

RECLAMATION

Managing Water in the West

Drain Unit 7 Extension River Maintenance Priority Site

Draft Environmental Assessment and Finding of No Significant Impact



U. S. Department of the Interior
Bureau of Reclamation
Albuquerque Area Office
Environment Division
Albuquerque, New Mexico

November 2008

**U.S. Department of the Interior
Bureau of Reclamation
Albuquerque Area Office
Albuquerque, New Mexico**

FINDING OF NO SIGNIFICANT IMPACT

Drain Unit 7 Extension River Maintenance Priority Site

Manager, Environment Division

Date

Area Manager, Albuquerque, New Mexico

Date

FONSI Number: AAO-09-001

BACKGROUND

The Drain Unit 7 Extension River Maintenance Priority Site (Project) is located 500 feet upstream of San Acacia Dam, on the right bankline of the Rio Grande. The approximate River Mile is 116.3. The river is actively eroding a spoil levee embankment that protects the Drain Unit 7 Extension irrigation structure, operated by the Middle Rio Grande Conservancy District (MRGCD). The Drain Unit 7 Extension structure serves as both a drain and canal, conveying irrigation drain water to the Socorro Main Canal for downstream irrigation needs. If the river is allowed to continue erosion of the levee, the drain prism could be destroyed, and the roadway on the levee lost, which is used to access parts of the Sevilleta National Wildlife Refuge.

Erosion has been a persistent problem in recent years on approximately 350 feet of the levee that protects the drain from the river. This portion of the levee is adjacent to the active river channel. Recent bankline erosion and bend migration upstream of the site indicate that bend migration may soon begin at the site, which will expose more of the levee to active erosion. The majority of the recent bend migration upstream of the site occurred during high flows brought on by monsoon season rainstorm events during July and August of 2006.

SUMMARY OF THE PROPOSED ACTION

The Federal action addressed in this Environmental Assessment (EA) is the protection of the Drain Unit 7 Extension spoil levee with riprap. The project area is surrounded by a region of rural farming and ranching. Farming activities such as plowing and tilling, and ranching activities such as livestock grazing, often eliminate or reduce vegetation, even if only temporarily, and thus become a potential cause of sediment loading in the river during periods of high runoff.

The purpose of this project is to prevent erosion of the existing spoil levee. The need is protection of the facility against erosion.

ENVIRONMENTAL IMPACTS RELATED TO THE RESOURCES OF CONCERN

The effects of the proposed action and reasons for a Finding of No Significant Impacts are addressed in detail in the EA and summarized below:

Water Resources - The purpose of this project is to prevent erosion of the existing spoil levee, but some components of the project could also contribute to soil erosion in the area, at least initially. Excavation of riprap toe trench in river channel. This excavation could result in a brief increase in sediment loading to the river. Nearly all of this cleared area will be covered with riprap, which will prevent future erosion, but there may be a small strip of area beyond the riprap footprint that is cleared and disturbed. It is anticipated that this area will quickly become reestablished with vegetation.

Biological Resources - Initial consultation with the Service resulted in a list of federally protected species, candidate species and species of concern that are known to occur in Socorro County. Two federally protected species were identified that could potentially occur in the project area, the Southwestern Willow Flycatcher, and the Rio Grande Silvery Minnow

(minnow). No known or potentially present state-listed protected species were identified in consultation with the NMDG&F (2004), and the NMRPTC (1999).

Because minnows occur in the vicinity, we have determined that the proposed action may affect and is likely to adversely affect the minnow. Since minnows could be incidentally harmed during construction activities, Reclamation has requested an Incidental Take Statement from the Service. The construction activities would occur in an area that has been designated critical habitat for the minnow, and in the long-term the Project may potentially have beneficial effects. Therefore, we have determined that the proposed action may affect, but is not likely to adversely affect minnow critical habitat.

Extensive surveys were performed during summer 2008 for flycatchers in the vicinity of the proposed project area and adjacent areas, so any suitable and newly-occupied habitat would be known. These surveys detected one pair and three unpaired, territorial birds approximately 1,000 feet upstream of the project area. Due to the presence of these birds and the possibility of their return to the same location, this information will be used to coordinate maintenance activities to avoid working in the area during the breeding season and to avoid affecting habitat at any time of year. Therefore, in considering the distance from the areas where the birds were resident in summer 2008, and the fact that no birds will be present when the work is done, Reclamation has determined that the proposed action would have no effects on the Southwestern Willow Flycatcher (flycatcher). We have also determined that the proposed action will have no effect on designated critical habitat for the willow flycatcher.

Cultural Resources - There are no known sacred sites or traditional cultural properties in the project area. The Proposed Action is expected to have no effects on cultural resources. No concerns or traditional cultural properties were identified by the parties consulted.

Indian Trust Assets - No Indian Trust Assets (ITAs) have been identified in the Project area. There are no reservations or ceded lands present. Because ITAs are not present, no impacts are anticipated.

Environmental Justice - Implementing the Proposed Action would not result in any disproportionate impacts on minority or low-income communities, so there would be no environmental justice impacts.

ENVIRONMENTAL COMMITMENTS

The environmental commitments to minimize potential adverse effects listed in detail in Chapter 4 of the EA will be implemented during construction activities and as part of the post construction site restoration activities. All applicable permits have been obtained or will be obtained prior to implementation of each phase of the project. These permits may include, but are not limited to:

- Clean Water Act, Section 404, Nationwide Permit 27
- Clean Water Act, Section 401, State Water Quality Certification
- National Pollutant Discharge Elimination System permit
- Storm Water Pollution Prevention Plan.

