  |                   |                  | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.                  |
| 8. _____                                 |                  |                   |                  |                                                                                                                                 |
| 9. _____                                 |                  |                   |                  |                                                                                                                                 |
| 10. _____                                |                  |                   |                  |                                                                                                                                 |
| 11. _____                                |                  |                   |                  |                                                                                                                                 |
|                                          | 50               | = Total Cover     |                  |                                                                                                                                 |
| Woody Vine Stratum (Plot size: _____)    |                  |                   |                  | Hydrophytic Vegetation Present? Yes _____ No <u>X</u>                                                                           |
| 1. _____                                 |                  |                   |                  |                                                                                                                                 |
| 2. _____                                 |                  |                   |                  |                                                                                                                                 |
|                                          |                  |                   |                  |                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>20</u>  |                  |                   |                  |                                                                                                                                 |

Remarks:



# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Close Road City/County: Ruidoso / Lincoln Sampling Date: 08/11/2014  
 Applicant/Owner: Village of Ruidoso State: NM Sampling Point: SP 8  
 Investigator(s): L. Markiewitz & V. Gibbs Section, Township, Range: Section 25, T 11S, R 12E  
 Landform (hillslope, terrace, etc.): Riverside Local relief (concave, convex, none): None Slope (%): 5-10  
 Subregion (LRR): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Cumulic Haplustolls, gently sloping NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No X  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                 |              |             |                                                             |
|---------------------------------|--------------|-------------|-------------------------------------------------------------|
| Hydrophytic Vegetation Present? | Yes _____    | No <u>X</u> | Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> |
| Hydric Soil Present?            | Yes <u>X</u> | No _____    |                                                             |
| Wetland Hydrology Present?      | Yes <u>X</u> | No _____    |                                                             |

Remarks:  
 Although the area was surveyed during monsoon season, the area had received recently a lot more rain than typical for the area leaving the area saturated.

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)          | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------------------------|------------------|-------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                 | _____            | _____             | _____            | Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)                                                                                                                                                                                                                                                                                                                   |
| 2. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| _____ = Total Cover                      |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species <u>100</u> x 5 = <u>500</u><br>Column Totals: <u>100</u> (A) <u>500</u> (B)<br><br>Prevalence Index = B/A = <u>5</u>                                                                                                                                                                         |
| Sapling/Shrub Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| _____ = Total Cover                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Herb Stratum (Plot size: <u>0.5 m</u> )  | Absolute % Cover | Dominant Species? | Indicator Status | <b>Hydrophytic Vegetation Indicators:</b><br>___ 1 - Rapid Test for Hydrophytic Vegetation<br>___ 2 - Dominance Test is >50%<br>___ 3 - Prevalence Index is ≤3.0 <sup>1</sup><br>___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ 5 - Wetland Non-Vascular Plants <sup>1</sup><br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>tall fescue</u>                    | <u>100</u>       | <u>X</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 6. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 7. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 8. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 9. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 10. _____                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| _____ = Total Cover                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Woody Vine Stratum (Plot size: _____)    | Absolute % Cover | Dominant Species? | Indicator Status | <b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| _____ = Total Cover                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| % Bare Ground in Herb Stratum _____      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

Remarks:



# **APPENDIX B**

## New Mexico Department of Agriculture Noxious Weed List

Hydric Rating by Map Unit—Lincoln County Area, New Mexico  
(Close Road)



Map Scale: 1:1,070 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84



Hydric Rating by Map Unit—Lincoln County Area, New Mexico  
(Close Road)

## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

#### Soil Rating Polygons

-  Hydric (100%)
-  Predominantly Hydric (66 to 99%)
-  Partially hydric (33 to 65%)
-  Predominantly nonhydric (1 to 32%)
-  Nonhydric (0%)
-  Not rated or not available

#### Soil Rating Lines

-  Hydric (100%)
-  Predominantly Hydric (66 to 99%)
-  Partially hydric (33 to 65%)
-  Predominantly nonhydric (1 to 32%)
-  Nonhydric (0%)
-  Not rated or not available

#### Soil Rating Points

-  Hydric (100%)

