No population, including populations defined as low-income or minority, would be disproportionately impacted by the Proposed Action or by the No Action Alternative.

3.10 Indian Trust Assets

The U.S. has an Indian trust responsibility (trust responsibility) to protect and maintain rights reserved by or granted to Indian tribes or Indian individuals by treaties, statutes, and executive orders, which rights are sometimes further interpreted through court decisions and regulations. This trust responsibility requires that all Federal agencies, including Reclamation, take all actions reasonably necessary to protect trust assets. Indian trust assets (ITAs) are legal interests in property held in trust by the U.S. for Indian tribes or individuals. "Legal interest" means there is a property interest for which a legal remedy, such as compensation or injunction, may be obtained if there is improper interference. For example, ITAs include land, minerals, hunting and fishing rights, and water rights. A characteristic of an ITA is that it cannot be sold, leased, or otherwise alienated without the U.S.' approval. Reclamation's Indian trust policy was stated in a July 2, 1993 memorandum from Reclamation's Commissioner. The policy statement is: "Reclamation will carry out its activities in a manner which protects trust assets and avoids adverse impacts when possible. When Reclamation cannot avoid adverse impacts, it will provide appropriate mitigation or compensation."

CHAPTER 4 ENVIRONMENTAL CONSEQUENCES

4.1 Introduction

The anticipated potential effects of the alternatives to the previously described environmental issues and resources in Chapter 3 are summarized in Table 2.

4.2 Geomorphology and Soils

No Action

There would be no change from the present geomorphology and soils along the MRG.

Proposed Action

It is unlikely that the overall geomorphology and soils would be affected. There would be a slight increase in the number of deeper water pools in the three drain outfalls. Soils would not be affected as the disturbance is very small.

Affected Resource	No Action	Proposed Action
Geomorphology/soils	No effect.	Some habitat complexity added to the MRG channel. Several pools would be created, adding variety to depths and velocities.
Hydrology	No effect.	No overall change to the hydrology of the MRG in the Isleta Reach. However during periods of channel dewatering, scoured pools may remain wetted.
Net Depletions	No effect.	No appreciable changes to net water depletions would occur due to the proposed action.
Vegetation	No effect.	Minor disturbance of weedy species in staging areas. Minor disruption of vegetation along banks as excavation for log structures is completed. A small amount of Russian olive and saltcedar will be disturbed at the Los Chavez site.
Wildlife	No effect.	No disturbance to nesting bird species as construction will be conducted after breeding season is completed (August 15 to April 15). Minor reduction in large dead cottonwoods that provide cavities for nesting and shelter. Minor disturbance to the bosque as snags are obtained. Areas have been previously disturbed by removal of non-native vegetation.
Fish	No effect.	It is anticipated that the number of perennially wetted habitats available to serve as refugia for fish in the vicinity during channel drying events will be increased. Increased availability of pool habitats as well as lower velocity habitats will occur, benefiting larval and juvenile stages of fish
T&E Species		
Rio Grande Silvery Minnow	No effect.	Will likely increase the number of perennially wetted habitats available for refugia during channel drying events. Increased habitat complexity will occur with the creation of pool habitats. Short-term adverse construction-related disturbance to habitat and water quality.
SW Willow Flycatcher	No effect.	No effect. Construction activities done after breeding season. No native willow habitats disturbed.
Bald Eagle	No effect.	May be temporary disturbance to wintering bald eagles. This will be offset by the commitment to cease all construction activities if bald eagles are observed within .25 miles of the construction site. The relocation of a few large cottonwood snags may have a slight effect on roosting bald eagles; however large mature cottonwoods are abundant in the project area.
WesternYellow-billed Cuckoo	No effect.	No effect. Construction activities done after breeding season. No live cottonwoods removed.
Cultural Resources	No effect.	No effect.
Environmental Justice	No effect.	No effect.
Indian Trust Assets	No effect.	No effect.

Table 2. Summary of Impacts.

4.3 Water Resources

No Action

No change would occur to the present hydrology of the MRG as this is controlled by the operation of upstream dams and the amount and timing of precipitation.

Overall water quality would continue at current levels.

There will be no changes to net depletions in this reach of the MRG.

Proposed Action

No change would occur to the present hydrology of the MRG. The proposed minor changes to the operations of the drain outfalls and wasteways involve small changes in the efficiency of operations and where possible focusing flows in the three outfalls where habitat enhancement would occur. There would be no change to the hydrology of the river channel.

Overall water quality would continue at current levels. There would be minor turbidity created for a few hours which would be confined to the site immediately adjacent to the trench dug into the bank to anchor the cottonwood logs.

There will be no changes to water deliveries, nor will any additional water be consumed as a result of installing the cottonwood logs in the three drain outfalls. It is not anticipated that any appreciable changes to net water depletions would occur in this reach of the MRG due to the Proposed Action.