Environmental Commitments include:

1. **Species Monitoring.** Reclamation will continue to conduct annual flycatcher surveys following established protocol and will conduct fish community surveys annually.
2. **Construction BMPs.** Reclamation will incorporate best management practices, for example cleaning all equipment before entering the channel, into its construction work to minimize environmental disturbance.
3. **Water for dust abatement** will be pumped from the drain, if needed.
4. **Replanting to improve habitat of disturbed areas:** Staging Area No. 4 was cleared of vegetation previously to accommodate subsurface drilling for project designs (Categorical Exclusion Checklist ALB-CE-08-017). Prior to clearing, this area was predominantly salt cedar, with sparse cottonwoods and coyote willow. After completion of the Phase I construction, a portion of this area, beyond the future projected bankline, will be planted with native species.
5. **Bankline Plantings:** After the riprap is placed along the bankline of the active channel, river bed sediment and bankline materials (obtained from excavation required for riprap placement) will be placed in the voids of the upper 5 feet of riprap. Vegetation will be planted in the soil zone of the riprap. The vegetation will be monitored, and watered if needed, until it has become established.
6. **Fuel Spill Protection:** Equipment will be fueled on existing roadways or staging areas with gravel pads and in a manner such that spilled fuel will not reach the river. Any spilled fuel will be removed with absorbent pads. There will be no storage of fuel at the site.
7. **Coordination and consultation with the Service** will be done as needed.

COORDINATION

The following individuals and organizations were consulted in preparing this environmental assessment and in developing the proposed action.

MRGCD:

Ray Gomez
David Gensler

Sevilleta NWR:

Terry Tadano (former refuge manager)
Renee Robichaud
Dennis Prichard (acting refuge manager)

New Mexico Interstate Stream Commission:

Chris Stageman

CONCLUSION

In accordance with the National Environmental Policy Act of 1969 (NEPA), as amended, and based on the analysis in the EA, the Bureau of Reclamation has determined that implementing the preferred plan presented in the EA for Drain Unit 7 Priority Site on the Rio Grande, Socorro County, New Mexico, would not result in a significant impact on the human environment and does not require preparation of an environmental impact statement.

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Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Front Cover: Looking at the Drain Unit 7 bend from the access roadway.
Photograph taken 4/30/2008 by Marsha Carra

Drain Unit 7 Extension River Maintenance Priority Site

New Mexico

Draft Environmental Assessment

Lead Agency:



United States Department of the Interior
Bureau of Reclamation
Upper Colorado Region
Albuquerque Area Office

Abstract

The United States Department of the Interior, Bureau of Reclamation prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to evaluate the environmental and socioeconomic impacts of placing riprap for protection of the Drain Unit 7 Extension spoil levee located 500 feet upstream of San Acacia Diversion Dam (SADD) on the right bank line of the Rio Grande. The action is needed to prevent further erosion of the levee protecting the Drain Unit 7 extension.

Based on the analysis, the proposed action would not result in any significant impacts to the environment.

For further information regarding this Draft Environmental Assessment, contact:

Ms. Marsha Carra
Bureau of Reclamation, Albuquerque Area Office
555 Broadway, N.E. Suite 100
Albuquerque, New Mexico 87102
Tel: (505) 462-3602
Fax: (505) 462-3780
E-mail: mcarra@uc.usbr.gov

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List of Acronyms and Abbreviations

ACOE	U.S. Army Corps of Engineers
AQCR	Air Quality Control Region
BMPs	Best Management Practices
CFR	Code of Federal Regulations
cfs	cubic feet per second
CMP	corrugated metal pipe
cy	cubic yards
CWA	Clean Water Act
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ft.	feet
in.	inches
ITAs	Indian Trust Assets
LFCC	Low Flow Conveyance Channel
mi.	miles
MRGCD	Middle Rio Grande Conservancy District
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMED	New Mexico Environment Department
NPDES	National Pollution Discharge Elimination System
O & M	Operations and Maintenance
RCP	reinforced concrete pipe
Reclamation	Bureau of Reclamation
RM	river mile
SADD	San Acacia Diversion Dam
Service	U.S. Fish and Wildlife Service
SHPO	State Historic Preservation Officer
U.S.C.	United States Code
USGS	United States Geological Survey

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Chapter 1: Purpose and Need for Action

1.1 Introduction

The Bureau of Reclamation has authority for river channel maintenance on the Rio Grande between Velarde, New Mexico and the headwaters of Caballo Reservoir. Reclamation regularly monitors changes in the river channel and evaluates channel and levee capacity in an effort to identify river maintenance priority sites where there is concern about possible damage to riverside facilities.

The Drain Unit 7 Extension River Maintenance Priority Site (Project) is located 500 feet upstream of San Acacia Diversion Dam (SADD), on the right bankline of the Rio Grande. The approximate River Mile is 116.3. The river is actively eroding a spoil levee embankment that protects the Drain Unit 7 Extension irrigation structure, operated by the Middle Rio Grande Conservancy District (MRGCD). The Drain Unit 7 Extension structure serves as both a drain and canal, conveying irrigation drain water to the Socorro Main Canal for downstream irrigation needs. If the river is allowed to continue erosion of the levee, the drain prism could be destroyed, and the roadway on the levee lost, which is used to maintain Drain Unit 7 and access parts of the Sevilleta National Wildlife Refuge (Sevilleta).

Erosion has been a persistent problem in recent years on approximately 350 feet of the levee that protects the drain from the river. This portion of the levee is adjacent to the active river channel. Recent bankline erosion and bend migration upstream of the site indicate that bend migration may soon begin at the site, which will expose more of the levee to active erosion. The majority of the recent bend migration upstream of the site occurred during high flows brought on by monsoon season rainstorm events during July and August of 2006. The general site area is shown in Figure 1, with a designation of the area of concern and the projected future bank line erosion.

