

## **4.0 ENVIRONMENTAL CONSEQUENCES**

### **4.1 INTRODUCTION**

This EA uses scientific and analytic evaluation to compare the No Action and Proposed Action Alternatives. This chapter of the EA evaluates the direct, indirect, and cumulative impacts to all resources described in Chapter 3, Affected Environment. In addition, environmental commitments, which will provide ongoing guidance for the proposed Project, are summarized.

### **4.2 GEOMORPHOLOGY AND SOILS**

Under the No Action Alternative, the geomorphology of the Rio Grande will likely remain stable, though current drought conditions may cause the channels between islands to continue to narrow and deepen. In the absence of frequent high discharges, the river in this reach will continue to have high velocities and will have limited meandering capability, a process that is important in moving and redefining islands and bars. Islands and bars will be stabilized with increasingly mature vegetation, predominantly non-native species. The geomorphic trends produced under the No Action Alternative are unfavorable for the Rio Grande silvery minnow because of decreased capacity for egg retention and larval success and decreased presence of quality mesohabitat.

Under the Proposed Action, the Project will undertake actions to alter a point bar and island within the channel as well as parts of the channel bank and Bosque to create the desired habitat types. In doing so, the current local geomorphology is anticipated to change slightly. Under the Proposed Action there will be minimal to moderate soil disturbance levels. The overall effects will be monitored, but are expected to be beneficial and completely within normal parameters for a sand-bed river system.

Before the initiation of construction activities, environmental protection measures will be reviewed at a pre-project meeting with the appropriate federal and state agencies. All activities will comply with local, state, and federal regulations. To mitigate negative effects from erosion, native vegetation will be planted in specific disturbed areas.

### **4.3 HYDROLOGY AND HYDRAULICS**

Under both the No Action and the Proposed Action Alternatives, there will be no change in the amount or duration of flow in the river. The Proposed Action will work with the existing hydrologic conditions to develop the desired habitat types.

### **4.4 WATER QUALITY**

The No Action Alternative will likely result in water quality that continues to meet applicable standards for most physical constituents, such as surface water temperature, pH, turbidity,

dissolved oxygen (DO), conductivity/total dissolved solids (TDS), suspended sediments (SSED), and fecal coliform.

Under the Proposed Action, no adverse impact to surface water or groundwater quality is anticipated. The Clean Water Act (CWA) provides protection for wetlands and waters of the United States from impacts associated with dredged or fill material in aquatic habitats, as defined under Section 404(b)(1). CWA compliance is required for all aspects of the Project that take place within the ordinary high-water mark, and since most work associated with the Proposed Action will be completed within jurisdictional areas, a 404 permit was obtained. Compliance with the CWA ensures that the Proposed Action will have no adverse effect on the water quality of the MRG. Water quality will be monitored and evaluated during the construction phase of the Project and for a period of 10 years after completion.

The Proposed Action will result in temporary changes in the measures for physical constituents, particularly for turbidity and total dissolved solids, because of the movement and dispersal of sediments within the river channel. Short-term and localized adverse effects to water quality may occur, but are not expected to exceed applicable standards.

#### **4.5 CULTURAL RESOURCES AND TRADITIONAL CULTURAL PROPERTIES**

Under the No Action and Proposed Action alternatives, no impacts to existing cultural resources or TCPs are anticipated.

#### **4.6 VEGETATION AND WETLAND RESOURCES**

Increased frequency of flooding is anticipated under the Proposed Action, compared to the No Action Alternative. Riparian vegetation is, by definition, subject to intermediate levels of disturbance from flooding. Reduced levels of annual maximum flows under the No Action Alternative have reduced these natural processes. Under the Proposed Action, some native and non-native vegetation will be disturbed by mechanical means during the implementation of the restoration techniques. Bank, island, and bar modification will require the removal of all vegetation within the footprint of the disturbance area. Non-native vegetation removal at all three sites will, by the nature of the action, completely remove the target non-native vegetation, and likely cause non-lethal disturbance to some non-target native vegetation.