4.4 Vegetation

No Action

Implementation of the No Action Alternative will have no effect on the vegetation community along the MRG in the Isleta Reach.

Proposed Action

If the Proposed Action is selected for implementation, minor disturbance of weedy species in staging areas and access roads would occur. A small amount of Russian olive and saltcedar will be disturbed at the Los Chavez site.

4.5 Wildlife

No Action

If the No Action Alternative is selected, no effect would occur to the wildlife species in the action area.

Proposed Action

Implementation of the Proposed Action would not disturb nesting bird species as construction will be conducted after breeding season is completed (August 15 to April 15). Minor reduction in large dead cottonwoods that provide cavities for nesting and shelter could occur. However mature cottonwood stands in the vicinity of the drain outfalls are fairly extensive. Overall impact would be slight given the small number of snags moved to the river channel. Minor

disturbance to the bosque would occur as snags are obtained; however the areas have been previously disturbed by removal of non-native vegetation. Efforts would be made to obtain snags from other projects which may have removed and stockpiled cottonwood snags.

Habitat for migratory bird and raptor species that fall under the purview of the Migratory Bird Treaty Act may have a slight potential be affected, however the amount of large snags retained on the landscape should exceed habitat requirements, and thus these species would not be adversely impacted.

4.6 Fish

No Action

The No Action Alternative would have no effect on the fish communities present in the Isleta Reach. Periodic channel dewatering has resulted in mortality for various fish species in the pest. However, recent rescue/salvage efforts have been performed for the RGSM with relocation of the RGSM to the Albuquerque Reach.

Proposed Action

Installation of large cottonwood snags under the Proposed Action is anticipated to increase the number of perennially wetted habitats available to serve as refugia for fish in the vicinity during channel drying events. However, river drying will still occur in the river system. Increased availability of pool habitats as well as lower velocity habitats will occur, benefiting all life stages of fish.

4.7 Threatened, Endangered and Special Status Species

4.7.1 Rio Grande Silvery Minnow

No Action

No effect would occur to the RGSM for the No Action Alternative. Continued mortalities and need for rescue operations would occur during channel drying events.

Proposed Action

Equipment would operate on the riverbank primarily and would come into contact with aquatic habitats of the RGSM only during installation of in-channel structures. The general commitment will be to install silt barriers along the interface between the wetted perimeter of the channel and the bank where construction will bring bank levels near the current water levels. This will assure that sediment is not accidentally deposited into shallow water habitats and that turbidity levels will remain at ambient levels in the river.

Installation of cottonwood snag structures would involve excavating a trench in the bank, placing the rootwad and lower trunk in the trench and backfilling with rock and soil. In-channel placements of snag structures will require anchoring. Minimal disturbance of RGSM habitat

would occur as the placements will be done primarily in the dry. There will be some drain outfall flows, but actual construction impacts are expected to be of very short duration (less than one day).

Indirect harm or mortality from lowering the water quality in the critical habitat of RGSM may occur from accidental introduction of hydrocarbon contaminants from fuel and fluids used with the proposed equipment when operating within the ordinary high water mark. Protection of hydraulic lines will prevent punctures during operation. All fueling activities will take place outside of the active floodplain, and all equipment will undergo thorough cleaning and inspection prior to operation. Equipment will be parked on predetermined locations on high ground overnight. No effects on RGSM are expected to result from contamination related to equipment fueling and leakage or accidental spills.

Over the long-term it is likely that the proposed installation of cottonwood logs at the Peralta Wasteway, Lower Peralta #1 Drain and Los Chavez Drain will result in the creation of scour pools that will extend into the ground water. These pools will provide refugia to RGSM during periods of channel dewatering and may improve the likelihood that RGSM can survive such events.

It is possible that the creation of perennially wetted pools for silvery minnows refugia may also create refugia for piscivorous species that may prey on silvery minnows. attracted to any newly created refugia pools resulting from cottonwood log installation. The major offsetting factor to this possibility is the addition of fine woody debris, first in the form of fine roots present in the rootwad that will form the bulk of the structure, and second from any woody debris collected in the rootwad. These fine and medium sized roots provide cover for small prey species such as silvery minnow. The root wad itself also serves to seine out from the river flows and collect fine woody debris such as small sticks, tree limbs, and windblown debris such as tumbleweeds. Fine woody debris has been documented to provide cover for silvery minnows during winter (Platania & Dudley, Broderick 2000).

4.7.2 Southwestern Willow Flycatcher

No Action

The No Action Alternative would have no effect on the SWFL.

Proposed Action

Short-term potential effects on SWFL during construction will be related to temporary noise during the nesting season. However, SWFL surveys conducted in the Belen Reach indicate that suitable SWFL habitat is limited (USBR 2006). This reach also receives very little overbank flooding. The majority of habitat in this reach consists of sparse, decadent saltcedar and Russian olive. Cottonwoods and grassy meadows are also interspersed throughout this reach. There are occasional stands of native willows adjacent to the river, which is where one unpaired male was detected within the Belen reach during the 2005 surveys. That site was located 14 miles downstream of the proposed project area (USBR 2006). There are no willow stands near the project area. Project construction is proposed to take place outside of the breeding season for

SWFL and will not directly affect the species. The project area occurs within critical habitat for SWFL. To minimize impacts to this and other riparian species, construction would take place between August 15 and April 15.

