

## **4.0 Environmental Consequences**

### **4.1. Introduction**

This chapter discusses the scientific and analytical basis for the summary comparison of effects in section 2.4 of Chapter 2. Included in the chapter are predicted effects of each alternative on selected environmental resources.

### **4.2. Predicted Effects on Each Relevant Issue and Resources**

#### **4.2.1. Wildlife**

##### **No Action A**

Lining Riverside Canal with concrete would not occur. As a result, wildlife such as the Pecos River Muskrat would not be affected.

##### **Proposed Action B**

Federally listed threatened and endangered wildlife species are not known to occur on or near the proposed project site. The Pecos River Muskrat (Muskrat) known to exist in canals similar to the Riverside Canal was listed by the Texas Parks and Wildlife as a Threatened Mammal; but has been delisted as a species of concern. A survey was conducted by the Texas Parks and Wildlife on the proposed canal improvement area. The results of the survey indicated that the Muskrat are living on the project site; but the project would not affect the species.

Other wildlife species habitat would not be affected by relining the canal.

##### **Secondary and Cumulative Effects**

The Pecos River Muskrat habitat along the banks of the canal would be permanently destroyed. However, since only a small portion of the canal would be lined with concrete, the proposed action would not permanently affect the Muskrat in the area. The Muskrat would simply move to another location on the banks of the canal that would not be disturbed by the project.

#### **4.2.2. Cultural Resources**

##### **No Action A**

There would be no change to the existing conditions and no effects to cultural resources.

##### **Proposed Action B**

The proposed project to line the Riverside Canal with concrete will affect its historical

features. However, the Texas Historical Commission responded to a description of the proposed action in a letter to Mr. Allen Rhames of Axiom-Blair Engineering from Lawrence Oaks the State Historic Preservation Officer. Mr. Oaks determined that the proposed Improvements to the Riverside Canal would have no adverse effects. However, Mr. Oaks indicated two conditions that would be required as follows:

- 4.2.2.1.** The section of the canal proposed to be lined would be required to be the same width (or as close to the same width as possible) as the current historic canal.
- 4.2.2.2.** As any future improvements to the Riverside Canal are made, a representative section shall be maintained in its original appearance and condition.

### **Secondary and Cumulative Effects**

The purpose of the canal would not change. However, the look of the canal would change within the project area; but would not change outside of the project area and as a result the historical look of the canal would be preserved.

#### **4.2.3. Wetlands**

##### **No Action A**

There would be no change to the existing conditions and no effects to any wetland resources.

##### **Proposed Action B**

If seepage were to be eliminated or significantly reduced as a result of lining the canal with concrete, the Rio Bosque Wetlands Park (Park) would not be affected. Since seepage would be eliminated, the regional aquifer would maintain the groundwater level much the same as before lining of the canal. Pump tests have shown that the rate of recovery from pumping wells installed within a few feet of the canal is very high. Since recovery rate of water is very high, this shows that the regional aquifer would rapidly replace any water lost from canal seepage.

### **Secondary and Cumulative Effects**

True wetlands do not exist along or near the canal in the Rio Bosque Park and as a result the project would have no effect on wetlands.

#### **4.2.4. Water Resources**

##### **No Action A**

There would be no change to the existing conditions and no effects to water resources would occur.

### **Proposed Action B**

Lining the Riverside Canal would reduce or eliminate seepage of water from the canal to the shallow Rio Grande alluvial aquifer. However, due to the high transmissivity (Axiom-Blair 2007) of the aquifer, water from other locations would recharge the loss from seepage in a very short period of time. Therefore, the impact to the groundwater aquifer would only be for a short period of time (less than a half a day). As a result, water resources under the Bosque Park would also be affected for only a short period of time.

### **Secondary and Cumulative Effects**

Elimination of seepage within the boundaries of the project site would occur. However, this would have negligible effect to the Rio Grande alluvial and Hueco Bolson regional aquifers.

The purpose of the project would be to conserve water. As a result, increased water in the canal would be available for farmers downstream of the project site.

#### **4.2.5. Vegetation**

##### **No action A**

There would be no change to the existing conditions and no effects to Vegetation.

##### **Proposed Action B**

With in the proposed project site, very little vegetation exists as a result of being previously disturbed from the operation of the Riverside Canal. However, a small amount of vegetation exists on the banks of the canal that include some sacred plants of the Isleta del Sur Pueblo. Lining the canal with concrete would eliminate those sacred plants. A list of common plants that may include some sacred plants provided by the Pueblo is listed in the table on page 15.

### **Secondary and Cumulative Effects**

Plants along the banks of the Riverside Canal within the project area which includes sacred plants would be permanently destroyed for the future. However, a good supply of the same species of plants exist in the Rio Grande and along the banks of the canal reaches that would not be lined with concrete. As a result, sacred plants would be available for the Isleta del Sur Pueblo for the future

#### **4.2.6. Environmental Justice**

##### **No Action A**

There would be no effects expected of any kind to the local population. No adverse

effects to low-income or minority populations are anticipated.

