

RECLAMATION

Managing Water in the West

**FINDING OF NO SIGNIFICANT IMPACT AND DRAFT
ENVIRONMENTAL ASSESSMENT
OF
RIVER MILE 111 PRIORITY SITE PROJECT**



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

February 2008

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.

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BUREAU OF RECLAMATION
Albuquerque Area Office
Albuquerque, New Mexico

Finding of No Significant Impact

RIVER MILE 111 PRIORITY SITE PROJECT

Manager, Environment Division

Date

Area Manager, Albuquerque Area Office

Date

AAO-07-016
FONSI Number

BACKGROUND

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 monitors changes in the river channel. The evaluations include channel and levee capacity in an effort to keep track of river maintenance priority sites where the river may cause damage to riverside facilities.

There is one location called River Mile (RM) 111 Priority Site (Project) located on the west side of the Rio Grande approximately 5.2 miles downstream of the San Acacia Diversion Dam. The Project is located at an actively migrating bend in the river. The concern at this site is the proximity of the river channel to the Low Flow conveyance Channels (LFCC), and the rate at which this distance has been decreasing with sustained flood flows.

SUMMARY OF THE PROPOSED ACTION

At the Project, Reclamation proposes to relocate the LFCC and the levee to the west to allow the river more freedom to move within its historic floodplain. A similar action was done at the RM 114 and 113 priority sites, and is often referred to as the RM 114 to 113 levee setback.

ENVIRONMENTAL IMPACTS RELATED TO THE RESOURCES OF CONCERN

Native Vegetation

In the areas affected by the proposed action (such as staging and stockpile areas, and the new LFCC), no more than approximately 800 to 900 native trees (such as Cottonwood trees) would be removed. Cottonwood trees removed would be utilized according to a mitigation plan in section 2.4, page 9. The following is a list of useful purposes for removal of Cottonwood trees:

- Some Cottonwood trees would be utilized for Silvery Minnow habitat near the project.
- Some of the trees would be used as snags for raptor perches etc.
- Some trees piled randomly near the project site would serve as wildlife habitat.

Some species of willow trees would also be removed. Most of these species would regenerate naturally.

Native grass species would be planted to control erosion and to reseed areas denuded as a result of staging areas, and stockpile areas.

Wetlands

5500 feet of the existing LFCC would be filled with spoil material from the existing levee on the east side which would include 4-6 acres of area below the ordinary high water mark. However, 4500 feet of the existing channel would be back-filled completely above the ordinary high water mark. Approximately 1000 feet of vegetation above the ordinary high water mark on the LFCC would be preserved (see Environmental Feature Figure 3). This action, in addition to creating

6200 feet of new LFCC to the west, would compensate for the displacement of a portion of the wetlands in the existing LFCC as a result of the proposed action.

Water Resources

This alternative would protect the levee, which helps protect the LFCC from westward migration of the river channel. The river would continue to deliver water and sediment to Elephant Butte Reservoir, as would the LFCC continue to deliver water uninterrupted. These water deliveries help meet Rio Grande Compact requirements. In addition, the proposed action would provide the Rio Grande an opportunity to meander naturally.

Wildlife Including Threatened and Endangered Species

Wildlife

To reduce the impact to fish in the LFCC, filling in the old LFCC would occur from north to south as described in section 2.4. A berm would be placed across the existing LFCC to divert the water into the new channel, gradually reducing flow down the old LFCC. Fish are expected to move downstream as the flow recedes. Seepage under the berm and the groundwater inflow is expected to maintain a minimal flow in the old LFCC as it is being filled in. This construction sequence would push fish downstream ahead of filling in the old LFCC, protecting fish while eliminating handling stress.

Although construction activities may displace existing wildlife away temporarily, most animal species in the Project area would be able to return after project 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 these losses over time.

Rio Grande Silvery Minnow

The project would have no effect on the minnow in the LFCC. To insure that this determination is confirmed, the Lemitar radial gate structure located at station 1626+00 in the LFCC would be utilized as a fish barrier. The radial gates would be closed during the entire duration of the construction operations. Reclamation has previously surveyed this reach for the potential presence of RGSM below the proposed construction area to the radial gates.

The proposed action also includes a mitigation plan that includes placing debris piles in the Rio Grande made of Cottonwood trees removed from the project area. In addition, Cottonwood tree root wads would be placed on the bank near RM 111 priority site that would cascade into the river as it migrates to the west. The construction of woody debris piles and use of root wads as part of the mitigation plan would occur in an area designated critical habitat for the silvery minnow and is utilized by silvery minnows. As a result, the woody debris piles and root wads would potentially have beneficial effects. Therefore, we have determined that the proposed action may affect, but is not likely to adversely affect silvery minnows; and may affect, but is not likely to adversely affect silvery minnow critical habitat. A Biological Assessment would be

required to be submitted to the U.S. Fish and Wildlife service to obtain concurrence with this conclusion.

Southwestern Willow Flycatcher

This project would have no adverse effects to the flycatcher or its critical habitat. Flycatcher surveys in the project area for at least the past 10 years have not detected any resident territorial or nesting birds. Vegetation in the project area is primarily composed of a mix of saltcedar, Russian olive, and cottonwood. Much of this vegetation has been degraded though grazing by livestock (east of the LFCC). Though the project area is within the bounds of designated flycatcher critical habitat, this location is largely xeric and does not contain the suitable combination of primary constituent elements of flycatcher critical habitat (correct vegetation species composition, density, structure, and proximity to surface water).

Noxious Weeds

Whenever land is disturbed, the potential exists for the intrusion and establishment of noxious weeds. River Mile 111 priority site project would disturb up to 150 acres. To minimize the potential for the continued establishment and spread of State-listed and other noxious weeds, revegetation of grass would be implemented.

In addition to reseeding and planting, the introduction of noxious weed seeds would be minimized by a requirement that all equipment used on the project be pressure washed before arriving and leaving the site. Reclamation, would monitor the project area following construction (5 years) for noxious weeds and treat them as necessary. By preventing the introduction of noxious weed seeds and pursuing an aggressive revegetation plan, the potential for noxious weeds becoming established in the project area over time would be minimal.

Environmental Justice

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

Indian Trust Assets (ITAs)

No ITAs have been identified within the Project area that could potentially be affected.

Cultural Resources

Sections of the LFCC and associated non-engineered levee would be affected by the proposed action. The proposed action would be nearly identical to the action of a previous project two miles upstream of this one at RM 113/114. A determination of effects would be the same for RM 111 (see Appendix B). Although these structures are eligible for the National Register of Historic Places, the SHPO has concurred (see Appendix B) with Reclamation that the report by Bishoff (2001) does, in fact, serve as mitigation for any adverse effects that may occur as a result of the modification of the LFCC.

In addition, no sacred sites or traditional cultural properties are in the project area. However, if any such sites or properties are identified as a result of the proposed action, then the Section 106 process would be conducted with the New Mexico State Historic Preservation Office.

Air Quality and Noise

Fugitive dust generation from excavating and grading activities in the project area, along with exhaust emissions from heavy equipment and vehicles working on the project, are the only anticipated effects to air quality during construction. These temporary effects would not be expected to be significantly adverse. There would be no effects to air quality following completion of construction activities and re-establishment of vegetation in disturbed areas.

ENVIRONMENTAL COMMITMENTS

- Construction schedules would be coordinated with a neighboring horse breeding and riding club to avoid adverse impacts to their business.
- All construction debris and waste would be disposed of at an approved landfill facility.
- Best Management Practices would be implemented and utilized to prevent stormwater runoff and water pollution from entering the Rio Grande during construction activities.
- The Lemitar radial gate structure located at station 1626+00 in the LFCC would be utilized as a fish barrier. The radial gates would be closed during the entire duration of the construction operations.
- During construction, Reclamation would obtain water for dust abatement from drains, canals, and the LFCC.
- An environmental feature would be preserved in the existing LFCC to save Cottonwood and Willow species saplings to provide for Project mitigation.
- The mitigation plan submitted described in section 2.4 would be implemented during and at the conclusion of construction activities for the Project.
- Permit conditions listed in the individual 404 and the 401 permits are required to be implemented (see Appendix A)
- Should evidence of possible scientific, pre-historical, historical, or archeological data be discovered during the course of this action, work shall cease at that location and the Area archaeologist shall be notified by phone immediately, with the location and nature of the findings. Care shall be exercised so as not to disturb or damage artifacts or fossils uncovered during operations, and the proponents shall provide such cooperation and assistance as may be necessary to preserve the findings for removal or other disposition by the Government.

Any person who knows or has reason to know that he or she has inadvertently discovered human remains on Federal or tribal lands, must provide immediate telephone notification of the inadvertent discovery, with written confirmation, to the responsible Federal agency official with respect to Federal lands, and, with respect to tribal lands, to the responsible Indian tribe official. The requirement is prescribed under the Native American Graves Protection and Repatriation Act (P.L. 101-601; 104 Stat. 3042) of November 1990 and National Historic Preservation Act, Section 110(a)(2)(E)(iii) (P.L. 102-575, 106 Stat. 4753) of October 1992.

COORDINATION

Two scoping meetings were conducted. One meeting was a non-public meeting with representatives of the U.S. Fish and Wildlife Service (Service), Middle Rio Grande Conservancy District, Save Our Bosque Task Force (SOBTF) and Socorro County Fire Marshal at the office of SOBTF on June 5, 2007. The other was a public meeting held at Reclamation's Field Division Office located in Socorro on June 6, 2007, from 6:30 to 8:00 p.m. The purpose of both of these meetings was to find out what issues there may be as a result of the proposed action.

One field trip was conducted with representatives of the Reclamation engineering division, Corps of Engineers, and the Service on September 14, 2007 at the project site to discuss the mitigation plan.

CONCLUSION

In accordance with the National Environmental Policy Act of 1969 (NEPA), as amended, and based on the analysis in the EA, Reclamation has determined that implementing the proposed action would not result in a significant impact on the human environment and does not require the preparation of an environmental impact statement.

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Acronyms and Abbreviations

ACOE	U.S. Army Corps of Engineers
AQCR	Air Quality Control Region
BMPs	Best Management Practices
CFR	Code of Federal Regulations
CWA	Clean Water Act
EA	Environmental Assessment
EPA	Environmental Protection Agency
EIS	Environmental Impact Statement
ESA	Endangered Species Act
ITAs	Indian Trust Assets
LFCC	Low Flow Conveyance Channel
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMED	New Mexico Environment Department
NMDGF	New Mexico Department of Game and Fish
NMRPTC	New Mexico Rare Plant Technical Council
MRGCD	Middle Rio Grande Conservancy District
NPDES	National Pollution Discharge Elimination System
O & M	Operations and Maintenance
RM	River Mile
SHPO	State Historic Preservation Officer
SOBTF	Save Our Bosque Task Force
Service	U.S. Fish and Wildlife Service
U.S.C.	United States Code
USGS	United States Geological Survey

Chapter 1 PURPOSE AND NEED FOR ACTION

1.1. Introduction:

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

There is one location (see Figure 1) called River Mile (RM) 111 priority site (Project) located on the west side of the Rio Grande (see map below), approximately 5.2 miles downstream of the San Acacia Diversion Dam. The Federal action addressed in this Environmental Assessment (EA) would be the execution of Low Flow Conveyance Channel (LFCC) and a non-engineered levee (levee) relocation activities at this priority site by Reclamation. This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) [42 United States Code (U.S.C.) 4321, et seq.].

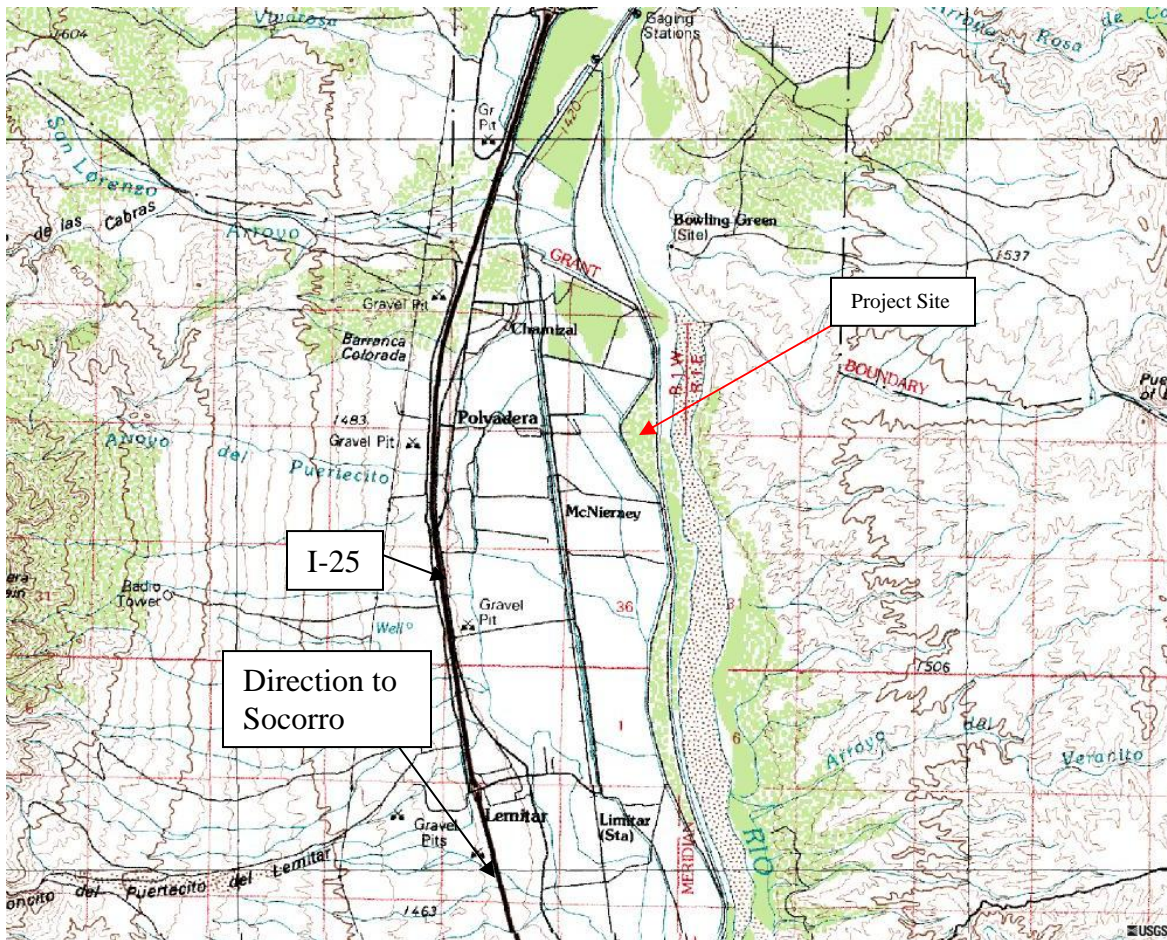


Figure 1, General location of the project

1.2. Proposed Action

At RM 111, Reclamation proposes to relocate the LFCC and the associated levee to the west to allow the river more freedom to move within its historic floodplain. A similar action was accomplished at the RM 114 and 113 priority sites, and is often referred to as the RM 114 to 113 levee setback. The planned maintenance action at the RM 111 will be referred to as the RM 111 Priority Site Project (Project).