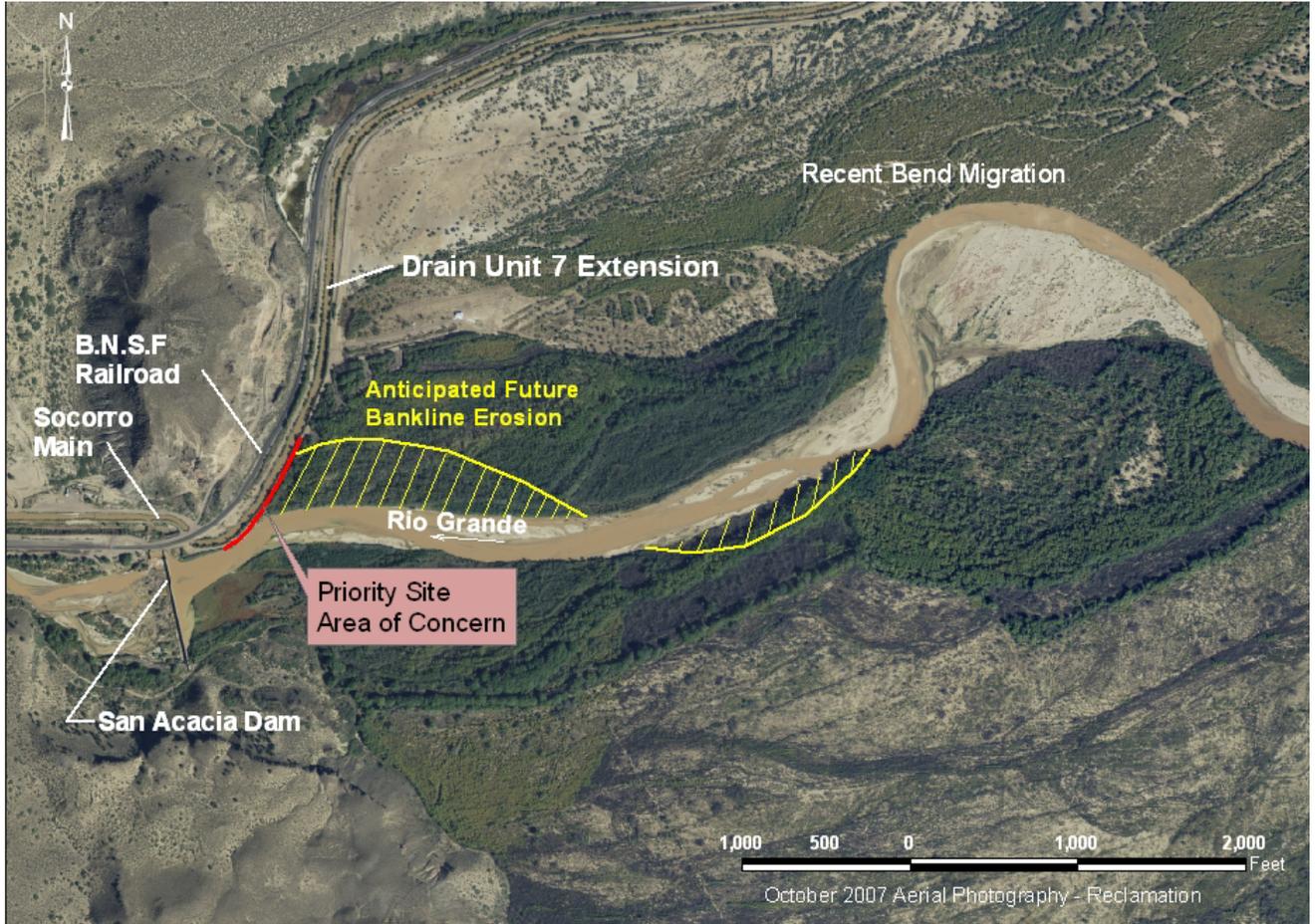


Figure 1: General Site Location of Drain Unit 7 Priority Site

This EA is prepared pursuant to the National Environmental Policy Act of 1969 (NEPA), as amended; the Council on Environmental Quality's (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500-1508); the Department of the Interior's NEPA Implementing Procedures (516 DM 1-15); and Reclamation's NEPA Handbook.

1.2 Need for the Action

The need for action is protection of the facility against erosion. Erosion has been a persistent problem in recent years on approximately 350 feet of the levee that protects the drain from the river. This portion of the spoil levee is adjacent to the active river channel. Recent bankline erosion and bend migration upstream of the site indicate that bend migration may soon begin at the site, which will expose more of the levee to active erosion. The majority of the recent bend migration upstream of the site occurred during high flows brought on by monsoon season rainstorm events during July and August of 2006.

1.3 Purpose of the Action

The design calls for placement of riprap along the river side of the Drain Unit 7 Extension spoil levee for a length of 650 feet. The purpose of the riprap placement would be to prevent further erosion of the levee that protects the Drain Unit 7 Extension irrigation structure.

1.4 Relevant Statutes, Regulations, and other Plans

The proposed action does not conflict with any known state or local planning or zoning ordinances. The proposed action would also be required to conform to the provisions of Section 7 of the *Endangered Species Act* (ESA) as administered by the U.S. Fish and Wildlife Service (Service) and Section 106 of the *National Historic Preservation Act* (NHPA) as administered by the New Mexico State Historic Preservation Officer (SHPO).

The U.S. Army Corps of Engineers (ACOE) determined the Project is under the irrigation exemption and sent a letter to the New Mexico Environment Department (NMED) to that effect. Because more than one acre of land would be disturbed by the proposed action, the Project would require a *National Pollution Discharge Elimination System* (NPDES) permit which Reclamation has obtained through the Environmental Protection Agency (EPA).

1.5 Public Scoping

Public meetings were held by Reclamation on Thursday, February 1, 2007, at 7 p.m. at New Mexico Institute of Mining and Technology, Macey Center, Socorro, NM, and Friday, February 2, 2007, at the University of New Mexico in Albuquerque as part of the scoping process. Reclamation sought comments concerning the formulation of alternatives. Scoping included four separate projects: San Acacia Fish Passage Project, La Joya Siphon Project, Drain Unit 7 Extension River Maintenance Priority Site (the subject of this DEA) and the SADD Apron Maintenance Project.

