1.6.5. Impacts to the culture of the Ysleta del sur Pueblo.

Additional meetings were held with the Yselta del sur Pueblo to further define their issues regarding the proposed action. The following are their concerns:

1.6.5.1. Affects of lining the canal on their sacred plants.
1.6.5.2. Affects of construction activities during religious ceremonies.

1.6.6. Environmental Justice and Indian Trust Assets are issues that are required to be considered by the Department of Interior.

2.0 Description of Alternatives Including the Proposed Action

2.1. Introduction:

This chapter will be devoted to describing and comparing the alternatives including a summary of environmental consequences. The chapter has five 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 Reclamation's Preferred Alternative
2.1.4. Summary Comparison of the Activities, the Predicted Achievement of the Project Objectives, and the Predicted Environmental Effects of All Alternatives (see table on page 10)

2.2. Description of the Alternatives:

2.2.1. No Action Alternative (A):

Implementation of this alternative would not satisfy the purpose and need of the proposed action. Weaknesses in the canal would continue to exist including inefficiencies of the delivery structures. In addition, high seepage and evaporation losses would continue to exist at the present rate.

2.2.2. Proposed Alternative (B)

Three canal sections A, B, and C (see Figure 2, Page 8) would be concrete lined with side slopes of 1:5:1. Although the dimensions would be different for each section, it would be necessary to carry a maximum flow of 1590 cubic feet per second (cfs). The Partidor Check, Franklin Check, and the Wasteway One Check Structures would be replaced with new efficient Structures. The Partidor Check Structure would discharge water to Reach C of the Riverside Canal. The Franklin Check Structure would discharge water to the Franklin feeder, an existing, earthen-lined, irrigation canal which flows to the northeast to feed the Franklin Canal. Both check structures would contain two, twelve-foot wide radial gates to control flow. The Wasteway One Structure is intended to pass water from Reach C to the existing Riverside Canal. Its design would also include a side-channel

weir to allow water to be wasted in an emergency from Reach C to the Rio Grande.

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

2.3.1. An effective alternative would correct weaknesses in the canal and help satisfy the need to help increase the water supply and efficiency of water delivery to the District. The following are criteria used for the process to select a preferred alternative:

2.3.1.1. An engineering design that fulfills the objectives listed in section 1.4.
2.3.1.2. An alternative that would be comply with the Lower Rio Grande Act (P.L. 106-576) including any additions to the act that would affect this project.
2.3.1.3. An alternative that would be most cost effective.