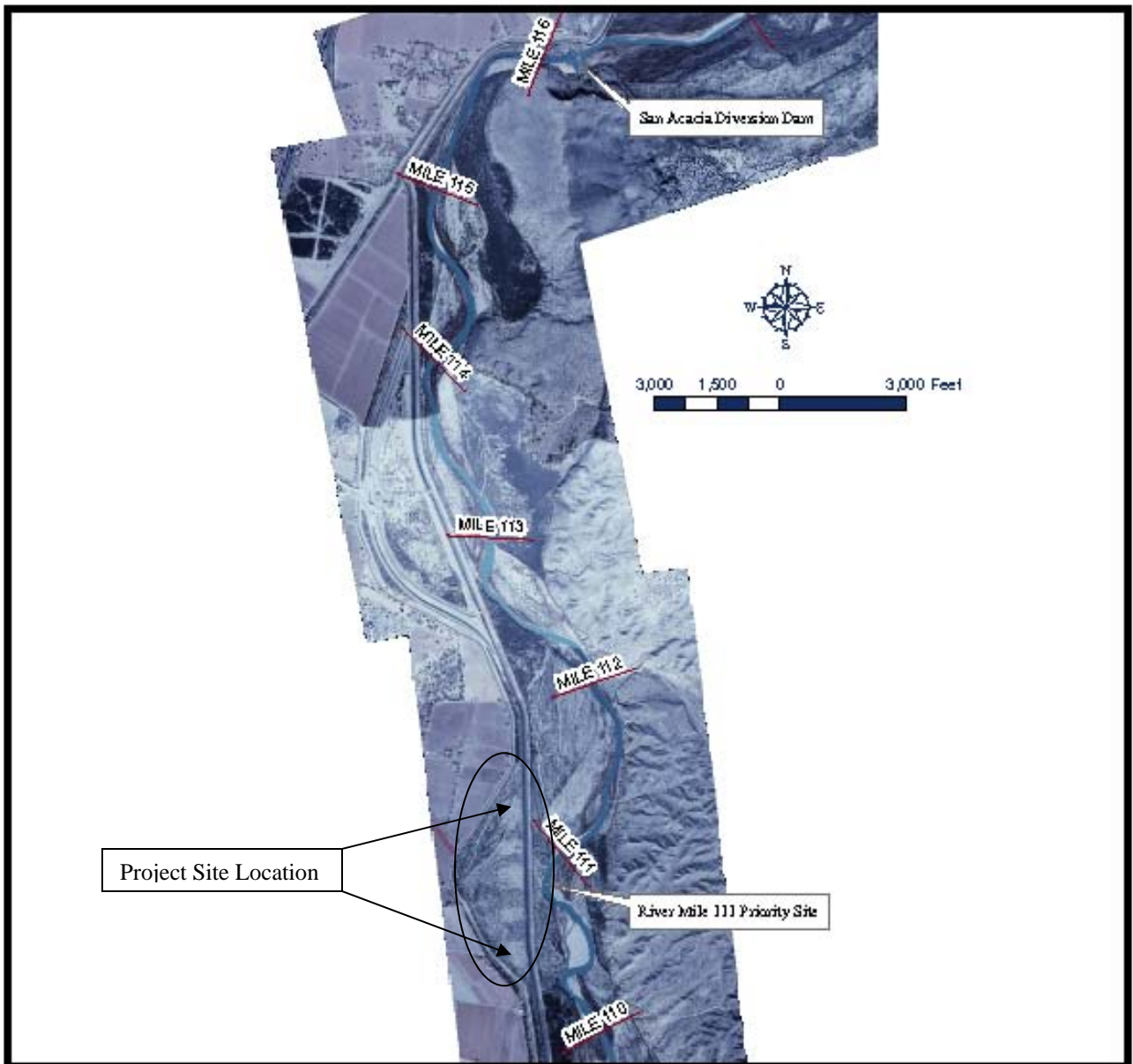


Figure 2, Location of the Project and priority site 111

1.3. Need for the Action

Geomorphic investigations have been completed for this reach and specifically for the RM 111 priority site (Massong, 2005). The Project is located at an actively migrating bend in the river. The concern is the proximity of the river channel to the LFCC and the rate at which this distance has been decreasing with sustained flood flows. Therefore, potential damage to the LFCC could occur unless a solution to the problem is implemented.

1.4. Purpose of the Action

In order to fulfill the need (described in section 1.3) for the action, Reclamation proposes to relocate the LFCC and the levee to the west. This action would provide protection to the LFCC from potential damage from the westward migration of the Rio Grande. Chapter 2 provides a detailed description of the proposed action.

1.5. Relevant Statutes, Regulations, and other Plans

The proposed action would be required to conform to the provisions of following regulations and associated federal and state agencies:

- 1.5.1.** Section 7 of the Endangered Species Act (ESA) administered by the U.S. Fish and Wildlife Service (Service).
- 1.5.2.** Section 106 of the National Historic Preservation Act (NHPA) administered by the New Mexico State Historic Preservation Officer (SHPO).
- 1.5.3.** Section 401 Certification of the Clean Water Act (CWA) administered by the New Mexico Environment Department Surface Water Quality Bureau (NMEDSWQB).
- 1.5.4.** Section 404 of the CWA administered by the Corps of Engineers.
- 1.5.5.** Section 402 of the CWA administered by the Environmental Protection Agency (EPA).
- 1.5.6.** Programmatic Agreement with the New Mexico State Historic Officer (NMSHPO).

1.6. Issues, Public Scoping

Public scoping, for the purpose of defining the issues regarding the implementation of the proposed action, included the following:

- 1.6.1.** Two scoping meetings were conducted. One meeting was a non-public meeting with representatives of the U.S. Fish and Wildlife Service (Service), Middle Rio Grande Conservancy District, Save Our Bosque Task Force (SOBTF) and Socorro County Fire Marshal at the office of SOBTF on June 5, 2007. The other was a public meeting held at Reclamation's Field Division Office located in Socorro on June 6, 2007, from 6:30 to 8:00 p.m. The purpose of both of these meetings was to find out what issues there may be as a result of the proposed action.

- 1.6.2. One field trip was conducted with representatives of the Reclamation engineering division, Corps of Engineers, and the Service on September 14, 2007 at the Project site to discuss the mitigation plan.

The following are a list of issues that have been identified:

- 1.6.2.1. Enhancement features of the Project for the Rio Grande Silvery Minnow proposed in a mitigation plan required by the Corps of Engineers.
- 1.6.2.2. Removal of Cottonwood and other native tree species.
- 1.6.2.3. Cultural Resource features of the LFCC.
- 1.6.2.4. Dust and noise effects to private land owners from construction activities to adjacent private land owner horse breeding operations.
- 1.6.2.5. Riparian zones within the LFCC that have all three indicators of wetlands, including hydric soils, hydrophytic vegetation, and wetland hydrology.
- 1.6.2.6. The affect on water resources as a result of realigning the LFCC and levee.

Chapter 2 ALTERNATIVES

2.1. Introduction

This chapter will be devoted to describing and comparing the alternatives including a summary of environmental consequences. The chapter has four sections as follows:

- 2.1.1. Description of Alternatives
- 2.1.2. Process Used to Consider, Select, and Eliminate Alternatives
- 2.1.3. Discussion of Proposed Alternative
- 2.1.4. Comparison of Alternatives, their Predicted Effects and Project Objectives (see page 21).

2.2. Description of Alternatives

2.2.1. Description of the No Action Alternative

If this action were selected, the priority site would continue to erode the west bank and eventually damage the Levee and possibly allow an avulsion into the LFCC.

2.2.2. Description of the Proposed Alternative

Realign the LFCC and the Levee to the west. See the discussion of the proposed alternative at section 2.4.

2.3. Process Used to Consider, Select, and Eliminate Alternatives

During the alternative selection process, four basic alternatives were analyzed, Levee and LFCC setback, Riprap Revetment, River Realignment, and no action. However, for the following reasons, the Levee and LFCC setback was selected over the other alternatives which could not provide the same benefits even though the overall cost was much the same:

1. A longer life span of 30 or more years.
2. No use of riprap along the Rio Grande.
3. The Project would not change the behavior of the river.
4. Low maintenance.
5. Allow the river to meander naturally.
6. In the long run, create habitat for the RGSM and for the Southwestern Willow Flycatcher (SWFC).

2.4. Discussion of Proposed Alternative

Proposed sequence of actions at the Project would include the following, with modification of actions depending upon construction operation conditions:

- Access to the project site
- Removal of Vegetation and Topsoil
- LFCC Fish Barrier
- Existing LFCC mowing & Riprap Salvage
- Construction Operations
- Filling the Existing LFCC
- Mitigation Plan Including Vegetation Reseeding
- Post construction activities

Access to the Project Site

Throughout the construction activities, routes of entry to the project site may include the San Lorenzo Arroyo road, the LFCC O&M roads, or the road through San Acacia. Prior to construction, warning signs would be placed along the LFCC operation and maintenance roads instructing the general public not to enter due to heavy equipment and construction activities.

Removal of Vegetation and Topsoil

All vegetation (including cottonwood trees, other native vegetation, and non-native salt cedars) and topsoil would be removed within the proposed new alignment of the LFCC and levee. However, a minimum of topsoil would be removed from the stockpile and staging areas and replaced at the end of the Project. In addition, vegetation would be removed as needed (some may not be removed) from the proposed staging and stockpile sites. Some mulching of non-native vegetation would occur and a majority of the cottonwood trees removed would be utilized as part of the mitigation plan (see mitigation plan on page 10).

LFCC Fish Barrier

The Lemitar radial gate structure located at station 1626+00 in the LFCC would be utilized as a fish barrier. The radial gates would be closed during the entire duration of the construction operations. Reclamation has previously surveyed the reach for the potential presence of RGSM below the proposed construction area to the radial gates.

Existing LFCC Riprap Salvage

Salvaging of riprap would consist of removing existing riprap from the slopes of the existing LFCC during the construction period. The riprap would be stockpiled for later use when the rock would be placed on the slopes of the newly constructed LFCC.

Additional riprap salvage would occur when all the riprap grade control structures would be removed downstream to the Lemitar radial gate. The riprap would also be stockpiled.

Construction Operations

The proposed alternative at this site involves realigning the existing LFCC from A to B in Figure 3, a total of 5,500 feet. The new LFCC alignment would be constructed to the west of the existing LFCC alignment. The new LFCC alignment would be approximately 6,200 feet in length and would accommodate space for two permanent riprap storage areas (see #6 & 7 of Figure 3). A typical cross section of the Project is shown in Figure 4 on page 8.

The realigned LFCC would be constructed for a 2,000 cfs flow. The bottom width of the LFCC would be $30\pm$ feet and would have 2:1 side slopes. New 6-inch nominal riprap protection would be provided on the LFCC slopes up to a height of 6.5 feet above the bottom of the LFCC channel at a minimum thickness of 11 inches. This riprap height provides a $1\pm$ foot freeboard at a flow of 500 cfs. Salvaged 6-inch riprap from the abandoned section of the LFCC may be used to protect the realigned LFCC slopes above the new riprap to provide erosion control from rainfall events. Salvaged or new 6-inch riprap may also be used to stabilize the toe of the new LFCC location during excavation.

Access roads for O&M would be located on both sides of the LFCC and would be a minimum of 24.0 feet wide at the top. The top surface would be a compacted road base material having a minimum thickness of 6 inches. During construction, if the original ground surface is found to be undesirable for the O&M access roads the soil may be reconditioned or removed and replaced with suitable fill. Where this occurs the material would be placed in lifts and compacted by construction equipment prior to the placement of the road base.

A levee would be constructed to the east of the east O&M access road along the entire length of the new levee setback. The levee would be offset from the O&M access road to allow the placement of a ditch to collect runoff from rainfall events. The levee would be constructed from material excavated from the new alignment of the LFCC. It is estimated that the levee height would range from 10-20 feet high as measured from the original ground surface. The spoil embankment would be constructed with a top width of 24 feet, 2:1 or 3:1 (H:V) side slopes on the west depending upon construction conditions, and 3:1 (H:V) side slopes on the east.

Additional features such as drainage ditches, corrugated metal pipe (CMP) drainage pipes, gabion basket protection at drainage outlets, and spoil embankment access ramps would be placed as needed along the levee setback alignment. All access ramps used temporarily for construction would be removed at the completion of the project.

Drainage ditches would be constructed on both O&M access roads away from the LFCC. The ditches would be sloped to the CMP drainage pipes and would be constructed to fit within the areas designated for disturbance. The average depth of both drainage ditches would range from 2 to 3 feet depending on field conditions. The CMP drainage pipes would extend from the drainage ditch into the LFCC channel. Gabion mattresses would be filled with 6-inch nominal riprap where the CMP pipe daylighted into the LFCC channel for erosion control.