Each proposed technique has different levels of potential impact on riparian vegetation. All vegetative communities, native and non-native, will be altered to some degree at the selected locations under the Proposed Action. Dead and downed native deciduous species may be used for in-channel placement as LWD. Living native deciduous species will be avoided. Some herbaceous floodplain species may be trampled during construction, but impacts will be moderate and transitory.

The Rio Grande, including the proposed project locations, is a USACE jurisdictional waterway. Executive Order 11990 (Protection of Wetlands; FR 1977a) requires the avoidance of short-term and long-term adverse impacts associated with the destruction, modification, or other disturbance

of wetland habitats. Compliance with Section 404 of the CWA will prevent net loss of wetlands due to Project actions. As a result, the Proposed Action will not impact wetland communities in the project area. Executive Order 11988 (Floodplain Management; FR 1977b) provides federal guidance for activities within the floodplains of inland and coastal waters and requires federal agencies to “ensure that its planning programs and budget requests reflect consideration of flood hazards and floodplain management.” The proposed modifications will not result in significant changes in flooding patterns outside the existing floodplain.

#### **4.7 FISH AND WILDLIFE**

Short-term adverse impacts to fish and wildlife resources will not occur under the No Action Alternative. Long-term adverse effects on breeding and foraging fish, avian species, and mammals may occur; however, they will be gradual and difficult to quantify under current riparian processes. Such effects will result from long-term alterations to riparian ecological processes, encroachment of non-native species, increased fire hazard, and increased depth to groundwater.

By comparison, the Proposed Action will produce short-term direct impacts on wildlife in the immediate area of disturbance and long-term beneficial effects on wildlife from improved ecological function and aquatic habitat. To avoid direct impact to migratory birds protected by the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703, et seq.), clearing and grubbing of woody vegetation will be scheduled between August 15 and April 15, outside of the normal breeding season for many migratory avian species. Should vegetation removal be implemented between April 15 and August 15, pre-construction nesting bird surveys should be conducted to identify potential MBTA issues. Any positive pre-construction survey results for migratory birds will be brought to the attention of the USFWS to determine methods of MBTA impact avoidance.

Other wildlife species that likely inhabit the proposed project area, such as reptiles, mammals, and amphibians, will be temporarily displaced and could experience mortality during the implementation of the Proposed Action. These effects will be outweighed by the long-term benefits of a healthier riparian ecosystem. No long-term adverse impacts on fish species are expected to occur under the Proposed Action. Long-term benefits from aquatic habitat creation and increased food abundance within mesohabitats are expected.

#### **4.8 THREATENED, ENDANGERED, AND SPECIAL STATUS SPECIES**

##### **RIO GRANDE SILVERY MINNOW (*HYBOGNATHUS AMARUS*)**

The No Action Alternative will have no impact on the current trends of silvery minnow populations in the Albuquerque Reach. The channel in the Albuquerque Reach is incised and degradation is expected to continue (Porter and Massong 2004). Limited numbers of silvery minnow have been identified in the project area (M. Porter, personal communication 2006). Increasing the amount and/or quality of suitable riverine habitat is essential for successful application of supplemental augmentation and rescue efforts for effective silvery minnow population management.

The Proposed Action may affect and is likely to adversely affect silvery minnow during construction; and may affect but is not likely to destroy or adversely modify silvery minnow critical habitat. Minnow critical habitat may be impacted by short-term increases in turbidity and other water quality parameters and the operation of heavy equipment within designated critical habitat. The primary objective of the Proposed Action is to create additional habitat for various lifestages of silvery minnow. The Proposed Action may provide beneficial effects to silvery minnow and their critical habitat, including improved egg and larval retention in the Albuquerque Reach, increased recruitment rates, and increased survival of young-of-year and adult silvery minnow.

Silvery minnow critical habitat encompasses the entire project area (FR 2003b). Short-term effects on silvery minnow critical habitat may occur during and immediately following habitat restoration activities from the operation of heavy machinery and the removal of vegetation. However, the slow movement of the equipment, coupled with the sensitivity of silvery minnow to sound, their high swimming speed, and access to the water column around the equipment make it possible, but unlikely, that any silvery minnow will be physically harmed by the equipment. Best Management Practices will be enforced to minimize impacts during periods of work.