-  Predominantly Hydric (66 to 99%)
-  Partially hydric (33 to 65%)
-  Predominantly nonhydric (1 to 32%)
-  Nonhydric (0%)
-  Not rated or not available

### Water Features

 Streams and Canals

### Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:63,400.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Lincoln County Area, New Mexico  
Survey Area Data: Version 10, Dec 19, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 21, 2011—Apr 22, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Hydric Rating by Map Unit

| Hydric Rating by Map Unit— Summary by Map Unit — Lincoln County Area, New Mexico (NM632) |                                        |        |              |                |
|------------------------------------------------------------------------------------------|----------------------------------------|--------|--------------|----------------|
| Map unit symbol                                                                          | Map unit name                          | Rating | Acres in AOI | Percent of AOI |
| 7                                                                                        | Cumulic Haplustolls,<br>gently sloping | 0      | 3.1          | 100.0%         |
| <b>Totals for Area of Interest</b>                                                       |                                        |        | <b>3.1</b>   | <b>100.0%</b>  |

## Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

### References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

## Rating Options

*Aggregation Method:* Percent Present

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Lower

## Map Unit Description

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. Soils of a given series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Additional information about the map units described in this report is available in other soil reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the soil reports define some of the properties included in the map unit descriptions.

## Report—Map Unit Description

### Lincoln County Area, New Mexico

#### 7—Cumulic Haplustolls, gently sloping

##### Map Unit Setting

*Elevation:* 6,300 to 7,100 feet

*Mean annual precipitation:* 16 to 24 inches

*Mean annual air temperature:* 45 to 54 degrees F

*Frost-free period:* 100 to 140 days

##### Map Unit Composition

*Cumulic haplustolls and similar soils:* 100 percent

## Description of Cumulic Haplustolls

### Setting

*Landform:* Valley floors

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Parent material:* Alluvium derived from igneous and sedimentary rock

### Typical profile

*H1 - 0 to 6 inches:* neutral, gravelly sandy clay loam

*H2 - 6 to 45 inches:* moderately alkaline, very gravelly sandy clay loam

*H3 - 45 to 60 inches:* moderately alkaline, extremely gravelly sandy loam

### Properties and qualities

*Slope:* 0 to 8 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Capacity of the most limiting layer to transmit water (Ksat):*

Moderately high to high (0.60 to 2.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* Occasional

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline (0.0 to 2.0 mmhos/cm)

*Sodium adsorption ratio, maximum in profile:* 1.0

*Available water storage in profile:* Low (about 5.4 inches)

### Interpretive groups

*Farmland classification:* Not prime farmland

*Land capability classification (irrigated):* 2s

*Land capability classification (nonirrigated):* 6e

*Hydrologic Soil Group:* B

*Ecological site:* Bottomland (R070CY103NM)

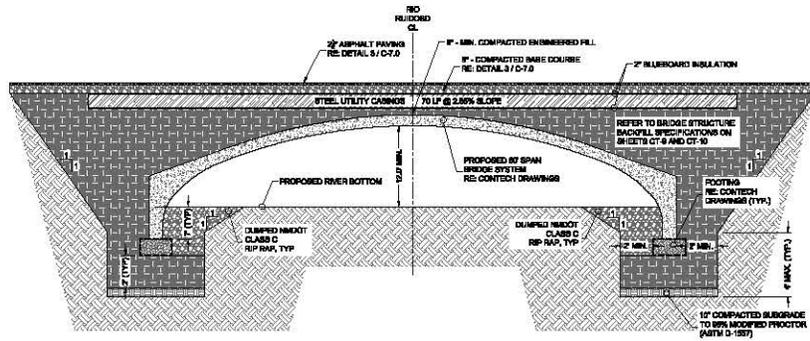
## Data Source Information

Soil Survey Area: Lincoln County Area, New Mexico

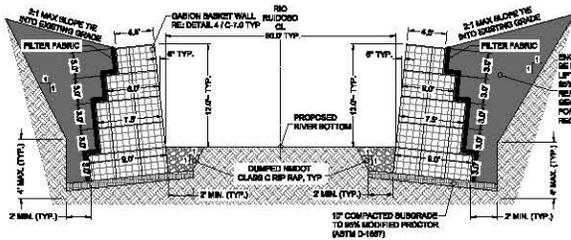
Survey Area Data: Version 10, Dec 19, 2013

