

FINAL
ENVIRONMENTAL ASSESSMENT
FOR
PRICE/PECOS CORRIDOR
OF THE
PIMA-MARICOPA IRRIGATION PROJECT

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Phoenix Area Office
P.O. Box 81169
Phoenix, Arizona 85069-1169

Tom Johnson
(DJ)

IN REPLY REFER TO

PXAO-1500 ENV-6.00

To: All Interested Persons, Organizations, and Agencies

From: Thomas G. Burbey
Area Manager

Subject: Finding of No Significant Impact (FONSI) and Final Environmental Assessment (EA) for the Price/Pecos Corridor of the Pima-Maricopa Irrigation Project (P-MIP)

Attached is the FONSI and final EA for the subject project. We have determined that construction of the Price/Pecos alignment will not significantly impact the human environment.

The Price/Pecos corridor is the first phase of a common-use irrigation system, known as P-MIP, designed to deliver water to lands within the Gila River Indian Reservation. Effects of the P-MIP were originally addressed in a final programmatic environmental impact statement (PEIS) in 1997. The Price/Pecos EA carries forward our commitment in the PEIS to evaluate specific components of each construction phase of the P-MIP, the associated impacts from implementation of the phase, and identify mitigation measures as appropriate.

A draft of the Price/Pecos EA was made available on December 9, 1997, for a 30-day public review and comment period. A total of 87 public and private entities received copies of the draft EA. Public notices of the availability of the draft EA were sent to 834 individuals, organizations, and agencies, including several news media outlets. Letters were received from four commentors.

The final EA incorporates changes made in response to comments. In general, the public comments did not require that substantive changes be made to the draft EA. Therefore, the final EA provides clarification and additional detail for issues that were referenced in the comments.

The final Price/Pecos EA completes the National Environmental Policy Act analysis of the first phase of the P-MIP. Your interest in this project is greatly appreciated. If you have any questions regarding this matter, please contact Mr. John McGlothlen, of my staff, at the above address, Attention: PXAO-1500, or by telephone at 602-216-3866.

Thomas G. Burbey

Attachment

Final
Environmental Assessment
for
Price/Pecos Corridor
of the
Pima-Maricopa Irrigation Project

Project Proponent:

Gila River Indian Community

Prepared for:

U.S. Bureau of Reclamation
Phoenix Area Office
10888 North 19th Avenue
Phoenix, AZ 85068
Contact: John McGlothlen 602-216-3866

Prepared by:

EcoPlan Associates, Inc.
1845 S. Dobson, Suite 111
Mesa, AZ 85202
Contact: Bruce Brown, 602/831-8780

July 1998

DISCLAIMER

Pursuant to the requirements of 40 CFR Section 1506.5, EcoPlan Associates declares under oath that it has no interest, financial or otherwise, in the outcome of this project.

F. Bruce Brown 7/9/98

F. Bruce Brown

Date

Principal

EcoPlan Associates, Inc.

Mesa, Arizona

United States Department of the Interior
Bureau of Reclamation
Lower Colorado Region
Phoenix Area Office

FINDING OF NO SIGNIFICANT IMPACT

Price/Pecos Corridor
of the
Pima-Maricopa Irrigation Project
Maricopa County, Arizona

Approved: Thomas G. Burbey
Thomas G. Burbey
Area Manager, Phoenix Area Office
Bureau of Reclamation

Date: 7/21/98

FONSI No. PXAO-98-5

Pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended, and based upon the analysis presented within the attached Environmental Assessment for the Price/Pecos Corridor of the Pima-Maricopa Irrigation Project, we have determined that construction and operation of the Price/Pecos irrigation corridor will not result in a significant impact on the human environment.

BACKGROUND

On October 22, 1992, the Secretary of Interior entered into a water service agreement with the Gila River Indian Community (Community) for the annual delivery of Central Arizona Project (CAP) water. Following examination of different methods of delivering CAP water on the Gila River Indian Reservation (Reservation), the Community determined that integration of CAP resources into a common-use irrigation delivery system would provide maximum benefit toward meeting its goals of rehabilitating previously and currently irrigated agricultural lands, and developing new lands for agricultural purposes. The Community ultimately decided to utilize an existing irrigation system, supplemented by construction of new infrastructure, to deliver CAP water for agricultural development. Reclamation and the Community completed a programmatic environmental impact statement (PEIS) in 1997 to evaluate potential impacts resulting from the Pima-Maricopa Irrigation Project (P-MIP). A Record of Decision regarding the implementation of the P-MIP was by issued by Reclamation's Commissioner on July 20, 1998.

To comply with the provisions of NEPA and commitments made in the PEIS, Reclamation and the Community will evaluate site-specific impacts associated with various phases of the P-MIP during project planning and development. The Price/Pecos environmental assessment (EA) describes the potential impacts to the human environment resulting from construction of a portion of the main irrigation distribution system along Price and Pecos roads in the northwestern part of the Reservation. Two action alternatives and the no action alternative are evaluated in the EA.

Public involvement for the Price/Pecos project included three Community informational meetings and one public meeting. Over 800 individuals, agencies, and organizations were mailed notices on the availability of the draft EA. In addition, news releases were sent to various news media regarding the draft EA. Only four entities provided written comments.

FINDING OF NO SIGNIFICANT IMPACT

We have determined that construction of the Price/Pecos alignment of the P-MIP will not significantly impact the environment, and preparation of an environmental impact statement is not warranted. This decision is based upon the following considerations.

1. The Price/Pecos alignment will consist of a combined buried pipeline and open, concrete-lined canal. Under the preferred alternative, most of this alignment would consist of buried pipeline and require approximately 68.5 acres of land on the Reservation for construction easements and rights-of-way. Alternative 1 would utilize a greater percentage of open canal and require 150.1 acres of Reservation land for rights-of-way and easements. Affected land resources include mostly active and retired agricultural lands interspersed with disturbed Sonoran desert scrub. The predominately agricultural-based land use within the project area will not change as a result of implementation of either action alternative.

2. The temporary and permanent loss of Sonoran desert scrub will occur from construction and operation of the Price/Pecos alignment. However, the habitat to be impacted occurs mostly on land previously utilized for agriculture and is of low to moderate quality. Impact to vegetation and exposed soils will be mitigated by revegetating areas disturbed by the project with native plants. No significant biological resources or species protected under the authority of the Endangered Species Act are known to occur in the project area.

3. Reclamation and the State Historic Preservation Officer (SHPO) have concurred with the findings of intensive cultural resources surveys of the Price/Pecos alignment. Only one archeological site identified within the project area is considered potentially eligible for the National Register of Historic Places. This site, however, is outside the area of potential effect for either action alternative. One other site reported by an earlier study as possibly containing a prehistoric reservoir and canal system and will be thoroughly investigated prior to construction. A testing plan for the reservoir and canals will be implemented to determine if subsurface artifacts are present. Cultural features or deposits found during any phase of the Price/Pecos project will be documented in accordance with the terms and conditions of a Programmatic Agreement among Reclamation, the Community, the SHPO, and the Advisory Council on Historic Preservation.

4. Minor effects to air quality will occur as a result of construction activities associated with the Price/Pecos project. Construction vehicle operation and related soil disturbing activities will contribute *de minimis* levels of carbon monoxide (CO), volatile organic compounds, nitrogen oxides, and fugitive dust emissions (PM₁₀) within the project area, most of which is in the federally-designated Maricopa County nonattainment area for CO, ozone, and PM₁₀. Mitigation measures will be employed to minimize emissions of CO, ozone, and PM₁₀. No conformity determination is required, because total emissions of criteria pollutants for the nonattainment area will not exceed regulatory threshold levels for general conformity.

5. Water resource impacts will be limited to the project corridor. Storm water drainage may be interrupted by levees associated with the elevated canal portion of the irrigation distribution system causing low areas along the up-slope side of the canal to collect runoff. The results of drainage studies will be incorporated into the final design of canal segments to minimize impact to drainage patterns and ensure that facilities and surrounding land uses will be protected from flooding or sediment loading. The Price/Pecos alignment will not affect riparian areas, wetlands, or the Gila River 100-year floodplain.

6. The environmental commitments identified in the EA will be implemented by the Community as required during construction and operation.

Documents related to this action are listed below.

U.S. Bureau of Reclamation. 1997. Final Programmatic Environmental Impact Statement, Pima-Maricopa Irrigation Project. Prepared by the Gila River Indian Community and Ecoplan Associates, Incorporated for U.S. Bureau of Reclamation.

U.S. Bureau of Reclamation. 1998. Record of Decision. Pima-Maricopa Irrigation Project.

Programmatic Agreement among the Gila River Indian Community, the United States Bureau of Reclamation, the Arizona State Historic Preservation Office, and the Advisory Council on Historic Preservation regarding treatment of cultural resources affected by development of the Pima-Maricopa Irrigation Project on the Gila River Indian Reservation. 1997. Phoenix, Arizona.

**Draft Environmental Assessment
For
Price/Pecos Corridor
of
Pima-Maricopa Irrigation Project**

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Price/Pecos Environmental Assessment

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ACRONYMS

<u>Abbreviation</u>	<u>Definition</u>
ACHP	President's Advisory Council on Historic Preservation
BIA	U.S. Bureau of Indian Affairs
CAA	Federal Clean Air Act of 1970
CAP	Central Arizona Project
CEQ	Council of Environmental Quality
cfs	Cubic feet per second
CO	Carbon Monoxide
Community	Gila River Indian Community
EA	Environmental Assessment
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FPEIS	Final Programmatic Environmental Statement
FWCA	Fish and Wildlife Coordination Act
FWS	U.S. Fish and Wildlife Service
FY	Fiscal Year
GRIC	Gila River Indian Community
Hohokam	Piman word meaning "the ancient ones" or "those who have gone before"
ITA	Indian Trust Assets
M&I	Municipal and Industrial
MAG	Maricopa Association of Governments
mg/l	Milligrams per liter
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969, as amended
NPDES	National Pollutant Discharge Elimination System
NRCS	National Resource Conservation Service
PM ₁₀	Inhalable dust particulates ten microns in size or smaller
P-MIP	Pima-Maricopa Irrigation Project
ppm	Parts per million
Reclamation	U.S. Bureau of Reclamation
Reservation	Gila River Indian Reservation
ROW	Right-of-way
SCIIP	San Carlos Indian Irrigation Project
Secretary	Secretary of the Interior
SHPO	State Historic Preservation Office
SIPs	State Implementation Plans
SRP	Salt River Project
TCPs	Traditional Cultural Properties
TDS	Total Dissolved Solids
µg/m ³	Micrograms per cubic meter

CONVERSION TABLE

<u>U.S. UNIT</u>	<u>U.S. WEIGHT</u>	<u>METRIC EQUIVALENT</u>
1 short ton	2000 pounds	0.907 metric tons
1 long ton	2240 pounds	1.016 metric tons
1 hundredweight	100 pounds	45.359 kilograms
1 pound	16 ounces	0.453 kilograms
1 ounce	16 drams	28.349 grams
1 dram	27.343 grains	1.771 grams
1 grain	0.036 drams	0.0648 grams

<u>U.S. LIQUID MEASURE</u>		
1 gallon	4 quarts	3.785 liters
1 quart	2 pints	0.946 liters
1 pint	4 gills	0.473 liters
1 gill	4 fluid ounces	118.291 milliliters
1 fluid ounce	8 fluidrams	29.573 milliliters
1 fluidram	60 minims	3.696 milliliters
1 minim	1/60 fluidram	0.061610 milliliters

<u>U.S. DRY MEASURE</u>		
1 bushel	4 pecks	35.238 liters
1 peck	8 quarts	8.809 liters
1 quart	2 pints	1.101 liters
1 pint	1/2 quart	0.550 liters

<u>U.S. LENGTH</u>		
1 mile	5,280 feet, 320 rods, 1,760 yds	1.609 kilometers
1 rod	5.50 yds, 16.5 feet	5.029 meters
1 yard	3 feet, 36 inches	0.9144 meters
1 foot	12 inches, 0.333 yds	30.480 centimeters
1 inch	0.083 feet, 0.027 yds	2.540 centimeters

<u>U.S. AREA</u>		
1 square mile	640 acres	2.590 sq. kilometers
1 acre	4,840 sq. yds, 43,560 sq. feet	0.405 hectares
1 square rod	30.25 sq. yards	25.293 sq. meters
1 square yard	1296 sq. inches, 9 sq. feet	0.836 sq. meters
1 square foot	144 sq. inches	0.093 sq. meters
1 square inch	0.007 sq. feet	6.451 sq. centimeters

<u>U.S. VOLUME</u>		
1 cubic yard	27 cubic feet	0.765 cubic meters
1 cubic foot	1,728 cubic inches	0.028 cubic meters
1 cubic inch	0.00058 cubic feet	16.387 cubic centimeters
1 acre-foot	43,560 cu.ft., 325,851 gal.	1,234 cubic meters

CHAPTER 1

PURPOSE AND NEED

1.1 INTRODUCTION

Congress passed the Colorado River Basin Project Act (PL 90-537) on September 30, 1968. The Act authorized the Secretary of the Interior (Secretary), through the U.S. Bureau of Reclamation (Reclamation), to construct the Central Arizona Project (CAP), a water resource development and management project with the primary purpose of furnishing Colorado River water for irrigation, and municipal and industrial (M&I) uses in central and southern Arizona. On October 22, 1992, the Secretary entered into a water service contract with the Gila River Indian Community (Community) for the annual delivery of 173,100 acre-feet of CAP water for agricultural use. Following extensive investigation of different methods for delivery and use of CAP water on the Gila River Indian Reservation (Reservation), the Community determined that the maximum benefit could be obtained by integrating CAP water resources into a common-use irrigation delivery system. This common-use irrigation delivery system, known as the Pima-Maricopa Irrigation Project (P-MIP), would be capable of conveying irrigation water from all available sources to a maximum of 146,330 acres identified for agricultural development in the Master Plan for Land and Water Use (Franzoy Corey, 1985).

A Final Programmatic Environmental Impact Statement (FPEIS) was prepared for P-MIP in 1997 to comply with the National Environmental Policy Act of 1969 (NEPA) (PL 91-190, as amended). The FPEIS described impacts associated with delivery and use of CAP water based upon the best information available at that time. The FPEIS assessed the impacts of the P-MIP at full development and committed to provide site-specific environmental evaluations of the separate project components as they are considered for implementation. The Price/Pecos Pipeline has been selected as the first component of P-MIP for implementation.

In the unlikely event that other P-MIP components are not constructed, the Price/Pecos component could function to integrate area wells to serve agricultural lands in the Memorial and Broadacres areas. Supplemental surface water from the Santan Canal would be within 2.5 miles and could provide additional water supply assurance to agricultural lands with minimum construction.

1.2 PROJECT LOCATION

The project area is located in Maricopa and Pinal counties on the Gila River Indian Reservation as shown in Figure 1. The project area is a corridor which runs north and south along Old Price Road to the intersection with Pecos Road. At Pecos Road, the corridor turns west following the Reservation boundary to Interstate 10 and turns south for a short distance to the Broadacres Canal (Figure 2).

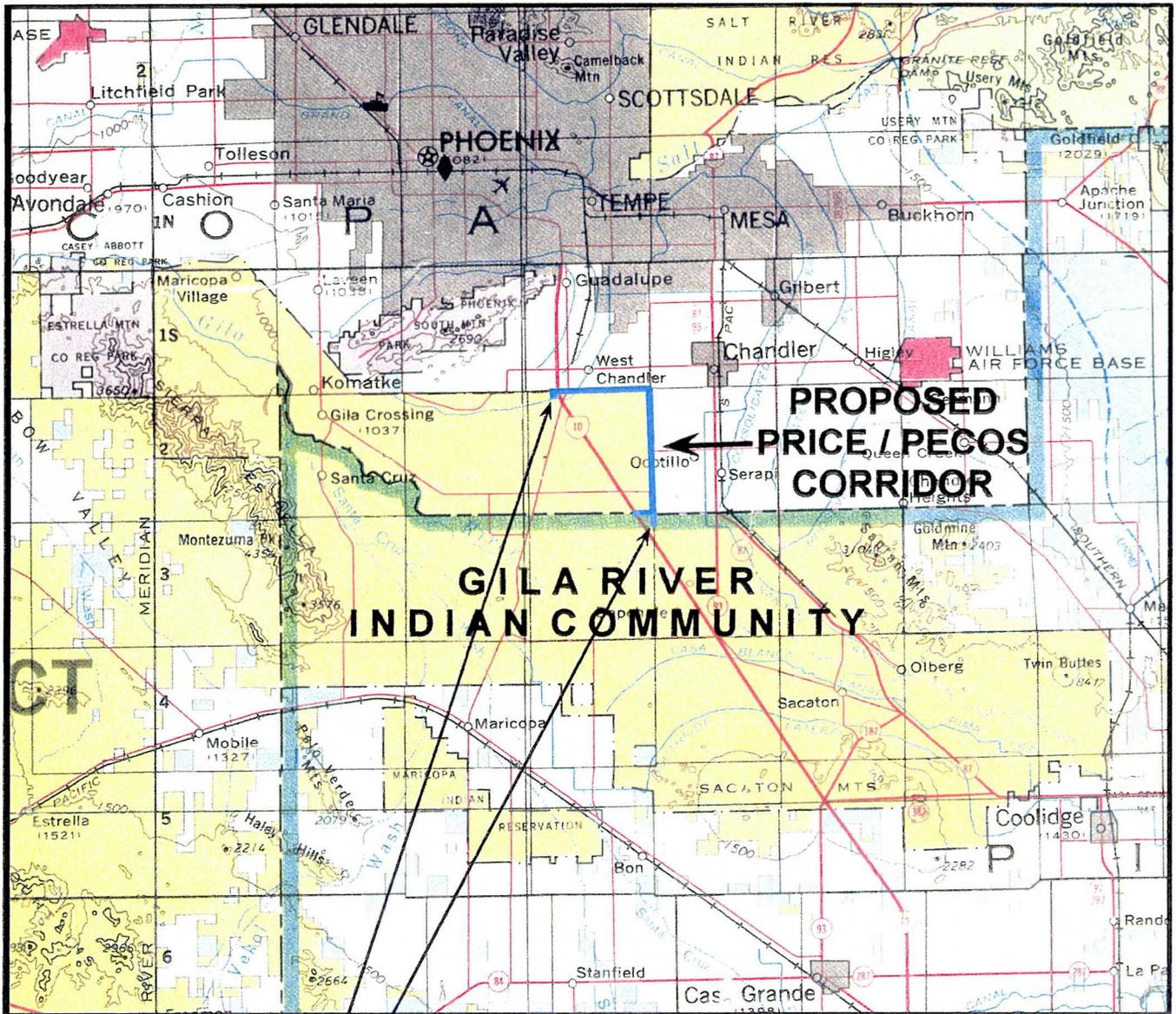


Figure 2: Price/Pecos Project Area

1.3 PURPOSE AND NEED FOR THE PROPOSED PROJECT

The FPEIS identified the purpose of the P-MIP as a common use irrigation system with the capability to receive water from any source available to the Community and provide irrigation for up to 146,330 acres of land on the Reservation. The main stem P-MIP delivery system consists of the Pima Lateral, Santan Canal, and Santan Canal Extension. Components of the main stem delivery system were analyzed using the following eight criteria: construction costs, right-of-way requirements, cultural impacts, environmental impacts, delivery potential, maintenance costs, operation costs and ease of construction. The purpose of the Price/Pecos Project is to function as a subcomponent of P-MIP, essential for conveying irrigation water to the western half of the Reservation. The Price/Pecos Project is a subcomponent of the Santan Canal Extension and was assessed to have the best likelihood to be available for early construction. The purpose of this environmental assessment (EA) is to describe the site-specific impacts from construction of the Price/Pecos Project. Irrigation deliveries to existing and potential agricultural lands to be served by the Price/Pecos Project will be covered in future environmental assessments.

The Tribal Council has adopted Resolution GR-03-97 which accepts the Price/Pecos area as the priority design area for the P-MIP. Resolution GR-55-97 approves construction activities (following NEPA compliance) on Tribal lands along the Pecos Road portion of the Price/Pecos Project (Appendix A).

1.4 PRIOR COMPLIANCE WITH NATIONAL ENVIRONMENTAL POLICY ACT

This EA is tiered to the Final Programmatic Environmental Impact Statement for the Pima-Maricopa Irrigation Project (USBR, 1997). The Price/Pecos Project involves Federal actions including expenditure of Federal funds and granting of rights-of-way to construct this component of the P-MIP.

This EA has been prepared in compliance with the National Environmental Policy Act (NEPA) of 1969, as amended, Council on Environmental Quality Regulations (40 CFR, Parts 1500-1508), Reclamation's NEPA Handbook (USBR, 1990), Floodplain and Wetlands Executive Orders 11988 and 11990, the Federal Endangered Species Act (ESA) (PL 93-205, as amended), and the National Historic Preservation Act (16 USC 470). Compliance with NEPA, as with the Price/Pecos Project, will occur as future conveyance facilities, distribution systems, and agricultural areas area planned.

CHAPTER 2

ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.1 PROJECT DESCRIPTION

The P-MIP is currently being developed to meet the Community goals of rehabilitating or redeveloping previously and currently irrigated agricultural lands, and bringing new lands into production within the Reservation. Progress towards the goal of expanded irrigated agriculture on the Reservation is being achieved through the preparation of studies and conceptual designs for various segments of the project. The studies and designs have assisted project staff to develop a schedule for design and construction.

