

## **Chapter 4. Environmental Consequences**

### **4.1 Introduction**

The anticipated potential effects of each alternative to the previously described environmental issues and resources are presented below. The analysis of the secondary and cumulative effects of other planned projects near the San Acacia area, as discussed in Chapter 1, Section 1.4, and in Chapter 2, Section 2.5, is presented here under each issue/resource section under the heading, “Secondary and Cumulative Effects”.

### **4.2 Predicted Attainment of Project Objectives for Each Alternative**

#### **No Action**

The project objectives would not be attained. The river would continue to migrate toward the LFCC and levee until they are breached. Severe damage to these structures would not be avoided and the river’s natural tendency to meander would be impaired.

#### **Proposed Action**

The project objectives of allowing the river to migrate naturally to the west and maintaining the integrity of the LFCC and levee would be achieved. Over time, the river would be expected to continue its westward movement at RM 114 and 113. By relocating the LFCC and levee at the historical western limit of the river’s channel, damage to these structures would be effectively avoided for the foreseeable future.

The secondary objective of restoring, improving, and enhancing the habitat and natural condition of the floodplain between the river and the newly aligned LFCC and levee would be attained to the extent possible by human action with available resources. The short-term disturbance of vegetation followed by an aggressive revegetation plan would ultimately lead to a long-term improvement in the productivity of available terrestrial habitat.

There would be a few small, irreversible and irretrievable commitments of resources. Fuel and lubricants for the heavy equipment would be permanently expended during the project. Concrete and metal would be used as materials for construction of the central segment of the project. Some old metal culverts would be removed and disposed of off site in an appropriate manner.

### **4.3 Predicted Effects on Each Relevant Issue and Resource**

#### **4.3.1 Federal and State Listed Species**

##### **No Action**

There would be no change to the existing condition and no effects to federally listed species.

##### **Proposed Action**

Since there are no known federal or state-listed protected species presently in the project area, there would be no adverse effects to legally protected species, with the possible exception of the Bald Eagle. Clearing and grubbing activities would occur prior to the nesting season for neotropical migrant birds, including the Southwestern Willow Flycatcher.

### Bald Eagle

Should a Bald Eagle be observed within 0.25 mi. upstream or downstream of the active project site in the morning before project construction activity starts, or following breaks in project construction activity, the construction crew would be required to suspend all activity until the bird leaves on its own volition, or if the Reclamation biologist, in consultation with the Service, determines that the potential for harassment is minimal. However, if a Bald Eagle arrives during project construction activities or if a Bald Eagle is observed beyond the specified distance, construction would not need to be interrupted. If Bald Eagles are found consistently in the immediate project area during the construction period, Reclamation would contact the Service to determine whether formal consultation under the ESA is necessary.

### Southwestern Willow Flycatcher

Although the project area is located in proposed critical habitat for the Southwestern Willow Flycatcher, the habitat in the area is not suitable for nesting and no flycatchers are known to nest in the area. The results of flycatcher surveys conducted using Service protocols in the project area in 2004 were negative (Doster, pers. comm., 2005). Areas to be cleared of vegetation do not contribute to any primary constituent elements of the proposed critical habitat. Additionally, clearing and grubbing activities would occur prior to the flycatcher nesting season; therefore, Reclamation has determined that no effects to this species would occur and the proposed action would not adversely modify proposed critical habitat.

### Rio Grande Silvery Minnow

Critical habitat was designated by the Service as the reach of the Rio Grande from Cochiti Dam to the upper pool for Elephant Butte Reservoir, approximately 163 miles (U.S. Fish and Wildlife Service, 2003). No in-stream activities are planned for the Rio Grande; therefore, no critical habitat would be affected. Though Rio Grande Silvery Minnows have previously been collected in the LFCC, none have been collected in the LFCC during surveys since 2002.