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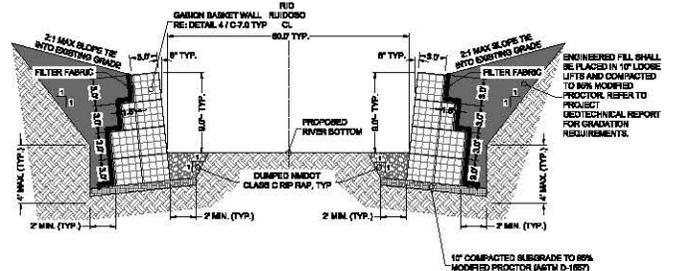
**APPENDIX F**  
General Construction Drawings



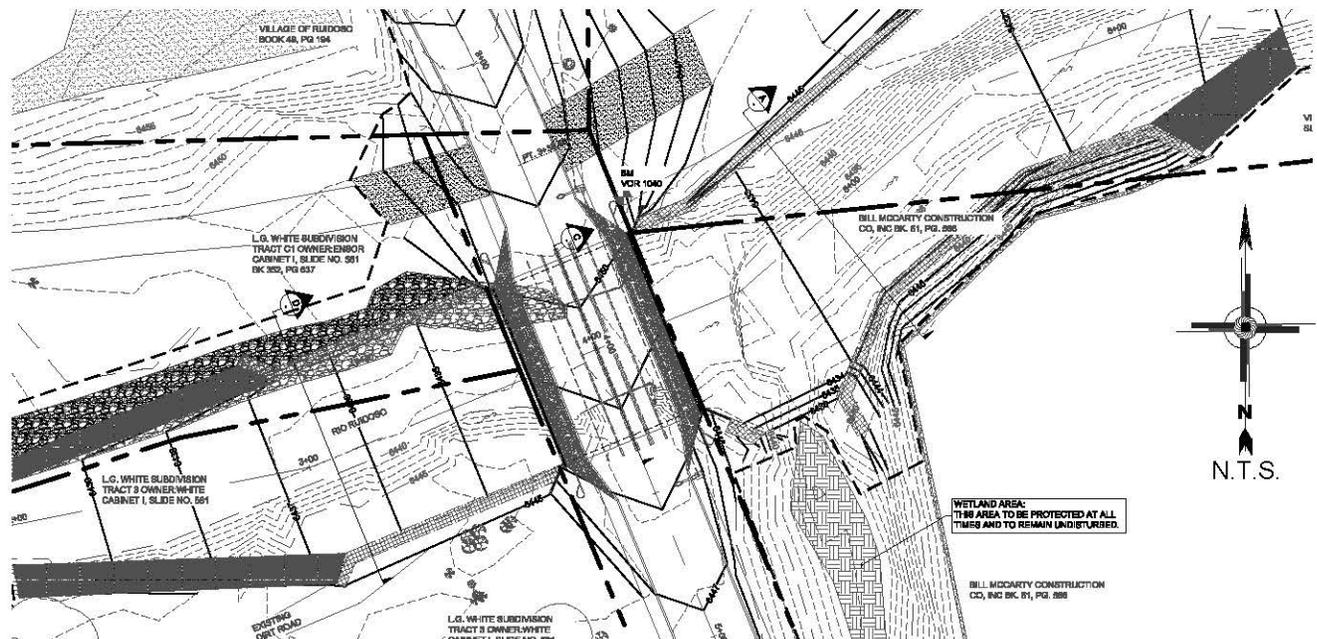
**C** UTILITY CROSS SECTION  
SCALE: N.T.S.



**A** TYPICAL DOWNSTREAM RIVER CROSS SECTION  
SCALE: N.T.S.



**D** TYPICAL UPSTREAM RIVER CROSS SECTION  
SCALE: N.T.S.



Sheet Title:  
PROPOSED CLOSE ROAD BRIDGE CROSS SECTIONS  
Project Name:  
CLOSE ROAD  
Client:  
VILLAGE OF RUIDOSO

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