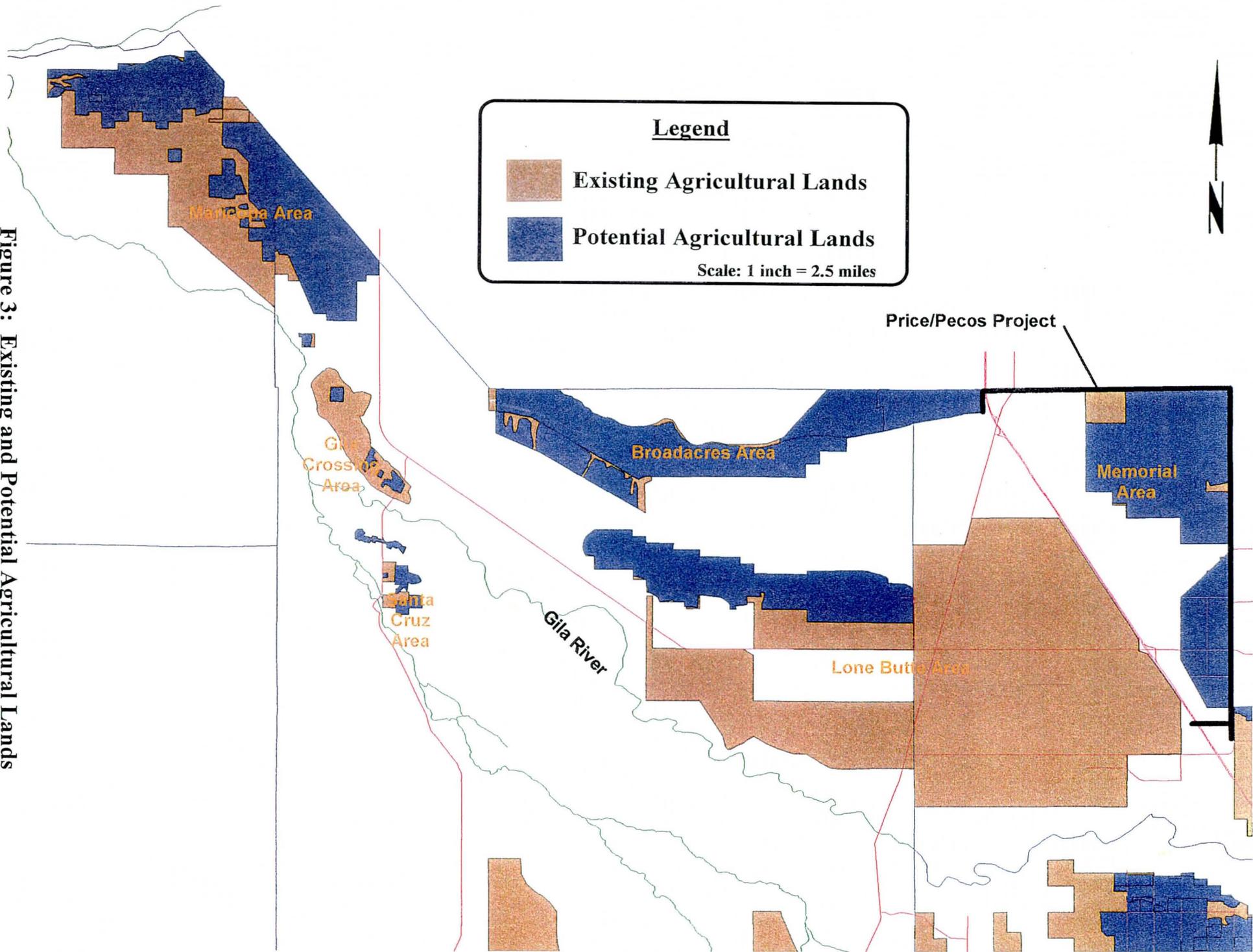
The Price/Pecos Corridor will form part of a larger irrigation distribution system that will serve lands in the northwestern part of the Reservation. Future turnouts in the corridor will provide supplemental irrigation to about 5,739 acres of currently developed farmland in the "Memorial Area" (Figure 3). In addition, the Price/Pecos component will enable water to be delivered downstream to about 5,209 acres of developed farmland in the Broadacres area and 5,265 acres in the Maricopa area. The total developed farmland in these three areas is 16,213 acres. Future development in the three areas could add another 4,100 acres for a total irrigated area of about 20,000 acres.

One major turnout, the I-10 Lateral, will branch west from the Price/Pecos alignment. The I-10 Lateral will extend west only a short distance in the Price/Pecos Project. However, future construction activities will extend the I-10 Lateral to serve lands in the Lone Butte area, Gila Crossing area and Santa Cruz area. The Lone Butte area has about 3,279 acres of existing developed farmland while the Gila Crossing area has 104 acres and the Santa Cruz area has 263 acres. Total developed farmland in these three areas is 3,646 acres. Future agricultural development potential is the greatest in the Lone Butte area where an estimated 19,100 additional acres could be irrigated. Future potential agricultural development in the Gila Crossing area is estimated to be 977 acres, and 683 acres in the Santa Cruz area. Future development could add another 20,760 acres for a total irrigated area of about 24,400 acres in these three areas.

The Price/Pecos Corridor and the I-10 Lateral form components of a main stem delivery system that will eventually serve 19,497 acres of currently developed farmland and up to an additional 25,000 acres of potential farmland in the area of the P-MIP. At full development, the Price/Pecos segment of the main delivery system will assist to serve almost 45,000 acres of farmland.

The Price/Pecos Project focus is on the main conveyance facility; distribution system studies and construction will occur in a later phase of the P-MIP. Irrigation deliveries to existing and potential agricultural lands will be covered in future EAs.

Figure 3: Existing and Potential Agricultural Lands



The Price/Pecos study and concept design address the routing of the Santan Canal Extension through the "Memorial Area" of the Gila River Indian Reservation (HDR, 1996; see Figure 4). Existing land uses within the Memorial Area include: agricultural fields (in production and vacant), Memorial Airfield, Lone Butte Industrial Park, cattle feedlot and auction barn, and undeveloped desert.

The Price/Pecos Project is to construct the first segment of the Santan Canal Extension, beginning at the Santan Canal (Point A, Figure 4) and ending at the Broadacres Canal (Point B, Figure 4). A number of different alignments and canal/pipeline combinations that could convey water as required by P-MIP were analyzed in the development of alternatives. These analyses resulted in the selection of two action alternatives (Alternative 1 and Alternative 2) that could convey water in the main stem system to serve present and potential agricultural lands by gravity. In addition to the two action alternatives, NEPA guidelines require consideration of a "No Action Alternative" which has been included as Alternative 3. Action alternatives that could not meet the gravity service criterion were eliminated from further consideration. The remainder of this chapter describes the action alternatives, the no action alternative and the alternatives considered but eliminated from further consideration.

2.2 ALTERNATIVE 1

Alternative 1 would be a combined open, concrete-lined canal and buried pipeline system to convey water from Point A to Point B (Figure 4), a total distance of 11.6 miles; and to construct the beginning segment of the I-10 Lateral (0.67 miles) the remainder of which will be completed during a subsequent P-MIP phase.

Alternative 1 would begin at Point A and connect to the existing Santan Canal which would enter the project area from the east. Point A would be the start of the Santan Extension Canal which would have a bottom width of 12 feet (36- to 48-foot top width) and a capacity of 659 cubic feet per second (cfs). The Santan Extension Canal would continue north from Point A for a distance of approximately 0.25 miles where a major bifurcation structure would be built. Currently, the Santan Canal terminates approximately 2.5 miles to the east of where the Price/Pecos Project begins (Point A, Figure 4). The 2.5-mile Santan Canal connection to the Price/Pecos Project will be constructed at a later date.

The bifurcation structure would divert a maximum flow of 343 cfs to the west and convey up to 316 cfs north. Only 0.67 miles of the western branch (I-10 Lateral) would be built at the present time, consisting of an eight-foot bottom width canal and two siphons. The first siphon would be eight feet in diameter and approximately 50 feet in length at the intersection with the El Paso Natural Gas pipeline and the second siphon would be nine feet in diameter and 340 feet long at the intersection with Interstate 10 (I-10). Construction of the I-10 Lateral under this phase would stop at the end of the I-10 siphon. A later construction phase will extend the lateral to serve lands in the Lone Butte, Gila Crossing and Santa Cruz areas.

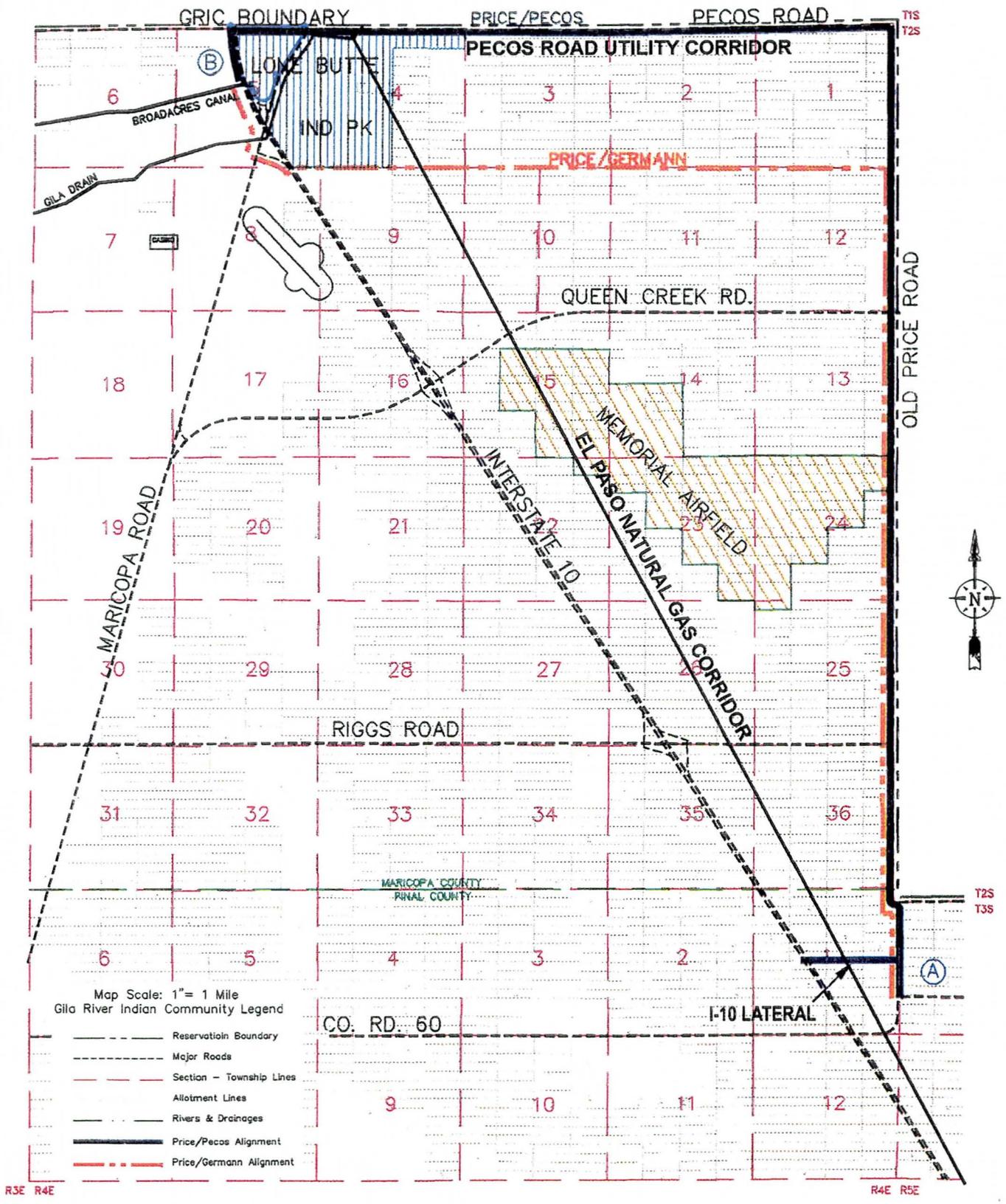


Figure 4: Action Alternatives

The northern branch would continue north from the bifurcation and parallel Old Price Road for approximately 6.4 miles before turning west to follow Pecos Road for 4.7 miles where the alignment turns south for 0.25 miles connecting with the Broadacres Canal. The total length of the northern branch canal from the bifurcation is approximately 11.4 miles. The northern branch would be a combination of open channel (8.4 miles) and buried pipeline (3.0 miles). An open canal, with a nine-foot bottom width (27- to 36-foot top width) and 316 cfs of capacity, would continue north from the bifurcation for 1.5 miles to Riggs Road. At Riggs Road, a siphon would be built with a diameter of nine feet and a length of 115 feet. The open canal would continue north from Riggs Road, with a nine-foot bottom width (27- to 36-foot top width) and 316 cfs of capacity, for 3.0 miles to Queen Creek Road. A second nine-foot diameter siphon with a length of 153 feet would be built to cross under Queen Creek Road. The canal would emerge from the siphon and continue north for 2.0 miles to Pecos Road with a nine-foot bottom width (27- to 36-foot top width) and 316 cfs capacity. At Pecos Road, the bottom width of the canal would reduce to six feet (18- to 24-foot top width) and the maximum capacity would reduce to 220 cfs.

The canal would continue with a six-foot bottom width section for another 1.9 miles and parallel Pecos Road just south of the El Paso Natural Gas pipeline to the Pacific Livestock Auction yards. At the Pacific Livestock Auction yards, the open canal would transition into a 10-foot diameter underground pipeline. The pipeline alignment would parallel the Reservation boundary to I-10, a distance of 2.7 miles, turn south for 0.25 miles and connect to the Broadacres Canal at Point B in Figure 4. The pipeline would be 10 feet in diameter for the first 1.7 miles, reduce to eight feet in diameter for 0.9 miles and reduce to five feet in diameter for the final 0.4 miles while maintaining a capacity of 220 cfs to the Gila Drain. The Gila Drain is an unlined drainage ditch which carries up to 150 cfs of agricultural return and irrigation flows to the Gila River, which originate from the Western Canal of the Salt River Project north of the project area. An inlet valve would be installed at the intersection of the pipeline and the Gila Drain to permit up to 150 cfs of settlement water to be taken into the pipeline and conveyed downstream. The pipeline would have a maximum capacity of 270 cfs from the Gila Drain to its terminus with the Broadacres Canal.

The total length of Alternative 1 is 12.3 miles including the 0.67-mile I-10 Lateral. The main alignment along Price and Pecos roads would include 8.6 miles of open channel and 3.0 miles of buried pipeline. There would be two siphons on the I-10 Lateral and two siphons on the Price/Pecos alignment. A total of 30 farm turnouts and eight check structures would be built on the Price/Pecos alignment, no turnouts or check structures would be built on the I-10 Lateral at this time.

Irrigation water would flow by gravity throughout the conveyance facilities constructed under Alternative 1. There is very little gradient along Old Price Road requiring that the open canal be constructed above ground level, on fill material, to maintain sufficient elevation for gravity operations. The height of the canal above ground level would gradually decrease along the proposed alignment up to the pipeline transition point where the facilities would be underground.

The right-of-way for Alternative 1 would vary for different sections of the alignment. Greater right-of-way is required for the open canal than for the buried pipeline. Right-of-way requirements for the open canal vary from a 76-foot wide corridor to a 124-foot wide corridor. A 20-foot wide corridor is needed for the pipeline. The total estimated right-of-way requirements for Alternative 1 are 120.3 acres. Approximately 7.2 acres would be needed for the I-10 Lateral, 105.9 acres for the open canal portion of the Price/Pecos alignment, and 7.2 acres for the pipeline portion. An additional 29.8 acres of on-Reservation easements are estimated to be needed during construction.

Present plans estimate that construction of the Price/Pecos component can be completed in approximately 17 months. Construction would start in May 1998 on the west end of the project at two places, the Broadacres Canal and the Gila Drain intersection, and proceed east. Construction plans have programmed the completion of the Pecos portion of the project by the end of Fiscal Year (FY) 1998 (October 1, 1997 through September 30, 1998). Construction of the segment paralleling Old Price Road to the south would be initiated and completed during FY 1999.

Preliminary estimates indicate that approximately 994,550 cubic yards of excavation and 934,340 cubic yards of fill would be required for the project. Excavation and fill requirements are almost in balance with the possibility that a small amount of excess excavation materials may occur. Disposal of excess materials will be accomplished through adding to the fill materials along the elevated canal sections of the conveyance facilities. The total estimated cost for Alternative 1 is \$35.7 million.

2.3 ALTERNATIVE 2 (PREFERRED ALTERNATIVE)

Alternative 2 would be identical in total length (12.3 miles) and use the same alignment as Alternative 1 but would employ pipeline to convey irrigation water for all but 0.25 miles at the beginning of the project and for the I-10 Lateral (0.67 miles). Alternative 2 would consist of 0.9 miles of an open, concrete-lined canal and 11.4 miles of buried pipeline ranging in diameter from six to 10 feet. From Point A (see Figure 4) to the bifurcation (0.25 miles), Alternative 2 would be identical to Alternative 1 using an open canal with a 12-foot bottom width and a capacity of 659 cfs. Pipeline would be used from the bifurcation throughout the remainder of the northern branch of the project. The I-10 Lateral in Alternative 2 would be identical to Alternative 1, consisting of an open canal with a capacity of 343 cfs throughout and a total length of 0.67 miles.

As in Alternative 1, the northern branch in Alternative 2 would have a capacity of 316 cfs throughout. A pipeline would be used from the bifurcation to the connection with the Broadacres Canal, a total distance of 11.4 miles. A 10-foot diameter pipe would be used for the first 6.7 miles from the bifurcation, reducing to an eight-foot diameter pipe for the next 3.5 miles, reducing to a seven-foot diameter pipe for the next 0.9 miles, and reducing to a six-foot diameter pipe for the final 0.3 miles prior to connecting with the Broadacres Canal. Irrigation water would flow by gravity in the buried pipeline. There would be 30 farm turnouts on the north branch and the pipeline would eliminate the need for siphons. An inlet valve would be installed at the intersection

of the pipeline and the Gila Drain to permit up to 150 cfs of potential settlement water to be taken into the pipeline and conveyed downstream.

Total right-of-way requirements for Alternative 2 would be 38.7 acres. The first segment of open canal would require 3.9 acres of right-of-way, the I-10 Lateral would require 7.2 acres, and the north branch pipeline would require 27.6 acres. In addition to the 38.7 acres of right-of-way, approximately 29.8 acres of on-Reservation easements are estimated to be needed during construction.

Present plans estimate that construction of the Price/Pecos component can be completed in approximately 17 months. Construction would begin in May 1998 on the west end of the project at two places, the Broadacres Canal and the Gila Drain intersection, and proceed east. Construction plans have programmed the completion of the Pecos portion of the project by the end of Fiscal Year (FY) 1998 (October 1, 1997 through September 30, 1998). Construction of the segment paralleling Old Price Road to the south would be initiated and completed during FY 1999.

Preliminary estimates indicate that approximately 41,520 cubic yards of excavation and 41,321 cubic yards of fill would be required for the project. Excavation and fill requirements are almost in balance with the possibility that a small amount of excess excavation materials may occur. Disposal of excess materials will be accomplished through adding to the fill materials along the elevated open canal sections of the conveyance facilities, from Point A to the bifurcation (see Figure 4). The total estimated cost for Alternative 2 is \$36.1 million.

Alternative 2 is the preferred alternative because of lower less right-of-way requirements (81.6 fewer acres), less visual impacts and lower overall environment impacts than Alternative 1.

2.4 ALTERNATIVE 3 (NO ACTION ALTERNATIVE)

Alternative 3 (no action alternative) would limit expansion of irrigation in the northwestern area of the Reservation. Efforts would continue by the Community to obtain funding for selected rehabilitation of irrigation facilities. Rehabilitation and betterment efforts would continue to be subject to limited funding and proceed in a piece-meal fashion. Agricultural lands outside of the San Carlos Indian Irrigation Project (SCIIP) boundaries would continue to be isolated with no connection to other non-SCIIP or SCIIP facilities. Agricultural lands in the Memorial Area would not have the option to receive surface water to supplement groundwater pumping except for small amounts of irrigation runoff from lands east and north of the Reservation. Surface water deliveries would continue to end at the terminus of the existing Santan Canal (2.5 miles east of Point A, Figure 4) except for small, variable diversions from the Gila Drain into the Broadacres Canal (near Point B, Figure 4). Existing and potential agricultural lands downstream from the Santan Canal would continue to rely upon groundwater ranging from good to poor quality. Poor quality groundwater in the area results primarily from high levels of salts and calcium. Development of new agricultural lands would most likely not occur in areas downstream of the Santan Canal.

2.5 ALTERNATIVES CONSIDERED BUT ELIMINATED

The Community has considered a number of options for construction of the main delivery system between the terminus of the Santan Canal and the beginning of the Broadacres Canal including alternative alignments and different combinations of open canal and buried pipeline. The options discussed in this section have been considered but eliminated from further consideration because delivery of irrigation water to all agricultural areas via gravity would not be possible.