Figure 3, RM 111 priority site area

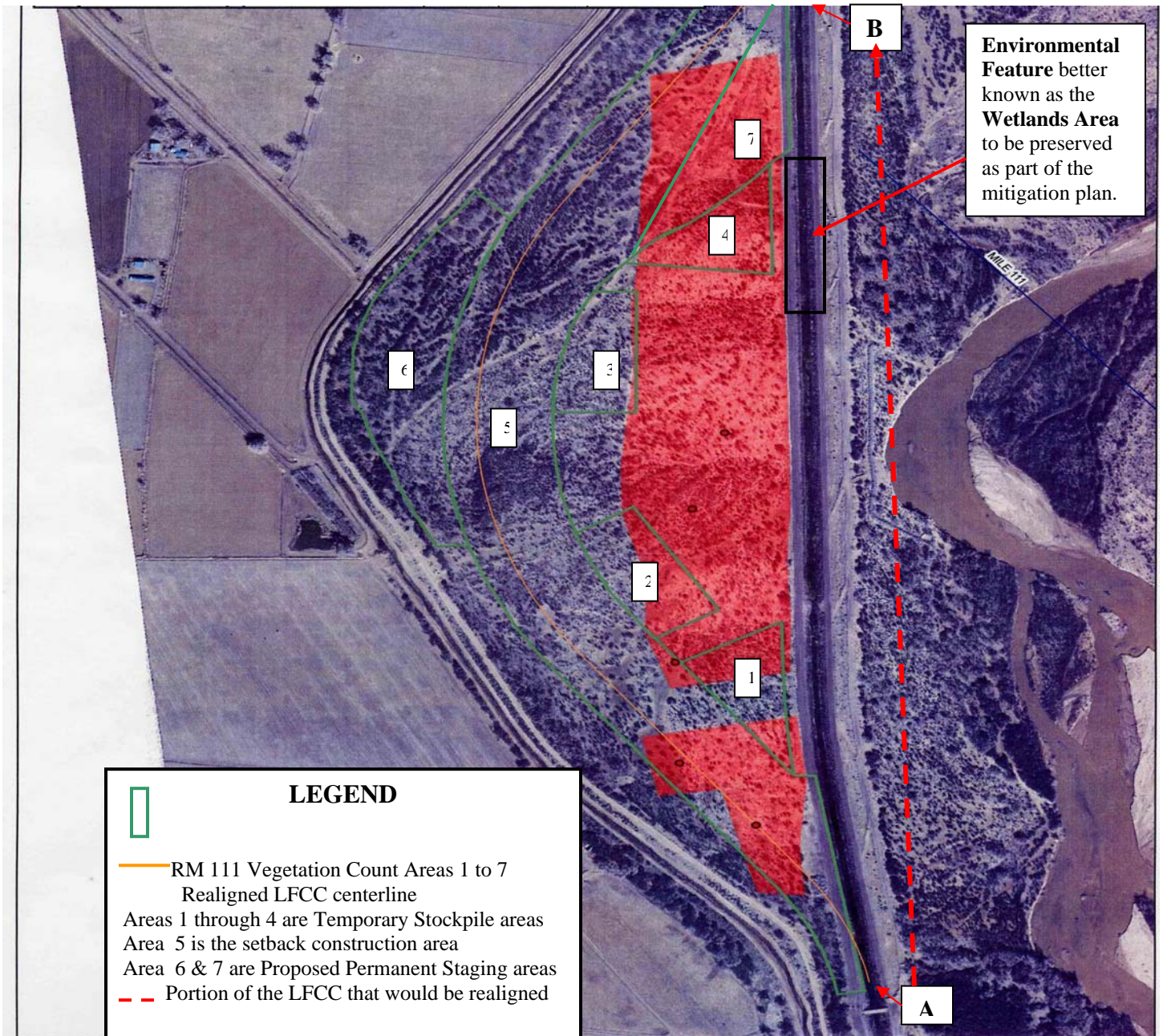
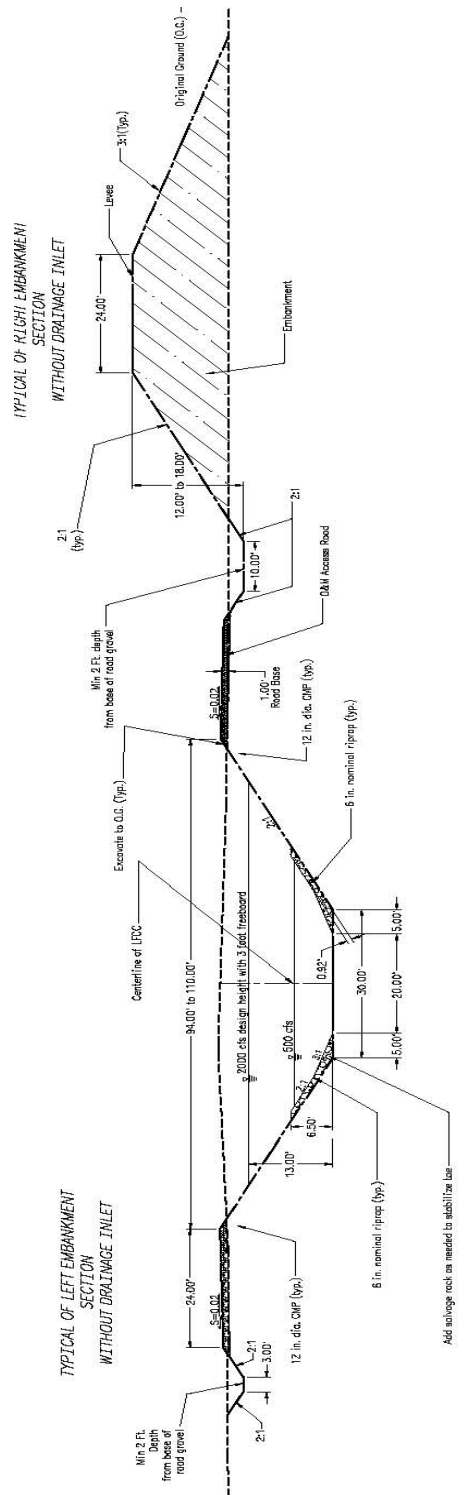


Figure 4. Typical RM 111 levee setback project cross section



To facilitate the crossing of the existing LFCC during construction, a maximum of three temporary LFCC crossings may be installed. Construction conditions would determine the number of these crossings constructed on the realigned LFCC to allow construction equipment access to both sides of the channel.

All crossings would have a CMP (36-inch minimum diameter) to allow water to flow in the existing and realigned LFCC. A rock embankment may be located upstream of the crossings and would pond the water in the channel to a depth required to allow for pumping activities. Riprap may be placed on the upstream and downstream exposed slopes for erosion control during construction activities. At the conclusion of the project the riprap would be removed.

Waste material from the Red Canyon Mine would be imported and spread to provide pads for the temporary stockpile areas, the permanent staging areas, and haul roads. The total area would not exceed the acreage designated in Table 1. At the end of construction the waste material from the temporary stockpile areas and haul roads would be removed to the extent possible and placed on the realigned LFCC side slopes or placed on the east side slopes of the new levee until all waste material is utilized. The disturbed areas will then be rehabilitated by loosening the compacted soil and reseeded.

Table 1. Construction Areas	
Temporary Stockpile Areas:	15 acres
Permanent Staging Areas:	18 acres
Temporary Haul Routes:	0.5 acres
Maximum Disturbed Acreage:	150 acres
Maximum Acreage that may be reseeded:	65 acres
Maximum Extent of Potential Impacted Acreage:	180 acres

Filling the Existing LFCC

Once the new LFCC alignment on the Project has been completed, a berm separating the new alignment from the old would be removed. A new berm would be placed across the existing LFCC and flows would be directed into the new channel. Filling of the old LFCC would occur starting at the upstream berm and proceed in a downstream direction. Fill material would come from the old levee and moved using construction equipment from the bank outward in a downstream direction. Any construction crossings constructed during the Project operations would be removed with the possibility that one crossing may be temporarily left in place or relocated further downstream to allow for delivery of water for construction activities. Backfill placed in the abandoned LFCC would vary in height and typically have finished grades no greater than 50:1.

During the backfill operations, approximately 1000 feet of the existing LFCC (Environmental feature, Figure 3) would only be filled in according to the mitigation plan.

Mitigation Plan Including Vegetation Re-seeding (see Figures 5 and 6)

A majority of cottonwood trees, other native vegetation, and non-native salt cedars would be removed from the proposed new alignment, stockpile, and staging areas. In addition, approximately 4 to 6 acres below the ordinary high water mark of riparian wetland area in the LFCC would be removed.

The following is a list of opportunities to mitigate the loss of native vegetation and riparian wetlands that would be implemented during and after the conclusion of the project:

1. Some Cottonwood trees removed (including trees with root wads) would be utilized under the direction of the Albuquerque Area Office fishery biologist for Silvery Minnow habitat near the project site.

Approximately five to ten root wads from removed Cottonwood Trees may be utilized along the bank of RM-111 priority site. These trees would be tagged and monitored as they self launch into the river to see where they go. Similar studies have shown that this method may benefit the RGSM (Dudley, 2007).

Stock piling some root wads from Cottonwood Trees could be utilized on other river maintenance and restoration projects in the future.

2. Some of the Cottonwood trees removed may be utilized as snags near the project site for wildlife habitat such as raptor perches etc. The current location of the old LFCC that would be filled in could be used for placement of some removed Cottonwood Trees as snags for wildlife perches.
3. Some trees cut down may be used randomly as brush piles for wildlife habitat on the Project site other than in the Rio Grande.

Woody debris piles would also be placed at point bars and islands of the Rio Grande in the vicinity of the project for the RGSM to be utilized to improve minnow habitat. A fishery biologist would be consulted for appropriate locations for the use of brush piles and Cottonwood snags. However, placement of the woody piles and root wades would only be accomplished in dry conditions.

4. A maximum of up to 65 acres of temporary stockpile areas, temporary haul roads, and permanent staging areas would be reseeded at the end of the project. At that time, a seed mix of native grasses would be formulated prior to application to areas that would require reseeded. Depending upon availability, the species may consist of blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Indian ricegrass (*Achnatherum hymenoides*), streambank wheatgrass (*Elymus lanceolatus*), galleta grass (*Pleuraphis jamesii*), alkali sacaton (*Sporobolus airoides*), sheep fescue (*Festuca ovina*), and little bluestem (*Schizachyrium scoparium*).

- 6200 feet of new potential riparian wetlands would be created to replace 5500 feet of existing riparian wetlands along the LFCC. However, 1000 feet of the existing LFCC would be preserved with already existing Cottonwood Tree saplings, Coyote Willow, and other native riparian vegetation (see location of the Environmental Feature in Figure 5).

By providing an opportunity for the river to migrate to the west, it is expected that approximately up to 83 acres of potential new riparian habitat may be created as a result of the Project. According to Geomorphic investigations (Massong, Bauer, Nemeth, 2000; Massong, 2005) it may take approximately 20 to 30 years for this to be created naturally.

FIGURE 5

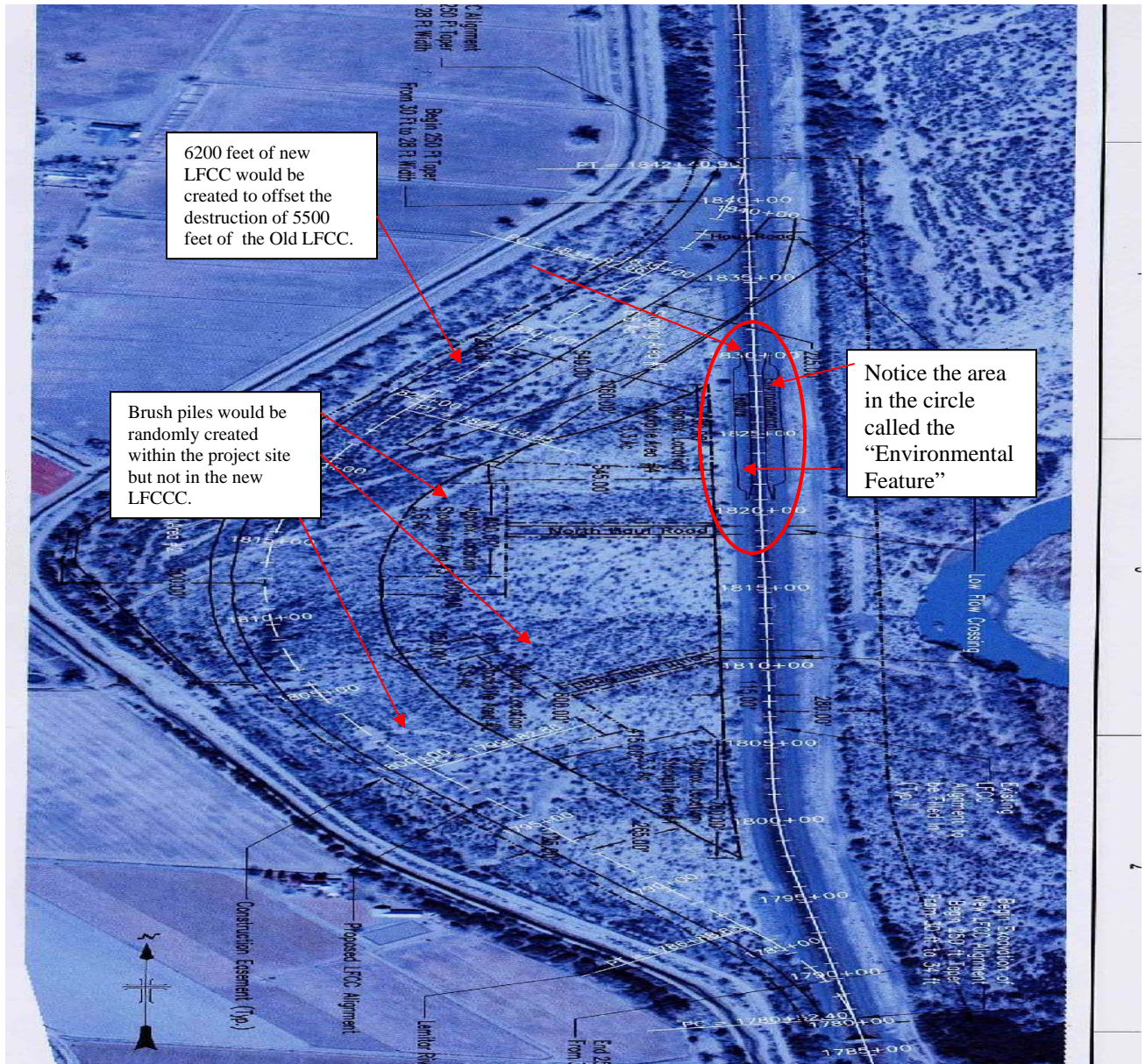
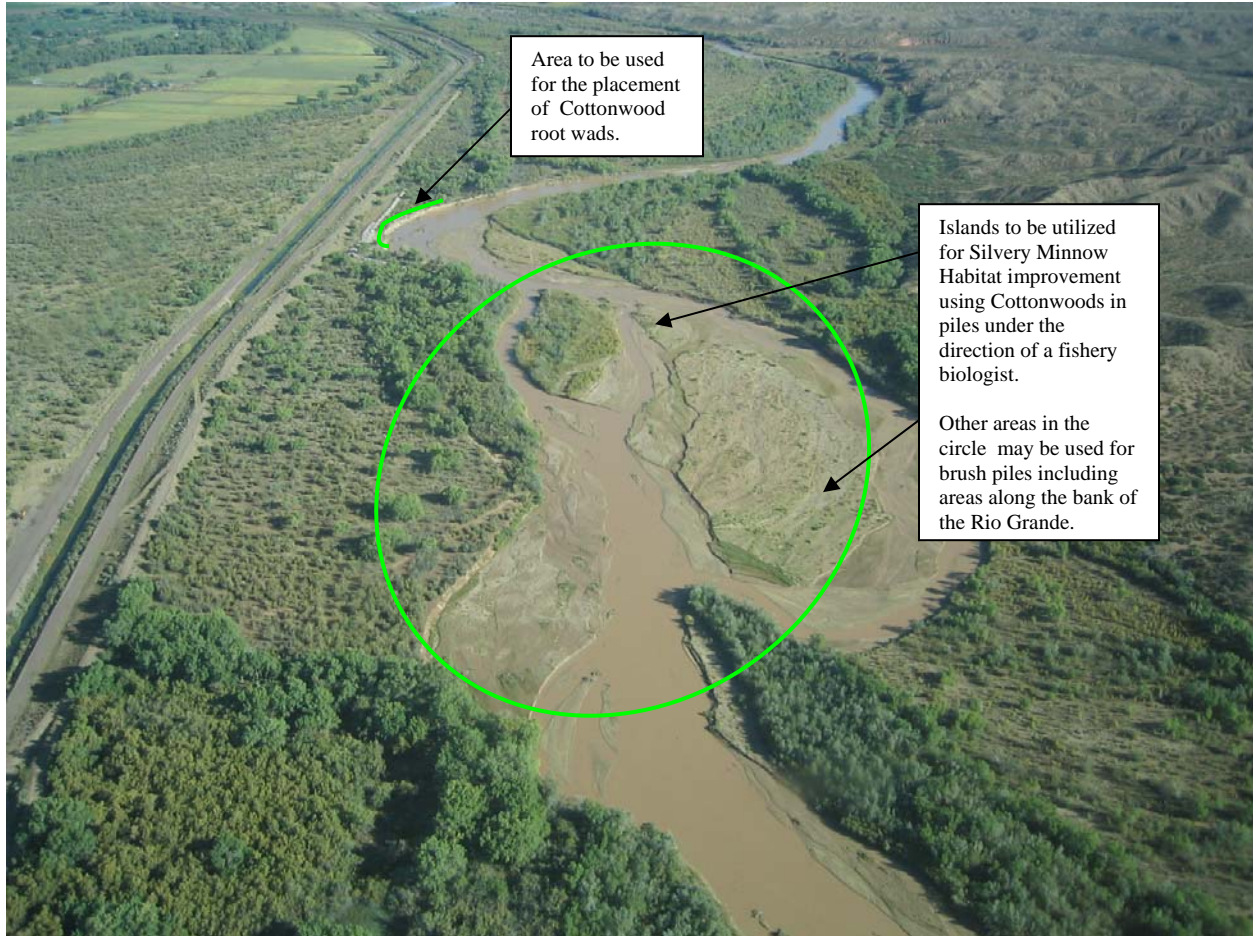


FIGURE 6



Post Construction Activities

- Monitor the mitigation plan for 5 years in accordance with the commitments in the 404 permit.
- Reseed vegetation that may have failed to survive. Establishment of reseeded vegetation should survive so that the success rate would provide for remediation equal to or better than the original and surrounding vegetation composition for native species. Therefore, replanting vegetation would depend upon the survival rate of the vegetation as compared to the areas immediately surrounding the areas replanted.
- On going maintenance activities after construction would be performed on roads, side slopes of the LFCC, levee, and would include such activities as mowing vegetation, and erosion control.