Fish barriers would be installed in the LFCC just outside the project limits to prevent Rio Grande Silvery Minnows from moving into the project area during construction. The LFCC would be resurveyed following installation of the fish barriers and prior to construction to document the absence of silvery minnows in the project area. These procedures would ensure that no effects to this species would occur. This project is in compliance with the ESA and no further consultation with the Service is required.

### **Secondary and Cumulative Effects**

There would be no secondary effects as a result of the proposed action. Because there would be no effects to the Southwestern Willow Flycatcher or the Rio Grande Silvery Minnow from the proposed action, there would be no cumulative effect when combined with other planned projects in the area. Monitoring for Bald Eagles during this project and others would minimize any potential effect on this species. This project, in combination with other planned projects in the area, would not be expected to result in any adverse effects to Bald Eagles.

### **4.3.2 Native Vegetation (Cottonwood & Goodding's Willow Trees) & Wildlife**

#### **No Action**

Existing vegetation, including saltcedar, would remain in place. Because of the altered hydrologic regime of the Rio Grande, mature cottonwood trees and Goodding's willows would continue to decline without being replaced by younger trees. The abundance of saltcedar would be expected to increase over time.

**Proposed Action**

The 286 cottonwood trees and 76 Goodding’s willow trees removed at the beginning of construction would be replaced by pole plantings of 1,768 new cottonwoods and 448 Goodding’s willows in selected areas near the riverbank and in the LFCC habitat enhancement areas within the project area. These new trees would be spaced irregularly in the LFCC habitat enhancement areas and along the bank in openings to improve their potential for survival and to create a more natural condition. All pole plantings would be caged with chicken wire initially to prevent beaver damage.

Native grass seeds would be used to reestablish vegetation in areas disturbed by construction. Only the amount of the proposed staging and stockpiling areas needed would be used or disturbed. Upon completion of stabilization activities, the project area and the staging and stockpiling areas would be cleaned up and all materials and equipment removed. Disturbed areas would be reseeded with native grasses and shrubs using the species presented at the bottom of page 14, Section 2.3, Post Construction Site Restoration Activities, of this EA. The reestablishment of seeded areas would be monitored by Reclamation and irrigation water would be brought in by truck, if necessary, to ensure the successful revegetation of those areas.

Although construction activities may scare existing wildlife away temporarily, most animal species in the project area would be able to return after the 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.

**Secondary and Cumulative Effects**

There would be no secondary effects as a result of the proposed action. The effects of the proposed action in combination with work at the RM 111 priority site would, over time, likely result in an overall improvement in the quality of the local floral and faunal health. The short term cumulative effects of construction would be small in the overall regional context and temporary in nature. The installation of additional riprap in the new LFCC channel to increase its discharge capacity to 2,000 cfs and the addition of two more 9.0 ft. RCPs would have no cumulative effect because of the different period of time in which these activities would occur.

**4.3.3 Noxious Weeds**

**No Action**

No ground disturbing activities would be undertaken to provide the opportunity for noxious weeds to become established. There would be no effect.

**Proposed Action**

Whenever land is disturbed, the potential exists for the intrusion and establishment of noxious weeds. This project could disturb up to 176.5 acres, depending upon how much space is ultimately needed for the staging and stockpiling areas. To minimize the potential for the establishment of state-listed and other noxious weeds, an aggressive revegetation plan would be implemented. This plan, as described in Section 2.3 of this EA, would allow native species to become reestablished more rapidly than they otherwise might. Past experience has shown that over time, any noxious weeds that manage to gain a foothold in the project area would mostly be crowded out by the more competitive native vegetation.

Most, if not all, of the riprap used for the project would be obtained from the existing LFCC. 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 during construction (3-5 years) for noxious weeds and would treat them as necessary. By preventing the introduction of noxious weed seeds and by pursuing an aggressive revegetation plan, the potential for noxious weeds becoming established in the project area over time would be minimal.