2.5.1 Interstate 10 Corridor

Three alignments were investigated that followed part or all of the Interstate 10 corridor. The I-10 Alignment would begin at Point A in Figure 5 and follow the same route as the action alternatives to the bifurcation point. Instead of a bifurcation, a canal would be constructed west with siphons under the El Paso Natural Gas pipeline and I-10. The open canal would continue northwest, paralleling the west side of the I-10 right-of-way. At Riggs Road and the Queen Creek Road interchanges, the canal alignment would follow along the freeway ramps and flow beneath the elevated approaches in box culverts. The canal would continue to Firebird Lake where a pipeline would be used because of right-of-way limitations and existing Gila River Telecommunications lines along the west side of I-10. The pipeline would emerge into an open canal after Firebird Lake, pass under Maricopa Road through a box culvert, and continue north along the west side of I-10 to the Gila Drain and Gila Floodway. Water would be pumped under the Gila Drain and Gila Floodway, and continue north to connect with the Broadacres Canal.

The Partial I-10 Alignment (Figure 5) is identical to the I-10 Alignment up to Queen Creek Road where the canal would turn west to Maricopa Road instead of continuing along I-10. After passing under Maricopa Road through a bridge, three possible alignments have been considered for the connection with the Broadacres Canal. One alignment would install a pump station at Maricopa Road and direct water into a pipeline. The pipeline would follow the west right-of-way of Maricopa Road to I-10 and continue north to connect with the Broadacres Canal. A second variation would install a pump station at Maricopa Road and direct water into a pipeline that would be routed 0.25 mile west before turning north and continuing to the Broadacres Canal. The third variation would also install a pump station at Maricopa Road and direct water into a pipeline that would flow west for 1.0 mile before following the west side of Section 18 (T2S, R4E) to the Broadacres Canal. Water would have to be pumped under the Gila Drain and the Gila Floodway for all three variations of the Partial I-10 Alignment.

The Non I-10 Alignment (Figure 5) is identical to the I-10 Alignment up to the end of the I-10 siphon. Instead of following the northwest alignment of I-10, the Non I-10 Alignment would continue due west from the siphon for 1.3 miles. The alignment would then follow a zig-zag pattern by first turning north for 1.5 miles, west for 1.0 miles, north for 1.0 miles, west for 1.5 miles, and north for 1.5 miles to rejoin the Partial I-10 Alignment. The Non I-10 Alignment would follow the same three possible alignments for connection with the Broadacres Canal as the Partial I-10 Alignment from the point where the two alignments rejoin.

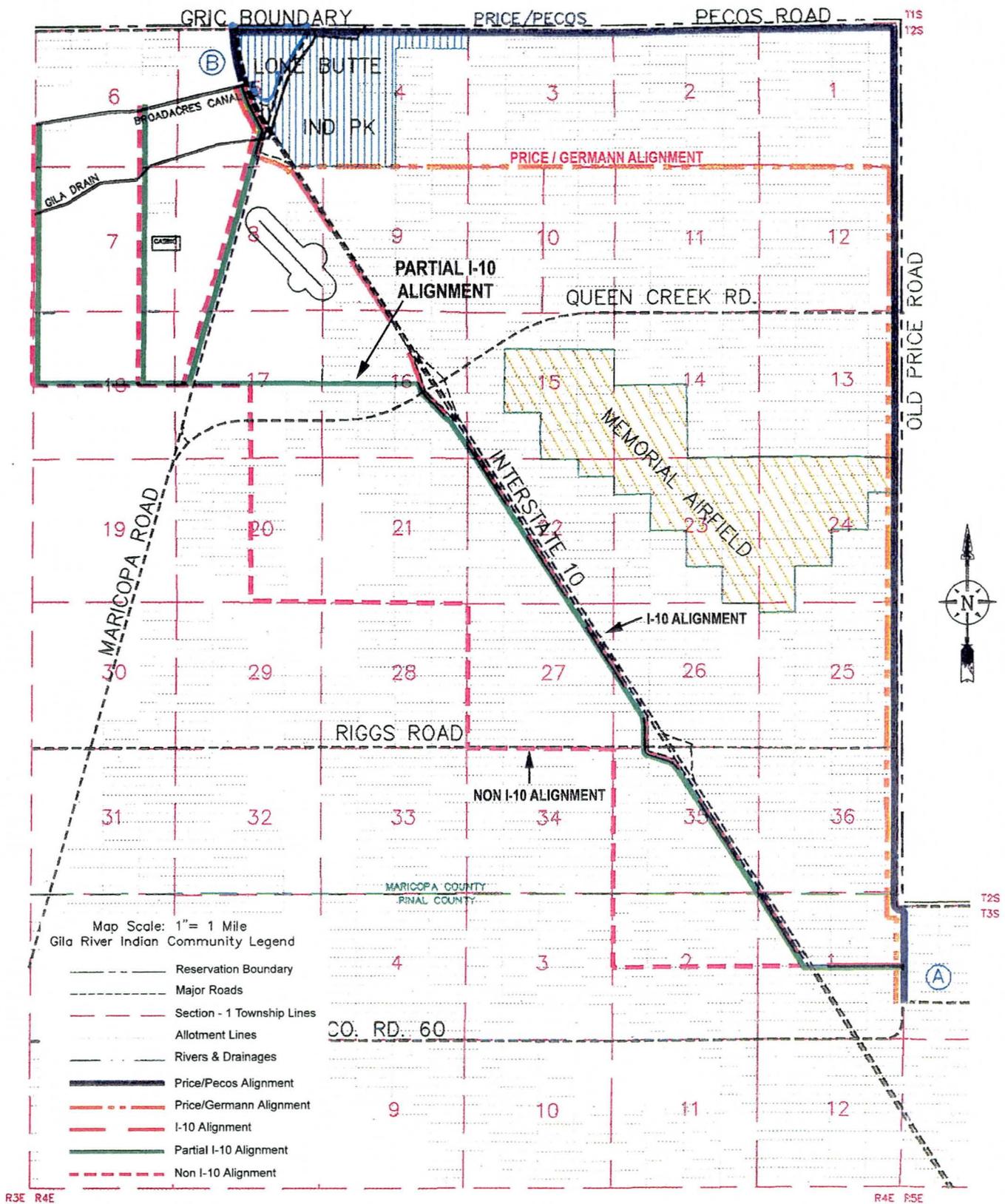


Figure 5: Eliminated Alternatives

The I-10 corridor alignments were not considered in more detail because: 1) the alignments crossed allotments on the diagonal and result in more complicated right-of-way agreements; 2) all alignments would require a pump station to convey flows beneath the Gila Drain and Gila Floodway; 3) gravity irrigation of the lands north of the Broadacres Canal would not be possible; and 4) a delivery ditch would still be required along Old Price Road in order to deliver water to the northeast corner of the Memorial Area between Pecos and Germann roads.

2.5.2 Germann Road Alignment

The Germann Road alignment would follow the same alignment as the action alternatives for the first 5.75 miles to the intersection with Germann Road (Figure 5). The alignment would turn west at Germann Road and continue to the Lone Butte Industrial Park. An open canal would be constructed from Point A in Figure 5 to the southeastern corner of the Lone Butte Industrial Park. A pipeline would be used to convey water for the remainder of the alignment. The pipeline would follow the southern boundary of the Lone Butte Industrial Park, cross I-10 at the Maricopa Road interchange, turn north, cross under the Gila Drain and Gila Floodway, and follow the west side of the I-10 right-of-way to the Broadacres Canal. The canal would be elevated sufficiently before entering the pipeline at the Lone Butte Industrial Park to maintain adequate hydraulic gradient so that a pumping station would not be required.

Lands to the north of the Germann Road alignment could not be served by gravity from the main canal. An additional lateral would be required to extend north from Germann Road along Old Price Road to Pecos Road and turn west in order to provide gravity service to lands between Germann and Pecos roads. Similarly, lands north of the Broadacres Canal could not be served by gravity unless water was pumped or the lateral was extended west along Pecos Road past I-10. The Germann Road alignment was eliminated from additional consideration because of the large area that could not be supplied with gravity irrigation.

For comparison purposes, the most notable environmental consequences anticipated with the two action alternatives and the no action alternative are summarized in Table 2-1. More detailed descriptions of potential environmental consequences are presented in Chapter 3, Affected Environment and Environmental Consequences.

**TABLE 2-1
EFFECTS OF ALTERNATIVES ON SELECTED RESOURCES**

Resource	Alternative 1	Alternative 2 (Preferred)	Alternative 3 (No Action)
Project Setting and Climate	Minor modifications to the natural character of the area. No changes in population movement or growth. No notable changes in climate.	Same as Alternative 1.	No impacts to current setting or climate.
Topography and Geology	Canal banks elevated 5 to 12 feet above ground level for 9.3 miles. No impact on seismic potential and earth fissuring in the area. Excavation and fill requirements in balance.	Canal banks elevated 12 feet above ground level for 0.25 miles. Underground pipeline will not affect topography. No impact on seismic potential and earth fissuring in the area. Excavation and fill requirements in balance.	No impacts to existing topography. Continued groundwater pumping would increase seismic potential or earth fissuring.
Soils	Soils may be more susceptible to erosion during construction.	Soils may be more susceptible to erosion during construction, but less than Alternative 1.	No impacts to soil resources.
Air Quality	Temporary increases in local CO and hydrocarbon levels due to operation of construction equipment. Temporary increase in PM ₁₀ from construction activities, not expected to be significant.	Temporary increases in local CO, hydrocarbon levels PM ₁₀ , however, less than Alternative 1.	No increase in construction related CO, hydrocarbon, or PM ₁₀ emissions.
Water Resources	Delivery of surface water to areas currently receiving ground water. No impacts to depth to groundwater and groundwater quality.	Same as Alternative 1.	No improvement in the northwestern portion of the on-Reservation water delivery. May adversely affect depth to groundwater.
Floodplains/ Flood Control	Elevated banks of canal may cause minor upslope ponding. No significant flooding problems or adverse alterations to the current floodplain.	Elevated banks for 0.25 miles of canal may inhibit flood flows from east to west, but less than Alternative 1. No significant flooding problems or adverse alterations to the current floodplain.	No changes to current flooding regime or alterations to current floodplain will occur.
Biological Resources	Permanent and temporary clearing of 149.4 acres of vegetation in corridor. Changes in soil surface run-off due to the open canal may alter adjacent vegetation associations. Partial revegetation of 112.4 acres along 9.3 miles of open canal. No impacts to listed or sensitive	Permanent and temporary clearing of 68.5 acres of vegetation in corridor. Complete revegetation along all but 7.5 acres along 0.9 miles of corridor. No impacts to listed or sensitive wildlife species.	No changes to the existing vegetation community in the project area. No impacts to listed or sensitive wildlife species.

TABLE 2-1 (Continued)
EFFECTS OF ALTERNATIVES ON SELECTED RESOURCES

Resource	Alternative 1	Alternative 2 (Preferred Alternative)	Alternative 3 (No Action)
Cultural Resources	Disturbance of potential subsurface remains of prehistoric reservoir and canals. Subsurface testing will be conducted prior to construction. One cultural resource site not eligible for National Register of Historic Places may be impacted.	Same as Alternative 1.	No disturbance of potential subsurface remains of prehistoric reservoir. No impact to cultural resource sites.
Land Resource/Use	Permanent changes to 112 acres of land use along canal portion. Limited reestablishment of desertscrub, agriculture production and agricultural access along canal.	Permanent changes to 11 acres of land use along open canal portion. Reestablishment of desertscrub, agriculture production and agricultural access along alignment.	No impacts to land use.
Land Ownership/Jurisdiction	Requires 119.6 acres right-of-way. Affects 116 allotments with no use of right-of-way after construction.	Requires 38.7 acres right-of-way. Affects 116 allotments with access and slightly limited use after construction.	No impacts to land ownership or jurisdiction.
Social Conditions	Relocation of 1 mobile trailer. Limited crossings. 9.3 miles of open canal are increased hazard to nearby residences.	0.9 miles of open canal are increased hazard to nearby residences, but less than Alternative 1.	No impacts to social conditions.
Sound and Noise	Temporary noise impacts during construction.	Temporary noise impacts during construction.	No impacts to sound and noise.
Visual Resources	9.3 miles of elevated canal would impact nearby visual quality.	0.9 miles of elevated canal would impact nearby visual quality.	No impacts to visual resources.
Indian Trust Assets	Expected to enhance Community's land and water resources.	Same as Alternative 1.	No impacts to the value of Indian Trust Assets.
Environmental Justice	Expected to positively impact low-income, Native American and other minority groups.	Same as Alternative 1.	No Environmental Justice impacts.

CHAPTER 3

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 INTRODUCTION

Chapter 3 describes the expected impacts on affected resources in the project area from implementation of the action alternatives. The affected environment, expected environmental consequences, and proposed mitigation measures are described for the following resource topics: project setting and climate, topography and geology, soils, air quality, water resources, floodplains/flood control, biological resources, cultural resources, land resources/use, land ownership and jurisdiction, social conditions, Indian Trust Assets and environmental justice. Cumulative impacts, and irreversible and irremediable commitments of resources are discussed at the end of the chapter.

A brief description of the types of activities that are expected to occur with implementation of either action alternative is provided to assist the reader in understanding the discussion of environmental consequences from construction-related activities.

Construction of an Open Canal. An open canal is generally constructed in segments which are several miles in length. The typical construction sequence of activities includes removal of vegetation, prewetting of soils in the segment, earth moving to create the canal prism (excavation and fill), final shaping of the canal prism, concrete lining of the canal prism, clean-up, and revegetation. Construction of the Pecos Road alignment would begin in 1998. Construction of the Old Price Road alignment would begin in 1999. All construction would be completed by the end of 1999.

Associated structures that are generally required with an open canal, include operation/maintenance roads on one or both sides, fencing along both sides, bridges, protective dikes to prevent runoff waters from entering the canal, cross drainage structures, farm turnouts and checks.

Construction of a Pipeline. Generally, pipelines are built in shorter segments than open canals. The pipeline construction sequence typically consists of vegetation removal, excavation of a trench immediately ahead of the pipe installation area, placement of the pipe in the trench, backfilling and compacting the trench, and revegetation. Small and large diameter pipes may be cast in the trench and require more construction time than pre-cast pipe delivered to the site. Construction of the Pecos Road alignment would begin in 1998. Construction of the Old Price Road alignment would begin in 1999. All construction would be completed by the end of 1999.

3.2 PROJECT SETTING AND CLIMATE

3.2.1 Affected Environment

The Price/Pecos Project area is part of the lower Sonoran Desert of south-central Arizona, located in Maricopa and Pinal counties (see Figure 1). While much of the land within the general project area is undeveloped desert, the area also supports agricultural production, small residential communities, industry, schools, churches, commercial establishments, and recreational enterprises. Although located in close proximity to urban centers, the overall character of the project area would be considered more rural than urban in nature. The actual project corridor occurs along existing dirt farm roads or on existing agricultural fields. The community of Sun Lakes lies immediately to the east of the project corridor.

The climate of the region is characterized by summer and winter precipitation and spring and fall drought (Lowe, 1985). Climate is typical of low-elevation, interior, Southwestern deserts with short, mild winters and long, hot summers. June and July are generally the hottest months, while December is the coldest. The highest temperature on record for the nearest weather station located at Chandler Heights is 116° Fahrenheit (F) or 47° Celsius (C). Average annual maximum and minimum temperatures are 85.6° F (29.8° C) and 55.1° F (12.8° C), respectively. Average annual precipitation is 8.98 inches with a maximum annual rainfall of 17.43 inches and a minimum annual rainfall of 4.60 inches (Owenby and Ezell 1992, and U.S. Department of Agriculture 1996).

3.2.2 Environmental Consequences

Alternatives 1 and 2. Implementation of either action alternative would result in minor modifications to the natural character of the area within the proposed corridor. The proposed facilities are linear in nature and, consequently, would not result in a concentrated impact to any one particular area. Farming on adjacent inactive agricultural fields and undeveloped land west and south of the project would likely resume with the water delivery system. Because of the extent these adjacent lands have been farmed, impacts to the natural character of the area would not be great. Only minor changes in population movement or growth would be expected as a result of either action alternative. Likewise, no notable changes in climatic conditions are expected as a result of implementation of the action alternatives.

Alternative 3. No impacts to the current setting or climate of the project area are anticipated under the no action alternative since the project would not be implemented as envisioned under the action alternatives.

3.2.3 Mitigation Measures

No mitigation measures are proposed.

3.3 TOPOGRAPHY AND GEOLOGY

3.3.1 Topography

3.3.1.1 Affected Environment

The Reservation is topographically diverse, ranging from the Gila River floodplain, with a meandering river and near-flat alluvial basins, to alluvial fans, hills, buttes, and rugged mountains. The presence of the Gila River is the most distinguishing feature.

The topography of the Price/Pecos Corridor is typical of flat alluvial basins with little topographic relief in the general vicinity, except from man-made hills and mounds of nearby golf courses and parks. Adjacent active and inactive agricultural fields have been leveled to accommodate proper irrigation and other surface flow drainage patterns. Elevations of the alluvial basin increase slightly from the Gila River west of the corridor toward the Santan Mountains to the east.

The topography of the proposed alignment is very gradual in the north-south direction along Old Price Road. For example, at the intersection of the Maricopa/Pinal County line with Old Price Road, the elevation is 1,183 feet and, six miles farther north where the Reservation boundary turns west, the elevation is still 1,183 feet. Once the alignment turns west, the gradient becomes more pronounced with an elevation at Broadacres Canal of 1,150 feet compared to 1,183 feet where the Reservation boundary turns west.

3.3.1.2 Environmental Consequences

In general, impacts to topography would be expected to occur if a proposed action or alternative would greatly modify the topographic relief of the project area.

Alternative 1. The near level topographical conditions along the north-south portion paralleling Old Price Road would require that the canal be elevated at the southern end to maintain the appropriate gradient for gravity operations. Generally, canal banks of this type are between five and six feet above the surrounding land surface. Conditions along Old Price Road would require that the canal banks be elevated at the southern end approximately 12 feet higher than the surrounding land surface. Gradually, over a distance of five miles, the canal bank elevation would decrease to the normal range of five to six feet above the surrounding land surface. Although the elevated canal section will change the topographic relief of the immediate area, only minor topographic impacts are expected.

Alternative 2. Alternative 2 would be a buried pipeline except for the first 0.25 miles of the alignment. The 0.25-mile section of elevated canal would be approximately 12 feet higher than the surrounding ground surface. Topographic impacts from the elevated canal section would be much less than in Alternative 1, and are considered to be minor. No topographic impacts are anticipated from the buried pipeline.

Alternative 3. No impacts to the project area topography are anticipated under the no action alternative since the project would not be implemented as envisioned under the action alternatives.

3.3.1.3 Mitigation Measures

T-1 Elevated canal banks will be revegetated to decrease erosion and blend the banks with the surrounding landscape.

3.3.2 Geology

3.3.2.1 Affected Environment

Major geologic units occurring on the Reservation are alluvial terrace deposits, basin fill, alluvium of McClellan Wash and Santa Cruz Wash, alluvial fan deposits, granitic rock of Thin Mountain and the Sacaton Mountains, and compacted fill. The only rock outcropping is the hard, jointed granitic rock of Thin Mountain, just north of SR 387.

Basin fill underlying the flat basin floor and cultivated farmland consists mostly of loose to slightly compacted silty sand and sandy silt with some, generally disseminated, caliche and possible localized deposits of clay.

Land subsidence and earth fissures, which are caused primarily by groundwater depletion, pose geologic hazards in many parts of southern Arizona. Subsidence has affected more than 3,000 square miles in the State. Differential land subsidence and earth fissures have damaged engineering structures, including buildings, streets, highways, railroads, earthen dams, water wells, water distribution systems and wastewater-treatment facilities. Measurable land subsidence has been detected in nine groundwater basins within Arizona. Investigations indicated that the areas of greatest subsidence correspond to areas of greatest water-level decline (Schumann and Genualdi, 1986). There are no known land subsidence or earth fissures in the project area.

With regard to seismicity, the closest known fault to the project area is located between Saguaro Lake and Bartlett Reservoir, near Sycamore Creek (referenced as Sugarloaf), over 40 miles north of the Reservation (Scarborough et al., 1986). The historical record of seismic activity shows no earthquakes of even moderate intensity occurring in the project corridor. The chance of a large earthquake occurring near enough to the Reservation/project area to cause major damage is quite low (pers. comm., Pearthree, 1996).

3.3.2.2 Environmental Consequences

Geologic impacts would be anticipated if the facilities associated with the action alternatives would be vulnerable to geologic hazards or if implementation of the proposal itself would be expected to contribute to the threat of geologic hazards.

Alternatives 1 and 2. Implementation of the action alternatives would have no effect on the seismic potential of the project area and, due to the low seismic potential of the project area,

seismic activity is not expected to have an impact on proposed project facilities. Construction of proposed facilities for the action alternatives would necessitate the acquisition of construction materials, including sand and gravel for the mixing of concrete and selected backfill. Commercial sources of these materials are available near the project area.

Excavation and fill requirements are almost in balance with the possibility that a small amount of excess excavation materials may occur. Disposal of excess materials will be accomplished through adding to the fill materials along the elevated canal sections of the conveyance facilities.