2.5. Comparison of Alternatives their Predict Effects and Project Objectives

Reasonable Alternatives	Affected Resources	Predicted Achievement of objectives in section 1.4 to fulfill the need.	Predicted Impacts of Alternatives (See Issues section 1.6)
No Action A	Vegetation	None	None
	Wetlands	None	None
	Water Resources	None	Potential avulsion of the river channel into the LFCC
	Wildlife including Threatened and Endangered Species	None	None
	Noxious Weeds	None	None
	Socioeconomic	None	None
	Environmental Justice	None	None
	Indian Trust Assets	None	None
	Cultural Resources	None	None
Air Quality and Noise	None	None	
Proposed Alternative For River Mile 111	Affected Resources	Predicted Achievement of objectives in section 1.4 to fulfill the need.	Predicted Impacts of Alternatives (See Issues section 1.6)
	Vegetation	Yes	Removal of native vegetation including Cottonwood trees and willows
	Wetlands	Yes	Wetlands in existing LFCC would be destroyed. New wetlands would be created to compensate.
	Water Resources	Yes	Potential impact to the LFCC Delivery of water
	Wildlife including Threatened and Endangered Species	Yes	Positive impact to create nursery habitat for the silvery minnow and habitat for other wildlife species.
	Noxious Weeds	Yes	Need to be controlled
	Environmental Justice	N/A	None
	Indian Trust Assets	N/A	None
	Cultural Resources	N/A	None
	Air Quality and Noise	Yes	During construction only

Chapter 3 AFFECTED ENVIRONMENT

3.1 Introduction

The relevant resources described in this chapter are those that would be affected by the alternatives if they were implemented. Only resources that may be affected or impacted are described and only to the extent necessary to understand anticipated impacts. The effects (impacts or issues) to these resources created by the alternatives if implemented are discussed in Chapter 4.

3.2 Description of Relevant Issues and Resources (See Issues in Section 1.6)

3.2.1 Vegetation

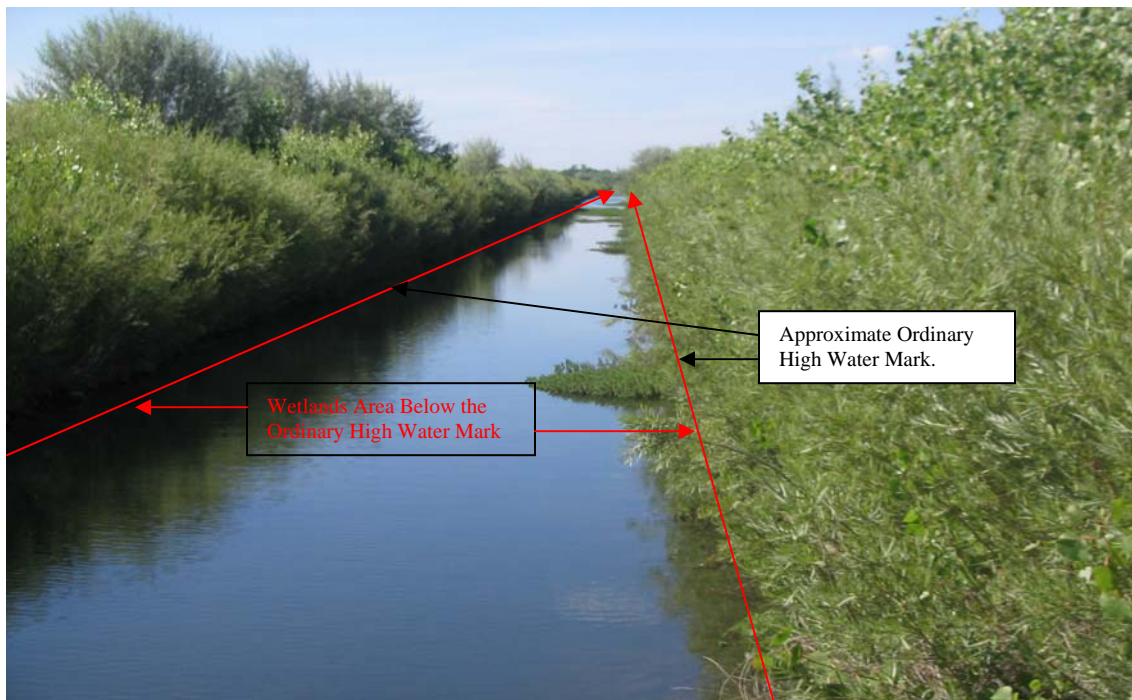
Vegetation at the project area is dominated by non-native species including saltcedar (*Tamarix* spp.) and Russian olive (*Elaeagnus angustifolia*), and other ground-layer weedy species. Other existing vegetation alliances that are found within the project area include the Cottonwood / Coyote Willow Alliance, the Cottonwood-Gooding Willow Alliance, the Cottonwood / New Mexico Olive Alliance, and the Cottonwood-Russian Olive / Saltcedar Alliance.

3.2.2 Wetlands

The area below the ordinary high water mark in LFCC is considered waters of the United States including riparian wetlands along the bank at the ordinary high water mark (see Figure 7). For a site to be considered a wetland, wet conditions (wetland hydrology), wet soils (hydric soils), and wet-loving plants must be present (Watercourse, 1995; and New Mexico Environment Department, 1997).

The LFCC has riparian wetlands. Notice in Figure 7, up the slope of the LFCC from the water's edge Coyote Willow, Cottonwood saplings, Russian Olive, Salt Cedar, and various forbs and grasses are riparian species and some are wet-loving plants near the ordinary high water mark.

Figure 7. Riparian wetlands along the bank at the ordinary high water mark.



3.2.3 Water Resources

The LFCC was created by Reclamation as part of a plan to increase deliveries of water to Elephant Butte. As a result, New Mexico was able to meet delivery requirements for the Rio Grande Compact in the 1960s and 1970s. Due to complications from channel aggradation, LFCC operations were suspended in 1985. However, the purpose of the LFCC remains to deliver water to Elephant Butte.

The LFCC is also used for pumping water at various location downstream of Socorro into the Rio Grande. This action presently provides water at critical times of the year for the RGSM critical habitat. In addition, the Southwestern Willow Flycatcher core population is associated with habitat that receives water from the LFCC in the upper end of Elephant Butte reservoir.

3.2.4 Wildlife including Threatened and Endangered Species

Wildlife species:

Coyote (*Canis latrans*), raccoon (*Procyon lotor*), bobcat (*Lynx rufus*), skunk (*Mephitis mephitis*), beaver (*Castor canadensis*), and various species of mice, rats, bats, rabbits, and other small mammals are common to the area. 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 and Endangered Species:

The following describes relevant T&E species that may be found at the locations of the proposed alternative.

Rio Grande Silvery Minnow

The Rio Grande silvery minnow (*Hybognathus amarus*) (minnow) was listed as a federally-endangered species by the U.S. Fish and Wildlife Service (Service) in July 1994 (U.S. Fish and Wildlife Service 1994a). Critical habitat was designated as the reach of the Rio Grande from Cochiti Dam to the upper pool for Elephant Butte Reservoir, a distance of approximately 163 miles (U.S. Fish and Wildlife Service 2003a). Surveys in October 2007 found 10 and 46 RGSM at sites on the Rio Grande bracketing the project area (Dudley & Plantania, 2007). No RGSM have been found in the LFCC (Porter et al. 2007).

Dudley and Platania (1997) documented habitat preferences of the minnow. They found that individuals were most commonly collected in shallow water (<40 cm) with low water velocities (<10 cm/second) and small substrate size, primarily silt and sand. Low-velocity habitats, such as backwaters and embayments, provide nursery areas for larvae (Dudley and Platania 1997, Massong et al. 2004), which grow rapidly in these areas. Restoration efforts that increase the availability of these habitat conditions would benefit the minnow. In addition to the quantity of preferred habitat, food availability may be influenced directly by river restoration activities. Minnows are herbivores that eat primarily diatoms, cyanobacteria, and green algae associated with sand or silt substrates in shallow areas of the river channel (Shirey 2004). Habitat created by

the Project would benefit silvery minnow populations and facilitate future re-introduction in the reach.

Southwestern Willow Flycatcher

A final rule was published in the February 27, 1995 Federal Register to list the southwestern U.S. population of the Willow Flycatcher (*Empidonax traillii extimus*) as an endangered species under the ESA with proposed critical habitat. However, the final rule designating critical habitat for the species range-wide did not include the Rio Grande (USFWS 1995) at that time. A proposal to list critical habitat was published October 12, 2004 (USFWS 2004), with a final designation published October 19, 2005 (USFWS 2005). The species occurs in southern California, Arizona, New Mexico, southern portions of Nevada and Utah, western Texas, and possibly southwestern Colorado (USFWS 1995). Arizona, New Mexico, and California account for the greatest number of known Southwestern Willow Flycatcher sites (93%) in this region and 88% of the total known territories located in 2001. Within these states, the largest known population of Willow Flycatcher territories is found along the Gila River drainage while the Rio Grande in Colorado and New Mexico contribute the second largest number of territories to the overall population (Sogge et al. 2002).

Since the initial surveys of the Rio Grande Valley in the 1990s, breeding pairs have been found within the Middle Rio Grande Project area from Elephant Butte Reservoir upstream to the vicinity of Española. Several locations along the Rio Grande have consistently held breeding flycatchers. These areas have one or more Willow Flycatcher pairs that have established a territory in an attempt to breed, with most birds returning annually. In some locations, these local populations appear to be expanding with increased number of territories being detected. Some local populations have remained small (10-15 territories, or fewer) but stable; other sites have become extirpated and no longer contain territorial flycatchers.

In the Middle Rio Grande, surveys for Willow Flycatchers in selected areas occurred because of environmental compliance activities for various projects. Although a systematic survey effort throughout the riparian corridor of the Middle Rio Grande has not occurred, reaches of the river with the most suitable habitat for flycatchers have been surveyed fairly thoroughly. Presence/absence surveys and nest monitoring along selected areas of the Rio Grande have been conducted from 1993 to 2007. With expanded or increased survey efforts during this 15-year period, several sites have been located where flycatcher territories have consistently been established. Once located, most of these core breeding areas have been monitored annually. The most recent surveys in the proposed project area were conducted during the 2007 breeding season.

3.2.5 Noxious Weeds

Populations of State-listed noxious weeds have been observed in the project area during site visits. Most of the species observed are considered Class B and Class C noxious weeds, according to the current State list of noxious weeds as shown in Appendix B. Some control efforts were recently implemented at the project area following a fire in 2003. Saltcedar, Russian olive, and Siberian elm were the species targeted during the control efforts.

3.2.6 Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires that the effects on minority and low-income populations within a project area be given special consideration to determine if the proposed action would result in disproportionate adverse effects to their communities.

According to the most recent data from the U.S. Bureau of Economic Accounts (2005), the annual per capita income for the State of New Mexico in 2003 was \$24,995. 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.

3.2.7 Indian Trust Assets

Indian Trust Assets (ITAs) or resources are defined as legal interests in assets held in trust by the U.S. Government for Native American Indian tribes or individual tribal members. Examples of ITAs are lands, minerals, water rights, other natural resources, money, or claims. An ITA cannot be sold, leased, or otherwise alienated without approval of the Federal government. There are no native American ITAs in the vicinity of the proposed project site.

3.2.8 Cultural Resources

Sections of the LFCC and associated levee would be affected by the proposed action. These structures are eligible for the National Register of Historic Places. In addition, no sacred sites or traditional cultural properties are in the project area.

3.2.9 Air Quality and Noise

The Clean Air Act of 1970, as amended, established National Ambient Air Quality Standards (NAAQS) (40 CFR 1 § 81.332) to protect the public from exposure to dangerous levels of several air pollutants. Socorro County is in Air Quality Control Region (AQCR) 152 – Albuquerque – Mid Rio Grande. The AQCR 152 has been classified as an attainment area for all air pollutants identified in the NAAQS (eCFR 2005). Because of this classification for Socorro County, the proposed project located at RM 111 is not subject to EPA requirements for ambient air monitoring.

Chapter 4 ENVIRONMENTAL CONSEQUENCES

4.1. Introduction

This chapter discusses the predicted achievement of the objectives, effects, and cumulative effects for each alternative in section 2.2 of Chapter 2. Included is a discussion of each alternative's effect on relevant issues summarized in section 1.6 (issues) and resources described in section 3.2.

4.2. Predicted Attainment of Project Objectives for Each Alternative

No Action Alternative

Under the no action alternative, the project objectives would not be attained.

Proposed Action Alternative

The proposed action would be to fulfill the need to protect the LFCC (section 1.3). The proposed action to realign the LFCC and the levee to the west would protect the LFCC from potential damage from the westward migration of the Rio Grande.

4.3. Predicted Effects on Each Relevant Issue and Resources

4.3.1. Native Vegetation

No Action Alternative

Under the no action alternative, existing vegetation, including native and non-native species, would remain in place.

Proposed Action Alternative

In the areas affected by the proposed action (such as staging and stockpile areas, and new LFCC), no more than approximately 500 to 600 native trees (such as Cottonwood trees) would be removed. Cottonwood trees removed would be utilized according to a migration plan in section 2.4, page 9. The following is a list of useful purposes for removal of Cottonwood trees:

- Some Cottonwood trees would be utilized for Silvery Minnow habitat near the project.
- Some of the trees would be used as snags for raptor perches etc.
- Some trees piled randomly near the project site would serve as wildlife habitat.