#### **WESTERN YELLOW-BILLED CUCKOO (*COCCYZUS AMERICANUS OCCIDENTALIS*)**

The No Action Alternative will not change the riparian habitats used by this species, and no effects will occur.

The Proposed Action may affect but is not likely to adversely affect the western yellow-billed cuckoo. Noise generated by heavy machinery during construction could disturb cuckoo in the project area. Additionally, the removal of non-native vegetation could potentially decrease habitat availability for the species. To minimize impact on this and other riparian species, clearing and grubbing of woody vegetation will be scheduled between September and April. Should vegetation removal and construction be implemented during the breeding season (April–August), pre-construction breeding bird surveys will be conducted and monitoring performed to assure avoidance of impacts. Any positive pre-construction survey results for migratory birds will be brought to the attention of the USFWS in order to determine methods of MBTA impact avoidance.

#### **SOUTHWESTERN WILLOW FLYCATCHER (*EMPIDONAX TRAILLII EXTIMUS*)**

The No Action Alternative will not disturb the riparian vegetation; therefore, this alternative will have no effect on the species.

The Proposed Action will take place outside of the breeding season for southwestern willow flycatcher and will not directly affect the species. The Proposed Action may affect but is not likely to adversely affect southwestern willow flycatcher. Noise generated by heavy machinery during construction could disturb migrating flycatcher in the project area. Additionally, the removal of non-native vegetation could potentially decrease habitat availability for the species. To minimize impact on this and other riparian species, clearing and grubbing of woody

vegetation will be scheduled between September and April. Should vegetation removal and construction be implemented during the breeding season (April 15–August 15), pre-construction breeding bird surveys will be conducted and monitoring performed to assure avoidance of impacts. Any positive pre-construction survey results for migratory birds will be brought to the attention of the USFWS in order to determine methods of MBTA impact avoidance.

A thorough analysis of flycatcher and potential impacts to flycatcher habitat associated with the proposed Project has been completed as part of the Biological Assessment for this Project (SWCA Environmental Consultants 2006).

#### **BALD EAGLE (*HALIAEETUS LEUCOCEPHALUS*)**

The No Action Alternative will not disturb the riparian vegetation where this species may occur; therefore, this alternative will have no effect on the species.

The Proposed Action may have short-term potential effects on bald eagles during construction, related to temporary noise and other disruptions. Removal of woody vegetation and other construction activities may take place during the winter months when bald eagles may be in the proposed project area. Best Management Practices will be employed to minimize the potential for disturbing bald eagles. If a bald eagle is visible within 0.25 mile of the proposed project area in the morning when activity starts, or arrives during breaks in activity, the contractor will be required to suspend all construction activity until the bird leaves on its own volition, or the project biologist, in consultation with the USFWS, determines that the potential for harassment is minimal. However, if a bald eagle arrives during construction activities, or is observed 0.25 mile or more from the construction site, activity will not be interrupted. The Proposed Action may affect but is not likely to adversely affect the bald eagle.

#### **COMMON BLACK-HAWK (*BUTEOGALLUS ANTHRACINUS*)**

The No Action Alternative will not make any changes to riparian vegetation used by this species; therefore, no adverse impacts to this species or its habitat will occur.

The Proposed Action will include clearing of woody vegetation but not mature gallery trees. Therefore, the Proposed Action should have no adverse impact on the common black-hawk. As a precautionary measure, the City or its contractor or project biologist will follow the same protocol as that for bald eagles during construction activities.

#### **NEW MEXICAN JUMPING MOUSE (*ZAPUS HUDSONIUS LUTEUS*)**

Lack of suitable habitat in the project areas makes it unlikely that either the No Action Alternative or the Proposed Action will have an adverse effect on the New Mexican jumping mouse.