Chapter 2: Alternatives

2.1 Introduction

The Federal action addressed in this Environmental Assessment (EA) is the protection of the Drain Unit 7 Extension spoil levee with riprap. Several other alternatives were considered (Appendix A: DU7 Alternatives Jan 10, 2007 Report), including use of bioengineering techniques, but the unique conditions at this site resulted in selection of riprap as the most feasible alternative. The design calls for placement of riprap along the river side of the Drain Unit 7 Extension spoil levee for a length of 650 feet. Construction will be performed in two phases.

2.2 Proposed Action

The preferred alternative selected for this Project involves protection of the Drain Unit 7 Extension spoil levee with riprap. Several other alternatives were considered, including use of bioengineering techniques (environmental enhancements), but the unique conditions at this site resulted in selection of riprap as the preferred alternative. The design calls for placement of riprap along the river side of the levee for a length of 650 feet. Construction will be performed in two or more phases. The planned approach to the phasing is as follows:

Phase 1 would address the most severely eroded portion of bankline, 250 linear feet within the active river channel, from approximately 2+50 to 5+00. Work within the river channel will take up to two months, and would be completed between November 1, 2008 and April 15, 2009.

Phase 2 would address the remaining area of concern (the remaining 400 linear feet, with 250 linear feet within the active river channel and 150 linear feet out of the water, to bring the total to 650 linear feet). This work would require approximately 2 months and would be completed some time between September 1, 2009 and April 15, 2010.

The Phase 1 and 2 work described above will address the area where the river is currently eroding the levee and approximately 150 feet of levee just upstream, where future erosion is anticipated due to migration of the active river channel (Figure 1). It is possible that the channel migration will continue beyond the 150 feet of riprap protection, in which case a second project would be implemented to increase the length of the riprap protection. The area will be monitored closely and the second project implemented before channel migration reaches the end of the riprap placed under this project. Work to be accomplished under this project is summarized below and covered in more detail in the Project Description as Phase 1. Phase 2 of the Project Description describes the potential work under a second project, to be implemented if needed.

For the Project covered by this document, 500 linear feet of the riprap would be placed within the active river, and 150 feet on a dry terrace. For the portion of riprap to be placed in the active

river channel (0+00 to 5+00), two layers of riprap would be placed against the existing bankline: (1) a 60-inch thick primary layer for protection of the bankline; (2) an additional layer of self launching riprap placed against the primary layer. The primary riprap layer will be keyed into the river channel a depth of up to five feet to form a toe trench which will provide scour protection for a portion of the 15-foot design scour depth. The remaining ten feet of scour protection will be provided by the self launching riprap. This riprap would fall into the scour hole as needed.

For the dry terrace area (5+00 to 6+50), riprap would be placed to form a self-launching windrow, parallel and adjacent to the levee. This riprap would fall in place to provide bankline protection if the active river channel migrates toward the levee, as shown in Figure 1.

Bioengineering features incorporated into the riprap design are as follows:

0+00 to 0+72: Riprap would be keyed into the bankline to provide a smooth transition between the riprap and the natural bankline, and to ensure that the riprap is not flanked (eroded at the downstream end) during the design discharge. This would require excavation of the bankline and that excavated material would be placed over the riprap to reconstruct the bankline so as to match the natural bankline. Willow poles would be planted in the reconstructed embankment along the edge of the river; their root systems would help hold the embankment in place. It is anticipated that the willows would not grow to a significant height, as this area is routinely mowed to allow for dam and drain maintenance activities.

5+00 to 6+50: Willows and/or cottonwoods would be planted between the levee and the self-launching riprap windrow. A trench would be excavated to allow planting of the willows at the groundwater level. It is anticipated that once these trees become established, the root system will serve as protection for the levee in the event that the self-launching riprap is ineffective.



Figure 2: Location picture of riprap area in river channel.

2.3 No Action Alternative

Under the No Action Alternative Reclamation would not place any riprap, only routine operations and maintenance (O & M) would be taken to prevent erosion at the Drain Unit 7 Extension spoil levee. Other ongoing O & M activities in the area generally consist of mowing the vegetation along the bank line slopes of the drain and levee and maintaining the condition of the access roads.

Chapter 3: Affected Environment

3.1 Introduction

Scope of Analysis

This section describes the current condition and trends of resources that may be affected by the proposed action and the environmental consequences of the proposed action and no action alternative. The information in this EA is derived primarily from the information in the Project Description and Biological Assessment.

Information from these documents is incorporated by reference and will not be repeated here unless needed to clarify discussions, to meet a legal requirement, to provide site-specific detail or to address changes in the resource baseline. Each aspect of the environment that would be affected by the proposed action is discussed to the level of detail commensurate with the potential for environmental impact. The greatest potential for impacts would be to water resources and biology. Other resources discussed in this chapter include cultural resources, Indian Trust Assets, and Environmental Justice.

Study Area

Research, conducted by the Reclamation Facilities and Lands staff, indicates that land ownership for the proposed project features is within the Drain Unit 7 Extension right-of-way or the floodplain area where Reclamation has prescriptive rights for river maintenance activities.

The Sevilleta boundary is approximately 500 feet north of the project area. The spoil levee on the east side of the drain also serves as a roadway that provides access to parts of Sevilleta, and this road is used regularly by Sevilleta staff. The road will need to be closed for up to four months for construction, but scheduling the work during the winter will minimize impacts to Sevilleta staff, as they can access the area served by this road from the north, by driving across the Rio Salado delta.

The general site area is also utilized by MRGCD for O & M of the Drain Unit 7 Extension, Socorro Main, and SADD. Work activities will be scheduled, such as performing work in the off-irrigation season, so as to not impact MRGCD operations. Provisions can also be made to make the road passable for MRGCD or Service staff for short periods during construction, provided that Reclamation is given sufficient advance notice.