Some species of willow trees would also be removed, but would regenerate naturally.

Native grass species would be planted to control erosion and to reseed areas denuded as a result of staging areas, stockpile areas, and the new LFCC areas of disturbance.

Secondary and Cumulative Effects

There would be minimal effects to vegetation as a result of the proposed action. Native vegetation such as Cottonwood trees and Willows would return naturally. Since the purpose of the proposed action is to provide an opportunity for the river to migrate westward, additional opportunity for native vegetation to become established would occur. The short-term cumulative effects of construction would be small in the overall regional context and temporary in nature.

4.3.2. Wetlands

No Action Alternative

Under the no action alternative, the existing LFCC and associated riparian wetlands would not be impacted until the Rio Grande breached the spoil embankment east of the channel.

Proposed Action Alternative

5500 feet of the existing LFCC would be filled with spoil material from the existing levee on the east side which would include 4-6 acres of area below the ordinary high water mark. However, 4500 feet of the existing channel would be back-filled completely above the ordinary high water mark. Approximately 1000 feet of vegetation above the ordinary high water mark on the LFCC would be preserved (see Environmental Feature Figure 3). This action, in addition to creating 6200 feet of new LFCC to the west, would compensate for the displacement of a portion of the wetlands in the existing LFCC as a result of the proposed action.

Secondary and Cumulative Effects

There would be minimal effects to wetlands as a result of the proposed action. Existing wetlands would be created in the future as a result of the proposed action. In addition, Cottonwood trees, Coyote Willows, and Willows would be preserved along 1000 feet of existing LFCC. Native vegetation would return naturally. Since the purpose of the proposed action is to provide an opportunity for the river to migrate westward, additional opportunity for native vegetation to become established would occur. The short-term cumulative effects of construction would be small in the overall regional context and temporary in nature.

4.3.3. Water Resources

No Action Alternative

Under the no action alternative, the levee protecting the LFCC would be at risk. The river would continue to migrate westward eventually breaching the levee. If this happens, downstream delivery of water via the river channel and the LFCC would be impaired. Without the protection of the levee, it is likely that the river channel would avulse into the LFCC, causing damage to infrastructure in the LFCC, irrigation facilities, and surrounding private land. If an avulsion occurs, the river channel would likely fill in partially, as would tributaries to the LFCC. This sedimentation would not only hamper irrigation, but would negatively affect the Rio Grande Compact delivery.

Presently the LFCC is utilized to pump water into the Rio Grande to help satisfy the requirements of the 2003 Biological Opinion for the RGSM. LFCC infrastructure damage from a breach would likely impair Reclamation's ability to satisfy those requirements.

Proposed Action Alternative

This alternative would protect the levee, which helps protect the LFCC from westward migration of the river channel. The river would continue to deliver water and sediment to Elephant Butte Reservoir, as would the LFCC continue to deliver water uninterrupted. These water deliveries help meet Rio Grande Compact requirements. In addition, the proposed action would provide the Rio Grande an opportunity to meander naturally.

Secondary and Cumulative Effects

There would be positive effects to water resources as a result of the proposed action. Existing conditions would be altered in the future as a result of the proposed action which would enable the river to migrate westward. Water for irrigation and farm fields would be protected in the future as a result of implementing the proposed action.

4.3.4. Wildlife Including Threatened and Endangered Species

No Action Alternative

Since this alternative would not include any construction activities, a greater potential for breaching of the Levee and the LFCC may occur. The effects to wildlife including threatened and endangered species would be much the same as for the proposed action where the river could migrate further to the west naturally and may potentially create additional wildlife habitat.

Proposed Action Alternative

Wildlife:

To reduce the impact to fish in the LFCC, filling in the Old LFCC would occur from north to south as described in section 2.4. A berm would be placed across the existing LFCC to divert the water into the new channel, gradually reducing flow down the old LFCC. Fish are expected to move downstream as the flow recedes. Seepage under the berm and the groundwater inflow is expected to maintain a minimal flow in the old LFCC as it is being filled in. This construction sequence would push fish downstream ahead of filling in the old LFCC, protecting fish while eliminating handling stress.

Although construction activities may displace existing wildlife away temporarily, most animal species in the project area would be able to return after project 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 these losses over time.

Rio Grande Silvery Minnow

The project would have no effect on the minnow in the LFCC. To insure that this determination is confirmed, the Lemitar radial gate structure located at station 1626+00 in the LFCC would be utilized as a fish barrier. The radial gates would be closed during the entire duration of the

construction operations. Reclamation has previously surveyed this reach for the potential presence of RGSM below the proposed construction area to the radial gates.

The proposed action also includes a mitigation plan that includes placing debris piles under dry conditions in the Rio Grande made of Cottonwood trees removed from the project area. In addition, Cottonwood tree root wades would be placed on the bank near RM 111 priority site that would cascade into the River as the River migrates to the west. The construction of woody debris piles and use of root wades as part of the mitigation plan would occur in an area designated critical habitat for the silvery minnow and is utilized by silvery minnows. In addition, would potentially have beneficial effects. Therefore, we have determined that the proposed action may affect, but is not likely to adversely affect silvery minnows; and may affect, but is not likely to adversely affect silvery minnow critical habitat. A Biological Assessment would be required to be submitted to the U.S. Fish and Wildlife service to obtain concurrence with this conclusion.

Secondary and Cumulative Effects

Secondary effects of the proposed action for the Rio Grande Silvery Minnow include improving habitat quality within the new riparian area created by future westward migration of the river. The proposed action would result in an increase in potential habitat for the species, which may increase the local population abundance.

The cumulative effects to Rio Grande Silvery Minnow should be associated with riparian areas in a dynamic system of constant change. Without this change, the riparian community would decrease in diversity and productivity. Sediment deposition, scouring flows, inundation, base flows, and channel and river realignment are processes that help to maintain and restore the riparian community diversity and potential improvement of minnow habitat.

Southwestern Willow Flycatcher

This project would have no adverse effects to the flycatcher or its critical habitat. Flycatcher surveys in the project area for at least the past 10 years have not detected any resident territorial or nesting birds. Vegetation in the project area is primarily composed of a mix of saltcedar, Russian olive, and cottonwood. Much of this vegetation has been degraded though grazing by livestock (east of the LFCC) and as a result of a goat-grazing study that was recently completed (west of the LFCC). Though the project area is within the bounds of designated flycatcher critical habitat, this location is largely xeric and does not contain the suitable combination of primary constituent elements of flycatcher critical habitat (correct vegetation species composition, density, structure, and proximity to surface water).

Secondary and Cumulative Effects

No adverse secondary and/or cumulative effects are anticipated.

4.3.5. Noxious Weeds

No Action

Under the no action alternative, no ground-disturbing activities would be undertaken. Therefore, there would be no effect on existing noxious weed infestations.

Proposed Action

Whenever land is disturbed, the potential exists for the intrusion and establishment of noxious weeds. The Project would disturb up to 150 acres. To minimize the potential for the continued establishment and spread of State-listed and other noxious weeds, re-vegetation of grass species would be implemented.

In addition to reseeding and planting, the introduction of noxious weed seeds would be minimized by a requirement that all equipment used on the project be pressure washed before arriving and leaving the site.

Secondary and Cumulative Effects

Addressing erosion problems at the Project would also require some ground-disturbing activities. Several acres of ground disturbance would occur at that site. Noxious weed seeds could be imported as part of that activity. Through sound and aggressive revegetation, planning, and ensuring all equipment is pressure washed to prevent weed seed transmission, the opportunity for noxious weed establishment would be minimized. There would be no secondary effects to noxious weeds as a result of the proposed action.

4.3.6. Environmental Justice

No Action

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.

Proposed Action

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

Secondary and Cumulative Effects

There would be no secondary effects concerning environmental justice as a result of the proposed action. Because no effects to the local population, either adverse or beneficial, are anticipated as a result of the proposed action, there would be no cumulative effect.

4.3.7. Indian Trust Assets

No Action

There would be no effects to ITAs.

Proposed Action

No ITAs have been identified that would be affected by the proposed action.

Secondary and Cumulative Effects

There would be no secondary effects as a result of the proposed action. Because no effects to ITAs are anticipated as a result of the proposed action, there would be no cumulative effects.

4.3.8. Cultural Resources**No Action Alternative**

There would be no effects to cultural resources.

Proposed Action Alternative

Sections of the LFCC and associated Levee would be affected by the proposed action. The proposed action would be nearly identical to the action of a previous project two miles upstream of this one at RM 113/114. A determination of effects would be the same for RM 111. These structures are eligible for the National Register of Historic Places. The NMSHPO has concurred (see Appendix A) with Reclamation that the report by Bishoff (2001) does, in fact, serve as mitigation for any adverse effects that may occur as a result of the modification of the LFCC.

In addition, no sacred sites or traditional cultural properties are in the project area. However, if any such sites or properties are identified as a result of the proposed action, then the Section 106 process would be conducted with the NMSHPO.

Secondary and Cumulative Effects

There would be no secondary effects as a result of the proposed action. Because no effects to cultural or archaeological resources or to sacred sites or traditional cultural properties are anticipated as a result of the proposed action, there would be no cumulative effects.

4.3.9. Air Quality and Noise**No Action**

There would be no effects to air quality or noise under the no action alternative.

Proposed Action

Fugitive dust generation from excavating and grading activities in the project area, along with exhaust emissions from heavy equipment and vehicles working on the project, are the only anticipated effects to air quality during construction. These temporary effects would not be expected to be significantly adverse. There would be no effects to air quality following completion of construction activities and re-establishment of vegetation in disturbed areas.

Fugitive dust would be suppressed by spreading water over disturbed areas where heavy equipment is working during dry conditions. One nearby residence has a horse breeding and riding business that could be affected by noise and dust. However, coordination of the construction schedule would be negotiated to mitigate any adverse impact to their business.

Noise from construction activities would exist during the project activities. However, noise from construction would not continue after the project is completed.

Secondary and Cumulative Effects

The effects of the proposed action on air quality and noise would be minor in the context of the local setting and temporary in nature; therefore, there would be no cumulative effects resulting from the combination of the proposed action and other anticipated projects. There would be no secondary effects to air quality and noise as a result of the proposed action.

4.4. Irreversible and Irretrievable Commitment of Resources

Some top soil would be removed from the project site, and would not be replaced in the same location at the end of the project. A small amount of wildlife habitat within the project area would be destroyed but would be replaced with a larger area of habitat as a result of the actions outlined in the mitigation plan in section 2.4. Construction equipment would utilize fuel and lubricants that would be permanently used.

Chapter 5 CONSULTATION AND COORDINATION

Two scoping meetings were conducted. One meeting was with representatives of the U.S. Fish and Wildlife Service (Service), Middle Rio Grande Conservancy District, Save Our Bosque Task Force (SOBTF) and Socorro County Fire Marshal at the office of SOBTF on June 5, 2007.

An additional meeting was held with the public at Reclamation's Field Division Office located in Socorro on June 6, 2007, from 6:30 to 8:00 p.m.

One field trip was conducted with representatives of the Reclamation engineering division, Corps of Engineers, and the Service on September 14, 2007 at the project site to discuss the mitigation plan.

Chapter 6. ENVIRONMENTAL COMMITMENTS

- 6.1.** Construction schedule would be coordinated with a neighboring horse breeding and riding club to avoid adverse impacts to their business.
- 6.2.** All construction debris and waste would be disposed of at an approved landfill facility.
- 6.3.** Best Management Practices would be implemented and utilized to prevent stormwater runoff and water pollution from entering the Rio Grande during construction activities.

- 6.4. The Lemitar radial gate structure located at station 1626+00 in the LFCC would be utilized as a fish barrier. The radial gates would be closed during the entire duration of the construction operations.
- 6.5. During construction, Reclamation would obtain water for dust abatement from drains, canals, and the river (not during the minnow spawning season).
- 6.6. Approximately 1000 feet of the existing LFCC would be preserved to save Cottonwood and Willow species saplings (Identified as the Environmental Feature in Figure 3).
- 6.7. The mitigation plan described in section 2.4 would be implemented during and at the conclusion of construction activities for the project.
- 6.8. Permit conditions listed in the individual 404 and 401 permits are required to be implemented (see Appendix A)
- 6.9. Should evidence of possible scientific, pre-historical, historical, or archeological data be discovered during the course of this action, work shall cease at that location and the Area archaeologist shall be notified by phone immediately, with the location and nature of the findings. Care shall be exercised so as not to disturb or damage artifacts or fossils uncovered during operations, and the proponents shall provide such cooperation and assistance as may be necessary to preserve the findings for removal or other disposition by the Government.

Any person who knows or has reason to know that he or she has inadvertently discovered human remains on Federal or tribal lands, must provide immediate telephone notification of the inadvertent discovery, with written confirmation, to the responsible Federal agency official with respect to Federal lands, and, with respect to tribal lands, to the responsible Indian tribe official. The requirement is prescribed under the Native American Graves Protection and Repatriation Act (P.L. 101-601; 104 Stat. 3042) of November 1990 and National Historic Preservation Act, Section 110(a)(2)(E)(iii) (P.L. 102-575, 106 Stat. 4753) of October 1992.

Chapter 7. LIST OF PREPARERS

NAME	JOB TITLE	EA RESPONSIBILITY	COMMENTS
Robert Maxwell	NEPA team leader for the project	Author of the EA	Consulted with the Pueblo on environmental issues and ITAs
Candy Ford	Realty Specialist	Coordinated all lands and access issues with the Pueblo	
Rudy Bernal	Lead Project Engineer	Supervised the Design of project proposed action	Reviewed and commented on EA
Jonathan AuBuchon	Project Engineer	Designed the project	
Carolyn Donnelly	Project Engineer	Helped design the project	
Rob Doster	Wildlife Biologist (Birds)		Prepared the SW Willow Flycatcher portion of the BA
Michael Porter	Fisheries Biologist	Consulting regarding the Rio Grande Silvery Minnow and the Mitigation Plan	Provided location of the fish barrier as well as surveyed the LFCC.
Nancy Umbriet	NEPA specialist		Reviewed and Commented on EA
Jeff Hanson	Archaeologist	Reviewed cultural resources section EA for accuracy	Provided SHPO letter and comments for EA
Lori Robertson	Environment Division Manager		Reviewed and Commented on EA

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U.S. Bureau of Economic Accounts. 2005. Data obtained from the Bureau of Economic Accounts website at: <http://www.bea.doc.gov/bea/regional/reis/drill.cfm>, September 2005.