2.3.2. The following table compares alternatives considered including the preferred alternative:

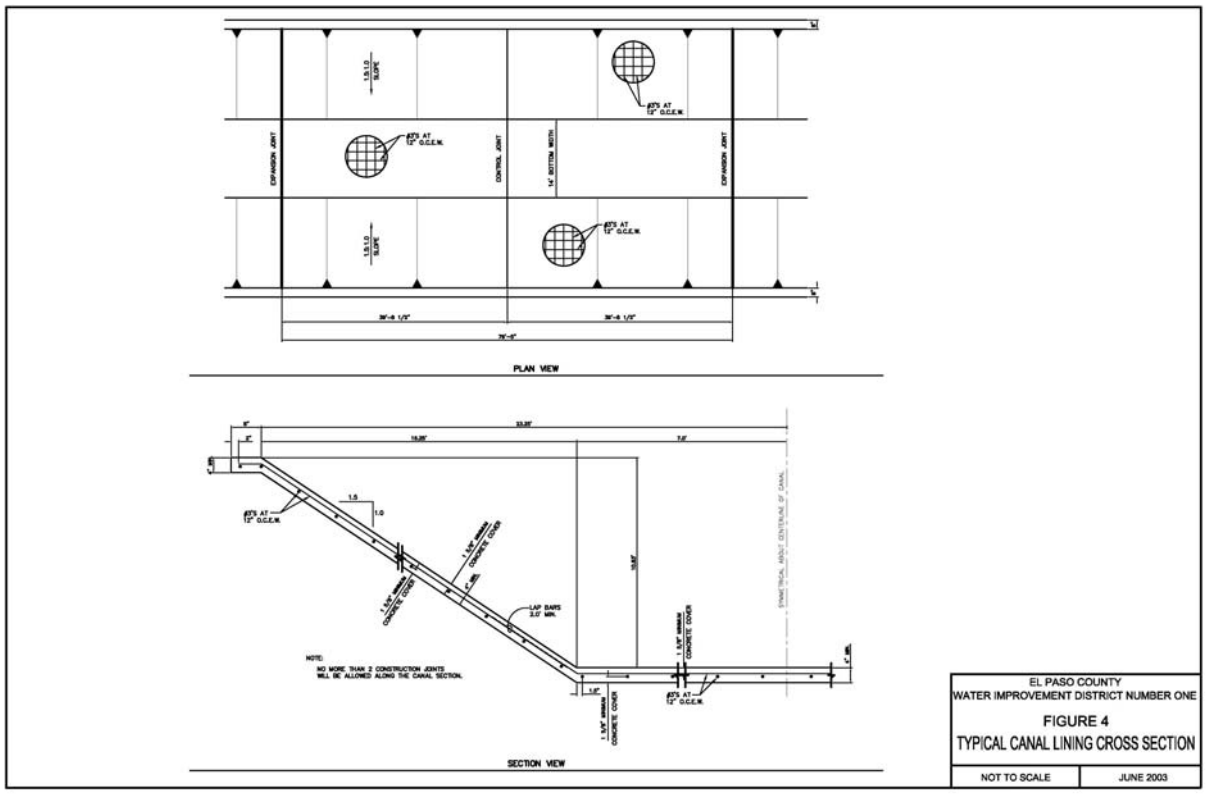
Alternatives Considered	**Criteria for Selecting the Preferred Alternative**		
	Meets Objective criteria in sections 1.4 and 2.3.1	**Complies with Public Law 106-576**	**Cost Effective**
No action	No	No	No
Elimination of canals	No	No	No
Reconstruction of canals	Partially	No	Yes
Replacement of canals with large diameter pipe	Yes	Yes	No
Concrete line canal sections A, B, and C	Yes	Yes	Yes

2.4. Discussion of Alternative B:

The proposed project area lies within El Paso County, Texas as indicated in Figure 1. The existing components of the segment of the canal system include approximately 16,000 feet of earthen-lined canal with bottom widths varying from 45 to 90 feet. The proposed canal (see Figure 2, section A, B, and C) begins at the downstream end of the existing American Canal. The project is divided into three segments: A, B, and C. Reach B connects to the middle of Reach, A at a point just downstream of the Wastewater Treatment Plant Bridge. Reach A terminates at the Partidor Check Structure. Reach C extends from the Partidor Check structure to the Wasteway One Check Structure.

Canal sections A, B, and C will be concrete lined with side slopes of 1:5:1 and a depth of about 11 feet. Each is designed to carry a maximum flow of 1590 cfs while maintaining about 4 feet of total freeboard. Section A has a length of 7630 feet and a bottom width of 14 feet. Section B has a length of 4000 feet and a bottom width of 18 feet. Section C has a length of 4370 feet and a bottom width of 28 feet. A typical canal lining cross-section is shown in Figure 4 as follows:

Figure 3.



The Partidor and Franklin Check Structures would be constructed to allow more concise and efficient management of water within the primary canal systems. Both check structures would contain two, twelve-foot wide radial gates to manage flow. The Partidor check would also contain overflow bypass channels on both sides of the radial gate bays, giving it a total bypass capacity of approximately 1590 cfs. The structures would each be approximately 140 feet long. Transition sections would be constructed from the proposed concrete-lined canal A, into the structure, and through to the Franklin Feeder. A Schematic Check Structure Layout is provided at Figure 5 on page 9.

Also the canal would be lined from the Partidor Check Structure to the Wasteway One Check Structure (see Figure 2, Page 8). The design of Wasteway One Check Structure would match that of the Franklin and Partidor Check Structures. Included at the Wasteway One Check Structure would be the construction of a side-channel weir to allow water to be wasted (in an emergency) or sluiced (for maintenance) from canal reach C to the Rio Grande through an existing wasteway culvert (see Figure 6, Page 9).