Burlington Northern and Santa Fe (BN&SF) railroad tracks run parallel to the Drain Unit 7 Extension on the west side, with an average distance of 80 feet between the drain and tracks through the project site. Since the access road to the Project crosses this railroad track, all construction activities involving multiple railroad crossings will be coordinated with BN&SF officials.

Access to the Project will be via the existing LFCC Operations and Maintenance (O&M) road around San Acacia, the SADD access road, and the eastern Drain Unit 7 Extension levee road. If necessary to ensure safe and convenient access, road improvements (e.g., blading, gravel cap placement, etc.) may be made to these roads. It may also be necessary to trim vegetation along roads to ensure vehicle clearance and safety concerns.

If dust becomes a safety concern while hauling riprap from the staging areas to the work areas, roads will be wetted with water pumped from the drains.

Material Sources and Staging Areas

Material Sources

(revised 10/4/08)

A portion of the riprap required for the project was hauled to the site in July 2008. This hauling was addressed in Categorical Exclusion Checklist No. ALB-CE-08-068. Riprap was stockpiled in staging areas, as follows:

- Staging Area 1: 1,800 cy
- Staging Area 2: 1,000 cy

The remaining riprap material for the project would come from one of the following locations, and would be stockpiled at one of the three staging areas, and then hauled to the work area as the riprap is needed for placement.

River Mile 111: Approximately 1,000 cy of riprap would be removed from the existing LFCC in conjunction with the realignment of the LFCC for River Mile 111, and this riprap may be used for the Drain Unit 7 Extension Project. Another source of riprap from the River Mile 111 is approximately 3,000 cy of self-launching riprap. This material is currently in a windrow of riprap between the river channel and the LFCC spoil levee, and was placed there as a temporary measure until completion of the River Mile 111. Location of project, in State Plane (NAD 83) coordinates: N 1,446,728 E 1,165,519. Haul route: On Low Flow Conveyance Channel maintenance road.

Abeytas Heading Stockpile: Reclamation stockpile, located adjacent to the Drain Unit 7, and just east of the town of Abeytas. Quantity to be hauled will be approximately 3,000 cubic yards. Location of stockpile, in State Plane (NAD 83) coordinates: N 1,262,503 E 1,472,414.

Haul route: MRGCD maintenance road from stockpile to State Highway 116, then 4.3 miles south to State Highway 60, then Interstate 25 south to the San Acacia exit, then through town of San Acacia.

Escondida Stockpile: Reclamation stockpile, located adjacent to the LFCC west maintenance road, just south of Escondida Lakes.

Location of stockpile, in State Plane (NAD 83) coordinates: N 1,135,301 E 1,446,929.

Haul route: On Low Flow Conveyance Channel maintenance road.

Red Canyon Mine: Reclamation mines riprap from this site under a BLM permit. Approximately 2,000 cubic yards of riprap material currently stockpiled at the mine may be used for this project. The mine is located approximately 5 miles south of Socorro, and approximately 4 miles west of State Highway 1.

Location of mine, in State Plane (NAD 83) coordinates: N 1,076,146 E 1,423,842.

Haul route: Local and County roads to State Highway 1, then north on Highway 1 to Socorro, then Interstate 25 north to the San Acacia exit, then through town of San Acacia.

Staging Areas:

No. 1: Located on an existing gravel pad where materials and equipment have been stored previously. The area is on a 4-acre plot of land held by Reclamation, just south of a cemetery and west of the MRGCD dam tender residence trailer. Area is void of vegetation and covered with gravel surfacing. Surface area: 0.5 acres.

No. 2: Located between the LFCC and BNSF railroad tracks, within the LFCC right-of-way. Area has very sparse vegetation, with mixture of grass, shrubs, and weeds. Surface area: 1.6 acres.

No. 2(a): Located between the LFCC and BNSF railroad tracks, within the LFCC right-of-way and just north of Staging Area No. 2. Area has very sparse vegetation, with mixture of grass, shrubs, and weeds. The area is also covered with numerous sediment stockpiles, from previous dredging of the LFCC. These stockpiles will be spread out to form a level surface and gravel surfacing placed over the graded surface to provide a firm surface for truck traffic and a pad for the riprap. Surface area: 1.5 acres.

No. 3: Located at the start of the construction area, at a wide portion of the road between the river and Drain Unit 7 Extension irrigation structure. Area is void of vegetation and covered with gravel surfacing. Surface area: 0.1 acres.

No. 4: Located on the floodplain of the river, in an area that was recently cleared of vegetation to accommodate subsurface drilling for project designs (Categorical Exclusion Checklist ALB-CE-08-017). Ground cover is wood chips, from the recent vegetation clearing. Surface area: 0.2 acres.

Material Quantities

Maximum Areas of Disturbance

Existing levee road, adjacent to work – 0.7 acres

Riprap placed within active river channel:

Below water surface - 0.6 to 0.75 acres.

This includes a 20-foot potential disturbance zone beyond the planned riprap footprint.

Above water surface – 0.3 acres

Riprap placed on dry terrace – 0.3 acres

This includes a 25-foot potential disturbance zone beyond the planned riprap footprint.

Maximum Quantities of Excavation

Bankline preparation – 6,000 cy

River channel (toe trench) – 2,000 cy

Lowering of road/levee surface to facilitate placement of riprap – 9,000 cy

Maximum Quantities of Riprap

Within active river channel – 8,000 cy

On dry terrace – 4,000 cy

3.2 Water Resources

Turbidity, from erosion in the reach of the Rio Grande that flows through the project area, is greatest during periods of high runoff. High flow events from rainstorms or rapid snow melts in the mountains cause scouring of the banks and bottom of the Rio Grande as well as the streams and arroyos that empty into the river. This scouring results in high sediment loading and gradual erosion of the river's banks. Over time, this erosion facilitates the natural tendency of the river to meander back and forth from side to side. Surface runoff adds to sediment loading and turbidity in the river.