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APPENDIX A

Public and Agency Correspondence



DEPARTMENT OF THE ARMY
 ALBUQUERQUE DISTRICT, CORPS OF ENGINEERS
 4101 JEFFERSON PLAZA NE
 ALBUQUERQUE NM 87109-3435

October 26, 2007

Operations Division
 Regulatory Branch

Ms. Connie L. Rupp
 Area Manager
 USBR-Albuquerque Area Office
 555 Broadway Boulevard NE, Suite 100
 Albuquerque, New Mexico 87102-2352

Dear Ms. Rupp:

The Albuquerque District, U.S. Army Corps of Engineers (Corps), received your October 18, 2007, application for a Department of the Army Permit under provisions of Section 404 of the Clean Water Act for the proposed River Mile (RM) 111 Low Flow Conveyance Channel (LFCC) Levee Setback project near Lemitar, Socorro County, New Mexico. Your application has been designated Application No. SPA-2005-00227-ABQ. Please refer to this number in future correspondence.

Your application had been found complete and will be reviewed and processed as expeditiously as possible in accordance with regulations published in the Federal Register on November 13, 1986 (33 CFR 320-330). In general, these regulations require that your project be evaluated with respect to its probable impact on the public interest, including conservation, economics, environmental concerns, historic values, wildlife, and other considerations. A public notice will be issued by this District to all interested persons in your project area. In addition, the District Engineer may hold a public hearing to allow interested parties to express their views and develop pertinent data. Your application will also be reviewed in accordance with guidelines promulgated by the Administrator, Environmental Protection Agency, with respect to types of dredged material and disposal sites. Finally, the New Mexico Environment Department (NMED) must certify that your project complies with the applicable effluent limitations and with State water quality standards prior to our issuing a permit. Your application cover letter indicates that you have forwarded a copy of your application to the NMED for their review and action.

Prior to issuance of a permit, the Corps must evaluate the environmental impacts of the project. To assist us in this

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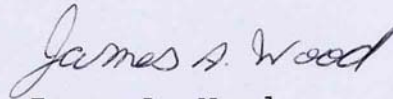
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evaluation, please forward a copy of any environmental analysis that has been prepared for the project. Has an archeological or historical reconnaissance or survey been performed in the project area or on adjacent lands? If so, please indicate who performed the investigation and the approximate date. Also, please provide the names and addresses of the landowners located to the west of the project site. These landowners should be informed of the proposed project through the public notice.

You are reminded that it is unlawful to discharge dredged or fill material within the ordinary high water mark or within wetlands prior to receipt of a permit.

If you have any questions regarding these procedures, please feel free to write or call me at (505) 342-3280 or e-mail at james.a.wood@usace.army.mil.

Sincerely,



James A. Wood
Regulatory Project Manager

Copy Furnished:

Mr. Dave Menzie
NMED-Surface Water Quality Bureau
3082 32nd Street Bypass, Suite D
Silver City, NM 88061



PUBLIC NOTICE

5 Army Corps
Engineers
Albuquerque District
101 Jefferson Plaza, NE
Albuquerque, NM 87109-3435

Permit Application No: SPA-2005-00227-ABQ Date: October 31, 2007
 Suspension Date: November 21, 2007
 Phone: (505) 342-3280
 In Reply Refer to: District Engineer, ATTN: CESPA-OD-R
 spsa-od-r@usaec.army.mil

PERMIT APPLICATION UNDER SECTION 404 OF THE CLEAN WATER ACT (33 USC 1344)

Summary of Proposed Project: We are requesting public comment on the following project before the above suspense date. The application is for a permit to place fill material into the existing low flow conveyance channel (LFCC) near Lemitar, Socorro County, New Mexico. The proposed work will involve the realignment of the LFCC to the west. Details of the proposed project are provided below.

Name of Applicant: Bureau of Reclamation, Albuquerque Area Office, 555 Broadway NE, Suite 100, Albuquerque, New Mexico 87102-2352 (Mr. Robert Maxwell, point of contact, phone (505) 462-3597).

Location: The proposed project is located within the low flow conveyance channel (LFCC), on the west side of the Rio Grande, south of San Acacia, Socorro County, New Mexico. The project is located within the SE1/4 of the SW1/4 of Section 24, Township 1 South, Range 1 West (34.2063° N Latitude, 106.8945° W Longitude).

Description of Work: The proposed River Mile (RM) 111 LFCC Realignment and Levee Setback Project will address a priority site identified by the applicant in the Rio Grande south of the San Acacia Diversion Dam. The Rio Grande at this site is currently eroding the bank on the west side of the river at RM 111. Continued erosion could result in the loss of the levee separating the Rio Grande from the LFCC and could result in damage to the LFCC. The proposed work will involve the filling of approximately 5,500 feet of the existing LFCC and the construction of approximately 6,200 feet of a new LFCC alignment to the west. This new channel will be approximately 6,200 feet in length, 94 feet to 110 feet wide

at the top, 30 feet wide at the bottom, and will have 2H:1V sides slopes. A levee will be constructed along the east side of the new LFCC alignment.

The project will be done in several phases. The first phase of the project will involve the removal of vegetation and topsoil from the route of the new LFCC alignment. The removal of existing trees and other native plants will be minimized, as much as possible, and all removed vegetation shall either be mulched or used to create habitat as part of the mitigation plan for the project. The second phase of the project will involve the construction of a new fish barrier in the LFCC or the use of the existing fish barrier installed during the previous realignment of the LFCC at RM's 114 and 113. This fish barrier will prevent fish, including Rio Grande silvery minnows, from traveling upstream into the construction area. The third phase of the project will involve the mowing the existing LFCC slopes and the removal of the riprap from these slopes. This riprap will be used on the side slopes of the realigned LFCC and/or on the east slope of the new LFCC levee at this site.

Several staging and stockpile areas will be used during the project. Two of these staging and stockpile areas will remain in place after construction as permanent riprap stockpile areas. The fourth phase of the project will involve the construction of the new LFCC alignment. The new LFCC will be constructed for a flow discharge of up to 2,000 cubic feet per second (cfs). Six inch diameter riprap protection will be placed on the slopes of the new LFCC up to a height of 6.5 feet above the bottom of the channel to a minimum thickness of 11 inches. This riprap height will provide a one-foot freeboard at a flow of 500 cfs. Access roads for operational and maintenance purposes will be placed on both sides of the LFCC and will be a minimum of 24 feet wide at the top. A levee will be constructed to the east of the east access road along the entire length of the new LFCC alignment. The levee will be offset from the access road to allow the placement of a ditch to collect runoff. The levee will be constructed from material excavated for the new LFCC alignment. The levee will range from 10-20 feet high, will have a top width of 24 feet, and 2H:1V slopes on the west to 3H:1V slopes on the east.

Additional features such as drainage ditches, drainage pipes, erosion protection at drainage outlets, and levee access ramps will be placed as needed along the new LFCC levee setback alignment. To facilitate the crossing of the existing LFCC during construction, up to three temporary crossings may be installed. All of these crossings will be 24 feet wide and will include a culvert (36-inch diameter minimum) to convey flows.

Once the new LFCC and levee setback project has been completed, flows from the existing LFCC will be directed into the new LFCC alignment. The abandoned portion of the existing LFCC will then be filled using material from the abandoned portion of the adjacent LFCC levee. During the backfill operation, one or more swale features shall be left in the abandoned LFCC. The exact location of these swales shall be determined during construction.

The proposed work will occur in the LFCC. No work will occur in the Rio Grande. The project will involve the placement of between 18,000 to 27,000 cys of permanent fill below the ordinary high water mark of the LFCC and will permanently affect between four to six acres, depending on the amount of fill material which can be placed in the existing LFCC and the number of swales which will be created. The project is expected to begin in January 2008 and to be complete by the end of April 2010.

Purpose and Need: The Bureau of Reclamation (USBR) has authority for maintenance of the Rio Grande between Velarde, New Mexico, and Caballo Reservoir under the Flood Control Acts of 1948 and 1950. Under these authorities, the USBR monitors locations where there is danger of river erosion causing damage to levees, roads, ditches, and other riverside facilities. These locations are referred to by the USBR as "priority sites". One of these priority sites has been identified by the USBR, the applicant, at RM 111. The Rio Grande at this site is eroding the west/right bank. The applicant believes that if this erosion continues, the levee adjacent to the LFCC channel could be breached. If this levee is breached, the LFCC could be substantially damaged. The proposed project has been designed to address this priority site without affecting the Rio Grande.

Mitigation Proposed by the Applicant: The proposed project has been designed to prevent possible damage to the LFCC and its levee. In addition, the applicant has stated that a key project objective is to restore the Rio Grande's active floodplain to a more natural condition by moving the LFCC and levee to the west, thus allowing the river to meander laterally over time and not to be confined by manmade structures. The applicant has developed a mitigation plan to offset the impacts associated with the clearing of native vegetation within the proposed project area. To offset the loss of this vegetation, the applicant has proposed the following measures-a) Some of the cottonwood trees removed during the project, including trunks and root wads, may be used to create Rio Grande silvery minnow habitat in the Rio Grande near the project site; b) Some of the

removed trees may be used to create raptor perches or brush piles for wildlife habitat; c) Some root wads from removed trees may be stockpiled for use in future river maintenance projects; and d) Areas temporarily disturbed during construction, such as temporary stockpile areas, temporary haul roads, and the slopes of the abandoned and filled LFCC, will be revegetated with native grasses and shrubs. In addition, cottonwood and other native woody species will be planted in one or more swales located within the abandoned and filled LFCC.

Plans and Data: Drawings showing the location of the work site and other data are enclosed with this notice. If additional information is desired, it may be obtained from the applicant, or from:

James Wood
Albuquerque District, Corps of Engineers
4101 Jefferson Plaza, NE
Albuquerque, NM 87109-3435
(505) 342-3280

Statement of Findings: As a federal agency, the applicant is responsible for ensuring compliance with Section 106 of the National Historic Preservation Act. The applicant's archeological staff has determined that the proposed project will have no effect on cultural resources. However, it is possible that presently unknown archeological, scientific, prehistoric, or historic data may be inadvertently lost or destroyed by the work accomplished under the requested permit. In the event that cultural resources are found, the New Mexico State Historic Preservation Office will be contacted for advice on the appropriate action to be taken.

The following is a list of endangered (E) and threatened (T) species and/or critical habitat (CH) for Socorro County, New Mexico:

Alamosa Springsnail (*Tryonia alamosae*) - E
Black-Footed Ferret (*Mustela nigripes*) - E
Chiricahua Leopard Frog (*Rana chiricahuensis*) - T
Least Tern (*Sterna antillarum*) - E
Mexican Spotted Owl (*Strix occidentalis lucida*) - T/CH
Northern Aplomado Falcon (*Falco femoralis septentrionalis*) - E
Piping Plover (*Charadrius melodus*) - T/CH
Rio Grande Silvery Minnow (*Hybognathus amarus*) - E/CH
Socorro Isopod (*Thermosphaeroma thermophilus*) - E

Socorro Springsnail (*Pyrgulopsis neomexicana*) - E
Southwestern Willow Flycatcher (*Empidonax traillii extimus*) - E
Pecos Sunflower (*Helianthus paradoxus*) - T

The applicant, as a federal agency, is responsible for complying with Section 7 of the Endangered Species Act. The applicant has determined that the proposed work will have no effect on the above threatened and endangered species or their critical habitat, including the Rio Grande silvery minnow and the southwestern willow flycatcher.

The applicant has applied to the New Mexico Environment Department for certification that this work is in compliance with applicable State water quality standards. The applicant is responsible for obtaining all other required Federal, state, and local authorizations for this work.

In accordance with environmental procedures and documentation required by the National Environmental Policy Act of 1969, an environmental assessment will be prepared for this project. Upon completion, the assessment may be seen at the Albuquerque District Office, U.S. Army Corps of Engineers, at the address given above.

Comment: Any comments concerning this project should be received by the District Engineer no later than **November 21, 2007**. Comments received after the end of the Public Notice comment period will not be considered. However, more time may be given if a request, with a valid reason, is received prior to the suspense date. The Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition, or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed below. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

The decision whether to issue a permit will be based on an evaluation of the probable impact, including cumulative impacts, of the proposed

activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. The evaluation of the impact of this activity will include application of the guidelines promulgated by the Administrator, EPA, under authority of Section 404(b) of the Clean Water Act. All factors relevant to the proposal and the cumulative effects will be considered; among these are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people.

At the request of the Department of Public Safety, Emergency Management Preparedness, State Coordinator, we are sending a copy of this notice to the local flood plain administrator to apprise the administrator of proposed development within their jurisdiction. In accordance with 44 CFR Part 60 (Flood Plain Management Regulations Criteria for Land Management and Use), participating communities are required to review all proposed development to determine if a flood plain development permit is required. The local Flood Plain Administrator is required to perform this review for all proposed development and maintain records of such review. You may contact:

Department of Public Safety
State Floodplain Coordinator
Attn: Mr. Bill Borthwick
email: wborhwick@dps.state.nm.us
Phone: 505-476-9617

If the District Engineer determines that the project complies with the 404(b)(1) guidelines, he will grant the permit unless issuance would be contrary to the public interest.



NEW MEXICO
ENVIRONMENT DEPARTMENT



Surface Water Quality Bureau

BILL RICHARDSON
Governor
DIANE DENISH
Lieutenant Governor

Harold Runnels Building, N2050
1190 South St. Francis Drive (87505)
P.O. Box 26110, Santa Fe, NM 87502
Phone (505) 827-0187 Fax (505) 827-0160
www.nmenv.state.nm.us

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RON CURRY
RECEIVED BOR
SUCROSO AREA OFFICE
ALBUQUERQUE
CITY OF ALBUQUERQUE
Deputy Secretary
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CERTIFIED MAIL 7004 0750 0001

November 16, 2007

Ms. Connie L. Rupp, Area Manager
U.S. Bureau of Reclamation - Albuquerque Area Office
555 Broadway Boulevard NE, Suite 100
Albuquerque, New Mexico 87102-2352

Subject: Clean Water Act Section 401 Water Quality Certification for **NMED SWQB File No. 2007-SC010 (345)**: Rio Grande River Mile 111 Low Flow Conveyance Channel and Levee Setback Project, Socorro County, New Mexico.

Dear Ms. Rupp,

The Surface Water Quality Bureau (SWQB) of the New Mexico Environment Department has examined the application for the project indicated above under Sections 404 and 401 of the federal Clean Water Act. According to the application, this project involves the relocation of the Low Flow Conveyance Channel (LFCC) and west side river levee to allow the river more freedom to move within its historic floodplain. The proposed project is located at river mile 111 about five miles south from San Acacia in Socorro County, New Mexico.

The U.S. Army Corps of Engineers (USACE) will regulate this project under Nationwide Permit 12 for Utility Line Activities (USACE Action No. SPA-2005-00227-ALB). A state Water Quality Certification is required by Section 401 of the federal Clean Water Act to ensure that the project complies with the state Water Quality Standards (State of New Mexico, Standards for Interstate & Intrastate Surface Waters, New Mexico Water Quality Control Commission, 20.6.4 New Mexico Administrative Code (NMAC) amendments through February 16, 2006). A Section 401 Water Quality Certification is also required to comply with General Condition 21 (Water Quality) and General Condition 23 (Regional and Case-By-Case Conditions) of the Nationwide Permits.