## 4.9 SOCIOECONOMICS

The long-term economic consequences of No Action are unknown at this time and difficult to assess. These impacts may be greater than the Proposed Action due to the significant costs of other silvery minnow habitat restoration options that have been proposed by the Collaborative Program.

The Proposed Action will not adversely affect current economic and socioeconomic conditions within Bernalillo County. The cost of the Proposed Action will be \$781,500. This amount is low in comparison with combined state and federal expenditures in Bernalillo County and the City of Albuquerque and will not adversely affect current economic conditions.

Under the No Action and the Proposed Action Alternatives, there will be temporary increases in federal and state spending in Bernalillo County to provide habitat restoration for the silvery minnow. Regardless of this Proposed Action, the MRG BiOp of 2003 requires that aggressive measures be taken to improve and restore aquatic habitat for the silvery minnow, and that those measures should be conducted in all areas of critical habitat. The signatories to the Collaborative Program have identified the Albuquerque Reach as an area of high priority, since the area is upstream of Elephant Butte Reservoir and water quantity is more reliable here than in more southern reaches, and therefore better able to support the duration of downstream egg drift required for successful silvery minnow breeding.

## 4.10 VISUAL AND AESTHETIC RESOURCES

The No Action Alternative will continue to provide long-term aesthetic value to RGVSP visitors and unimpeded vistas of the Rio Grande and the riparian forest from the Rio Bravo Bridge. There will be no short-term changes in the visual and aesthetic experience. Long-term impacts to the river and Bosque from changes in the channel configuration will be so slow as to be imperceptible to the public.

The Proposed Action will likely produce long-term changes in the visual and aesthetic experience of the public from the bridges, trails, and riverside areas adjacent to the project area. The current condition of the Bosque, with considerable non-native vegetation, is the only condition that many local residents have experienced. After the removal of non-native vegetation from the project sites, the Bosque will be less densely vegetated, replicating historic conditions. While some of the public may perceive the more natural look of the Bosque as pleasing, others may consider the new look to be less aesthetically desirable than the current condition.

The short-term impacts of equipment operation may also disturb the aesthetic experience of individuals within the RGVSP. The proposed construction areas may be visible from the Rio Bravo Bridge. The visual and aesthetic impacts of construction associated with the proposed Project will be brief and limited to the relatively few pedestrians using the trails near the Project, but the intensity of this short-term impact may be experienced as high by those who regularly use these trails for their natural aesthetic value.

#### **4.11 AIR QUALITY AND NOISE**

The project areas are in a natural area and a park with nature trails and other recreational uses in which a quiet atmosphere is expected. The No Action Alternative will hold ambient noise levels to the current condition.

The Proposed Action is not anticipated to generate ambient noise that exceeds the City of Albuquerque Noise Ordinance. Construction equipment to be used during the Proposed Action will create temporary variable noise levels that will likely exceed allowable ambient noise of 80 dBa in the immediate vicinity of the restoration site. Construction sites are anticipated to be more than 500 feet from any sensitive noise receptors. The nearest noise receptors will include the recreating public on nearby trails and residents of nearby homes and businesses outside the levees. Under the Proposed Action, noise impacts during heavy equipment use will be short term and occur during normal business hours to minimize noise disturbance. The riparian vegetation and levee will abate some of the noise generated by the equipment. A Construction Noise Permit may be issued by the City of Albuquerque if sensitive noise receptors are identified within 500 feet of restoration construction sites.

Construction equipment will temporarily generate fumes and air emissions under the Proposed Action. The level of air emissions is anticipated to be low and in compliance with local and federal air emission standards.

#### **4.12 NET WATER DEPLETIONS**

The No Action Alternative will maintain current levels of water depletions in the Albuquerque Reach, as identified in previous studies (SSPA 2004). The goal of the Proposed Action is to neither increase nor decrease depletions. All of the proposed work will occur within the 660-foot-wide river channel, where river water level and river surface open area fluctuate significantly. Therefore, the work will not likely increase depletions to any measurable or calculable degree. Actions on the river channel banks at the Rio Bravo North site that could potentially increase depletions will be analyzed further as required by the Office of the State Engineer (OSE). The City will submit a permit application, including this EA and other pertinent documentation as necessary, for this location. Work will not occur at locations where permits are deemed necessary until the necessary permits have been secured. Evaluations of the net depletion effects of each proposed technique will be evaluated over the course of the Project. Restoration techniques that are determined to add significant levels of depletion to the surface waters of the Rio Grande will be curtailed unless offset with other sources of water.