Any activities that reduce or eliminate vegetation have the potential to result in erosion until new vegetation has become reestablished. The project area is surrounded by a region of rural farming and ranching. Farming activities such as plowing and tilling, and ranching activities such as livestock grazing, often eliminate or reduce vegetation, even if only temporarily, and thus become a potential cause of sediment loading in the river during periods of high runoff. The purpose of this project is to prevent erosion of the existing spoil levee, but the following components of the project could also contribute to soil erosion in the area, at least initially.

Area from Station 0+00 to 0+72, where the bankline will be excavated to provide a key for the riprap. After placement of the riprap, the excavated bankline material would be placed over the riprap to provide a smooth transition between the riprap and natural bankline. This embankment material would be vulnerable to erosion. Willow poles would be planted within the embankment material to help stabilize it, but the material would be particularly vulnerable to erosion until the willows develop a root system.

Bankline preparation, Station 0+72 to 5+00. Some excavation and grading of the bankline may be required to prepare for the new riprap. Most of this excavation would be to rearrange the existing riprap, but some excavation into the levee embankment may also be required. However, this excavation would be above the water surface of the river, and would be covered with riprap, so there should be no increase in erosion as a result of this preparatory work.

Excavation of riprap toe trench in river channel. This excavation could result in a brief increase in sediment loading to the river.

Staging Area No. 4 disturbance. This staging area was cleared of vegetation previously (Categorical Exclusion Checklist ALB-CE-08-017). The cleared vegetation was chipped and those wood chips provide the existing ground cover and deterrent to soil erosion. Disturbance of this area during the project work could make the surface more vulnerable to erosion, but the area will be replanted with native trees after completion of the project work, and it is anticipated that the area will quickly become reestablished with vegetation.

Vegetation clearing, Station 5+00 to 6+50. Existing vegetation would be cleared from the surface of the dry terrace to provide for placement of the windrow of self-launching riprap. Nearly all of this cleared area would be covered with riprap, which would prevent future erosion, but there may be a small strip of area beyond the riprap footprint that is cleared and disturbed. It is anticipated that this area would quickly become reestablished with vegetation.

A 404/401 permit was submitted to the COE for the proposed work at the Project. A determination was made that maintenance and repair of the drain and the spoil levee is exempt from Section 404 regulation under the irrigation exemption.

3.3 Biological Resources

Wildlife and Habitat

Native vegetation in the project area is dominated by Rio Grande cottonwoods, Goodding's and coyote willows (*Salix* spp.), New Mexico olive (*Forestiera neomexicana*) and saltcedar (*Tamarix* spp.). Understory vegetation is typical of the southern floodplains portion of the Floodplain-Plains Riparian vegetation type described by Dick-Peddie (1993). This habitat is relatively common along the Rio Grande in the southern half of New Mexico, although acknowledged to be in decline as a result of human activities over the past two centuries. The primary human activities that have been identified as causing this decline are tree cutting and the impoundment of stream and river surface waters.

Mammal species common to the area include: coyotes, raccoons, bobcats, skunks, beavers, and various species of mice, rats, bats, rabbits and other small mammals. Birds that can be found in the region at different times of the year include: herons, ducks, turkey vultures, hawks, doves, hummingbirds, crows and numerous other species.

Threatened, Endangered and Special Status Species

Initial consultation with the Service resulted in a list of federally protected species, candidate species and species of concern that are known to occur in Socorro County. Two federally protected species were identified that could potentially occur in the project area, the Southwestern Willow Flycatcher (flycatcher), and the Rio Grande Silvery Minnow (minnow). No known or potentially present state-listed protected species were identified in consultation with the NMDG&F (2004), and the NMRPTC (1999).

Silvery Minnow

It is likely that minnows will be present in the Project area, based upon October 2007 sampling 0.6 mi. above the SADD which resulted in 5 fish caught with a sampling effort of 688.8 m². The construction techniques minimize contact with any fish and minimize potential for harm or harassment, once the riprap platform is established and continues to expand. Minnows present near the work area would be able to freely move away from contact with the equipment and from disturbance by riprap being pushed into the river channel. Use of heavy equipment would disturb minnows in the immediate area of operation, and these effects are spatially localized but not discountable.

Because minnows occur in the vicinity, we have determined that the proposed action may affect and is likely to adversely affect the minnow. Since minnows could be incidentally harmed during construction activities, Reclamation has requested an Incidental Take Statement from the Service. The construction activities would occur in an area that has been designated critical habitat for the minnow, and in the long-term the Project may potentially have beneficial effects. Therefore, we have determined that the proposed action may affect, but is not likely to adversely affect minnow critical habitat.

Southwestern Willow Flycatcher

The project area is located in designated critical habitat for the flycatcher.

Extensive surveys were performed during summer 2008 for flycatchers in the vicinity of the Project, so any suitable and newly-occupied habitat would be known. These surveys detected one pair and three unpaired, territorial birds approximately 1,000 feet upstream of the project area. Due to the presence of these birds and the possibility of their return to the same location, this information will be used to coordinate maintenance activities to avoid working in the area during the breeding season and to avoid affecting habitat at any time of year. Therefore, in considering the distance from the areas where the birds were resident in summer 2008, and the fact that no birds will be present when the work is done, Reclamation has determined that the proposed action would have no effects on the flycatcher. We have also determined that the proposed action would have no effect on designated critical habitat for the flycatcher.

3.4 Cultural Resources

There are no known sacred sites or traditional cultural properties in the project area. Cultural resources include past and present expressions of human culture and history in the physical environment, such as prehistoric and historic archaeological sites, buildings, structures, objects, districts, natural features, and biota, which are considered important to a culture, subculture, or community. Cultural resources also include aspects of the physical environment that are a part of traditional lifeways and practices, and are associated with community values and institutions. Historic properties are a subset of cultural resources that meet specific eligibility criteria found at 36 CFR 60.4 for listing on the National Register of Historic Places (NRHP).