The state Water Quality Standards applicable to the project, which are available on the web at <http://www.nmenv.state.nm.us/swqb/Standards/20.6.4NMAC.pdf>, include but are not limited to:

- 20.6.4.8 Antidegradation Policy and Implementation Plan
- 20.6.4.13 General Criteria
- 20.6.4.900 Standards Applicable to Attainable or Designated Uses

- 20.6.4.105 RIO GRANDE BASIN - The main stem of the Rio Grande from the headwaters of Elephant Butte reservoir upstream to Alameda bridge (Corrales bridge) and intermittent water below the perennial reaches of the Rio Puerco that enters the main stem of the Rio Grande.
- A. Designated Uses:
Irrigation, marginal warmwater aquatic life, livestock watering, wildlife habitat and secondary contact
- B. Criteria:
- (1) In any single sample: pH within the range of 6.6 to 9.0 and temperature 32.2°C (90°F) or less. The use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses listed above in Subsection A of this section.
 - (2) The monthly geometric mean of E. coli bacteria 126 cfu/100 mL or less; single sample 410 cfu/100 mL or less (see Subsection B of 20.6.4.14 NMAC).
 - (3) At mean monthly flows above 100 cfs, the monthly average concentrations for: TDS 1,500 mg/L or less, sulfate 500 mg/L or less and chloride 250 mg/L or less [20.6.4.105 NMAC - Rp 20 NMAC 6.1.2105, 10-12-00; A, 05-23-05].

General Criteria in 20.6.4.13 NMAC for bottom deposits and suspended or settleable solids; floating solids; oil and grease; toxic pollutants; temperature; and turbidity are applicable to the discharge of dredge or fill material.

401 Water Quality Certification with Conditions:

Pursuant to Section 401 of the Clean Water Act and 40 Code of Federal Regulations Part 121, the SWQB hereby issues a conditional Section 401 Water Quality Certification for USACE Action No. SPA-2005-00227-ELP: Rio Grande River Mile 111 Low Flow Conveyance Channel and Levee Setback Project. This certification is subject to conditions to reasonably ensure that the activity is consistent with state law, will be conducted in a manner that will not violate applicable state Water Quality Standards, and implements the Water Quality Management Plan, including Total Maximum Daily Loads (TMDLs), the Continuing Planning Process, and Antidegradation Policy Implementation Plan. **Therefore, this Certification is not valid unless the following conditions are adhered to:**

1. Erosion control measures for all portions of the project area that drain to or would have runoff toward surface water must be properly selected, installed, inspected, repaired, and maintained. Erosion and sediment control structures (e.g., silt fences, sediment basins, etc.) must be inspected after significant storm events and repaired as necessary. Sediment must be removed from erosion control structures when the sediment reaches one-half the height of the structure or wet storage volume is reduced by one-half.
2. Fuel, oil, hydraulic fluid, lubricants, and other petrochemicals must not be stored within the 100-year floodplain and must have a secondary containment system to prevent spills. Appropriate spill clean-up materials such as booms and absorbent pads must be available on-site at all times during construction.
3. All heavy equipment used in the project area must be pressure washed and/or steam cleaned before the start of the project and inspected daily for leaks. A written log of inspections and maintenance must be completed. Leaking equipment must not be used in or near surface water. Refuel equipment at least 100 feet from surface water.
4. Avoid working within the channel during spring runoff season or summer thunderstorm flows. Local weather forecasts must be monitored to avoid working in high water. Releases from dams must be incorporated into the work schedule to avoid working in high water. Work in the stream channel should be limited to periods of no flow when practicable, and must be limited to periods of low flow.
5. Temporary crossings must be restricted to a single location and perpendicular to and at a narrow point of the channel to minimize disturbance. Heavy equipment must not be parked within the stream channel.

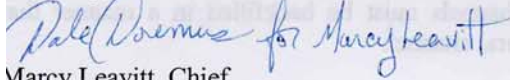
A written log of inspections and maintenance must be completed. All operators of such equipment must have documented training regarding the use of any special equipment as well as site-specific awareness relevant to environmental spills.

6. Flowing water must be temporarily diverted around the work area, but remain within the existing channel to minimize erosion and turbidity and to provide for aquatic life movement. Diversion structures must be non-erodible, such as sand bags, water bladders, concrete barriers, or channel lined with geotextile or plastic sheeting. Dirt cofferdams are not acceptable diversion structures. Diversion structures must be capable of carrying anticipated stream flows during the construction period. Fish passage must be maintained at all times. Fish that become stranded in the dewatered channel must be immediately captured and returned to the active channel without further harm. All man-made materials must be removed from the diversion channel and water returned to the original channel in a manner that avoids or minimizes turbidity. Temporary diversion channels must be backfilled in a manner that prevents erosion and diversion of the stream from its natural channel.
7. All asphalt, concrete, and other construction materials must be properly handled and contained to prevent releases to surface water. Poured concrete must be fully contained in mortar-tight forms and/or placed behind cofferdams to prevent releases to surface water or ground water. Appropriate measures must be used to prevent wastewater from concrete batching, vehicle wash-down, or aggregate processing entering the watercourse. Dumping of waste materials near watercourses is strictly prohibited.
8. Work or the use of heavy equipment in wetlands must be avoided or minimized. Construction activities in wetlands must be scheduled during low water or winter (frozen) conditions. Temporary protective mats are required for heavy equipment working in wetlands to minimize impacts to soil and vegetation and are to be removed when no longer necessary. Wetland crossings must be restricted to a single location and constructed perpendicular to and at a narrow point of the wetland. Wetland vegetation and excavated material (top soil) must be retained and reused to improve seeding success. Flows to wetlands must not be permanently disrupted. Permeable fills should be designed and installed, when practicable. Fill materials must be clean and consist of coarse material with minimal fines.
9. All areas adjacent to the watercourse that are disturbed because of the project, including temporary access roads, stockpiles and staging areas, must be restored to pre-project elevations. Disturbed areas outside the channel that are not otherwise physically protected from erosion must be reseeded or planted with native vegetation. Stabilization measures including vegetation are required at the earliest practicable date, but by the end of first full growing season following construction. Native woody riparian and/or wetland species must be used in areas that support such vegetation. Measures to prevent damage by beavers, wildlife, or livestock are required until trees are established. Plantings must be monitored and replaced for an overall survival rate of at least 80 percent. Once established, native plants adapted to the site must be able to thrive with no supplemental water or treatment.
10. Report all spills immediately to the NMED as required by the New Mexico Water Quality Control Commission regulations (20.6.2.1203 NMAC). For non-emergencies during normal business hours, call 505-428-2500. For non-emergencies after hours, call 866-428-6535 or 505-428-6535 (voice mail, twenty-four hours a day). For emergencies only, call 505-827-9329 twenty-four hours a day (NM Dept of Public Safety).
11. A copy of this Section 401 Water Quality Certification must be kept at the project site during all phases of construction. All contractors involved in the project must be provided a copy of this certification and made aware of the conditions prior to starting construction.
12. The SWQB must be notified at least five days before starting construction to allow time to schedule monitoring or inspections.

Violations of state Water Quality Standards could lead to penalties under the New Mexico Water Quality Act. Section 74-6-10.1 B of the Act states, "Any person who violates any provision of the Water Quality Act [Chapter 74, Article 6 NMSA 1978] other than Section 74-6-5 NMSA 1978 or any person who violates any regulation, water quality standard or compliance order adopted pursuant to that act shall be assessed civil penalties up to the amount of ten thousand dollars (\$10,000) per day for each violation."

The SWQB specifically reserves the right to amend or revoke this conditional Section 401 Certification at any time to ensure compliance with the state Water Quality Standards. If you have any questions regarding this conditional certification please feel free to contact David Menzie of my staff at (505) 956-1548. Thank you for your cooperation.

Sincerely,



Marcy Leavitt, Chief
Surface Water Quality Bureau

ML: dm

cc: NMED District V Manager, Grants
James Wood, U.S. Army Corps of Engineers
Tom Nystrom, Region 6, USEPA
Matthew Wunder, NM Department of Game and Fish
Brian Millsap, U.S. Fish and Wildlife Service
401 Certification File 2007-SC010 (345)

The following copy of an e-mail from NMED changes and clarifies condition number 9 of the water quality certification (401 permit) on page 37:

From: "Menzie, David, NMENV" <david.menzie@state.nm.us>
To: <rmaxwell@uc.usbr.gov>
Date: 1/2/2008 10:53:56 AM
Subject: Clarification WQC 2007-010

Robert,

Thanks for your call asking for clarification regarding Condition Number 9 for Water Quality Certification 2007-SC010 Rio Grande River Mile 111 Low Flow Conveyance Channel and Levee Setback Project. The condition states:

All areas adjacent to the watercourse that are disturbed because of the project, including temporary access roads, stockpiles and staging areas, must be restored to pre-project elevations. Disturbed areas outside the channel that are not otherwise physically protected from erosion must be reseeded or planted with native vegetation. Stabilization measures including vegetation are required at the earliest practicable date, but by the end of first full growing season following construction. Native woody riparian and/or wetland species must be used in areas that support such vegetation. Measures to prevent damage by beavers, wildlife, or livestock are required until trees are established. Plantings must be monitored and replaced for an overall survival rate of at least 80 percent. Once established, native plants adapted to the site must be able to thrive with no supplemental water or treatment.

The WQC condition listed above for restoration of vegetated areas disturbed by your project activities can be modified for site specific conditions. Based on our recent discussion and the nature of your activity (which actually restores floodplain), pre-project elevations do not need to be restored nor does your project need an overall plant survival rate of at least 80 percent. Your project plans include an acceptable re-vegetation plan well suited to the area and the project activities. If you have any further questions, please contact me.

David Menzie
NM Environment Department
Surface Water Quality Bureau
Watershed Protection Section
3082 32nd Street ByPass, Suite D
Silver City, NM 88061
575 956-1548 (office) 575 670-2863(cell)
575 388-3258 (fax)

david.menzie@state.nm.us

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Individual 404 Permit

Bureau of Reclamation

JAN 14 2007

ALB-184
ENV-8:00

Mr. James Wood
Army Corps of Engineers
Albuquerque District Office/CESPA-OD-R
4101 Jefferson Plaza NE
Albuquerque, NM 87109-3435

Subject: Section 404 Clean Water Act, Individual Permit No. SPA-2005-00227-ABQ

Dear Mr. Wood:

Enclosed is the subject permit, signed and dated, as requested in a letter from Mr. Donald Borda of the Army Corps of Engineers to Ms. Connie Rupp of the Bureau of Reclamation, dated December 5, 2007. Also enclosed are two drawings reflecting minor changes you concurred with in a meeting with Reclamation staff held in your office on January 7, 2008.

During the previously mentioned meeting, some of the permit conditions were discussed for clarification. The discussion also included a description of minor changes to the project description. It was our understanding that the minor changes would not require a modification to the permit, but did require an explanation. The explanation, entitled "Minor Project Description Changes to the River Mile 111 Priority Site Project" is enclosed with this cover letter.

If you have any questions or require additional information, please contact Mr. Robert H. Maxwell at 505-462-3597.

Sincerely,

JOHN R. POLAND

John R. Poland
Area Manager

Enclosures - 3

cc: Mr. David Menzie
NMED-Surface Water Quality Bureau
910 East 32nd Street
Silver City, NM 89061
(w/encl)

bc: ALB-211 (w/o encl)

WBR:RMaxwell:ronchaga:01/10/08:505-462-3597

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OFFICIAL FILE COPY		
DATE	SURNAME	CODE
1/10	FB	211
1/11	RM	184
1/11	LR	180
1/11	WR	150
1/11	Poland	100
Classification ENV-8.00		
Project GF		
Control No. 8002455		
Folder I.D. 39342		

Minor Project Description Changes to the River Mile 111 Priority Site Project

1. Page 7 of the project description (submitted with the permit application) states that the spoil levee shall be constructed with a top width of 24 feet, 2:1 (H:V) sides slopes on the west, and 3:1 (H:V) side slopes on the east. Reclamation would like to have the flexibility to change the west slope of the levee from 2:1 to 3:1 slope with the understanding that the fill quantities and the requested disturbance footprint would remain the same.
2. The submitted drawings specified four temporary stockpile areas and two temporary haul routes. Reclamation would like to have the flexibility to change the size/location and or combine stockpile areas and haul roads as long as the total disturbed acreage would not change.
3. Lengthen the “Environmental Feature” to the North by 198 feet. The original length shown on the drawings was from station 1820 to 1828+50. The change would be from station 1820 to 1830+48.
4. Sheet 4 of 7 of the drawings describes the use of Gabion Baskets to protect the slopes at the drainage outlets. Due to observations of a similar design at Reclamation’s RM 113/114 levee setback project, changes were made to the RM 111 design to better protect the slope from erosion. This new design lengthens the footprint area and substitutes the use of gabion mattresses for gabion baskets. This new design decreases the rock fill quantity needed for the slope erosion control at the drainage outlets. Reclamation would like to replace sheet 4 of 7 with a new drawing that describes the use of a Gabion Matress. (see enclosed new drawing).
5. Reclamation would like to extend the time to complete the project to 2012.
6. Enclosed is a new drawing of the “Environmental Feature” that replaces sheet 7 of 7. Native vegetation would be left in place along this portion of the Low Flow Conveyance Channel in lieu of pole plantings, described on the old drawing (sheet 7 of 7).

TYPICAL OF LEFT EMBANKMENT SECTION WITH DRAINAGE INLET

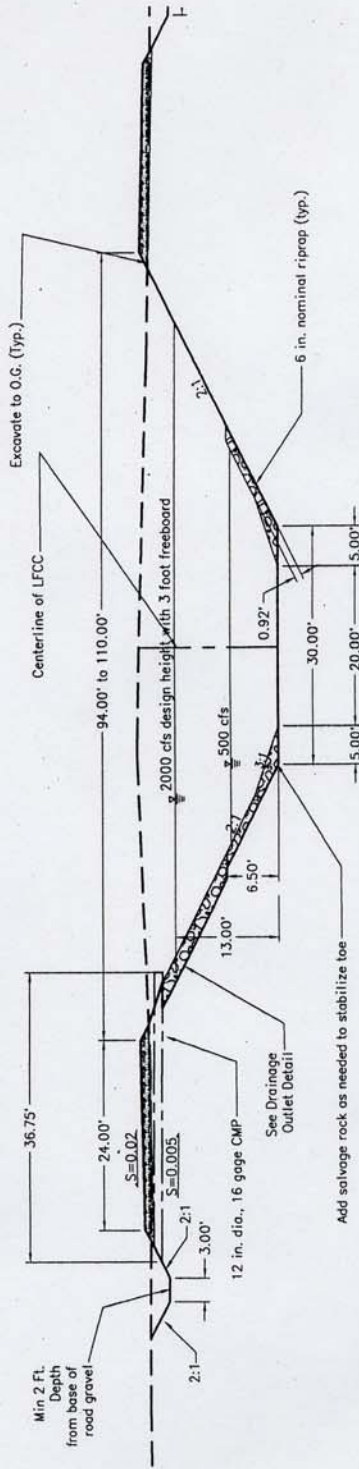


Figure 6. Typical RM 111 levee setback project cross section with drainage pipe. All dimensions are approximate.