#### **4.13 ENVIRONMENTAL JUSTICE**

The Proposed Action complies with Executive Order 12898 (FR 1994b), Environmental Justice in Minority and Low-Income Populations. The proposed Project is located on the active floodplain of the Rio Grande, between the flood control levees within the Albuquerque Reach of the river. Outside of the levees, nearby land use along this reach includes residential neighborhoods of multiple economic strata, as well as commercial and industrial uses.

Regardless of the level of impacts, they will be similar throughout the reach. There will be no disproportionately high or adverse human health or environmental effects on minority or low-income populations due to either the No Action or Action alternatives.

#### **4.14 INDIAN TRUST ASSETS**

No ITAs were identified in the project areas and therefore no associated impacts are anticipated for either the No Action or the Proposed Action alternative.

#### **4.15 IRRETRIEVABLE COMMITMENT OF RESOURCES**

The implementation of the Project will result in the commitment of resources such as fossil fuels, construction materials, and labor. In addition, city and federal public funds will be expended for the construction of the proposed Project.

#### **4.16 CUMULATIVE IMPACTS**

NEPA defines cumulative effects as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (42 U.S.C. 4331–4335). Cumulative environmental impacts associated with the Rio Grande, including islands and riparian areas, have been evaluated for the following projects relative to the Proposed Action.

##### **CITY OF ALBUQUERQUE – OPEN SPACE DIVISION**

The City of Albuquerque Open Space division has been conducting extensive clearing of non-native vegetation from within the Rio Grande Valley State Park Bosque. A considerable portion of these thinning efforts is taking place adjacent to the proposed project sites. The thinning process is intended to reduce fuel loading within the Bosque, thus reducing the risk of future catastrophic wildfire. While much of the City's thinning has been completed in support of Collaborative Program projects, these projects have been completed under separate environmental compliance completed by the USACE for fuels reduction.

##### **MIDDLE RIO GRANDE ENDANGERED SPECIES ACT COLLABORATIVE PROGRAM**

The Collaborative Program has initiated and funded multiple habitat restoration projects, including City and USACE restoration projects near the location of the Proposed Action. Silvery minnow augmentation funded by the Collaborative Program should provide positive synergistic interactions with habitat that will be created by this Project.

## **UPPER RIO GRANDE WATER OPERATIONS ENVIRONMENTAL IMPACT STATEMENT**

The USACE, the New Mexico Interstate Stream Commission (NMISC), and Reclamation are signatories to an MOA to develop integrated water operations rules for several dams on the Rio Grande upstream of the project area (URGWOPS 1999). A draft environmental impact statement for the program was released in January, 2006 (URGWOPS 2006).

### **CITY OF ALBUQUERQUE SAN JUAN–CHAMA DRINKING WATER PROJECT**

The City has initiated construction of a diversion dam in the Rio Grande south of the Alameda Bridge to divert San Juan–Chama water for the City's drinking water supply. The City is currently constructing water intakes and a crossing of the Rio Grande at Campbell Road for the same project. Several proposed habitat restoration projects are specified for the Albuquerque Reach as mitigation for adverse effects from this Project (Reclamation 2004).

### **MIDDLE RIO GRANDE BOSQUE WILDFIRE PROJECT AND WETLAND RESTORATION PROJECT**

The USACE is involved in a Bosque Wildfire Project throughout the Albuquerque Reach of the Rio Grande, thinning riparian vegetation at selected locations adjacent to the river. The USACE is also involved in Ecosystem Restoration projects at the Albuquerque Biological Park and the Wetland Restoration Project south of Central Avenue (USACE 2004).