Indirect effects to SWFL will occur from removal of suitable habitats. Vegetation removal is limited to the removal of from three to six cottonwood snags. There will be minimal disturbance of vegetation as the cottonwood snags are in areas where understory has been cleared as part of the fuels reduction efforts. Impacts to dense, mature, or native vegetation and wetlands will be avoided. No long-term effects on SWFL populations or their habitats are expected as a result of the Project.

4.7.3 Bald Eagle

No Action

The No Action Alternative would have no effect on the bald eagle.

Proposed Action

The Proposed Action would remove from three to six cottonwood snags from each site, and relocate them to the drain outfall area. Relocation of such snags or trees could potentially change suitable bald eagle habitat from standing trees/snags to snags lying in the drain outfall area. These structures would be available for perching during hunting or resting activities. Short term construction related impacts may include temporary noise and other disturbance. Guidelines will be employed to minimize the potential for disturbing bald eagles (discussed in the Environmental Commitments section below). No long-term effects on bald eagle populations or habitat are expected to result from the Proposed Action. Large, mature cottonwood trees and snags are abundant in this area and are not limiting. Measures will be taken to minimize disturbance to riparian habitat. Proposed Action may have short-term minor potential effects to wintering bald eagles during construction, related to temporary noise and other disruptions. During construction of the habitats, if a bald eagle is spotted within 0.25 mile of active project construction, prior to starting, construction activities will be delayed until the eagle leaves the area on its own accord.

4.7.4 Western Yellow-billed Cuckoo

No Action

The No Action Alternative would have no effect on the yellow-billed cuckoo.

Proposed Action

No effects will occur to breeding cuckoos under the Proposed Action as construction is delayed until after August 15, after the breeding season. No live cottonwoods would be removed and hence no adverse impacts to habitat would occur.

4.7.5 Common Black-Hawk

No Action

The No Action Alternative would have no effect on the common black-hawk.

Proposed Action

The Proposed Action would not adversely affect this species as no adverse impacts would occur to riparian areas along the MRG in the mouths of drain outfalls.

4.7.6 New Mexican Jumping Mouse

No Action

The No Action Alternative would have no effect on the New Mexican jumping mouse.

Proposed Action

It is unlikely that this species inhabits the drain outfall areas. These are heavily impacted areas from recreational use and river maintenance activities and dense streamside vegetation, as well as wetlands with cattails have been eliminated in the areas proposed for cottonwood log structure installation. It is unlikely that this species is present in either the riparian floodplain or on in-channel islands in the vicinity of the three drain outfalls and thus would not be affected.

4.8 Cultural Resources

No Action

The No Action Alternative would have no effect on cultural resources.

Proposed Action

The Albuquerque Area Office Archaeologist determined that the project will have no effect on existing cultural resources.

4.9 Socioeconomics and Environmental Justice

No Action

The No Action Alternative would have no effect on socioeconomics or environmental justice.

Proposed Action

The proposed action would not adversely affect current socioeconomic conditions in Valencia County. The cost of the proposed action is approximately $220,000 which is small in comparison with combined state and federal expenditures within Valencia County, and will not adversely affect current economic conditions. No low-income or minority populations would be disproportionately impacted by the proposed action.

4.10 Indian Trust Assets

No Action

The No Action Alternative would have no effect on Indian Trust Assets.

Proposed Action

There are no impacts to ITAs, as no ITAs were identified within the Proposed Project Area.

4.11 Irretrievable Commitment of Resources

Implementation of the Project would result in the commitment of resources such as fossil fuels, construction materials, and labor. In addition, Federal public funds would be expended for the construction of the proposed Project.

4.12 Cumulative Effects

The 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 Proposed Action have been evaluated for the following projects relative to the Proposed Action.

The Collaborative Program has funded multiple habitat restoration projects in the vicinity of the proposed action. Work has been done towards the removal of islands and improving habitat at Isleta Pueblo to the north of this project. Work has also been completed at the Los Lunas project to the south. This involved lowering the floodplain and creating secondary channels. North of Isleta Diversion Dam, projects creating and/or improving silvery minnow habitat are being done by the City of Albuquerque, the Interstate Stream Commission, the Army Corps of Engineers, and Reclamation. The Collaborative Program will continue to fund habitat restoration projects nearby. The proposed action and these projects are improving and/or creating habitat for the silvery minnow in the Isleta and Albuquerque reaches. Other projects, like the silvery minnow augmentation project, should provide positive synergistic interactions with habitat that would be created by this project.