Figure 4.

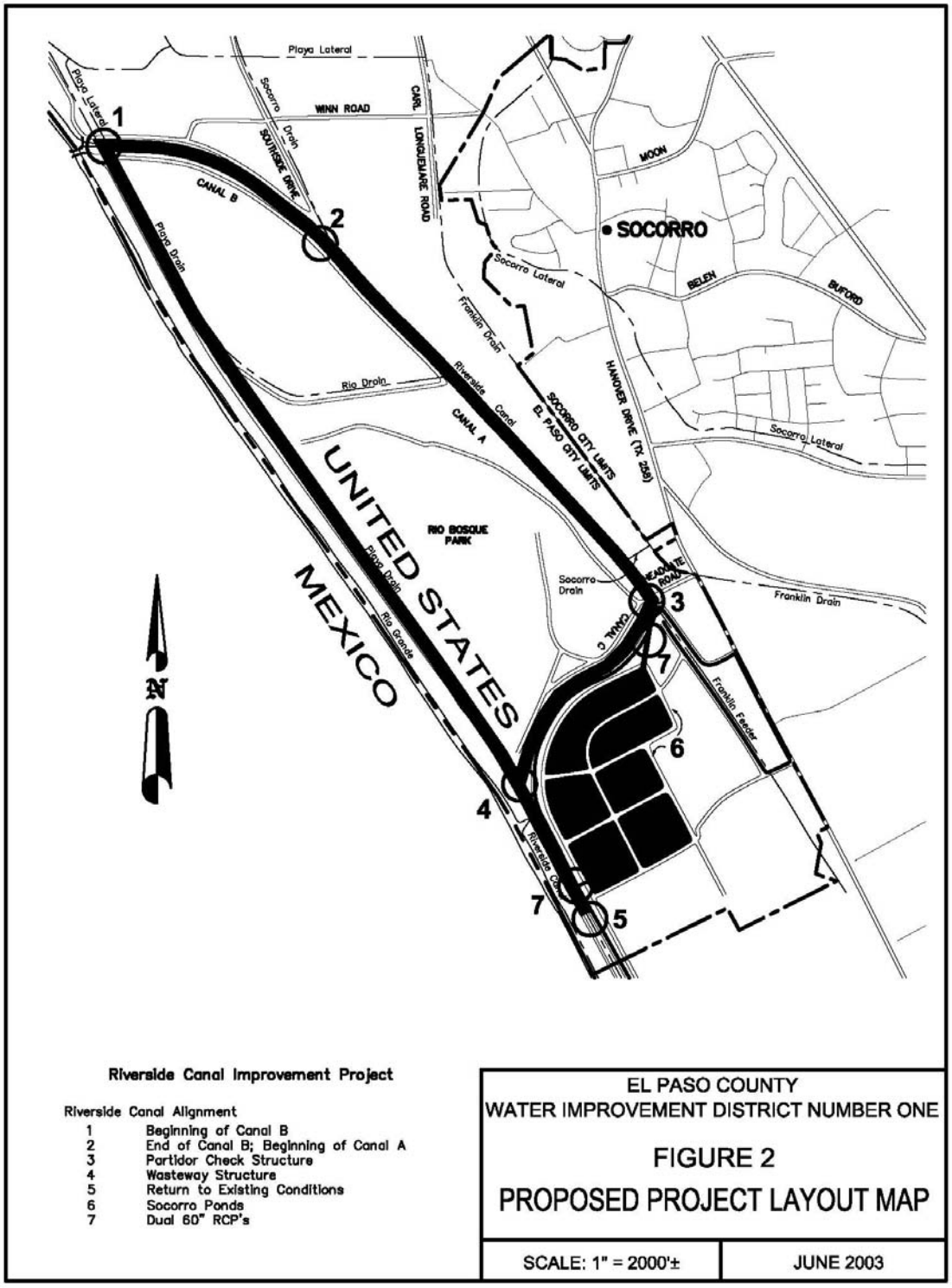

Playa Lateral
Socorro Drain
WINN ROAD
CARL LONGUEMARE ROAD
SOUTHSIDE DRIVE
CANAL B
Playa Drain
MOON
SOCORRO
Socorro Lateral
BELEN
BUFORD
Franklin Drain
Rio Drain
Riverside Canal
CANAL A
HANOVER DRIVE (TX 259)
SOCORRO CITY LIMITS
EL PASO CITY LIMITS
UNITED STATES
MEXICO
RIO BOSQUE PARK
Rio Grande
CANAL C
Franklin Feeder
1
2
3
4
5
6
7
N
Riverside Canal Improvement Project