The Community will prepare a comprehensive water management document or plan that will be used to manage groundwater resources with the goal of balancing groundwater withdrawal, migration and recharge, thus reducing the potential for land subsidence and earth fissures. Because implementation of the action alternatives will not contribute to major declines in groundwater levels, the potential for land subsidence and earth fissuring within the area would not increase.

Alternative 3. Alternative 3, the no action alternative, would increase the potential for land subsidence or earth fissuring in the project area due to continued groundwater pumping.

3.3.2.3 Mitigation Measures

The Community will prepare a comprehensive water management document which will provide a framework to maintain a long-term balance between groundwater withdrawal, migration and recharge.

An integral part of the comprehensive water management plan will be groundwater monitoring. Results of the monitoring program will be used to identify areas of major water table decline and the associated risk of subsidence and/or earth fissuring. As a result, adjustments will be made in the blend of groundwater and surface water delivered to agricultural fields across the Reservation to address or respond to identified groundwater conditions of concern, such as major declines. For example, groundwater pumping could be reduced or halted in an area or areas of the Reservation experiencing major water table declines, while to compensate, pumping could be increased in other areas of the Reservation subjected to only minor water table declines.

G-1 The potential for land subsidence and earth-fissuring will be monitored and addressed through the Community's Comprehensive Water Management Plan.

3.4 SOILS

3.4.1 Affected Environment

Soils within the project corridor are typical desert fine-textured soils, ranging from clays to loams similar to those found on floodplains next to river bottoms. Coarse-textured soils developed on alluvial fans at the base of mountain ranges are of lesser extent.

Potential engineering/construction problems related to soil conditions may include dispersive soils, caliche cementation, and hydrocompaction. Dispersive soils will become dispersed in the water medium when wetted and, therefore, cannot be used as construction fill. Caliche-cemented soils result from the evaporation of water from the soil, depositing cement-like calcium, potassium, sodium, and other salts around the soil grains. Caliche may also occur as an impermeable, well-hardened layer, ranging from several inches to several feet thick. Caliche is common throughout southern Arizona deserts and is expected to occur within the project corridor. Hydrocompaction occurs when low-density, high-porosity, moisture-deficient deposits compact when wetted. As much as several feet of settlement due to hydrocompaction has been experienced along the CAP canal system (USBR, 1993).

3.4.2 Environmental Consequences

Alternatives 1 and 2. During construction activities, vegetation would be removed exposing soils to water erosion from storm events. Construction activities loosen soils which may make them more susceptible to erosion by wind and water. Impacts to soils will be minor because the majority of the disturbed areas will be revegetated.

Alternative 3. No impacts to soil resources are anticipated as a result of the no action alternative since the project would not be implemented as envisioned under the action alternatives. The existing vegetation community would not be cleared. Soil erosion downstream of the Santan Canal would be less extensive than expected under Alternatives 1 and 2 since fewer acres of farmland would be supported by the existing water distribution system.

3.3.3 Mitigation Measures

S-1 Construction-disturbed areas will be reseeded to restore vegetative cover and reduce soil erosion. Local native plant species will be used for revegetation to the extent possible.

3.5 AIR QUALITY

3.5.1 Affected Environment

The Federal Clean Air Act (CAA) of 1970, as amended, established National Ambient Air Quality Standards (NAAQS) (Table 3-1) for seven air pollutants--ozone, airborne particulates (PM₁₀), carbon monoxide (CO), hydrocarbons, sulfur dioxide, nitrogen dioxide and lead (Arizona Department of Environmental Quality, 1995).

TABLE 3-1
SUMMARY OF AMBIENT AIR QUALITY STANDARDS
STATE AND FEDERAL STANDARDS¹
In $\mu\text{g}/\text{m}^3$ (and ppm)

Pollutant	Averaging Time	Primary	Secondary
Carbon Monoxide ²	1-hr.	40 (35)	40 (35)
	8-hr.	10 (9)	10 (9)
Nitrogen Dioxide	Annual	100 (.05)	100 (0.5)
Ozone	1-hr.	235 (.12)	235 (.12)
PM ₁₀	24-hr./Annual	150/50	150/50
Sulfur Dioxide	3-hr.	—	1300 (.5)
	24-hr.	365 (0.14)	—
	Annual	80 (0.3)	—
Lead	Calendar Qtr.	2	2

¹ Standards are not to be exceeded more than once per year with two exceptions. In the case of ozone and PM₁₀, compliance is determined by the number of days which the ozone or PM₁₀ is exceeded. The number of exceedance days per year, based on a 3-year running average, is not to exceed 1.0.

² In mg/m³ (and ppm).

Source: Arizona Department of Environmental Quality, 1995.

In 1990, the United States Congress passed the new Clean Air Act Amendments. Areas that do not meet the NAAQS are considered in "nonattainment" for that particular pollutant. Nonattainment refers to those areas that, by virtue of their air pollutant emission trends, violate these national standards. States that fail to attain the NAAQS are required to submit State Implementation Plans (SIPs) to address air quality problems. Portions of the Price/Pecos Project area are located within federally designated areas of nonattainment for carbon monoxide (CO), ozone and PM₁₀ (See USBR, 1997 for more details).

Responsibility for the Clean Air Act

While the Gila River Indian Community is not a political subdivision of the State of Arizona, nor of Maricopa or Pinal counties, it is responsible for compliance with Federal environmental laws and regulations, and is a part of the federally-designated Maricopa County nonattainment areas for CO, ozone and PM₁₀.

In Arizona, ambient air quality monitoring is accomplished through a monitoring network. The closest monitoring sites to the Reservation are two Maricopa County monitoring sites: Chandler (1475 E. Pecos Road) and Phoenix (4732 S. Central); and two Pinal County monitoring sites: Coolidge (County Highway Yard) and Maricopa (residence). The Chandler and Phoenix stations monitor for CO, ozone and PM₁₀; the Coolidge and Maricopa sites monitor only for PM₁₀.

Carbon Monoxide (CO)

CO is a mildly toxic pollutant that bonds to hemoglobin in the bloodstream when inhaled and interferes with oxygen transport to body tissues. The Federal eight-hour average standard for CO is set at 9 ppm and may not be exceeded more than one day per year to remain in compliance.

Two areas have been classified as nonattainment for CO within the State of Arizona: the Maricopa Association of Governments (MAG) Urban Planning Area and the Tucson Urban Area. The MAG Urban Planning Area overlaps a portion of the project area. In accordance with criteria in Section 186 of the Clean Air Act, as amended, the MAG Urban Planning Area has been designated as a "serious" nonattainment area for CO. The MAG Urban Planning Area nonattainment designation of serious is a result of failure to meet Federal air quality standards for CO by December 31, 1995. Prior to this date, this nonattainment area was designated as moderate.

The MAG Urban Planning Area boundaries coincide with the Maricopa County line which is located near the souther project boundary and most of the Price/Pecos Corridor is within this CO nonattainment area. This portion of the project area can be described as those lands within Maricopa County, generally west of Old Price Road and north of Hunt Highway.

Pollutant sources of CO are generally classified according to four areas of emphasis: on-road mobile sources (on-road automobiles, trucks), non-road mobile sources (aircraft, locomotives, construction equipment, farm equipment, recreational equipment, lawn and garden equipment), area sources (fuel combustion, on-site incineration, open burning, fireplaces, and woodstoves), and stationary point sources (industrial, manufacturing and electrical power generation facilities). Based on the results of monitoring efforts within the region, emissions from on-road vehicles represent the single largest contribution to CO levels, responsible for roughly 70 percent of all CO emissions. About 21 percent is contributed from non-road mobile sources, eight percent from area sources and one percent from point sources (MAG 1993 Carbon Monoxide Plan). Consequently, to be most effective, strategies to reduce CO should be directed primarily toward on-road mobile sources.

While a portion of the Maricopa County nonattainment area is within the project corridor, the overall characterization of local existing emissions would be expected to vary somewhat due to major differences in land use and population density from those of the urban areas of Maricopa County.

Ozone

Ozone is a respiratory irritant that increases susceptibility to respiratory infections. Ozone causes substantial damage to leaf tissue of crops and natural vegetation, and damages many materials by acting as a chemical oxidizing agent. Ozone is of concern primarily during summer because it is created by the interaction of high temperatures, sunlight, and atmospheric inversion layers, which induce photochemical reactions among nitrogen oxides (NO_x) and volatile organic compounds (VOC), and/or reactive organic gases (ROG). The Federal standards for ozone have been set for

a one-hour averaging time. The federal one hour ozone standard is 0.12 ppm, not to be exceeded more than three times in any three-year period to remain in compliance. Common practice is to quantify ozone precursor emissions of NO_x, VOC, and/or ROG to indicate potential undesirable ozone levels.

The MAG Urban Planning Area has also been designated as nonattainment for ozone. This federally-designated ozone nonattainment area is classified as serious. The Price/Pecos Corridor is located within this ozone nonattainment area. The MAG Urban Planning Area nonattainment designation of serious is a result of failure to meet Federal air quality standards for ozone by November 15, 1996. Prior to this date, this nonattainment area was designated as moderate.

The sources of ozone precursor emissions are categorized into five areas of emphasis: on-road mobile sources, area sources, non-road mobile sources, stationary point-sources and biogenic sources (vegetation within the non-attainment area). On-road mobile sources constitute the highest category at approximately 35 percent. Area sources contribute roughly 30 percent, non-road mobile sources 15 percent, point sources 10 percent and biogenic sources 10 percent (MAG 1993 Ozone Plan).

Particulates (PM₁₀)

Federal PM₁₀ standards have been set at 150 micrograms per cubic meter (µg/m³) for a 24-hour average and at 50 µg/m³ for an annual average. Federal 24-hour PM₁₀ standards may not be exceeded more than one day per year, and annual standards may not be exceeded at all to remain in compliance.

Ten areas within the State of Arizona have been designated as nonattainment for particulate matter of ten microns (PM₁₀) or less, including several areas within Maricopa County. The Price/Pecos Corridor is within Maricopa County and classified as a serious nonattainment area for PM₁₀. The nonattainment designation of serious is a result of failure to meet Federal air quality standards for PM₁₀ by December 31, 1994. Prior to this date, this nonattainment area was designated as moderate.

The project area is within a rural setting, surrounded primarily by agricultural fields and open desert. Lands of both types produce a great deal of particulate matter during frequent winds and seasonal storms. For rural areas of Maricopa County, agricultural activities (such as tilling, leveling, mulching and cultivating) represent 32 percent of PM₁₀ emissions, and other fugitive dust sources from unpaved roads, off-road vehicles and construction contribute 27 percent. Vehicular exhaust contributes 19 percent while vehicular re-entrainment of dust from paved roads contributes 16 percent. Other sources of PM₁₀ include secondary particles at four percent, agricultural equipment exhaust at one percent and fireplaces at one percent.

Formation of particulate matter or fine particles suspended in the air is dependent upon several factors. Among these factors are stagnant air masses, low winds in the winter, high winds in the summer, temperature inversions, and fine, silty soils, all characteristics of south-central Arizona. Disturbance of vegetation and the soil surface increases the contribution of wind erosion to

particulate matter. Activities including development (i.e. construction), travel, agriculture, and other uses disturb the dry, silty soil (MAG 1991, as revised 1993).

3.5.2 Environmental Consequences

The CAA conformity regulation states that for any new project using Federal funds or requiring Federal approval, the Federal agency must show that the project does not cause or contribute to a worsening of air quality in areas that violate the Federal ambient air quality standards. The Federal agency must perform a formal conformity determination if the emissions from the Federal action will exceed certain threshold levels. These pollutant threshold levels, called *de minimis* emission levels, vary from pollutant to pollutant and depend upon the nonattainment status of individual air basins.

Implementation of action alternatives, primarily construction activities, would create the potential to affect local ambient air quality. Consideration must be given to project-related emissions that could contribute to CO, ozone and PM₁₀ since the project area is located within Maricopa County's nonattainment areas for these emission constituents. The project has the most potential to adversely affect PM₁₀ levels due to the character of the air pollutant emissions that would be generated as a result of increased construction activity. Residents of Sun Lakes would be most affected by increases in pollutant emissions as a result of project construction.

The applicable *de minimis* levels are 100 tons per year (tpy) for VOC and NO_x, 100 tpy for CO, and 70 tpy for PM₁₀. Construction and operation emissions, as estimated in the following sections, would be well below the minimum threshold emissions level that would trigger the formal conformity requirement and no conformity determination is required for this project.

Carbon Monoxide and Ozone

Alternatives 1 and 2. As a result of implementation of either of the action alternatives, construction would create new sources of CO within the project area. These new sources would include emissions from vehicular traffic associated with construction activities. Increased CO contributions from the project are estimated to be 0.20 tons per year (tpy) for the worse case set of circumstances. As a result of implementation of either of the action alternatives, construction operations would also expand new hydrocarbon emission sources in the area, contributing to the formation of ozone. The new hydrocarbon emissions would result from the operation of construction equipment and are estimated to be 0.04 tpy of VOC and 0.40 tpy of NO_x under the most extreme conditions. Estimated CO and ozone precursor emissions would be well below the applicable *de minimis* level of 100 tpy for CO, VOC and NO_x, respectively.

Alternative 3. The selection of Alternative 3, the no action alternative, would result in no construction activities. Consequently, no increase in construction-related CO or hydrocarbon emissions affecting the formation of ozone would occur.

Particulates (PM₁₀)

Generation of PM₁₀, resulting from construction of irrigation delivery facilities, represents perhaps the project's greatest potential for adversely affecting the air quality of the area.

Alternatives 1 and 2. Soil materials which are physically moved, uncovered, destabilized or otherwise modified from undisturbed natural conditions during construction or other earth moving activities would increase the potential for emissions of fugitive dust. Material handling, storage and/or transporting operations associated with construction activities, including the loading, unloading, conveying, transporting, piling, stacking, crushing, screening, grading or moving of bulk materials at a construction site would also increase fugitive dust.

Construction vehicles track soil and dust off the site and onto adjacent paved roads. Vehicles traveling over these roads would create a secondary PM₁₀ impact as dirt is crushed and re-entrained. Some soil erosion and increased local atmospheric dust pollution would be expected during construction activities even with implementation of mitigation measures to minimize erosion and generation of fugitive dust. During the 17-month construction period, project-related increases in PM₁₀ are estimated to be 18 tpy, which would be well below the *de minimis* level of 70 tpy. Slightly more PM₁₀ is anticipated from Alternative 1 than Alternative 2 because of the increased earth moving activities associated with construction of the open canal, however, increases in PM₁₀ are not expected to exceed 20 tpy under the most extreme conditions because PM₁₀ emission controls will be implemented (see 3.5.3 Mitigation Measures below).

Alternative 3. The selection of Alternative 3, the no action alternative, would result in no construction or rehabilitation of irrigation delivery facilities. Consequently, no increase in construction-related PM₁₀ emissions would occur. Any PM₁₀ emissions as they presently occur on adjacent inactive and undeveloped lands, would remain unchanged.

3.5.3 Mitigation Measures

Mitigation measures designed to minimize impacts on carbon monoxide, ozone and PM₁₀ will be developed and implemented as part of the project.

- A-1 All persons/contractors conducting earth moving operations shall contact the GRIC, Department of Environmental Quality (DEQ) and complete a Dust Control Plan prior to initiating any earth moving operations. After a Dust Control Plan has been approved by DEQ, each person conducting earth moving operations shall implement Reasonable Available Control Measures (RACMs) in accordance with the approved Dust Control Plan. The approved Dust Control Plan shall be kept immediately available at the site by the person/persons conducting earth moving operations and make the plan available upon request by a DEQ/Tribal representative.
- A-2 All earth moving operations shall be conducted in such a manner as to prevent dust emissions from exceeding 20 percent opacity.

A-3 Earth moving operations shall be terminated during high wind events (>20 MPH).

Construction-Related Mitigation Measures.

A-4 Land disturbance will be minimized.

A-5 Persons conducting earth moving operations shall stabilize the disturbed areas prior to leaving the site for the weekend or extended periods of time in a manner which will prevent creation of wind blown dust.

A-6 Watering trucks will be used to minimize dust. A log shall be kept on each water truck documenting the quantity and duration water is applied to the site.

A-7 Trucks will be covered, as appropriate, when hauling dirt, sand, and gravel or transferring materials.

A-8 Haul trucks will be maintained in good repair so that spillage would not occur from beds, sidewalls and tailgates.

A-9 Dust suppressants will be used on traveled paths, as required, which are not paved.

A-10 Parking, storage and staging areas will be limited.

A-11 Where possible, disturbed land will be reseeded or revegetated. Local native plant species will be used for revegetation to the extent possible.

A-12 Excess material and dirt piles will be removed to elevated portions of the open canal.

A-13 Temporary vehicular paths created during construction will be reseeded or revegetated to avoid future off-road vehicular activities. Local native plant species will be used for revegetation to the extent possible.

3.6 WATER RESOURCES

3.6.1 Affected Environment

Groundwater is an important water source throughout the Reservation. The aquifer beneath the Reservation forms a continuous groundwater reservoir with varying rates of flow and storage capacities. Existing information indicates there are 27 groundwater wells in the vicinity of the project corridor, of which nine are inactive. Maintenance of these wells is divided between the Bureau of Indian Affairs (BIA) Pima Agency and individual farmers, depending upon well location. Depths to water in the project area range from 80 to 120 feet below the ground surface. There are no riparian or wetland features in the project area.

Surface water is derived from streamflow (Gila River and Salt River), surface storage in San Carlos Reservoir, and from the CAP. Streamflow is that part of precipitation that appears as run-off in streams. Surface storage is water that is impounded in man-made reservoirs or water naturally retained in drainage basins and ultimately carried through general and on-farm distribution systems.

Natural streamflow, stored water, and CAP water are delivered to the Reservation through the existing facilities of the San Carlos Indian Irrigation Project. Natural streamflow and surface storage are diverted from the Gila River at Ashurst-Hayden Dam¹ while CAP water is diverted from the Fannin-MacFarland Aqueduct into the Pima Lateral Feeder Canal which connects to SCIIP facilities at the beginning of the Pima Lateral².

The Community performed an initial groundwater sampling effort in 1993 to establish baseline water quality conditions (CH₂M-Hill, 1993). Sampling included six wells in the project vicinity south of Pecos Road between Old Price Road and I-10. Total dissolved solids (TDS) ranged from 712 mg/l to 4,087 mg/l. The State recommended TDS level for potable water is 500 mg/l whereas, a wide variety agricultural crops can tolerate TDS levels between 800 mg/l and 1,000 mg/l without noticeable yield reductions. Nitrate (as nitrogen) levels ranged from 0.1 mg/l to 25.4 mg/l. The State standard for nitrate (as nitrogen) in potable water supplies is 10 mg/l. TDS and nitrate levels in the project area do not follow a systematic pattern and appear to be site-specific. A two-acre pollution plume located in the Lone Butte Industrial Park is discussed in Section 3.10 below.

3.6.2 Environmental Consequences

Alternatives 1 and 2. Under each of the action alternatives, the on-Reservation distribution system would be capable of delivering surface water to areas that presently receive only groundwater (some areas of SCIIP-Indian Works and non-SCIIP areas). A comprehensive water management plan will be prepared prior to delivery of surface water into the area which will address potential, but unlikely, waterlogging problems on and off of the Reservation. The plan will address alternatives for removal and disposal of drainage water. The potential for drainage water and agricultural runoff will be analyzed in subsequent NEPA documentation.

The depth to groundwater and groundwater quality in the project area are not expected to be affected by construction of either Alternative 1 or Alternative 2. The canal and pipeline would be constructed on or near the ground surface and would not come into direct contact with the groundwater table. No surface waters occur in the project area.

Alternative 3. Under Alternative 3, no action would be taken to improve existing distribution facilities as envisioned under the action alternatives. The project area would continue to rely solely on groundwater, which may adversely impact the depth to water.

¹ Historically, Sacaton Dam and Gila Crossing were also utilized.

² See Final Programmatic Environmental Impact Statement for additional details related to water resources.

3.6.2 Mitigation Measures

WR-1 A National Pollution Discharge Elimination System (NPDES; Section 402) Permit Notice of Intent will be filed with the EPA prior to construction.

WR-2 In accordance with the NPDES Permit requirements, a Stormwater Pollution Prevention Plan will be prepared and available for inspection prior to construction.

3.7 FLOODPLAINS/FLOOD CONTROL

3.7.1 Affected Environment

The project corridor lies adjacent to leveled active and inactive agricultural fields outside of the Gila River 100-year floodplain. These fields are lined at their margins with irrigation canals (laterals). The residential community of Sun Lakes borders the project corridor south of Riggs Road along Old Price Road. Sun Lakes is comprised of many water retention ponds and catch basins used for flood control as well as for aesthetics and recreational fishing by local residents. The project corridor crosses the Gila Drain shortly after entering the Lone Butte Industrial Park.

3.7.2 Environmental Consequences

Alternative 1. Due to the topographic relief of the general area, flood waters will generally flow from east to west and north to south along areas of low elevation. Irrigation field ditches and waste water treatment facilities of Sun Lakes and Chandler/Ocotillo would likely divert all potential floodwaters to retention ponds and/or agricultural fields on and off of the Reservation, respectively. Construction of an elevated canal and associated levees along Old Price Road and portions of Pecos Road would further limit surface flooding from east to west. However, minor floodwaters may accumulate along the upslope side of the canal if low spots occur. Flooding is not anticipated to overtop the open canal portion of Alternative 1 at any time. Current irrigation field ditches will be relocated to the west along Old Price Road, and to the south along Pecos Road to accommodate the project corridor.