### **Proposed Action B**

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

### **Secondary and Cumulative Effects**

As a result of no effects to the local populations, there would be no cumulative effects either adverse or beneficial.

#### **4.2.7. Indian Trust Assets**

##### **No Action A**

There would be no effects to ITAs.

##### **Proposed Action B**

As a result of consultation with the neighboring Isleta del sur Pueblo, there are no known ITAs within the project area of the proposed action. Therefore, there would be no effects to ITAs.

### **Secondary and Cumulative Effects**

As a result of no effects to ITAs, there would be no cumulative effects

#### **4.2.8. Air Quality and Noise**

##### **No Action A**

There would be no change to the existing conditions and no effects to air quality or noise.

##### **Proposed Action B**

As a result of the use of heavy equipment during construction, particulate matter and noise would increase in the area of the project. The increased levels of dust and noise would only be during the time of construction. After construction air quality and noise would be returned to the same conditions as existed before construction activities.

Increased dust and noise would affect religious activities of the Isleta del sur Pueblo. However, construction activities would be scheduled around the time of the religious ceremonies and as a result would have no effect upon their religious activities.

## **Secondary and Cumulative Effects**

Upon completing the project, dust and noise from construction would be eliminated. As a result, no cumulative effects are expected in the future.

### **4.3. Irreversible and Irretrievable Commitment of Resources of the Proposed Action.**

Seepage to the regional aquifer within the project site would be eliminated. Sacred plants currently existing on the banks of the canal would be destroyed and not be replaced.

## **5.0 Environmental Commitments**

**5.1.** Construction activities would be scheduled around the religious ceremonies of the Isleta del sur Pueblo.

**5.2.** A letter from the Texas Historical Commission can be found at Appendix A. The letter lists a few conditions if the project were to be implemented.

**5.3.** Sacred plants of the Isleta del sur Pueblo that currently exist in the proposed project site would be surveyed under consultation with the Pueblo to insure that the same plants exist upstream and downstream of the canal. The vegetative surveys would be conducted in the Rio Grande and other canals to insure that their sacred plants are not permanently destroyed.

## **6.0 Consultation and Coordination**

Consultation took place with the Corps of Engineers, Texas Parks and Wildlife, US Fish and Wildlife, Friends of the Rio Bosque, Isleta del sur Pueblo, Texas Historical Commission, University of Texas at El Paso, El Paso Improvement District #1, and several private individuals who attended the public meeting. These individuals will have an opportunity to review the draft EA.

The Texas Parks and Wildlife would like to have a presence or absence survey completed prior to construction of the Pecos River Muskrat (on the Texas State threatened list).

A government to government consultation with the Isleta del sur Pueblo took place on September 25, 2003, to review tribal concerns regarding the proposed project. The Pueblo was concerned about air quality and noise during religious ceremonies and the effects of lining the canal on some of their sacred plants on the banks of the canal. Several informal field trips have been conducted with the Pueblo to consult further and understand their needs.

The Pueblo would like construction to be conducted from last week of May through January 13<sup>th</sup> since ceremonies exist during that time. This request would mitigate effects of construction on the spiritual ceremonies of the Pueblo.

The Texas State Historic Preservation Office (SHPO) requires that some of the canal show original appearance and condition in future canal improvements. In addition, SHPO requests

that the design be as close to the width of the original canal as much as possible.

A public meeting was held September 10, 2003 to present the proposed project and receive comments from those who attended.

## 7.0 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
Woodrow Irving	Project Engineer	Coordinated issues with the Pueblo, reviewed design for Reclamation requirements	Reviewed and commented on EA
Al Blair	Lead Project Engineer and EP #1 Engineering Consultant	Supervised the Design of project proposed action	Reviewed and commented on EA, Provided Aquifer Test Analysis and Technical Report
Jeff Hanson	Archaeologist	Reviewed cultural resources section EA for accuracy	Provided SHPO letter and comments for EA

## 8.0 References

Alvarez, Henry and Wayne Bucker, 1980, Report 246, Groundwater Development in the El Paso Region, Texas with Emphasis on the Resources of the Lower El Paso Valley, Texas Water Development Board.

International Boundary and Water Commission (IBWC), 1993, Final Environmental Assessment Rio Grande American Canal Extension, El Paso, Texas, Ground Water Resources, page 17.

El Paso County Water Improvement District Number One. Project Report. May 2003.

New Mexico-Texas Water Commission 1998, 1999. El Paso-Las Cruces Regional Sustainable Water Project. Community Newsletter. 1:1 and 1:4.

U.S. Bureau of Reclamation. Prevention and Control of Animal Damage to Hydraulic Structures. U.S. Government Printing Office. April 1991.

U.S. Environmental Protection Agency. 1997. *Jonathon Rogers Water Treatment Plant Expansion Project Environmental Assessment*. December 1997.