### **NMISC RIVERINE HABITAT RESTORATION PROJECTS**

The New Mexico Water Trust Board and the NMISC are conducting projects to improve silvery minnow habitat. These projects include increasing scientific knowledge of available food for aquatic species within the MRG and incorporating LWD for improved mesohabitat (Tetra Tech 2004).

### **ASSESSMENT OF CUMULATIVE IMPACTS**

The cumulative effects of the Proposed Action plus the described related projects could produce short-term changes in several aspects of the existing hydrology, hydraulics, and fluvial geomorphology within the affected subreach. The Proposed Action could affect other specific downstream restoration projects by changing local fluvial geomorphology and hydrology. Other projects listed here could affect the Proposed Action by altering physical processes upon which the proposed techniques depend. Changes in upstream water operations could augment and improve or could decrease the effectiveness of proposed projects.

While all the parties to these various actions recognize the need for dramatic change in the riverine ecosystem to provide better support for the endangered silvery minnow, the complex cumulative outcome of multiple actions will be unpredictable and potentially adverse to water quality and various indicators of silvery minnow reproductive success. The only effective means of dealing with the complex cumulative effects in ESA critical habitat will be to coordinate efforts among all parties. Sound scientific measurement of the baseline parameters most closely

associated with silvery minnow success needs to be accomplished and a detailed silvery minnow monitoring protocol should be implemented. Further development and approval of an adaptive management strategy so that it is in place early in the implementation phase of the Proposed Action will facilitate a rapid response to potentially adverse indicators.

#### 4.17 SUMMARY OF EFFECTS AND SITE SUITABILITY

Different techniques considered for restoration will have short-term effects on some environmental resources but long-term beneficial effects on biological resources, including flycatcher, silvery minnow, and silvery minnow critical habitat. The overall effects of the proposed restoration techniques are summarized in Table 4.1.

**Table 4.1.** Environmental Consequences of Proposed Restoration Techniques on Environmental Resources under the Proposed Action and No Action Alternatives

<b>Environmental Resources</b>	<b>Proposed Action</b>	<b>No Action</b>
Geomorphology and Soils	Short-term adverse impact to geomorphology; long-term beneficial effects on the altered channel features	Development of channel features that are unfavorable for silvery minnow egg retention and for larval and adult success will continue
Hydrology and Hydraulics	Short-term minimal adverse impact to hydrology; long-term positive effect	No change in the amount or duration of flows in the Albuquerque Reach
Water Quality	Short-term effects within applicable water quality standards; no long-term adverse effects	No change in levels of constituents such as pH, dissolved oxygen, temperature, turbidity
Cultural Resources and TCPs	No adverse effects on archaeological resources or TCPs	No change to cultural resources or traditional cultural properties
Vegetation and Wetlands	Limited short-term adverse effects on herbaceous vegetation; permanent removal of non-native woody vegetation; long-term beneficial effects on native vegetation	Continuation of current trends in vegetation such as increases in non-native species and woody vegetation
Fish and Wildlife	Short-term adverse impacts; long-term positive effect on fish and wildlife abundance and diversity from habitat improvements	Continued adverse trends toward decreased fish and wildlife abundance and diversity
Threatened, Endangered, and Special Status Species	Short-term likely to adversely affect Rio Grande silvery minnow; short-term may affect/not likely to adversely affect western yellow-billed cuckoo, willow flycatcher, and bald eagle; long-term positive effects on silvery minnow and flycatcher	Continued adverse trend toward decreased habitat for silvery minnow and flycatcher
Socioeconomics	No adverse effects; the costs of implementing the Project are within the annual range of variability for federal expenditures for Bernalillo County	No short-term change in socioeconomics anticipated
Visual and Aesthetic Resources	Short-term negative impacts; long-term positive effect	No long-term or short-term changes in the visual and aesthetic experience
Air Quality and Noise	Short-term adverse impact from increased ambient noise levels	No change in air quality or noise
Net Water Depletions	No adverse effects anticipated, further evaluation required	No change in net water depletions
Environmental Justice	No adverse effect	No change in environmental justice
Indian Trust Assets	No ITAs identified; no adverse effects	No change in ITAs

All proposed activities will take place within the Rio Bravo to South Diversion Channel subreach. A site assessment completed to evaluate this subreach included the collection of photographs and GPS data, and GIS analysis in the laboratory. Work at this location will create beneficial habitat for silvery minnow and flycatcher. All access will be through the existing levee roads and transmission line access roads. Proposed staging and access will be coordinated with the City Open Space Division, MRGCD, and Reclamation.