The pipeline portion of Alternative 1 would carry water under the Gila Drain before crossing under I-10. No major flooding problems or adverse alterations to the current floodplain would result from construction of Alternative 1.

Alternative 2. Construction of an underground pipeline along the project corridor would not alter surface runoff or drainage of the surrounding area. The open canal portion of the corridor located at the southern end may limit flooding in the immediate vicinity of the 0.25-mile section and the 0.67-mile I-10 Lateral, however, no major alteration to surface flow or flooding is anticipated. As in Alternative 1, the pipeline along Pecos Road will cross under the Gila Drain. Irrigation field ditches would be relocated to the west along Old Price Road to accommodate pipeline construction. No major flooding problems or adverse alterations to the current floodplain would result from construction of Alternative 2.

Alternative 3. No changes to the current flooding regime or alterations to the current floodplain would result from the no action alternative.

3.7.3 Mitigation Measures

F-1 Drainage studies will be undertaken as part of the design process for this project to ensure that facilities and surrounding land uses will be protected from flooding or sediment loading.

3.8 BIOLOGICAL RESOURCES

3.8.1 Vegetation

3.8.1.1 Affected Environment

According to a detailed vegetation classification survey performed by Reclamation in 1994, the Price/Pecos Corridor is considered to be entirely within the active agricultural classification, although most fields are out of production at the present time. Vegetation growing on lands immediately adjacent to agricultural fields and along Old Price and Pecos roads mainly consists of saltbush, creosote bush, grasses, forbs, and sparsely distributed mesquite, paloverde and tamarisk. No riparian/aquatic vegetation occurs in or adjacent to the project corridor. Adjacent inactive agricultural fields and undeveloped lands support native plant species including, mesquite, paloverde, creosote bush, bursage, annual and perennial grasses, and various forbs.

3.8.1.2 Environmental Consequences

Alternative 1. Permanent and temporary clearing of vegetation on 113.1 acres of right-of-way and 29.8 acres of easement area along Old Price and Pecos roads, and 7.2 acres along the I-10 Lateral would occur during construction. Partial revegetation is anticipated in those areas where open canals are planned (about 113.1 acres) due to the presence of the canal. Complete revegetation is anticipated in those areas where underground pipes and siphons are planned (approximately 7.2 acres), and in areas used for construction easements. Changes in soil surface runoff as a result of the open canal would alter adjacent vegetation associations along Old Price Road, south of the bifurcation, and along adjacent ephemeral drainages. Overall, impacts to vegetation would be minor since disturbed areas would be revegetated.

Alternative 2. Permanent and temporary clearing of vegetation on 31.5 acres of right-of-way and 29.8 acres of easement area along Old Price and Pecos roads, and 7.2 acres along the I-10 Lateral would occur during construction. Partial revegetation is anticipated in those areas where open canals are planned (about 7.5 acres) due to the presence of the canal. Complete revegetation is anticipated in those areas where underground pipes and siphons are planned (approximately 31.2 acres), and in areas used for construction easements. Due to the use of underground pipeline for this alternative, vegetation is expected to re-establish in disturbed areas on the trench backfill.

Vegetation will not re-establish in permanently disturbed areas along the planned open canal south of the bifurcation and the I-10 Lateral. No permanent changes in surface soil runoff along the Old Price and Pecos roads would result. However, changes in soil surface runoff as a result of the open canal south of the bifurcation would alter adjacent vegetation associations. Temporary changes of surface soil runoff along Old Price and Pecos roads would occur during construction of the pipeline. Implementation of Alternative 2 is not expected to result in major impacts to vegetation since the majority of disturbed areas would be revegetated.

Alternative 3. No changes to the existing vegetation community would occur on the project area and adjacent lands from the no action alternative. Clearing of native vegetation would be less extensive than expected under Alternatives 1 and 2 since fewer acres of farmland would be supported by the existing water distribution system.

3.8.1.3 Mitigation Measures

BR-1 Disturbed areas, where possible, will be reseeded/revegetated with native species.

BR-2 Vegetation disturbances will be limited to the project corridor.

BR-3 Plants occurring within the project corridor that are protected by the GRIC Native Plant Law will be salvaged to the extent possible.

3.8.2 Wildlife

3.8.2.1 Affected Environment

The active agricultural setting along Old Price and Pecos roads is not high quality wildlife habitat. Adjacent wildlife habitat occurs as small, scattered clumps of native trees and shrubs along the corridor. Small reptiles (lizards, snakes, etc.) and mammals such as rabbits, rodents, and coyotes are expected to inhabit these areas as individuals or small groups. Resident birds, such as Red-tailed Hawks, Gambel's Quail, Mourning Doves, and American Roadrunners may use small isolated vegetation clumps as nesting, roosting and foraging sites.

3.8.2.2 Environmental Consequences

Alternatives 1 and 2. Resident mammal, reptile, and bird species would be displaced from the project corridor during construction of the open canal, siphons, and pipeline. Upon completion and operation, the open canal of Alternative 1 would provide a water source for some species of wildlife inhabiting the area. The open canal portions of Alternatives 1 and 2, however, may result in possible wildlife drownings.

Alternative 3. No impacts to individual species or groups of wildlife or their habitat would occur in the project area or on adjacent lands from the no action alternative. Clearing of wildlife habitat would be less extensive than expected under Alternatives 1 and 2 since fewer acres of farmland would be supported by the existing water distribution system.

3.8.2.3 Mitigation Measures

BR-4 The open canal portion of the action alternatives will be fenced with chain-link to restrict access of larger wildlife species to the canal.

BR-5 Open canal will be constructed with a rough-lined inner surface to aid the escape of smaller wildlife species.

3.8.3 Special Status Species

3.8.3.1 Affected Environment

A visual survey of the Price/Pecos Corridor was performed by members of the Gila River Indian Community, U.S. Fish and Wildlife Service, and Reclamation on January 15, 1997 (Appendix B). No major biological resources, including listed species protected under the authority of the Endangered Species Act (ESA) or their corresponding habitat, were identified.

3.8.3.2 Environmental Consequences

Alternatives 1 and 2. No major biological resources or listed species protected under the authority of the ESA would be impacted by construction and operation of Alternative 1 or Alternative 2. Reclamation has determined that Alternative 1 or Alternative 2 will not affect any listed or proposed species or corresponding designated critical habitat.

Alternative 3. No major biological resources or listed species protected under the authority of the ESA would be impacted from the no action alternative. The no action alternative will not affect any listed or proposed species or corresponding designated critical habitat.

3.8.3.3 Mitigation Measures

No mitigation measures are proposed.

3.9 CULTURAL RESOURCES

3.9.1 Affected Environment

The Gila-Salt Valley has long been considered the heartland of prehistoric Hohokam culture. This region, stretching from The Buttes east of the community of Florence westward across the Reservation to the confluence of the Gila and Salt rivers, once contained thousands of villages and short-term camps or farmsteads tied to extensive canal systems (Doyel and Green, 1995). These canal systems were engineered and built by the Hohokam to deliver surface water to villages and fields.

Many archaeological sites in this region have been obliterated by modern agricultural development. The Reservation also contains some of the best preserved examples of villages and other sites, including Snaketown, a World Heritage Site, and the type site for the Hohokam Preclassic Period (Gladwin et al., 1937; Haury, 1976). The Reservation also has an unknown number of small prehistoric sites (for example, resource procurement and processing, field house, and petroglyph sites) as well as segments of prehistoric canal systems. Post-Classic Period Hohokam (after A.D. 1450) and Spanish contact-period sites may also be present, which will provide important information on a period of human occupation that is poorly documented archaeologically. Also present are numerous historic Akimel O'odham (Pima) and Pi Posh (Maricopa) sites, which are of particular interest to current residents of the Community. More recent sites include remnants of a World War II Japanese-American internment camp.

Previous archaeological surveys conducted by Archaeological Consulting Services, Ltd. within the Price/Pecos alignment right-of-way in 1990 (Macnider, 1990) and 1991 (Irwin, 1991) did not reveal any archaeological sites. A review of Arizona State Museum site records revealed that no archaeological sites had been previously recorded within the proposed right-of-way.

Cultural resources in the Price/Pecos Project area were treated in accordance with the Programmatic Agreement signed by Reclamation and the Community in May 1997 (Appendix G). In addition to the surveys described below, Traditional Cultural Properties (TCPs) consultation will be conducted prior to the onset of construction in accordance with the stipulations of the Programmatic Agreement. GRIC will notify Reclamation by letter regarding results of TCP consultations; if necessary, appropriate mitigation procedures will be developed.

A Class III pedestrian survey (transects no more than 20 m apart) of the approximately 12-mile long project corridor was conducted in 1996 (Brodbeck, 1996) by the Community's Cultural Resource Management Program (Figures 6 and 7). The survey area consisted of a 1,000-foot wide right-of-way extending along the west side of Interstate 10 from the Broadacres Canal to the northern boundary of the Reservation, along Pecos Road from Interstate 10 to Old Price Road, and along Old Price Road from Pecos Road to Goodyear Road. In addition, another small segment located at the southern end of the project area extended from Old Price Road to Interstate 10. The survey included 785 acres of the total 1,202 acres within the 1,000-foot wide corridor. The remaining 417 acres were not surveyed (at that time) and included previously developed areas with existing structures, posted "No trespassing" areas, and areas where dense vegetation did not allow at least 50 percent ground visibility.

A supplemental Class III cultural resources survey was performed by the Community to evaluate a portion of the 417 acres not originally surveyed due to dense vegetation cover (Woodson, 1997). The survey included 130 acres of land occurring within the original 1,000-foot wide survey corridor. The remaining acreage will be surveyed prior to, or monitored during, construction.

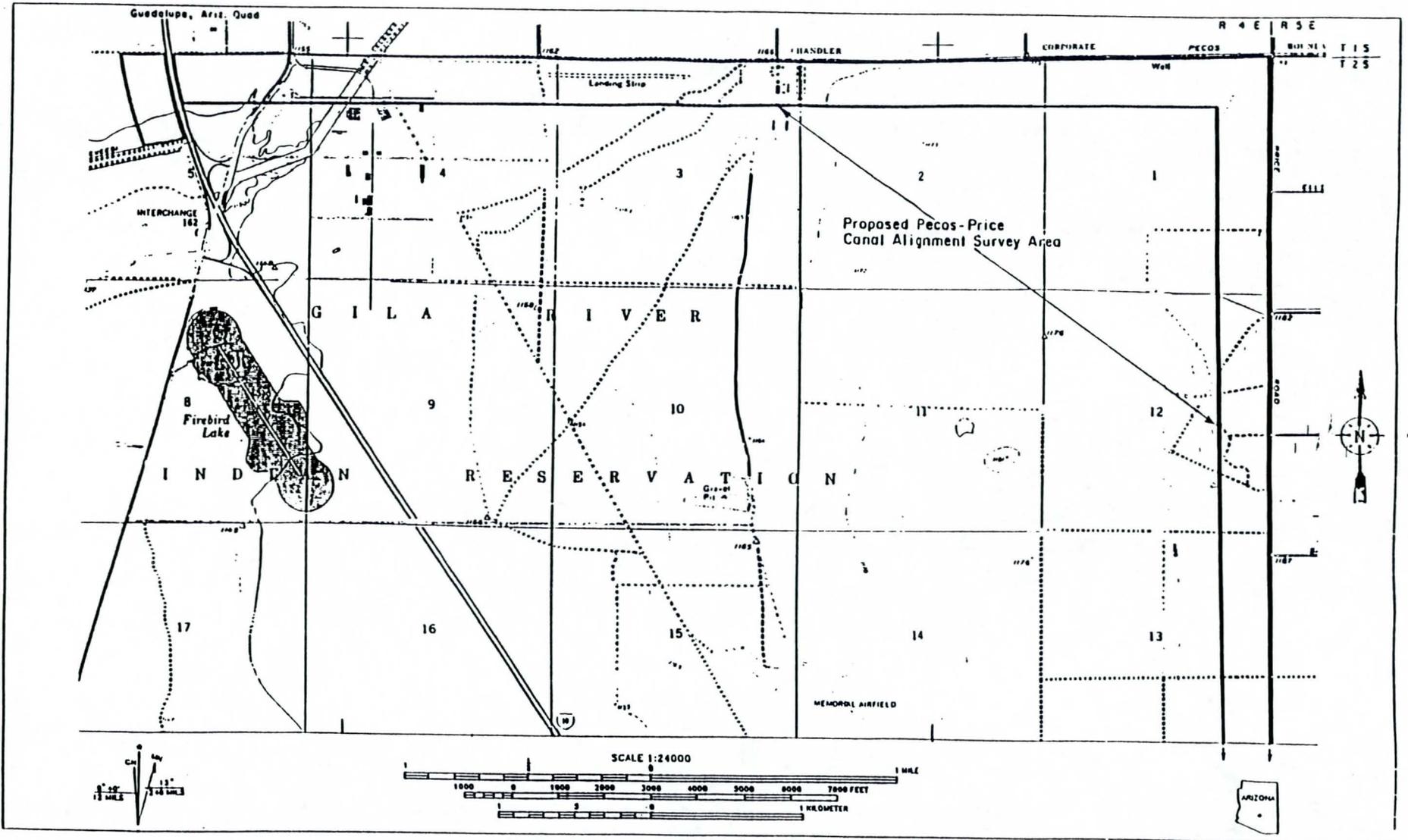


Figure 6: Price/Pecos Canal Alignment Project Area (North Half)

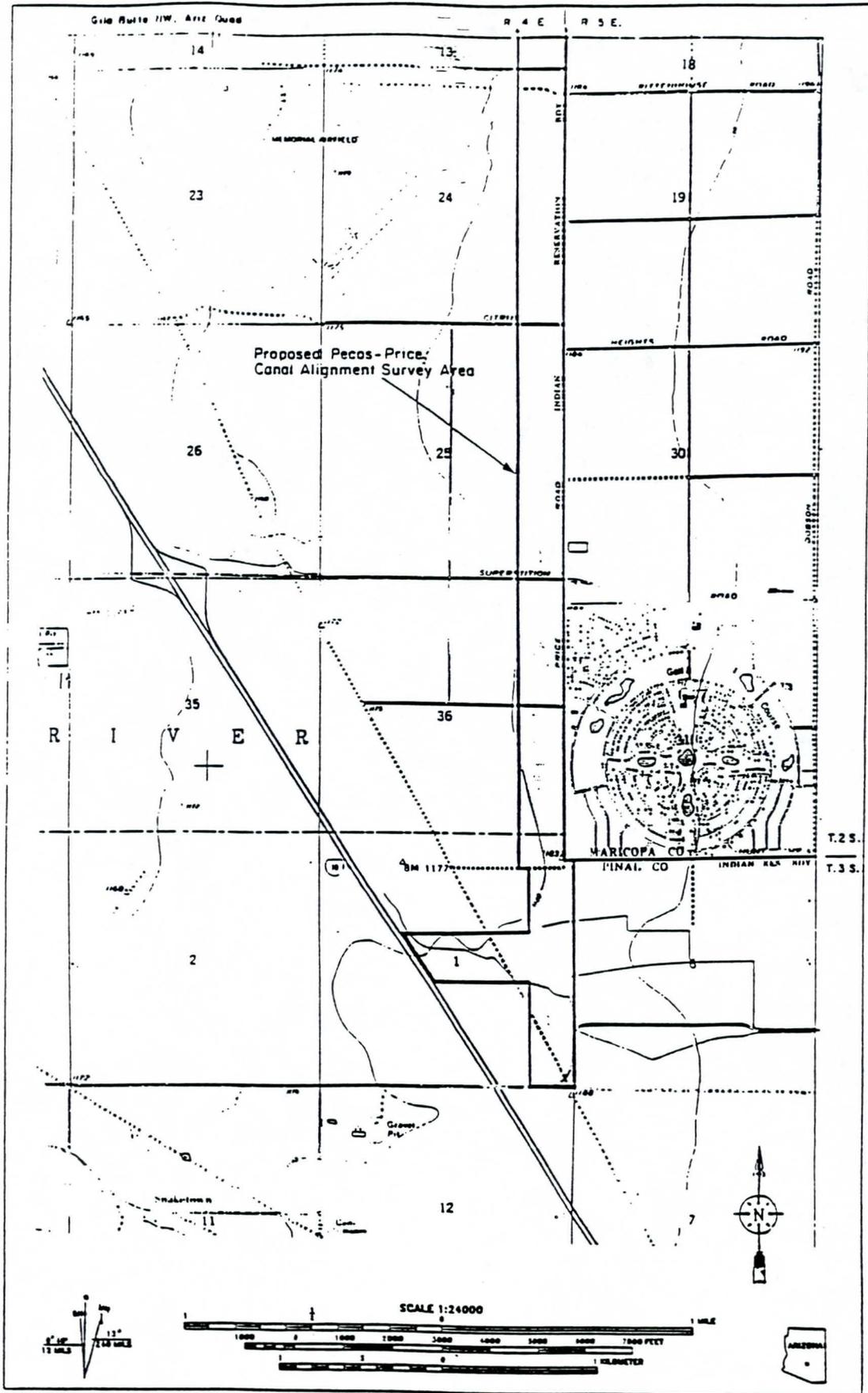


Figure 7: Price/Pecos Canal Alignment Project Area (South Half)

No archaeological sites were identified in the areas intensively surveyed. The Community recommended that archaeological clearance be granted to those areas, with the exception of the NW 1/4 of Section 3 in Township 2 South (T2S) and Range 4 East (R4E) where the subsurface remains of a prehistoric reservoir may be preserved based on Turney (1929) and data compilation by J. Howard (1992; Figure 8). Reclamation and the State Historic Preservation Officer (SHPO) concurred with the findings (Appendix C). A testing plan for the reservoir and associated canals was prepared by the Community (Foster and Woodson, 1997) and submitted by Reclamation to SHPO. Concurrence by SHPO with the proposed testing plan was also received (Appendix D). No prehistoric reservoir was found during testing, however, a subsurface canal was discovered. Further testing will be conducted prior to construction, as necessary.

Two archaeological sites were identified during the survey, referred to as site GR-559 and site GR-560. Site GR-559 is a low density prehistoric artifact scatter of the pre-Classic Period. The eligibility status of the site is indeterminate based on surface observations. Site GR-560 consists of a low density historic/modern trash scatter. Based on the artifacts observed, the sites date roughly from the 1910's through the 1950's. Site GR-560 was recommended by the Community to be ineligible to the National Register of Historic Places under either Criterion C or D. Subsurface cultural deposits are unlikely to exist.

SHPO concurrence with the supplemental cultural resources survey report was received May 6th, 1997 (Appendix C). Based on the SHPO concurrence, site GR-560 was not eligible for addition to the National Register of Historic Places. Site GR-559 was determined to be potentially eligible for addition to the National Register of Historic Places.

Prior to conducting archaeological testing, the Community submitted an agreement to each owner/allottee of record within the Price/Pecos Corridor (Appendix E). The agreements were acknowledged and signed by all living owners/allottees of properties within the alignment.

3.9.2 Environmental Consequences

Alternatives 1 and 2. Both action alternatives would impact the potential subsurface remains of a prehistoric reservoir and associated canals along Pecos Road in the NW 1/4 of Section 3 in T2S and R4E. A portion of the reservoir and canals would likely be destroyed from excavation of the canal or pipeline. A testing plan for the reservoir and associated canals would be implemented prior to construction to determine if subsurface artifacts are present (Appendix F). Subsurface testing for cultural resources along Pecos Road would be accomplished through the excavation of a series of backhoe trenches.

Archaeological sites GR-559 and GR-560 were also identified during the surveys. Site GR-559 is located approximately 250 feet to the south of the proposed corridor. Project implementation would not impact GR-559 under the present alignment.