3.5 Indian Trust Assets

Indian Trust Assets (ITAs) are legal interests in assets held in trust by the United States through the Department of the Interior, Bureau of Indian Affairs, for Indian tribes or individual Indians. This trust responsibility requires that all federal agencies, including Reclamation, ensure their actions protect ITAs.

“Assets” are anything owned that has monetary value. The asset need not be owned outright but could be some other type of property interest, such as a lease or a right of way. They can be real property, physical assets, or intangible property rights. Common examples of ITAs may include lands, minerals, hunting and fishing rights, water rights, other natural resources, and money. “Legal interest” means there is a primary interest for which a legal remedy, such as compensation or injunction, may be obtained if there is improper interference. ITAs do not include things in which a tribe or individual have no legal interest, such as off-reservation sacred lands in which a tribe has no legal property interest. It should be noted that other federal laws pertaining to religious or cultural laws should be addressed if impacts to such lands were to occur from Reclamation actions. There are no native American Indian Trust lands or ITAs in the vicinity of the proposed project site.

3.6 Environmental Justice

An evaluation of environmental justice impacts is mandated by Executive Order 12898 on Environmental Justice (February 11, 1994). Environmental justice addresses the fair treatment of people of all races and incomes with respect to Federal actions that affect the environment. Fair treatment implies that no group of people should bear a disproportionate share of high and adverse human health and environmental impacts from a Federal action.

The impacts of an action can be considered disproportionately distributed if the impacts imposed on a specific group are greater than the percentage of the total population represented by that group. A group is typically defined by race, ethnicity, income class, or community identity. Evaluating potential environmental justice concerns requires an understanding of where the project impacts are likely to occur and where potentially affected groups are located. The analysis relies on demographic data from sources such as the U.S. Census Bureau, individual counties and municipalities, and local school districts to determine the location of different groups of people. Census demographic data and state economic development figures are typically the most complete and comparable information available for individuals and households. According to the most recent data from the Bureau of Economic Analysis (2004), the annual per capita income for the state of New Mexico in 2002 was \$24,823. The 2002 annual per capita income for Socorro County was \$18,577. According to the most recent data from the U.S. Census Bureau (2004), approximately 48 percent of the residents of Socorro County were Hispanic or Latino in 2000.

Chapter 4: Environmental Consequences

4.1 Water Resources

No Action

Under the no action alternative, the spoil levee protecting the Drain Unit 7 Extension irrigation structure would be at risk. The existing riprap protecting the levee is of inadequate size and quantity to protect the spoil levee, and it has been necessary to replace eroded sections of riprap twice in the last four years. If no action is taken, the river will eventually break through the levee and into the prism of the drain, causing the drain to outfall into the river. If this were to happen, the drain would no longer be able to supply water directly to the Socorro Main Canal.

Proposed Action

This alternative would prevent further erosion of the spoil levee that protects the Drain Unit 7 Extension irrigation structure and the drain will continue to deliver water to the Socorro Main Canal, as designed.

Work activities conducted by the Bureau of Reclamation will not increase the amount of open water surface area in the river channel; therefore will not result in any net water depletions.

4.2 Biological Resources

No Action Alternative

Under the no action alternative, there would be no change from current trends or conditions. The no action alternative would have no effect on the potential for overbank flows, inundation of habitat, potential for intermittency, or extreme low or peak flows.

Proposed Action

Although construction activities may displace existing wildlife temporarily, most animal species in the Project would be able to return after completion. Some mortality of less mobile species would be expected, but not in quantities that would damage local populations. The improved quality of the habitat after new vegetation becomes established would offset some of these losses over time.

Extensive surveys were performed during summer 2008 for flycatchers in the vicinity of the Project, so any suitable and newly-occupied habitat would be known. These surveys detected one pair and three unpaired, territorial birds approximately 1,000 feet upstream of the project area. Due to the presence of these birds and the possibility of their return to the same location, this information will be used to coordinate maintenance activities to avoid working in the area during the breeding season and to avoid affecting habitat at any time of year. Therefore, in considering the distance from the areas where the birds were resident in summer 2008, and the fact that no birds will be present when the work is done, Reclamation has determined that the proposed action would have no effects on the flycatcher. We have also determined that the proposed action would have no effect on designated critical habitat for the flycatcher. Because minnows occur in the vicinity, we have determined that the proposed action may affect and is likely to adversely affect the minnow. Since minnows could be incidentally harmed

during construction activities, Reclamation has requested an Incidental Take Statement from the Service. The construction activities would occur in an area that has been designated critical habitat for the minnow, and in the long-term the Project may potentially have beneficial effects. Therefore, we have determined that the proposed action may affect, but is not likely to adversely affect minnow critical habitat.

4.3 Cultural Resources

No Action Alternative

The no action alternative is unlikely to affect cultural resources. Potential impacts would be limited geographically to the Drain Unit 7 Extension irrigation structure.

Ongoing impacts on cultural resources resulting from river operations include the potential for direct disturbance of the integrity of archaeological sites through erosion, wave action, and cycles of inundation and drawdown, and the potential for vandalism of formerly submerged archaeological resources. The potential for these kinds of impacts, including impacts on resources that may be eligible for listing on the NRHP or may be of traditional importance, is greater from natural drought cycles and flood events.

Proposed Action

No known sacred sites or traditional cultural properties are in the project area. The work in the active river channel is covered by Reclamation's Programmatic agreement with the SHPO. The work on the spoil levee, staging areas, and access routes is on existing facilities which have been previously disturbed with a determination of no historic properties.

4.4 Indian Trust Assets

The potential for the action to affect ITAs is used as a resource indicator to evaluate impacts on ITAs. Actions which would adversely affect the value, use, or enjoyment of an ITA would be considered to have impacts.