#### 4.18 ENVIRONMENTAL COMMITMENTS

The following environmental commitments will be undertaken by the City:

- Clean Water Act compliance is required for all aspects of the Project within jurisdictional waters of the U.S. Since most work associated with the Proposed Action will be completed within floodplain areas regulated by this law, a 404 permit was obtained. A state water quality certification permit under Section 401 of the CWA was also obtained for the Project.
- Storm-water discharges under the Proposed Action will be limited to ground-disturbing activities outside the mean high water mark. All such activities will be evaluated for compliance with National Pollutant Discharge Elimination System (NPDES) guidance, a NPDES permit, or a Storm Water Pollution Prevention Plan. The 404 and 401 permitting processes has been completed for the Proposed Action.
- To avoid direct impacts to migratory birds protected by the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703, et seq.), clearing of woody vegetation and construction will be scheduled between August 15 and April 15, outside of the normal breeding season for many avian species. Should vegetation removal and construction be implemented during the breeding season (April 15–August 15), pre-construction breeding bird surveys will be conducted and monitoring performed to assure avoidance of impacts to migratory birds. If any positive pre-construction survey results or observations of migratory species occur during construction, all activities will be suspended pending coordination with and guidance from the USFWS.
- To avoid negative visual impacts resulting from vegetation removal, native vegetation will be planted after the removal of current vegetation during habitat restoration activities.
- A Temporary Construction Noise Permit may be required by the Albuquerque Environmental Health Department prior to construction, as specified in the local Noise Ordinance, Article 9 Section 9-13.
- If it is determined by the OSE that net depletions will occur as a result of the Project, the City will submit a permit application, including this EA and other pertinent documentation as necessary. Work will not occur at locations where permits are deemed necessary until the necessary permits have been secured.

- Wetlands will be avoided during all phases of construction and in the location of staging areas and access routes to the construction areas.
- Monitoring will be performed at each site to ensure that project goals are met.
- Cumulative impacts of adjacent habitat restoration projects will be evaluated as they come online, and adaptive management techniques will be used for elements of the Project when appropriate.
- Appropriate permits for the Rio Grande Bosque and river access and staging areas will be acquired prior to the commencement of the Proposed Action.
- Endangered Species Act compliance has been addressed through consultation with the USFWS regarding potential impacts to threatened and endangered species. Rio Grande silvery minnow critical habitat encompasses the entire project area (FR 2003b) in the river channel. The southwestern willow flycatcher uses the proposed project area during migration. BMPs will be enforced to minimize potential impacts to silvery minnow and flycatcher from direct construction impacts during periods of work. Consultation with the USFWS has determined the most effective BMPs.
- Reclamation has coordinated with the State Historic Preservation Officer for purposes of NHPA Section 106 compliance and has completed consultation with interested Tribal entities. The Project is committed to avoidance of any TCPs in the project area. Should evidence of possible prehistoric or historic cultural resources or other archaeological data be discovered during the course of this action, work will cease at that location and the Reclamation Area Archaeologist will be notified by phone immediately with the location and nature of the findings. Care will be exercised to avoid disturbing or damaging artifacts or fossils uncovered during operations, and the proponent will provide such cooperation and assistance as may be necessary to preserve the findings for removal or other disposition by the U.S. Government.
- Annual monitoring of the following resources will be conducted for a minimum of ten years after project completion:
  - Rio Grande silvery minnow
  - Southwestern willow flycatcher
  - Water quality
  - Vegetation