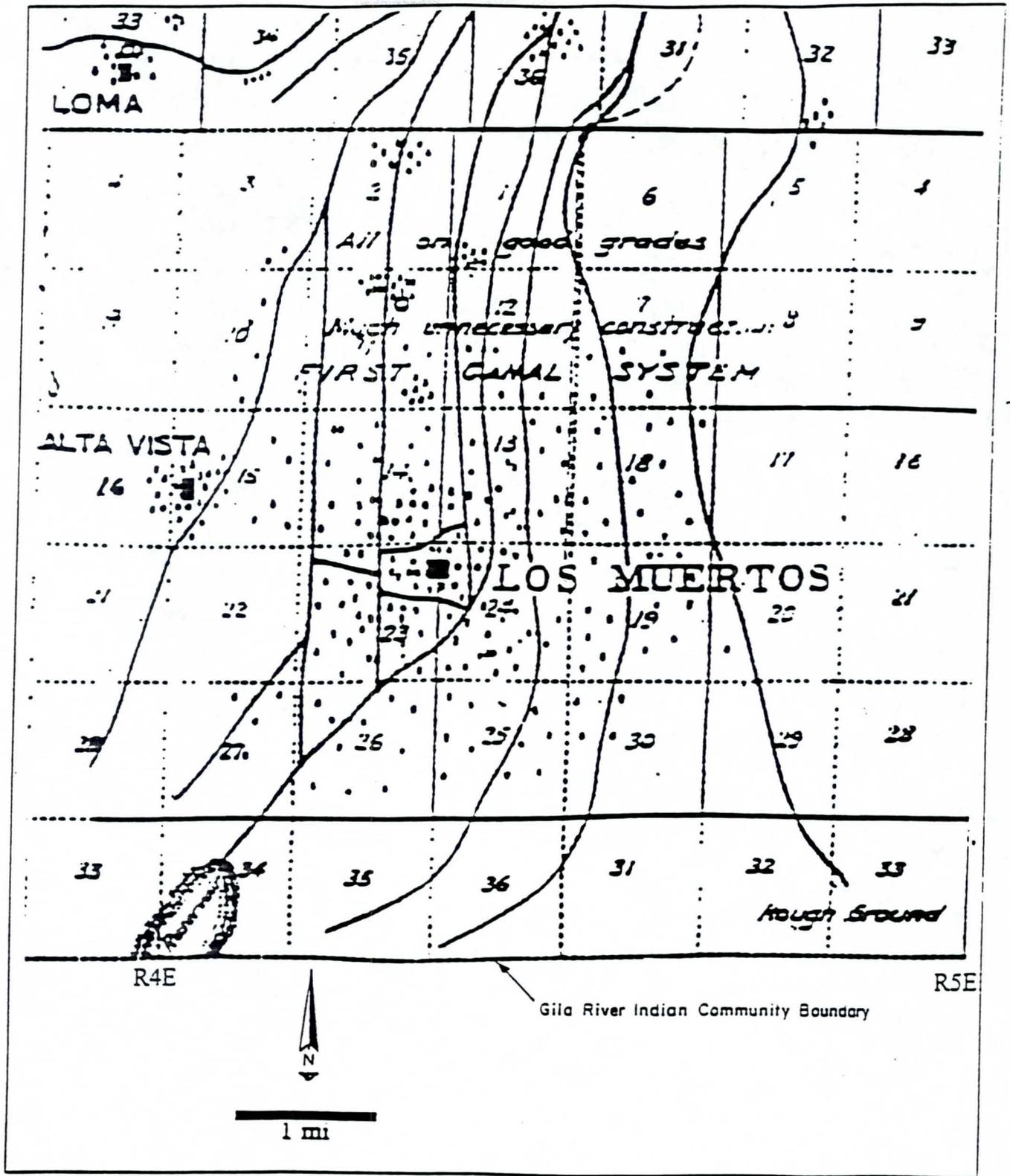


Figure 8: A Portion of Omar Turney's Map of Prehistoric Canals

Site GR-560, a low density historic/modern trash scatter, lies at the Old Price Road and Pecos Road intersection. No subsurface testing will be performed prior to construction because: 1) subsurface cultural deposits are unlikely to exist; and 2) this site is recommended by the Community to be ineligible for the National Register of Historic Places under either Criterion C or D. Due to the location of GR-560, construction activities will likely disturb the trash scatter and further mix existing debris with soil excavated from the canal or pipeline.

Alternative 3. Implementation of the no action alternative would not impact potential subsurface remains of the reservoir and associated canals. Additionally, sites GR-559 or GR-560 would not be impacted by this alternative. No subsurface testing would be required. Cultural resources in existing and/or future agricultural fields which would be served by Alternatives 1 or 2 would not be impacted.

3.9.3 Mitigation Measures

- C-1 Prior to construction, subsurface testing will be performed along the length of Pecos Road to determine if subsurface cultural resources are present. A series of 10 m-long trenches (test units) at intervals of 10 m along the pipeline centerline (oriented east to west) will be excavated (Appendix F). Cultural features or deposits will be detailed and recorded as to their orientation in the profile. All artifacts discovered in the test units will be collected, and appropriate provenance information will be recorded on the collection bags.
- C-2 All cultural resources affected by the Price/Pecos Corridor will be treated according to terms and conditions set forth in the Programmatic Agreement among the Community, Reclamation, SHPO, and the Advisory Council on Historic Preservation (Appendix G).

3.10 LAND RESOURCES/USE

3.10.1 Affected Environment

Land resources/use on the Reservation along the corridor from the beginning of the project to the southern end of Old Price Road include active agricultural lands, a small housing development, and undeveloped Sonoran desertscrub habitat. Along Old Price Road to the intersection of Pecos Road, land resources/use primarily include utility corridors, active and inactive agricultural lands, and one homestead located between Riggs and Queen Creek roads. Among the utilities paralleling Old Price Road are phone lines operated by Gila River Telecommunications, overhead electric power lines operated by SCIIP and Salt River Project (SRP), and irrigation/tailwater ditches operated by SRP. The corridor will cross the right-of-way of Queen Creek and Riggs roads via underground siphons. Adjacent off-Reservation land uses outside of the corridor along Old Price Road are residential areas of Sun Lakes, an RV campground, waste water treatment facilities, businesses, and several diary and agricultural farms/fields.

Land resources/use along Pecos Road is similar to that along Old Price Road with active and inactive agricultural fields and utility corridors occupying most of the area to the intersection with Kyrene Road. Disturbed Sonoran desertscrub habitat occurs west of Kyrene Road. Utilities paralleling the corridor are overhead high voltage power lines, the El Paso Natural Gas line, the Santa Fe petroleum pipeline, and the AT&T and Gila River Telecommunications line. Other north-south utilities intersecting the corridor include the City of Chandler sanitary sewer, the Gila Drain where it crosses the alignment and enters the Lone Butte Industrial Park, and an abandoned AT&T coaxial telephone cable west of the industrial park. A natural gas line regulator station is located immediately north of the corridor east of the Gila Drain. While in the boundaries of the Lone Butte Industrial Park, the corridor would pass south of the park's water supply storage tanks and booster pump station along an existing utility corridor. Water pipelines, overhead powerlines and billboard signs along I-10 may occur in the pipeline corridor. West of I-10, land resources/use include overhead power lines and water pipelines supplying users along Maricopa Road.

Leakage from a petroleum pipeline along the northern boundary of the Lone Butte Industrial Park has resulted in a plume about two acres in size located approximately 200 feet west of the point where the Gila Drain crosses the Reservation boundary. The plume extends to a depth of about 40 feet below ground surface where an impenetrable clay soil layer (clay lens) causes a perched water table. Fifteen monitoring wells within the plume area are sampled on a regular basis. Well data indicate that the plume is migrating to the southwest.

3.10.2 Environmental Consequences

Alternative 1. The open canal portion of Alternative 1 would result in permanent change to current land resources/use within the corridor. Those portions of active and inactive agricultural fields falling within the 76-foot to 124-foot wide canal corridor would be removed from agricultural production. Undeveloped desertscrub would not reestablish in the canal portion of Alternative 1. Residents of the homestead between Riggs and Queen Creek roads would be temporarily relocated during construction. Utility corridors and easements along Old Price Road would remain in place. The ADOT Riggs Road and Queen Creek Road rights-of-way would be avoided by using underground siphons at these locations. During construction, however, traffic using roads crossing the corridor (e.g., Riggs Road) may experience delays due to increased truck and heavy equipment movement. In addition, limited traffic delays/detours would be expected during construction of the underground siphons at Riggs Road and Queen Creek Road. Traffic management during construction would follow standard ADOT traffic control procedures. Land resources/use adjacent to the corridor along Old Price Road would remain unchanged.

Alternative 1 would parallel the El Paso Natural Gas line for the length of Pecos Road to the Gila Drain. The recommended alignment is south of the natural gas line. The pipeline portion of Alternative 1 along Pecos Road would cross under the Gila Drain, the El Paso Natural Gas line, Maricopa Road and I-10 before connecting to the Broadacres Canal. All utilities along Pecos Road would remain in place. Land resources/use within the pipeline portion of Alternative 1 would be temporarily changed during construction. Agricultural roads and vegetation may be reestablished in the underground pipeline section of Alternative 1 after construction is completed.

Existing land resources/use are expected to continue after construction of the pipeline except for those uses that potentially would interfere with access for repairs (i.e. drilling, trenching, building of structures, etc.).

The proposed pipeline alignment would pass about 50 feet south of the petroleum plume. A remote possibility exists that construction excavation could encounter contaminated soil, in which case, the soil will be handled and disposed of according to proper hazardous waste procedures. Operation of the pipeline would not impact the petroleum plume. Likewise, the plume is not expected to impact operation of the pipeline or the quality of the irrigation water.

Alternative 2. Alternative 2 would have similar impacts to land resources/use as the pipeline portion of Alternative 1 and follow the same alignment. The 0.25 miles of open canal south of the bifurcation would permanently change the current land resources/use as in Alternative 1. Agricultural production, vegetation, and vehicle traffic along agricultural fields would not reestablish in this section. However, along the remaining length of Alternative 2, land resources/use would return to existing uses except for those uses potentially impacting the underground pipeline (i.e. drilling, trenching, building of structures, etc.). All utilities along Old Price and Pecos roads would remain in place. During construction, traffic using roads crossing the corridor (e.g., Riggs Road) may experience delays due to increased truck and heavy equipment movement. Minor traffic detours would be expected during construction of the underground pipeline at Riggs and Queen Creek roads. Traffic management during construction would follow standard ADOT traffic control procedures. Impacts to land resources between the livestock auction barn and Broadacres Canal would be the same as described for Alternative 1. Land resources/use adjacent to the corridor would remain unchanged.

Alternative 3. Implementing the no action alternative would have no impact on current land resources/use in and adjacent to the corridor. Land resources/use on areas which would be developed as new agricultural fields under Alternatives 1 or 2 would likely not change.

3.10.3 Mitigation Measures

LR-1 Traffic management during construction would follow standard ADOT traffic control procedures.

LR-2 If contaminated soils are encountered during construction, appropriate hazardous waste handling and disposal procedures will be followed.

3.11 LAND OWNERSHIP AND JURISDICTION

3.11.1 Affected Environment

On the Reservation, lands are owned by the Community as Tribal lands and also by private Community members as allotments. Reservation lands encompass 372,929 acres of which 275,537 acres are Tribal lands and 97,392 acres are privately owned by Community members.

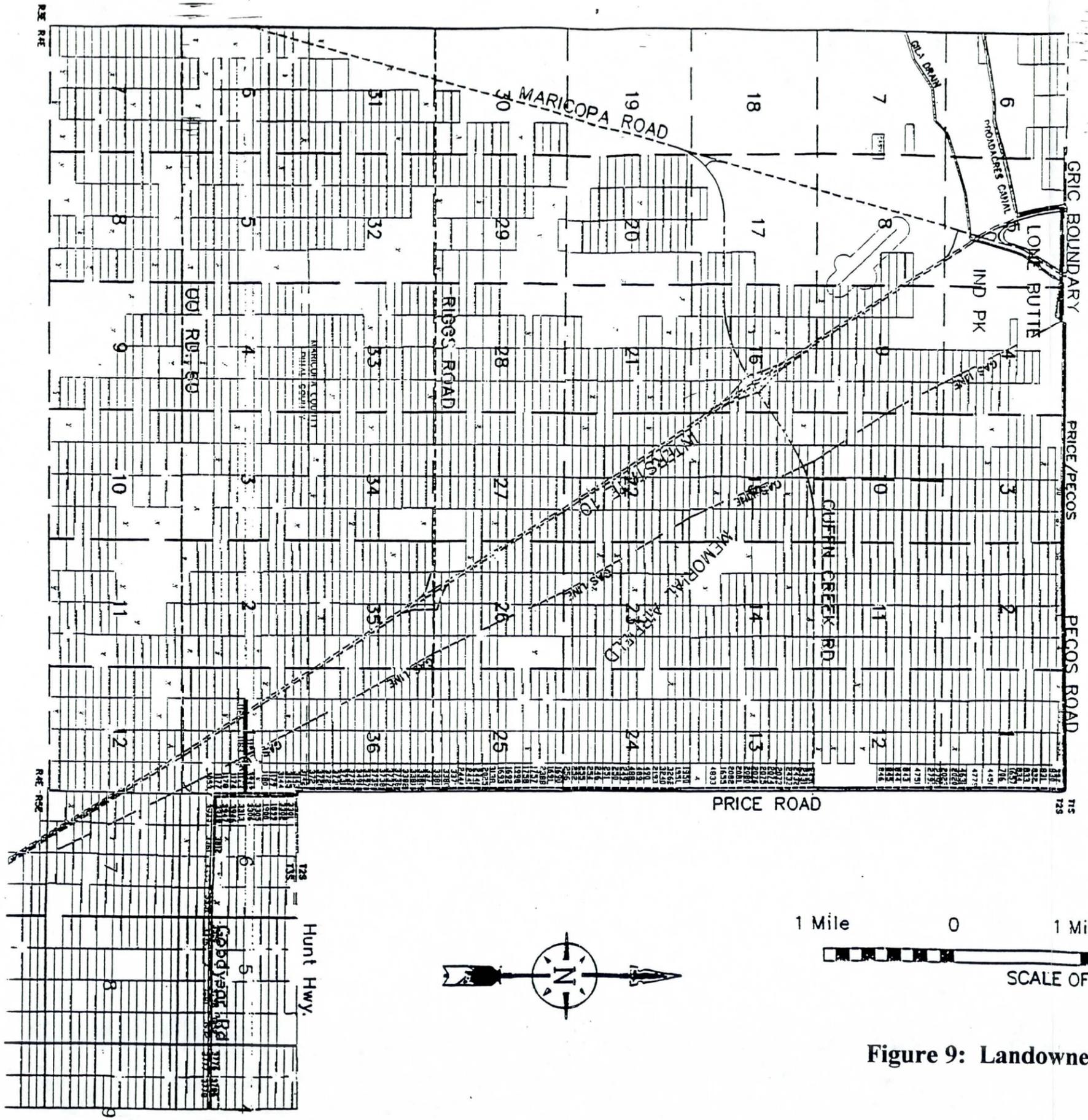
There are approximately 5,000 individual allotments on the Reservation (Unpublished BIA Data). The allotment system was established by the General Allotment Act of 1887, as amended. When executed between 1916-1924, the General Allotment Act allotted each Tribal member 20 acres of land, divided into two non-contiguous 10-acre parcels. The general practice was to locate one parcel within SCIIP and the other parcel elsewhere on the Reservation. Today, due to inheritance, individual allotments are owned by anywhere from one to several dozen people. Land not allotted to individuals remains Tribal, owned collectively by the Community. The project area includes lands that are owned by the Tribe and lands that are privately owned by members of the Community (Figure 9).

Reservation land use is predominantly rural with interspersed pockets of commercial, industrial and residential developments. The project corridor passes through the area of the Reservation with the highest potential for commercial/industrial development, comprising the northern boundary from Old Price Road west to 51st Avenue and along the Queen Creek and Riggs road alignments. This area is predominantly allotted lands and allotment owners are forming landowner corporations in some areas with high potential for commercial/industrial development. Final decisions on types of development are up to individual landowners but must be in compliance with Community land use ordinances as administered by the Planning and Zoning Committee. Tribal lands are subject to the same regulatory rules of the Community as allotted lands. One common characteristic in both allotted and Tribal land is the trust responsibility of the Federal government administered by the BIA. All contracts, deeds or use of these trust resources must follow Federal law, regulation and policy found in 25 CFR, 54 BIAM and other Federal regulations which require consent of landowners involved and, where appropriate, consent and/or concurrence of Tribal government and approval of BIA.

Rights-of-way on Tribal lands will be acquired using the same procedures as described for allotted lands. The Tribal Council will be consulted for consent or rejection. Upon receipt of consent, BIA will issue the right-of-way deed. Compensation will be deposited with BIA for distribution to landowners.

3.11.2 Environmental Consequences

Alternative 1. The open canal alternative is estimated to require 120.3 acres of right-of-way, which would vary from 76 feet to 124 feet in width. There would be a total of 116 allotments affected by right-of-way requirements. All but four of the 116 allotments are 10-acre rectangular parcels measuring 1,320 feet by 330 feet. The other four allotments are 20-acre rectangular parcels measuring 1,320 feet by 660 feet. The acquired right-of-way would be fenced (i.e., chain link fence) and not available to parcel owners for secondary uses.



LEGEND

- ### Allotment Numbers
- Pipeline Alignment
- Allotments
- Section Lines
- 12 Section Numbers

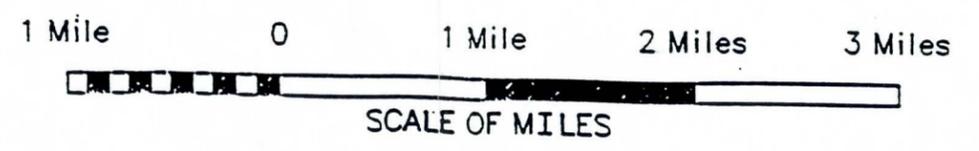


Figure 9: Landownership Map

Most of the affected allotments are along the north-south portion of the proposed alignment that parallels Old Price Road. The allotments are oriented with the 1,320-foot side going east and west, and the 330-foot side going north and south. The north-south alignment and the east-west orientation of the parcels would result in a right-of-way requirement of approximately 0.8 acres for each 10-acre allotment and 1.6 acres for each 20-acre allotment. Approximately 98 10-acre and four 20-acre allotments would be affected in order to obtain the 84.4 acres of needed right-of-way along Old Price Road. Five allotments (and one tribal parcel) totaling 7.2 acres along the I-10 Lateral would also be affected. The I-10 Lateral right-of-way runs along a common boundary of two allotments so that only half of the required width would need to come from any one parcel. Since the alignment parallels the long side of the rectangular allotment, about 1.5 acres of right-of-way would be needed from each parcel.

There are nine allotments that would be affected along the Pecos Road where the alignment runs east and west. Since the orientation of the allotments is also east and west, the alignment would require a right-of-way of approximately 3.0 acres from each parcel. Preliminary designs indicate that the alignment would cut most of the parcels into two pieces where the right-of-way would be approximately 3.0 acres leaving the remainder of the allotment divided into two separate pieces. Right-of-way acquisition would greatly affect the nine allotments along Pecos Road.

The remaining right-of-way requirements are on lands owned by the Community and rights-of-way/easements would be approved by the Tribal Council. Approximately 29.8 acres of construction easements will also be required in addition to the 120.3 acres of right-of-way. The location of construction easement sites are unknown at this time.

Alternative 2. The pipeline alternative is estimated to require 38.7 acres of right-of-way. The same 116 allotments affected in Alternative 1 would also be affected by Alternative 2, but to a much lesser extent.

Impacts to property owners from Alternative 2 would be the same as Alternative 1 for the first 0.25 miles of right-of-way up to the beginning of the pipeline and for the I-10 Lateral. The 0.25-mile open canal portion would run north and south along a common boundary of eight allotments requiring 0.4 acres from each parcel, and five allotments (plus one tribal parcel) totaling 7.2 acres. The remainder of the alignment would be buried pipeline affecting 108 allotments requiring a 20-foot width and a total right-of-way of 28.3 acres. After construction, the remaining 108 allotments would not be fenced and a number of secondary uses would be allowed, i.e., agriculture, temporary access roads, and certain temporary structures.

The remaining right-of-way requirements are on lands owned by the Community and rights-of-way/easements would be approved by the Tribal Council. Approximately 29.8 acres of construction easements will also be required in addition to the 38.7 acres of right-of-way. The location of construction easement sites are unknown at this time.

Alternative 3. Under the no action alternative, the project would not be implemented as envisioned under the action alternatives and so no impacts to land ownership or jurisdiction would result.

3.11.3 Mitigation Measures

L-1 Established procedures will be followed in acquisition of rights-of-way and easements needed for the project. Allotted lands on the Reservation will only be acquired as necessary.

3.12 SOCIAL CONDITIONS

3.12.1 Affected Environment

The project alignment is located almost entirely in a rural setting which is sparsely populated. There are no population centers on the Reservation near the alignment. The Lone Butte Industrial Park is located at the west end where activities associated with businesses occur. Recreational facilities surrounding Firebird Lake and Compton Terrace (including a Community casino) are located nearby. Farther east along Pecos Road, there are several buildings and warehouse structures clustered around the Pacific Cattle Auction building. The closest structures are within approximately 100 feet of the southern boundary of the proposed alignment. Along the Old Price Road corridor is an occupied mobile trailer and farm yard that are within 25 feet of the corridor. There are no other buildings or structures within or near the proposed alignment on the Reservation.

Off the Reservation, there are residential developments near both the Old Price Road and Pecos Road portions of the alignment. Along Pecos Road, residential developments in the City of Chandler come within 200 feet of the alignment. Interspersed among the residential developments are active agricultural fields. Old Price Road is bordered by agricultural fields, a large dairy operation, and several farm residences. The Sun Lakes residential development is located at the southern end of Old Price Road and includes homes, RV parking/campground, and a golf course. The closest residences in Sun Lakes are a minimum of 75 feet from the proposed alignment. All of the facilities along Old Price Road, excluding the mobile trailer and farm yard, are located approximately 75 feet or more from the proposed alignment.

3.12.2 Environmental Consequences

Alternative 1. The open canal alternative would require a right-of-way that varies between 76 feet and 124 feet in width. One mobile home would have to be relocated. Crossings would be limited to several constructed bridges and access to the canal would be prevented by a chain-link fence placed on both sides of the alignment. Although the canal would be fenced and posted with warning signs, an increased level of danger to nearby residences off of the Reservation would be present because of the exposed open water surface.