No Action Alternative and Proposed Action

No ITAs have been identified in the consultation with tribes and the Bureau of Indian Affairs (BIA). There are no reservations or ceded lands present. Because resources are not present, no impacts are anticipated to result from the no action alternative or the proposed action.

4.5 Environmental Justice

The potential for the action to cause a disproportionate share of high and adverse human health and/or environmental impacts on low income and/or minority communities is used as a resource indicator to evaluate environmental justice.

As discussed in Chapter 3, U.S. Census Bureau data indicate that the 2002 annual per capita income for Socorro County was \$18,577. According to the most recent data from the U.S. Census Bureau (2004), approximately 48 percent of the residents of Socorro County were Hispanic or Latino in 2000. No adverse effects of any kind to the local population are expected under the no action alternative. No adverse effects to low-income or minority populations are anticipated.

No Action Alternative

Under the no action alternative, there would be no change from current conditions and trends. The no action alternative would have no effect on ongoing socioeconomic and environmental trends affecting minority and low income populations. Other actions would be required to acquire and develop additional water sources. These actions may result in potential environmental justice issues if they involve minority and low income populations.

Proposed Action

No disproportionate adverse effects to low-income or minority populations are anticipated as a result of the proposed action.

There would be no disproportionate human health, economic and environmental impacts on any group of people, including minority and low-income populations.

4.6 Irretrievable Commitment of Resources

Wildlife habitat within the project area would be destroyed but would be replaced with the same or larger area of habitat as a result of the actions. Construction equipment would utilize fuel and lubricants that would be permanently used.

4.7 Cumulative Impacts

Cumulative effects include the effects of future state, tribal, local or private actions that are reasonably certain to occur in the action area.

North of the powerline, all the way to Cochiti Reservoir, there are many local, state, and private entities and landowners, including Indian pueblos that are participating with the Federal agencies in the Middle Rio Grande Endangered Species Collaborative Program (Program). The Program will continue to fund habitat restoration projects and conduct research that will benefit minnows and flycatchers. Outside of the Program there are also state, city, other groups, and Pueblos that are improving riparian and riverine conditions along the Middle Rio Grande.

Activities that affect water quality along the Middle Rio Grande consist of municipal wastewater discharges, urban runoff, agricultural runoff, riparian clearing, chemical use for vegetation control and crops. Recreation along and in the riparian zone, which can be compounded by urban growth, stocking of exotic and predators fish, industrial growth along the river, riparian clearing without a revegetation plan, could also affect both minnows and flycatchers and their habitat.

Chapter 5: Environmental Commitments

Reclamation proposes the following conservation measures to minimize or avoid adverse effects of the project work.

1. **Species Monitoring.** Reclamation will continue to conduct annual flycatcher surveys following established protocol and will conduct fish community surveys annually.
2. **Construction BMPs.** Reclamation will incorporate best management practices, for example cleaning all equipment before entering the channel, into its construction work to minimize environmental disturbance.
3. **Water for dust abatement** will be pumped from the drain, if needed.
4. **Replanting to improve habitat of disturbed areas:** Staging Area No. 4 was cleared of vegetation previously to accommodate subsurface drilling for project designs (Categorical Exclusion Checklist ALB-CE-08-017). Prior to clearing, this area was predominantly salt cedar, with sparse cottonwoods and coyote willow. After completion of the project work, a portion of this area, beyond the future projected bankline, will be planted with native species. (Plan for species to be developed).
5. **Bankline Plantings:** After the riprap is placed along the bankline of the active channel, river bed sediment and bankline materials (obtained from excavation required for riprap placement) will be placed in the voids of the upper 5 feet of riprap. Vegetation will be planted in the soil zone of the riprap. The vegetation will be monitored, and watered if needed, until it has become established.
6. **Fuel Spill Protection:** Equipment will be fueled on existing roadways or staging areas with gravel pads and in a manner such that spilled fuel will not reach the river. Any spilled fuel will be removed with absorbent pads. There will be no storage of fuel at the site.
7. **Coordination and consultation with the Service** will be done as needed.

Chapter 6: Consultation and Coordination

The following individuals and organizations were consulted in preparing this environmental assessment and in developing the proposed action.

MRGCD:

Ray Gomez
David Gensler

Sevilleta NWR:

Terry Tadano (former refuge manager)

Renee Robichaud
Dennis Prichard (acting refuge manager)

New Mexico Interstate Stream Commission:
Chris Stageman

draft

Chapter 7: List of Preparers

NAME	EDUCATION / EXPERIENCE	RESPONSIBILITIES
Jonathan Aubuchon	B.S., Civil/Environmental Engineering University of Michigan M.S., Environmental Engineering, University of Michigan PE, Arizona, Civil Engineering, Water Resources	Hydraulic Engineer
Marsha Carra	B.S., Anthropology/Geography Eastern New Mexico University 19 Years	Project Manager; NEPA Specialist; Interagency and Tribal Coordination
Gary Dean	B.S., Fisheries Biology Colorado State University 22 Years	Biological Resources and Section 7 Consultation
Jeanne Dye	M.S., New Mexico State University 15 Years	Biologist
Charles Fischer	M.S., New Mexico Institute of Mining and Technology 17 Years	Water Resources
Nancy Purdy	B.S., Economics 19 Years	Contract Specialist; Realty and Water Rights
Cheryl Rolland	M.S. - Civil Engineering, Water Resources, South Dakota School of Mines and Technology 25 years	Project Manager; Engineering Oversight

Chapter 8: References

[NMDG&F] New Mexico Department of Game and Fish. 2005. Biota Information System Of New Mexico (BISON-M). New Mexico Department of Game and Fish, Conservation Services Division, Santa Fe, New Mexico. 67 p.

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U.S. Census Bureau. 2005. Data obtained from the Census Bureau website at: <http://quickfacts.census.gov/qfd/states/35/35043.html>, September 2005.