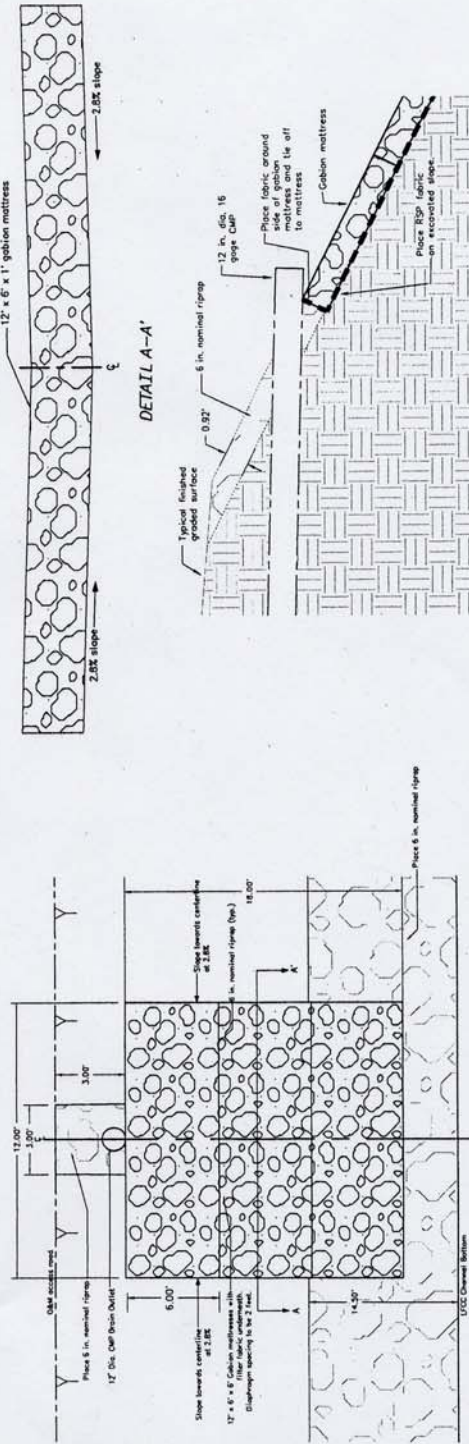
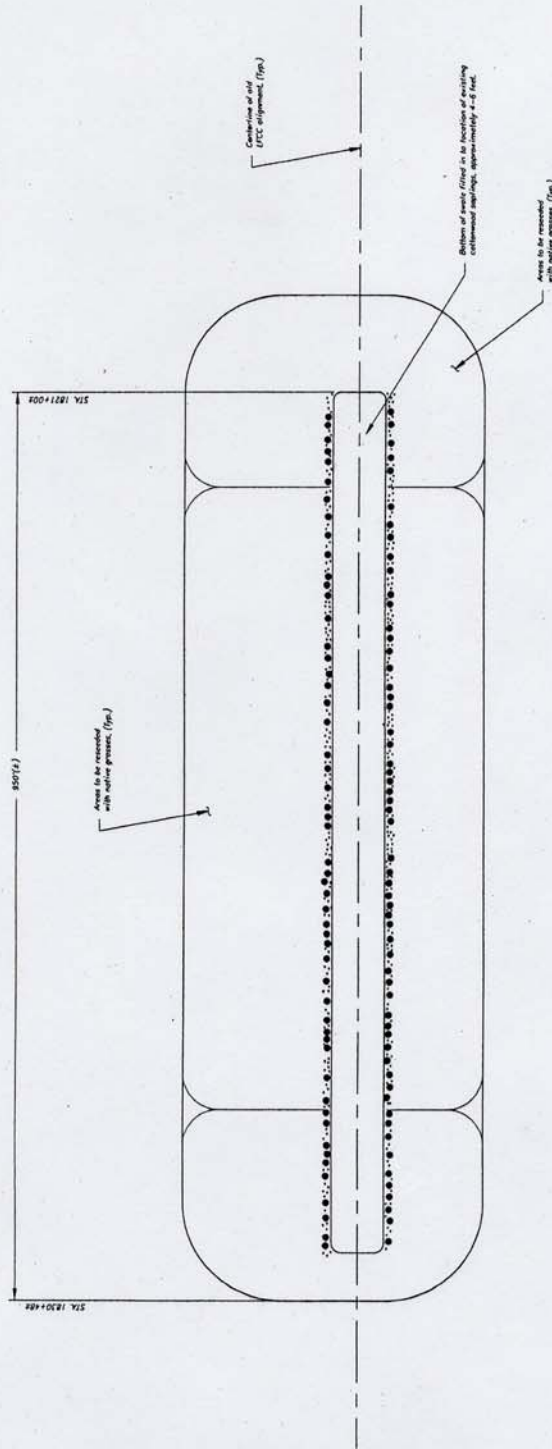


Figure 7. Typical installation around drainage pipe, parallel to slope and cross section of slope. All dimensions are approximate.



SITE PLAN (SWALE)



NOTES

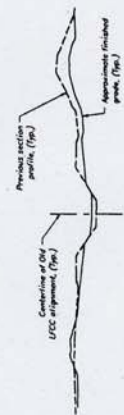
1. Stationing increases as you travel upstream. When describing LL and RL from centerline per the existing drawings.
2. Construction easements are the existing UCC alignment is 215.0 FT (East) RL or 203.0 FT from existing east fence embankment (a width over 15' greater are 215.0 FT (East) LL.
3. All construction shall be done within the easement. All work shall be thoroughly inspected prior to arrival at the construction site to verify the work. All work shall be done within the easement.
4. Additional work to be done shall include: grading, rock toe, concrete bank, stone, and similar habitat features. Exact locations and quantities will be determined in the field.
5. All other work surfaces to be removed with native grasses. This work will be performed by others.
6. Note that stationing in plan view refers to old UCC alignment.
7. Swale arrangement shown is an estimate based on field observations.

LEGEND

- • • Embankment Drawings
- Construction of Old UCC Alignment
- Division of Work

ABBREVIATIONS

- DYS - Cubic Feet per Second
- LL - Existing Ground
- RL - Proposed Ground
- OC - Old Channel
- DC - Divided Channel



TYPICAL CROSS SECTION PROFILE

DEPARTMENT OF THE ARMY PERMIT

Permittee Bureau of Reclamation, Albuquerque Area Office

Permit No. SPA-2005-00227-ABQ

Issuing Office Albuquerque District, Corps of Engineers

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: The River Mile (RM) 111 LFCC Realignment and Levee Setback Project will involve the filling of approximately 5,500 feet of the existing LFCC and the construction of approximately 6,200 feet of a new LFCC alignment to the west. This new channel will be approximately 6,200 feet in length, 94 feet to 110 feet wide at the top, 30 feet wide at the bottom, and will have 2H:1V sides slopes. A levee will be constructed along the east side of the new LFCC alignment.

The project will be done in several phases. The first phase of the project will involve the removal of vegetation and topsoil from the route of the new LFCC alignment. The removal of existing trees and other native plants will be minimized, as much as possible, and all removed vegetation shall either be mulched or used to create habitat as part of the mitigation plan for the project. The second phase of the project will involve the construction of a new fish barrier in the LFCC or the use of the existing fish barrier installed during the previous realignment of the LFCC at RM's 114 and 113. This fish barrier will prevent fish, including Rio Grande silvery minnows, from traveling upstream into the construction area. The third phase of the project will involve the mowing the existing LFCC slopes and the removal of the riprap from these slopes. This riprap will be used on the side slopes of the realigned LFCC and/or on the east slope of the new LFCC levee at this site.

Several staging and stockpile areas will be used during the project. Two of these staging and stockpile areas will remain in place after construction as permanent riprap stockpile areas. The fourth phase of the project will involve the construction of the new LFCC alignment. The new LFCC will be constructed for a flow discharge of up to 2,000 cubic feet per second (cfs). Six inch diameter riprap protection will be placed on the slopes of the new LFCC up to a height of 6.5 feet above the bottom of the channel to a minimum thickness of 11 inches. This riprap height will provide a one-foot freeboard at a flow of 500 cfs. Access roads for operational and maintenance purposes will be placed on both sides of the LFCC and will be a minimum of 24 feet wide at the top. A levee will be constructed to the east of the east access road along

the entire length of the new LFCC alignment. The levee will be offset from the access road to allow the placement of a ditch to collect runoff. The levee will be constructed from material excavated for the new LFCC alignment. The levee will range from 10-20 feet high, will have a top width of 24 feet, and 2H:1V slopes on the west to 3H:1V slopes on the east.

Additional features such as drainage ditches, drainage pipes, erosion protection at drainage outlets, and levee access ramps will be placed as needed along the new LFCC levee setback alignment. To facilitate the crossing of the existing LFCC during construction, up to three temporary crossings may be installed. All of these crossings will be 24 feet wide and will include a culvert (36-inch diameter minimum) to convey flows.

Once the new LFCC and levee setback project has been completed, flows from the existing LFCC will be directed into the new LFCC alignment. The abandoned portion of the existing LFCC will then be filled using material from the abandoned portion of the adjacent LFCC levee. During the backfill operation, one or more swale features shall be left in the abandoned LFCC. The exact location of these swales shall be determined during construction.

The project will involve the placement of between 18,000 to 27,000 cubic yards of permanent fill below the ordinary high water mark of the LFCC and will permanently affect between four to six acres, depending on the amount of fill material which can be placed in the existing LFCC and the number of swales which will be created.

The project will be constructed in accordance with the attached drawings, entitled, "RM 111 LFCC Realignment and Levee Setback Project near Lemitar, Socorro County, NM, Appl. No. SPA-2005-00227-ABQ, Appl. by USBR, Sheets 1 through 7, dated October 2007".

Project Location: The project is located within the low flow conveyance channel (LFCC), on the west side of the Rio Grande, south of San Acacia, Socorro County, New Mexico. The project is located within the SE1/4 of the SW1/4 of Section 24, Township 1 South, Range 1 West (34.2063° N Latitude, 106.8945° W Longitude).

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on December 31, 2010. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

After a detailed and careful review of all of the conditions contained in this permit, the permittee acknowledges that, although said conditions were required by the Corps of Engineers, nonetheless the permittee agreed to those conditions voluntarily to facilitate issuance of the permit; the permittee will comply fully with all the terms of all the permit conditions.

1. The existing low flow conveyance channel shall be seined prior to being filled and any fish recovered through seining shall be returned to the Rio Grande.

2. Temporary staging areas and other areas disturbed during construction shall be reclaimed with native vegetation.

3. Construction activities in the Rio Grande bosque should be avoided during the breeding season of the Southwestern willow flycatcher (May through July) and other migratory birds (March through August). Areas proposed for construction during the nesting season should be surveyed and, when occupied nests are found, the nesting areas should be avoided until nesting is complete.

4. Revegetation efforts should be monitored for five years and an annual monitoring report should be furnished to the Albuquerque District, U.S. Army Corps of Engineers for review.

5. In the event that cultural resources are found during construction, the New Mexico State Historic Preservation Office will be contacted for advice on the appropriate action to be taken.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

() Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

(x) Section 404 of the Clean Water Act (33 U.S.C. 1344).

() Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

- a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.
- b. This permit does not grant any property rights or exclusive privileges.
- c. This permit does not authorize any injury to the property or rights of others.
- d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

- a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
- b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
- c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
- d. Design or construction deficiencies associated with the permitted work.
- e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

- a. You fail to comply with the terms and conditions of this permit.
- b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).
- c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

(PERMITTEE)

(DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

Donald Borda
Chief, Regulatory Branch
(for the DISTRICT ENGINEER)

(DATE)

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

(TRANSFERREE)

(DATE)

LEGAL NOTICE

**Bureau of Reclamation
Public Scoping Meeting
On
San Acacia River Mile
111
Priority Site Project**

The Bureau of Reclamation's Albuquerque Area Office invites the public to attend a scoping meeting in the Environmental Assessment process to address a priority site along the Rio Grande where the river flow is nearing the levee.

Reclamation staff will briefly present several options and provide preliminary details on the preferred option for the area just north of Socorro, New Mexico. It would be a unique project that would involve moving the levee and the Low Flow Conveyance Channel to the west of the present location. This option would allow the river more room to migrate in the floodplain and potentially provide improved habitat for the endangered Rio Grande silvery minnow while providing flood protection for private property and citizens.

The meeting will be held on Wednesday June 6, 2007, at 6:00 p.m. at the Reclamation's Socorro Field Division office located at 2401 State Rd. #1, Socorro, New Mexico. For directions, please call Beverly at (505) 835-1202.

EDC/BoR/meeting
June 2, 9, 2007



United States Department of the Interior

BUREAU OF RECLAMATION

Albuquerque Area Office
555 Broadway Blvd. NE, Suite 100
Albuquerque, NM 87102-2352

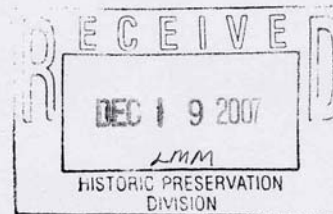


IN REPLY REFER TO:

ALB-174
ENV-3.00

083136

DEC 17 2007



Ms. Lisa Meyer
New Mexico State Historic Preservation Office
Historic Preservation Division, Bataan Memorial Building
407 Galisteo Street, Suite 236
Santa Fe, NM 87501

Subject: Section 106 Consultation for the River Mile 111 Priority Site Project, River Maintenance Program, Middle Rio Grande Project

Dear Ms. Meyer:

The Bureau of Reclamation is proposing to realign a section of the Low Flow Conveyance Channel (LFCC) at River Mile 111. The LFCC extends from the San Acacia Diversion Dam to just below Fort Craig. River Mile 111 lies approximately 5.2 miles below San Acacia Diversion Dam, where the river is going through a transition in which the bed is lowering and there is rapid lateral migration (see enclosed map and photos) which will affect the existing LFCC. Reclamation proposes to relocate and build 6,200 feet of new LFCC and levee to the west to allow the river more freedom to move within its historic floodplain. The existing 5,500 feet of LFCC would be filled in with spoil material from the existing non-engineered levee on the east side. However, 1,000 feet of existing LFCC would only be filled below the ordinary high water mark and will remain as a small swale.

In February 2003, the New Mexico State Historic Preservation Office (SHPO) concurred with a mitigation report submitted by Statistical Research Inc., entitled *Reclamation and Water Conveyance in the Middle Rio Grande Valley, 1888-1998*, by Matt C. Bischoff. This report was to cover any adverse affects on future modifications of the LFCC. In February 2005, SHPO concurred with Reclamation on a similar undertaking; *River Mile 114 to 113 Priority Site Levee Setback Project* (a copy of the concurrence letter is enclosed).

There are no recorded historic properties other than the LFCC within the project foot print. Therefore, Reclamation recommends that archaeological clearance be granted for this project. Please contact Reclamation archaeologist Jeffery Hanson at 505-462-3607 if you have any questions or comments.

Sincerely,

This undertaking will not have an adverse effect on registered or eligible properties.

Lisa M. Meyer 12/21/07
for NM State Historic Preservation Officer

Lori Robertson

Lori Robertson
Manager, Environment Division

Enclosures - 3