Alternative 2. The pipeline alternative would not require relocation of the mobile home, existing access would be maintained. Access to the 0.25-mile open canal portion would be prevented by a chain-link fence placed on both sides of the alignment. Although the canal would be fenced and posted with warning signs, an increased level of danger to nearby residences off of the Reservation would be present because of the exposed open water surface.

Alternative 3. Under the no action alternative, the project would not be implemented as envisioned under the action alternatives and no impacts to social conditions would result.

3.12.3 Mitigation Measures

SC-1 Access to the open canal portion would be prevented by a chain-link fence placed on both sides of the alignment. Warning signs would also be posted.

3.13 OTHER VALUES

3.13.1 Sound and Noise

3.13.1.1 Affected Environment

The project corridor is primarily rural in nature with wide expanses of active and inactive agricultural fields where ambient noise levels are relatively low. Noise levels are slightly higher in the immediate vicinity of Sun Lakes, Memorial Airfield and the Lone Butte Industrial Park, and vary with the amount of activity (air and surface traffic movements). A constant source of noise is Interstate 10 which intersects the project corridor near the western terminus.

3.13.1.2 Environmental Consequences

Alternatives 1 and 2. Implementation of either Alternative 1 or Alternative 2 would result in temporary noise from construction-related activities, including the operation of bulldozers, earth moving equipment, concrete mixers, portable generators, water trucks, power tools, and trucks. Temporary increases in local traffic, especially heavy trucks associated with construction will increase ambient noise levels along the Price/Pecos Corridor. Noise would be similar for construction activities associated with the open canal and pipeline segments.

Temporary noise impacts would be most noticeable to the residences of Sun Lakes who are located immediately adjacent to the project corridor south of Riggs Road along Old Price Road. Additional residences located north of Pecos Road would be affected to a lesser extent. Both communities are separated from the project corridor by a concrete fence, which may reduce impacts from construction noise. Expected noise levels to residences living 100 feet from the corridor would range from 60 to 95 decibels. For comparison, the sound pressure level of a gas lawn mower at 100 feet equals approximately 70 decibels. Noise levels inside residences would be considerably lower. Low ambient noise levels would return to normal once construction is

complete. There would be no long-term noise impacts resulting from operation of the canal or pipeline.

Alternative 3. No temporary or long-term intermittent changes to the ambient noise levels within or in the vicinity of the project corridor would occur from the no action alternative.

3.13.3 Mitigation Measures

N-1 Construction activities that may potentially create a noise impact on residential units would be restricted to daytime hours (5:00 am to 6:00 pm). Night work is not anticipated. Whenever feasible, fixed noise sources will be oriented away from noise sensitive areas.

3.13.2 Visual Resources

3.13.2.1 Affected Environment

The scenic quality of the Price/Pecos Corridor is typical of areas in central Arizona with comparable disturbed landscapes and vegetation. Much of the corridor is bordered by wide expanses of inactive agricultural fields lined with abandoned irrigation laterals and clumps of a remnant creosote-bursage community. Much of the vegetative cover is sparse and low in species diversity. Active agricultural fields are scattered along the corridor, especially in the vicinity of Old Price Road. Large individuals of non-native tamarisk (saltcedar) dot the margins of some agricultural fields.

Mountain ranges, desert vegetation communities, scattered farm residences and agricultural lands shape the primary visual character of the vicinity. Mountain ranges rise abruptly from the valley floor and provide a scenic backdrop for the agricultural land. Distant ribbons of desert riparian vegetation are present and provide variety to the desert-dominated landscape.

3.13.2.2 Environmental Consequences

Alternative 1. Moderate topographic relief along the Old Price Road portion of the alignment requires the canal to be elevated higher than normal at the start of the project to maintain sufficient hydraulic gradient. Canal banks would be 12 feet above the surrounding land surface in the first mile of the project. Through the first five miles, the canal banks would gradually decrease to a range of five to six feet above the surrounding land surface, and continue at this elevation range throughout the remainder of the project.

Alternative 1 would be expected to permanently impact the immediate visual resources, specifically from construction of an elevated open canal west from the bifurcation to I-10, along Old Price Road, and along a portion of Pecos Road. Permanent impacts from the elevated canal would likely be experienced by residences and businesses of Sun Lakes and the City of Chandler adjacent to the corridor. Temporary impacts would occur during construction when earth moving equipment and fill material occupy the corridor.

Alternative 2. Alternative 2 would have an open canal, similar to Alternative 1, for the first 0.25 miles to the bifurcation before transitioning into an underground pipeline, and an open canal (0.67 miles) west from the bifurcation to I-10. The canal segments would reach a maximum elevation of 12 feet above the surrounding land surface resulting in permanent impacts to visual resources. The remaining 11.4 miles would be buried pipeline which would not result in permanent impacts to visual resources, especially of the residences of Sun Lakes and Chandler. Temporary impacts to visual quality in this area would result during construction when earth moving equipment and fill material occupy the corridor.

Alternative 3. No impacts to visual resources from construction and elevated open canals would result under the no action alternative since the project would not be implemented as envisioned under the action alternatives. No visual impacts to the surrounding vegetation community would result from the no action alternative. A more natural looking landscape would likely be maintained on much of the agricultural lands that would be developed under Alternatives 1 or 2.

3.13.2.3 Mitigation Measures

VR-1 Above ground sections of the canal and pipeline would be revegetated to re-establish the visual character of the project area.

3.13.3 Indian Trust Assets

3.13.3.1 Affected Environment

Indian Trust Assets (ITA) are "legal interests" in "assets" held in "trust" by the United States for Indian tribes or individual Indians. Assets are anything owned that has monetary value. The asset need not be owned outright, but could be some other type of property interest, such as a lease or a right-of-use. Assets can be real property, physical assets, or intangible property rights. Common examples of Indian Trust Assets may include lands, minerals, hunting and fishing rights, water rights, other natural resources, money or claims. The United States, with the Secretary of the Interior as the trustee, holds many assets in trust for Indian tribes or Indian individuals.

"Legal interest" means there is a primary interest for which a legal remedy, such as compensation or injunction, may be obtained if there is improper interference. Indian Trust Assets do not include things in which a tribe or individuals have no legal interest, such as off-reservation sacred lands in which a tribe has no legal property interest.

The United States has an Indian 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 of the Gila River Indian Community include, but are not necessarily limited to land resources, water rights, minerals, and hunting and fishing rights.

3.13.3.2 Environmental Consequences

Alternatives 1 and 2. The project is part of an overall Gila River Indian Community Master Plan for Land and Water Use. As part of the Master Plan process, the Community conducted more than 50 citizen participation meetings. The Master Plan identified major goals and preferences of the Community for improving and developing Reservation land and water resources. The Master Plan was accepted by formal action of the Community Council in December 1985.

Once implemented, the Price/Pecos water delivery system would become an important segment of the main Reservation irrigation delivery system. Proposed improvements to the irrigation delivery and storage facilities would be expected to provide community members with better access to the Community's water rights, providing for more reliable and higher quality water supplies for each district within the Reservation. The Price/Pecos Project is expected to enhance the value of Community land and water resources. Indian Trust land adjacent to the project area would be converted from inactive agricultural fields and undisturbed desert to active agricultural land.

Alternative 3. No impacts to Indian Trust Assets would result under Alternative 3 because the no action alternative does not provide for full development and utilization of the existing and future water supply, which is an ITA of the Community.

3.13.3.3 Mitigation Measures

- IT-1 The Bureau of Reclamation and the Bureau of Indian Affairs, as appropriate, will comply with all applicable laws, rules, regulations and Executive Orders pertaining to the identification and protection of Indian Trust Assets.
- IT-2 Potential impacts to Indian Trust Assets will be considered by the Bureau of Indian Affairs in its review and approval of future proposed purchases and leases of land within the Reservation.

3.13.4 Environmental Justice

Executive Order 12898 of February 11, 1994, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations", outlines the following responsibilities of Federal agencies for Federal actions.

"Considerations of environmental justice are included to the greatest extent practicable and permitted by law, and consistent with the principles set forth in the report on the National Performance Review, each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories and possessions,"

3.13.4.1 Affected Environment

The Gila River Indian Community is composed primarily of Pima and Maricopa Indians, two separate tribes descended from different linguistic families. These tribes have been living together in this area for approximately 150 years. Both tribes (and their Hohokam predecessors) are agrarian peoples, having practiced irrigated farming for about 2,000 years.

The Reservation is divided into seven districts, each district represented on the Tribal Council. The Reservation encompasses a large area in which physical, biological, cultural and socioeconomic conditions vary. With regard to the agricultural industry, current conditions and opportunities are not equal throughout the Reservation. Under current conditions, some areas of the Reservation rely on less dependable water supplies, some are more greatly impacted by water quality problems and soil limitations, and some are more prone to other agriculture-related problems such as water logging.

The 1990 Census (Bureau of Census, 1990) indicated a total population of 9,540 for the Community, 86 percent American Indian (8,250), 12 percent Hispanic (1,103), 2 percent White non-hispanic (160) and less than 1 percent each of Asian (6), Black non-Hispanic (16) and other (5). In comparison, 1990 census data for Maricopa County indicated a total population of 2,129,120 of which 2 percent were American Indian (38,017), 16 percent Hispanic (345,498), 68 percent white non-hispanic (1,453,922), 2 percent Asian (36,294), 4 percent Black (74,257), and 8 percent other (174,113). In Pinal County, the 1990 Census indicated a total population of 116,379 with 59 percent White non-Hispanic (68,403), 29 percent Hispanic (34,158), 8 percent American Indian (9,735), 3 percent Black non-Hispanic (3,439) and 1 percent other (644).

Per capita income is low and poverty levels are high within the Community compared to Maricopa County, Pinal County and the State of Arizona. Per capita income in the Community is \$3,354, a figure lower than the per capita income in any of Arizona's fifteen counties. Per capita income in Maricopa County is \$14,970; in Pinal County, \$9,228; and in the State of Arizona, \$13,461. The income of 63 percent of the households within the Reservation is below the poverty level. The income of 12 percent of Maricopa County households, 24 percent of Pinal County households, and 16 percent of Arizona households is below the poverty level (Bureau of Census, 1990).

3.13.4.2 Environmental Consequences

Alternatives 1 and 2. The Gila River Indian Community proposes the Price/Pecos portion of the P-MIP to facilitate effective and efficient use of Reservation land and water resources to enhance economic growth, development and self-sufficiency of the Community and to improve the standard of living of Community members. The proposed project would benefit Community members by providing employment opportunities and increasing Community revenues. Economic opportunities provided by the project are consistent with the cultural background and historic land use in the Community.

The project would also allow the Community to more efficiently utilize their allotment of CAP irrigation water and to enhance the adequacy and dependability of their agricultural industry. The irrigation delivery system improvements, including construction of new canals, will allow for delivery of adequate and dependable irrigation water to each of the seven districts within the Reservation, some of which are currently limited to groundwater for irrigation supplies. Localized problems with water quality can also be improved with the P-MIP since water supplies can be mixed.

Only one resident in Alternative 1 and no residents in Alternative 2 would need to be temporarily relocated, and no low-income, Native American or minority neighborhoods would be divided as a result of the project. In addition, the location of the project cannot be removed from the low-income, Native American and minority populations associated with the project area. The action alternatives, therefore, would not be expected to create disproportionately high or adverse effects for any low-income, Native American or other minority groups.

Alternative 3. Under Alternative 3, the no action alternative, economic and environmental conditions would remain essentially as they are today. Potential improvements in economic conditions and employment opportunities that would result from this project would not occur under the no action alternative.

3.13.4.3 Mitigation Measures

EJ-1 The Community will continue to maintain the comprehensive public information and public involvement process that was initiated during preparation of the Master Plan Report for Land and Water Use and continued throughout the preparation of this NEPA analyses and documentation.

3.14 CUMULATIVE IMPACTS

Evaluation of cumulative impacts is intended to consider potential incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions. The cumulative impacts that could result from use of CAP and Gila River water were considered and disclosed in the Final Programmatic Environmental Impact Statement (FPEIS), and are summarized below.

- Construction and rehabilitation of the off-Reservation Joint Works and other Works would disturb an estimated 5,375 acres. Construction of on-Reservation components would disturb roughly 10,420 acres. Initial ground clearing and leveling for agricultural development would disturb 80,330 acres of vacant desert land and 34,000 acres of previously farmed agricultural lands. Summing these figures results in disturbance of an estimated 130,125 acres.
- Impacts associated with ongoing agricultural production would apply to a cumulative total of 146,330 acres: consisting of 32,000 acres of existing agriculture, 34,000 acres of previously-farmed agricultural lands and 80,330 acres of new agricultural lands. Master Plan

implementation would result in nearly a four-fold increase in agricultural development within the Reservation. A commensurate increase would be expected in the generation of fugitive dust, incidence of soil erosion, and loss of natural resources (e.g., native vegetation, wildlife, etc.) Agricultural production will commit the use of up to 771,600 AF/YR of irrigation water and a commensurate increase in the commitment of other resources including fertilizers/soil amendments, pesticides/other agricultural chemicals, and fuels used for farm machinery and equipment.

This EA tiers from the FPEIS and incorporates the findings related to local/cummulative impacts associated with construction of this portion of the main stem delivery facility. Cumulative biological, cultural, soils, and geological impacts from construction of the Price/Pecos Project water delivery facilities will result in minor localized effects on desert habitat and cultural resources. Cumulative land use, socioeconomic, and noise impacts are expected to be minor or beneficial.

The Price/Pecos Corridor and the I-10 Lateral form components of a main stem delivery system that will eventually serve 19,497 acres of currently developed farmland and up to an additional 25,000 acres of potential farmland in the area of the P-MIP. At full development, the Price/Pecos segment of the main delivery system will assist to serve almost 45,000 acres of farmland. Irrigation deliveries to existing and potential agricultural lands will be covered in future environmental assessments.

3.15 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The term irreversible describes the loss of future options and applies to the effects of use of nonrenewable resources or to those resources that are renewable only over long periods of time. Irretrievable refers to the loss of production, harvest or use of natural resources. Production loss can be irretrievable, while the action may not be irreversible.

Construction activities associated with an open canal and underground pipeline would require the irreversible and irretrievable commitment of manpower, fossil fuels, water, raw materials and financial resources.

Losses of "in situ" cultural resources are anticipated as a result of the project. Any loss of cultural resources, as a result of constructing new canals and pipelines are considered an irreversible and irretrievable loss. These losses would be partially mitigated through surveys and data recovery.

Irretrievable losses of desertscrub/wildlife habitat could conceivably be reclaimed along the project corridor if the Community considers such an action necessary. An irretrievable loss of desertscrub/wildlife habitat would occur on new agricultural lands developed as a result of the improved water delivery system.

CHAPTER 4

ENVIRONMENTAL COMMITMENTS

The following section is a comprehensive listing of the mitigation measures incorporated into the Price/Pecos Environmental Assessment. These mitigation measures will be implemented as part of the proposed project.

Topography (T)

- T-1 Elevated canal banks will be revegetated to decrease erosion and blend the banks with the surrounding landscape.

Geology (G)

- G-1 The potential for land subsidence and earth-fissuring will be monitored and addressed through the Community's Comprehensive Water Management Plan.

Soils (S)

- S-1 Construction-disturbed areas will be reseeded to restore vegetative cover and reduce soil erosion. Local native plant species will be used for revegetation to the extent possible.

Air Quality/Emissions (A)

- A-1 All persons/contractors conducting earth moving operations shall contact the GRIC, Department of Environmental Quality (DEQ) and complete a Dust Control Plan prior to initiating any earth moving operations. After a Dust Control Plan has been approved by DEQ, each person conducting earth moving operations shall implement Reasonable Available Control Measures (RACMs) in accordance with the approved Dust Control Plan. The approved Dust Control Plan shall be kept immediately available at the site by the person/persons conducting earth moving operations and make the plan available upon request by a DEQ/Tribal representative.
- A-2 All earth moving operations shall be conducted in such a manner as to prevent dust emissions from exceeding 20 percent opacity.
- A-3 Earth moving operations shall be terminated during high wind events (>20 MPH).

Construction-Related Mitigation Measures.

- A-4 Land disturbance will be minimized.

- A-5 Persons conducting earth moving operations shall stabilize the disturbed areas prior to leaving the site for the weekend or extended periods of time in a manner which will prevent creation of wind blown dust.
- A-6 Watering trucks will be used to minimize dust. A log shall be kept on each water truck documenting the quantity and duration water is applied to the site.
- A-7 Trucks will be covered, as appropriate, when hauling dirt, sand, and gravel or transferring materials.
- A-8 Haul trucks will be maintained in good repair so that spillage would not occur from beds, sidewalls and tailgates.
- A-9 Dust suppressants will be used on traveled paths, as required, which are not paved.
- A-10 Parking, storage and staging areas will be limited.
- A-11 Where possible, disturbed land will be reseeded or revegetated. Local native plant species will be used for revegetation to the extent possible.
- A-12 Excess material and dirt piles will be removed to elevated portions of the open canal.
- A-13 Temporary vehicular paths created during construction will be reseeded or revegetated to avoid future off-road vehicular activities. Local native plant species will be used for revegetation to the extent possible.

Water Resources (WR)

- WR-1 A National Pollution Discharge Elimination System (NPDES; Section 402) Permit Notice of Intent will be filed with the EPA prior to construction
- WR-2 In accordance with the NPDES Permit requirements, a Stormwater Pollution Prevention Plan will be prepared and available for inspection prior to construction.

Floodplains/Flood Control (F)

- F-1 Drainage studies will be undertaken as part of the design process for this project to ensure that facilities and surrounding land uses will be protected from flooding or sediment loading.

Biological Resources (BR)

- BR-1 Disturbed areas, where possible, will be reseeded/revegetated with native species.
- BR-2 Vegetation disturbances will be limited to the project corridor.

- BR-3** Plants occurring within the project corridor that are protected by the GRIC Native Plant Law will be salvaged to the extent possible.
- BR-4** The open canal portion of the action alternatives will be fenced with chain-link to restrict the prevent wildlife access of larger wildlife species to the canal.
- BR-5** Open canal will be constructed with a rough-lined inner surface and ladders to aid in which may help smaller wildlife species to escape from canals.

Cultural Resources (C)

- C-1** Prior to construction, subsurface testing will be performed along the length of Pecos Road to determine if subsurface cultural resources are present. A series of 10 m-long trenches (test units) at intervals of 10 m along the pipeline centerline (oriented east to west) will be excavated. Cultural features or deposits will be detailed and recorded as to their orientation in the profile. All artifacts discovered in the test units will be collected, and appropriate provenience information will be recorded on the collection bags.
- C-2** Because the eligibility status of GR-559 is indeterminate based on surface observations, preconstruction subsurface testing will be performed to determine if subsurface cultural resources are present. All cultural resources affected by the Price/Pecos Corridor will be treated according to terms and conditions set forth in the Programmatic Agreement among the Community, Reclamation, SHPO, and the Advisory Council on Historic Preservation.

Land Resources/Use (LR)

- LR-1** Traffic management during construction would follow standard ADOT traffic control procedures.
- LR-2** If contaminated soils are encountered, appropriate hazardous waste handling and disposal procedures will be followed.

Land Use (L)

- L-1** Established procedures will be followed in acquisition of rights-of-way needed for the project. Allotted lands on the Reservation will only be acquired as necessary.

Social Conditions (SC)

- SC-1** Access to the open canal portion would be prevented by a chain-link fence placed on both sides of the alignment. Warning signs will also be posted.

Noise (N)

N-1 Construction activities that may potentially create a noise impact on residential units would be restricted to daytime hours. Night work is not anticipated. Whenever feasible, fixed noise sources will be oriented away from noise sensitive areas.

Visual Resources (VR)

VR-1 Above ground sections of the canal and pipeline would be revegetated to re-establish the visual character of the project area.

Indian Trust Assets (IT)

IT-1 The Bureau of Reclamation and the Bureau of Indian Affairs, as appropriate, will comply with all applicable laws, rules, regulations and Executive Orders pertaining to the identification and protection of Indian Trust Assets.

IT-2 Potential impacts to Indian Trust Assets will be considered by the Bureau of Indian Affairs in its review and approval of future proposed purchases and leases of land within the Reservation.

Environmental Justice and Equality (EJ)

EJ-1 The Community will continue to maintain the comprehensive public information and public involvement process that was initiated during preparation of the Master Plan Report for Land and Water Use and continued throughout the preparation of this NEPA analyses and documentation.

CHAPTER 5

APPLICABLE ENVIRONMENTAL QUALITY STATUTES

The Council of Environmental Quality (CEQ) Regulations (40 CFR 1500.2 and 1502.25) require that related environmental laws, rules, regulations, and executive orders be integrated into an environmental impact statement. Although CEQ regulations do not specifically indicate that discussions of related laws are required in an Environmental Assessment, selected Federal, state and local regulations may apply to the proposed action. The Community would be required to coordinate with the appropriate agencies that may require a permit.

5.1 NATIONAL ENVIRONMENTAL POLICY ACT

The Price/Pecos Environmental Assessment has been prepared in compliance with NEPA. This EA tiers from the FPEIS and incorporates the findings related to local/cummulative impacts associated with construction of a water delivery facility.