Riverside Canal Alignment
1 Beginning of Canal B
2 End of Canal B; Beginning of Canal A
3 Partidor Check Structure
4 Wasteway Structure
5 Return to Existing Conditions
6 Socorro Ponds
7 Dual 60" RCP's
EL PASO COUNTY
WATER IMPROVEMENT DISTRICT NUMBER ONE
FIGURE 2
PROPOSED PROJECT LAYOUT MAP
SCALE: 1" = 2000'±
JUNE 2003

Figure 5.

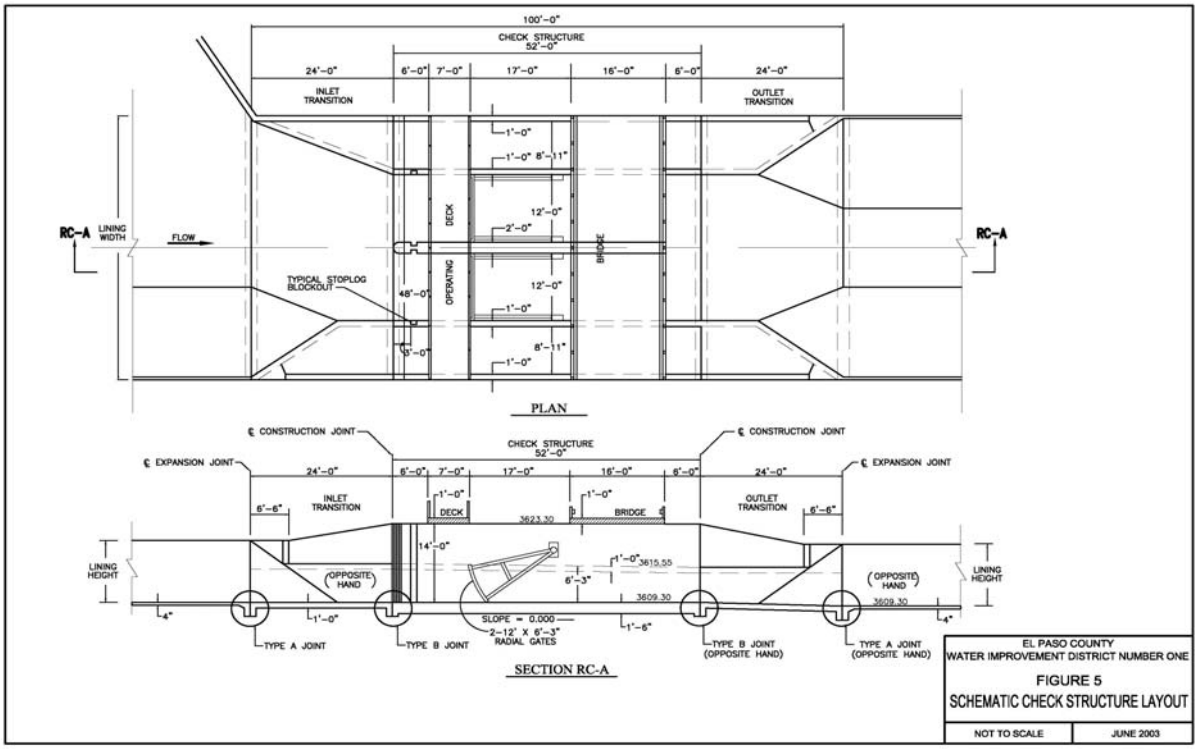
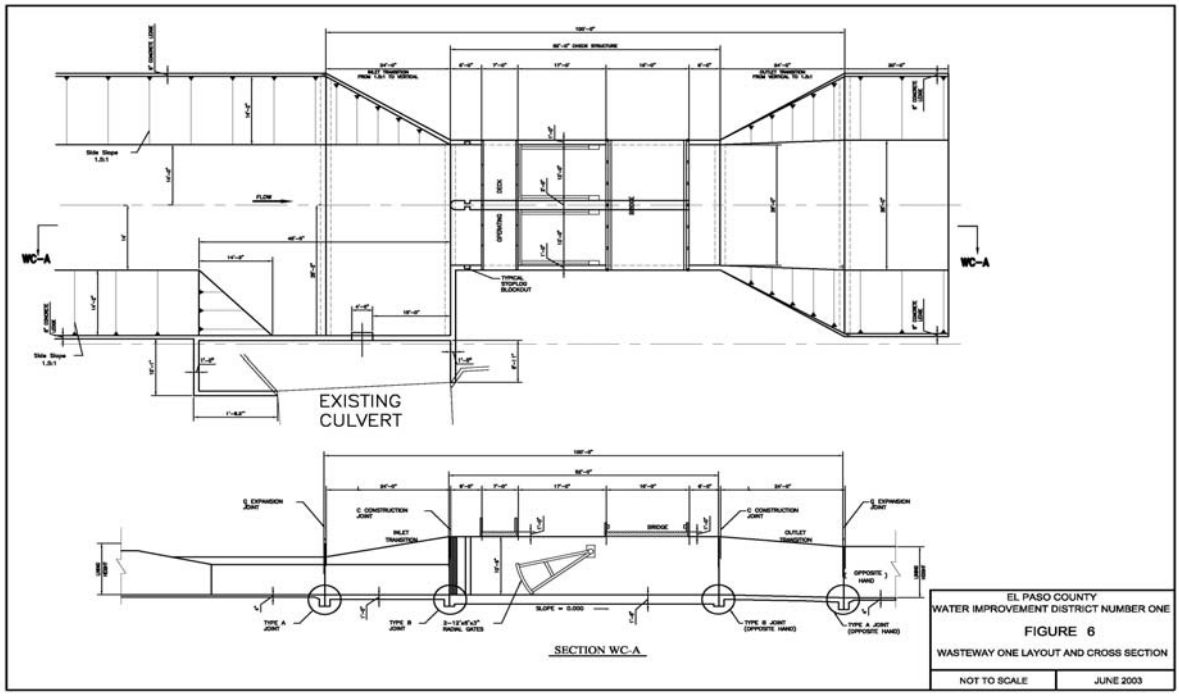