### **Secondary and Cumulative Effects**

Addressing the RM 111 priority site would also require some ground disturbing activities. At this time, how much ground disturbance would occur is not known. The placement of additional riprap in the new LFCC alignment channel to increase its discharge capacity to 2,000 cfs would not require ground disturbing activities, although the installation of two additional RCPs in the central segment would. Noxious weed seeds could be imported with the riprap.

In either case, through sound and aggressive revegetation planning and ensuring all equipment is pressure washed to prevent weed transmission, the opportunity for noxious weed establishment would be minimized. Also, since the additional riprap would be installed well after native vegetation has become thoroughly established in the LFCC, there would be little chance of weeds being able to compete.

There would be no secondary effects as a result of the proposed action.

### **4.3.4 Erosion Control and Water Quality**

#### **No Action**

Erosion of the levee and LFCC in the project area would continue to add a small amount of turbidity to the river downstream; however, when the levee and LFCC ultimately fail, a large amount of soil would be deposited into the river and contribute adversely to the turbidity of the river for a brief period. Emergency measures to repair the levee and the LFCC would likely be carried out under less than desirable conditions, which could temporarily contribute further to turbidity in the river.

#### **Proposed Action**

During construction, the removal of vegetation in the project area could potentially result in erosion and contribute to additional turbidity in the river downstream of the project area; however, standard construction BMPs would be used to minimize runoff during this period. Consequently, most runoff would be contained within the San Lorenzo Basin. The reestablishment of native riparian vegetation in the project area following construction would ultimately reduce the project area's contribution to turbidity in the river. The ACOE has specified project requirements for compliance with Section 404 of the CWA in Permit No. 200400321. The specific requirements of the permit can be found in Appendix A. The NMED has specified project requirements for certification and compliance with Section 401 of the CWA. Also, because this project would result in the disturbance of more than one acre of land, an NPDES permit would be required.

### **Secondary and Cumulative Effects**

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

### **4.3.5 Air Quality**

#### **No Action**

There would be no effects to air quality.

**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 effects would not be expected to be adverse. There would be no effects to air quality following completion of construction activities and reestablishment of vegetation in disturbed areas.

Fugitive dust would be suppressed by spreading water over disturbed areas where heavy equipment is working during dry conditions. The nearest residence is far enough away from the project area that most of any dust that does escape from the immediate project area would be able to dissipate before reaching it and the prevailing wind direction is away from the residence. Dust levels resulting from the proposed action would be expected to be lower than those generated by plowing and tilling activities on nearby farms. Exhaust emissions from heavy equipment and vehicles working on the project would dissipate rapidly before leaving the project area.

**Secondary and Cumulative Effects**

The effects of the proposed action on air quality 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 the other anticipated projects. There would be no secondary effects as a result of the proposed action.

**4.3.6 Cultural and Archaeological Resources, and Sacred Sites**

**No Action**

There would be no effects to cultural resources or sacred sites.

**Proposed Action**

Sections of the LFCC and associated levee would be affected by the proposed action. Although these structures are eligible for the National Register of Historic Places, the SHPO has concurred (see Appendix A) with Reclamation that the report by Bischoff (2001) does, in fact, serve as mitigation for any adverse effects that may occur as a result of modification of the LFCC.

No sacred sites or traditional cultural properties are expected in the project area; however, should consultation with the tribes result in the identification of any such sites or properties, then Reclamation would consult with tribe(s) concerned to ensure no adverse effects result from the proposed action.

**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 effect.

**4.3.7 Indian Trust Assets**

**No Action**

There would be no effects to ITAs.

**Proposed Action**

There would be no effects to ITAs.

**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 effect.

**4.3.8 Environmental Justice**

**No Action**

No effects of any kind to the local population are expected. No adverse effects to low-income or minority populations are anticipated.

**Proposed Action**

No effects of any kind to the local population are expected. No adverse effects to low-income or minority populations are anticipated.

**Secondary and Cumulative Effects**

There would be no secondary effects 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.