Figure 6.



2.5. Summary Comparison of the Alternatives, the Predicted Achievement of the Project Objectives, and the Predicted Environmental effects of Reasonable Alternatives.

Reasonable Alternatives	**Affected Resources**	**Predicted Impacts (Issues section 1.6) of the Alternatives on the Resources**	**Predicted Achievement of objective criteria listed in section 1.4 and section 2.4.1 to fulfill the need.**
No Action A	Vegetation	None	**None**
	Threatened and Endangered Wildlife Species	None	None
	Wetlands	None	None
	Water Resources	Continued seepage from the unlined canal	None
	Environmental Justice	None	None
	Indian Trust Assets	None	None
	Cultural Resources	None	None
	Air Quality and Noise	None	None
Proposed Action Alternative B	Vegetation	Destroys vegetation in the canal including some sacred pueblo plants	Not applicable (N/A)
	Threatened and Endangered Wildlife Species	None	N/A
	Wetlands	Eliminating seepage from the canal would not affect the Rio Bosque Park nor the potential for a wetland	Nearly eliminates seepage losses to the groundwater
	Water Resources	Eliminating seepage from the canal will reduce the amount of water going to the Hueco Bolson Aquifer	None
	Environmental Justice	None	None
	Indian Trust Assets	None	None
	Cultural Resources	The canal and the check structures would be replaced	Improvement in deliveries and diversion of water to the canal
	Air Quality and Noise	Increased dust and noise during construction	N/A