5.2 CLEAN WATER ACT, as amended

Section 401 relates to compliance with state water quality standards and a permit is required prior to discharging any dredged or fill material into a water of the United States. Section 404 of the Clean Water Act identifies conditions under which a permit is required for construction projects that result in the placement of fill or dredged material into a water of the United States. A system of water quality standards, discharge limitations, and permits is used to enforce the regulations of the Act. For example, a National Pollutant Discharge Elimination System (NPDES; Section 402) Permit would be required if water quality impacts are anticipated. A Section 404 Permit issued from the U.S. Army Corps of Engineers may be required if construction materials will be placed into water of the United States and/or if certain project activities affect wetlands and riparian areas. A NPDES Notice of Intent will be filed with the EPA and a Stormwater Pollution Prevention Plan will be prepared prior to project construction. Presently, no water quality related permits are required by the Tribe.

5.3 CLEAN AIR ACT, as amended

The Clean Air Act requires that any Federal entity engaged in an activity that may result in the discharge of air pollutants must comply with all applicable air pollution control laws and regulations (Federal, State or local). Measures would be incorporated into contractor specifications to ensure compliance with Clean Air Act regulations. The future development of a Tribal Implementation Plan (TIP) related to air quality will outline strategies for the reduction of CO and ozone emissions levels that specifically address appropriate tribal issues and characteristics. Because the TIP for air quality is in the initial stages of development, the completion date is presently unknown.

5.4 NATIONAL HISTORIC PRESERVATION ACT OF 1966, as amended

The National Historic Preservation Act establishes as Federal policy the protection of historic sites and values in cooperation with other nations, states, and local governments. The Act requires Federal agencies to identify important cultural resources that may be affected by a proposed action and consult with the President's Advisory Council on Historic Preservation (ACHP) and SHPO.

Impacts to cultural resources from implementation of the Price/Pecos Project have been coordinated with both ACHP and SHPO under Section 106 of the Act. Both entities have agreed to the mitigation program developed. No additional impacts to important cultural resources would result from the proposed action.

5.5 WILD AND SCENIC RIVERS ACT OF 1968

There are no portions of rivers either designated or under study as a wild and scenic river in the project area.

5.6 WILDERNESS ACT OF 1964, as amended

There are no portions of land either designated or under study as a wilderness area in the project area.

5.7 FISH AND WILDLIFE COORDINATION ACT

A Fish and Wildlife Coordination Act Report (FWCA) was prepared by the U.S. Fish and Wildlife Service (FWS) for the FPEIS. Coordination has continued with FWS and has extended to the Price/Pecos Environmental Assessment to address expected impacts and potential mitigation measures. Because impacts to wildlife resources are anticipated to be minimal, Reclamation and FWS have agreed that no supplemental FWCA report will be prepared for the project.

5.8 ENDANGERED SPECIES ACT OF 1973

The ESA provides protection for animal and plant species in danger of extinction (endangered) and those that may become endangered in the foreseeable future (threatened). Section 7 of the ESA requires Federal agencies to ensure that their actions in the United States do not have adverse impacts on the continued existence of threatened or endangered species or on designated areas that are important in the conservation of these species (critical habitat). The FPEIS required that a site specific biological assessment of tiered projects be completed in compliance with Section 7 of the ESA. A biological assessment conducted by Reclamation concluded that no

listed species or suitable habitat occurs in the project area nor will any such species be affected by the project (Appendix B).

5.9 EXECUTIVE ORDER 11988, FLOODPLAIN MANAGEMENT, MAY 24, 1977

Executive Order 11988 requires that project actions "avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative" within the 100-year floodplain. No part of the project is located in the 100-year floodplain. If flows occur during construction, there may be short-term increases in turbidity levels, however, no lasting effects to surface water quality are expected from these conditions. Reclamation will ensure that all measures are taken to comply with Executive Order 11988.

5.10 EXECUTIVE ORDER 11990, PROTECTION WETLANDS, MAY 24, 1977

Executive Order 11990 requires that project actions "avoid to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative...." The proposed action would not affect any wetland areas.

5.11 FARMLAND PROTECTION POLICY ACT

The U.S. Natural Resources Conservation Service (NRCS) is responsible for administering the Farmland Protection Policy Act. The NRCS has identified that all of the proposed corridor is classified as prime farmland which would be 120.3 acres in Alternative 1 and 38.7 acres in Alternative 2.

CHAPTER 6

CONSULTATION AND COORDINATION

Numerous agencies were consulted in assessing the effects of the proposed action in the Price/Pecos Environmental Assessment. The EA was prepared with assistance from the following Federal, State, and local agencies:

- U.S. Bureau of Reclamation, Phoenix Area Office
- U.S. Bureau of Indian Affairs, Phoenix Area Office
- U.S. Fish and Wildlife Service, Arizona Ecological Services Office
- U.S. Army Corps of Engineers
- U.S. Natural Resources Conservation Service
- Arizona Game and Fish Department
- Arizona Department of Environmental Quality
- State Historic Preservation Officer
- Maricopa County Air Pollution Control District
- Maricopa County Flood Control District

Public involvement for the Price/Pecos Project beyond the scoping process for the FPEIS has included three Community informational meetings: Saturday, October 4, 1997 (District 4); Monday, October 20, 1997 (District 4); and Tuesday, October 21, 1997 (Community wide). Each meeting was precluded by information mailings sent to Community members. In addition to the Community public involvement efforts, the agenda for District 4 regularly scheduled meetings (usually bi-monthly) has often included the Price/Pecos Project.

A draft of the Price/Pecos EA was made available on December 9, 1997 for review and comment by the public. Notices of availability were mailed to 834 entities. Notices of availability were also posted in community centers located in Sun Lakes and in each district of the Community. Those desiring to receive a copy of the draft EA could complete and mail a request form included in the mailing package or make direct requests to the Community or consultant. A total of 42 request forms were received. In addition, copies of the draft EA were mailed to 45 selected agencies. A total of 87 public entities received one or more copies of the draft EA.

A public meeting was held on December 20, 1997 in which additional information about the proposed irrigation project was presented. A question and answer period followed a presentation of the project. A total of four people attended and no comments were made at the public meeting. Written public comments on the Draft EA were to be submitted by January 23, 1998. Four comment letters were received from the public.

Each comment letter was reviewed by Reclamation and the Community, and responses are provided to each comment. A numbering system was employed to address each comment which consisted of two numbers separated by a hyphen such as 1-0, 3-1, etc. The first number refers to

the letter and the second number refers to the individual comment within the referenced letter. Responses to the comments by Reclamation and the Community identify the comment through the same numbering system. When the number contains a zero following the hyphen, such as 1-0, the response refers to the letter as a whole. The Final EA has been updated, as appropriate, to reflect the responses to public comments.



United States Department of the Interior

Fish and Wildlife Service

Arizona Ecological Services Field Office

2321 W. Royal Palm Road, Suite 103

Phoenix, Arizona 85021-4951

(602) 640-2720 Fax (602) 640-2730



In Reply Refer To:

AESO/FA

January 5, 1998

MEMORANDUM

TO: Area Manager, Bureau of Reclamation, Phoenix Area Office, Phoenix, Arizona

FROM: Field Supervisor

SUBJECT: Draft Environmental Assessment (EA) for Price/Pecos Corridor Of The Pima-Maricopa Irrigation Project (P-MIP)

The Service has reviewed the subject draft EA which is a tiered document of the Final Programmatic Environmental Impact Statement for the P-MIP, 1997. The proposed Price/Pecos corridor would form part of the main delivery system that would eventually serve agricultural lands in the northwestern portion of the Gila River Indian Reservation. Irrigation deliveries to existing and potential agricultural lands would be covered in future tiered EA's. We provided the Bureau with a Planning Aid Report for the P-MIP on September 10, 1996, and will continue to provide planning and technical assistance as various project components are developed and implemented.

Impacts to wildlife resources from the Price/Pecos corridor are expected to occur in the form of habitat alteration resulting from the clearing of native vegetation to accommodate construction of canals. The proposed corridor site is characterized by active and retired agricultural fields. Sonoran desertscrub vegetation of the proposed site is sparse and provides habitat for a limited number of wildlife species. Impacts to wildlife resources would be mitigated through revegetation of the corridor with native plant species. Canals would be fenced to minimize potential wildlife drownings and would be constructed with rough-lined inner surfaces to facilitate escape by trapped wildlife. The Service does not anticipate significant impacts to fish and wildlife resources from the construction of the corridor. Specific and cumulative impacts of various components of the P-MIP will be addressed in future Fish and Wildlife Coordination Act documents.

The Service appreciates the opportunity to provide comments on impacts to fish and wildlife resources resulting from the delivery and use of Central Arizona Project water. If you have any questions or if we can be of further assistance, please contact Mike Martinez.

Sam F. Spiller
 for Sam F. Spiller

cc: Executive Director, Arizona Department of Environmental Quality, Phoenix, AZ
Director, Arizona Department of Water Resources, Phoenix, AZ
Director, Arizona Game and Fish Department, Phoenix, AZ

**Response to Comments
Fish and Wildlife Service**

1-0 It is noted in the letter that Fish and Wildlife does not anticipate major impacts to fish and wildlife resources from project construction.

Response to Comments
Bureau of Indian Affairs, San Carlos Irrigation Project

- 2-1 Legend has been reversed on Figure 3.
- 2-2 Road in question has been changed to Hunt Highway on Figure 4.

capacity constraints, and 3) the costs of delivery of the water to the Reservation through SRP's canal system.

In reviewing the Draft EA we noted that the Community has evidently recognized the potential limitations on the delivery of water through SRP's canal system and has consequently limited its proposed interconnection with the SRP system to "permit up to 50 cfs of drainage water to be taken into the pipeline and conveyed downstream." (Draft EA at pp. 11; emphasis added). While we believe the Community's view on the source and volume of water anticipated to be brought through the proposed interconnection of the Gila Drain and the PMIP is more in line with what may be achievable, we have two major concerns about the proposed interconnection.

3-1

First, the Community should be aware that this drainage water may not be available in future years. The Community has previously expressed dissatisfaction to SRP with respect to the continuation of drain flows onto the Reservation. Thus, SRP has been actively pursuing alternative uses for this drainage water. Also, as you, and I believe the Community, are aware, non-Indian water users in the Phoenix Active Management Area are required to limit their use of groundwater in accordance with the provisions in the Groundwater Management Act. These limitations are expected to be more restrictive in the upcoming Third Management Period (2000 to 2010) and in subsequent management periods. As a result, various entities are exploring the possible use of drain flows in the Gila Drain to serve nearby water uses that would otherwise be served by potable surface water and groundwater. Consequently, it is very likely that, except for infrequent, high rate, generally short duration, storm water events, drain water flows in the Gila Drain to the Reservation boundary may be greatly reduced or even cease to exist in the future.

3-2

Second, as we have indicated to the Community on several occasions, we have major concerns about the effect of the proposed interconnection on the operation of the Gila Drain. The Gila Drain is just that, a drain to transport return flows including tailwater and storm water arising on SRP lands to the Gila River. We are concerned that the proposed interconnection may negatively affect area drainage and potentially cause flooding above and below the interconnection point. As such, we believe that the Final EA should incorporate an analysis and discussion of the potential effect of the proposed interconnection on the overall operation of the Gila Drain. Moreover, we believe that the Community should be required to monitor the flows in the Gila Drain and be required to mitigate any impacts to off-Reservation landowners, water delivery agents and water users caused by the proposed interconnection.

3-3

Additionally, the Community has previously indicated to its members and others that it would not mix wastewater (e. g. drainage water) from off the Reservation with water in the PMIP. (See attached PMIP Newsletter entitled "GRIC WetWater News", question 6). We believe that the proposed action by the Community to connect the Gila Drain to the PMIP is inconsistent with previous representations to the Community members and others interested in the PMIP. As such, we would recommend that

3-4

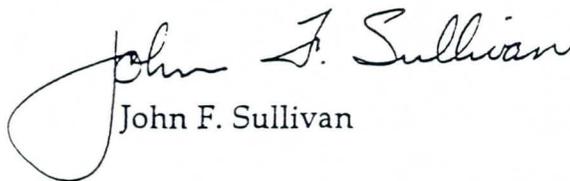
further discussions between the Community and its members occur to ensure that the interconnection is indeed what the Community and its members desire.

Another concern raised by the construction of the PMIP, and specifically the Price/Pecos Corridor, and which was also noted in SRP's comments to the Draft PEIS, is water logging impacts on off-Reservation landowners from the use of CAP and other water in the northwest area of the Reservation (SRP comments at pp. 8). The EA states that a "comprehensive water management plan will be prepared prior to delivery of surface water into the area which will address potential water logging problems on and off the Reservation." (Draft EA at pp. 28, emphasis added). It seems that this "comprehensive water management plan" should be available for review and comment prior to finalizing the EA so that any environmental consequences can be fully evaluated. 3-5

Lastly, we would note that the legend presented in Figure 3 on page 6 appears to be reversed. 3-6

Again, we appreciate the opportunity to comment on the Draft EA and hope that our comments will aid the Bureau of Reclamation in its final decision. If you have any questions about our comments, please contact Mr. Dave Roberts at 236-2343.

Sincerely,


John F. Sullivan

attachment

cc: Ms. Karen Barfoot, Chandler
Mr. Bill Chase, Phoenix
Mr. George Fletcher, Tempe
Mr. Lonnie Frost, Gilbert
Mr. Carter Gable, Arlington Canal Company
Mr. Karl Kohlhoff, Mesa
Mr. Jackie Meck, Buckeye Irrigation Company

Response to Comments Salt River Project

- 3-1 The amount of 50 cfs is in error and should be 150 cfs. Also, a clarification is in order to identify that water expected to be diverted through the interconnection would be settlement water, not drainage water. The Final EA has been revised to reflect these changes and the sentence on page 11 of the draft document has been revised as follows: "...permit up to 150 cfs of potential settlement water to be taken into the pipeline and conveyed downstream." Since SRP would be a party to the settlement, there would be ample opportunity to participate in addressing operational details.
- 3-2 With the clarification that the Community considers the Gila Drain as one potential alternative to convey settlement water, the reliability or unreliability of drainage flows is not an issue. Future flows through the Gila Drain would be controlled releases of settlement water based upon future settlement agreements, to which SRP would be a party.
- 3-3 The Gila Drain interconnection is a feature of the P-MIP that will be constructed only after agreement to terms of a potential water settlement are reached. Required analyses and studies will be conducted in the future as part of water settlement. The existing operation of the Gila Drain and associated responsibilities will continue as presently implemented. Future operation and monitoring of the Gila Drain will be fully addressed within the purview of water settlement.
- 3-4 The position of the Community has been not to mix off-Reservation wastewater into the P-MIP System as correctly stated in the cited P-MIP Newsletter ("...There will be no mixing of off-reservation wastewater with the P-MIP water."). This position has not changed. The Draft EA has been revised to clarify that settlement water rather than drainage water would be mixed with other P-MIP water. Inherent in this statement is that settlement water will be of acceptable quality. Community members are kept informed through on-going discussions and no physical connection will be made (e.g., Gila Drain) until acceptable water of appropriate quality is available under settlement.
- 3-5 Lands to be served by P-MIP in the northwest area of the Reservation have not been specifically identified, therefore, any comprehensive water management plan would only be conceptual at this time. Localized waterlogging and associated impacts will be addressed in subsequent NEPA documentation when specific identification of the lands to be served and a water management plan are complete. At present, the Community is working on the comprehensive water management plan. As stated in Comment 1-1 of the PEIS, "...comprehensive water management document will address management of groundwater resources and has the overall goal to balance withdrawals and recharge. Subsequent tiered NEPA documentation will address specific groundwater budgets and impacts..." Additionally, Comment 12-1 of the PEIS states: "...potential waterlogging on and off of the Reservation will be examined in site-specific NEPA documentation in which affected parties will participate. A comprehensive water management plan will be

prepared prior to delivery of surface water to address alternatives for removal and disposal of drainage water. Subsequent NEPA documentation will analyze the potential for excess agricultural runoff and drainage water on a site-specific basis...”

The Draft EA has been revised under Section 3.6.2, p. 28, 2nd sentence to read: “...will address potential, but unlikely, waterlogging problems on and off of the Reservation...”

3-6 Revised as noted.

FEB 23 '98

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

Governor Jane Dee Hull Russell F. Rhoades, Director

DATE	BY	INITIALS
2/23	JDM	JDM
2/23	JDM	JDM

February 17, 1998

Mr. Thomas G. Burbey
Area Manager
United State Department of Interior
Bureau of Reclamation
Phoenix, Arizona 85068-0980

REGISTRATION ENV 600
48000517
7997-2

Re: **Draft Environmental Assessment: Price/Pecos Corridor portion of the Pima Maricopa Irrigation Project**

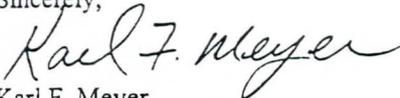
Dear Mr. Burbey:

The Arizona Department of Environmental Quality, Division of Water Quality, Nonpoint Source Unit (NPS), appreciates the opportunity to comment on the **Draft Environmental Assessment: Price/Pecos Corridor portion of the Pima Maricopa Irrigation Project**. The ADEQ NPS program requests that when the project has been fully finalized that the following information be submitted to address the applicants request for a nonpoint source 401 State water quality certification:

- a detailed map(s) showing exact location of the project;
- a precise description of the activity(s) that will be occurring on the project; and
- a water quality management plan containing an implemented strategy used to comply with Surface Water Quality Standards. The water quality management plan shall include:
 - an identification of rivers, streams or water bodies which will, with reasonable probability, be impacted by the activity(s);
 - the management practices (Best Management Practices/Guidance Practices) to be implemented by the owner/operator to maintain compliance with Surface Water Quality Standards; and
 - a monitoring plan to document implementation of the Water Quality Management Plan and compliance with Surface Water Quality Standards.

The Arizona Department of Environmental Quality would appreciate receiving periodic updates on the progress of this proposed project. Thank you for your cooperation, should you have any questions, please contact me at (602) 207-4535, 1-800-234-5677 ext. 4535 (Arizona Only) or FAX (602) 207-4467.

Sincerely,



Karl F. Meyer
Environmental Health Specialist
Nonpoint Source Unit

KFM:kfm:pml

Response to Comments
Arizona Department of Environmental Quality

- 4-0 P-MIP will provide periodic updates to ADEQ concerning the progress of the project and will submit all information required for a nonpoint source 401 State water quality certification to the appropriate agency.

CHAPTER 7

LIST OF PREPARERS

The Price/Pecos Environmental Assessment has been prepared for Reclamation by the Department of Land & Water Resources of the Gila River Indian Community with the assistance of EcoPlan Associates. Staff from the Community, Reclamation (Phoenix Area Office and Denver Office), and BIA provided important technical input. Public involvement activities were conducted by the Community and Reclamation.

The following individuals prepared this environmental assessment:

Errol Blackwater	Environmental Coordinator	Gila River Indian Community
John Ravesloot	Cultural Resources	Gila River Indian Community
F. Bruce Brown	Project Manager	EcoPlan Associates
George A. Ruffner	Biologist	EcoPlan Associates
Tom Ashbeck	Environmental Planner	EcoPlan Associates

The following individuals provided technical input and/or document review:

Lee Thompson	Dir. Dept Land & Water Res.	Gila River Indian Community
Larry Sinclair	Project Manager, P-MIP	Gila River Indian Community
Harry Millsaps	Hydraulic Engineer	Gila River Indian Community
Ralph Arrington	Design Engineer	Gila River Indian Community
Robert Donlevy	Reality Specialist	Gila River Indian Community
Gene Franzoy	Senior Staff	Gila River Indian Community
Jim Hardee	Senior Staff	Gila River Indian Community
Bruce Ellis	Chief, Environmental Div.	Bureau of Reclamation
Brian Mhlbachler	Biologist	Bureau of Reclamation
John McGlothlen	Environmental Planner	Bureau of Reclamation
Jon Czaplicki	Cultural Resources	Bureau of Reclamation
Amy Heuselin	Senior Environmental Planner	Bureau of Indian Affairs
Don Metz	Supervisory Coordinator	Fish and Wildlife Service

CHAPTER 8

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APPENDICES

APPENDIX A

Council Resolutions





GILA RIVER INDIAN COMMUNITY

SACATON, AZ 85247

RESOLUTION GR-95-95

A RESOLUTION AUTHORIZING THE DIRECTOR OF THE DEPARTMENT OF LAND AND WATER RESOURCES OF THE GILA RIVER INDIAN COMMUNITY TO PURSUE, STUDY AND REFINE THE STUDY PLAN-ALTERNATIVE 4, UNDER THE CENTRAL ARIZONA PROJECT WATER MANAGEMENT PROJECT TO DELIVER WATER FROM VARIOUS SOURCES TO THE RESERVATION LANDS.

WHEREAS, The Water Management Plan is based on the Gila River Indian Community's (the "Community") 1985 Land and Water Use Master Plan and presently five alternatives are under consideration in the Programmatic Environmental Impact Statement (PEIS) to deliver water from various delivery points to the reservation lands; and

WHEREAS, The Department of Land and Water Resources has presented these alternatives #1 through #5 to the Gila River Indian Community Council (the "Community Council") in a special Council meeting held on June 16, 1995 at the Tribal Administration Offices in Sacaton, Arizona; and

WHEREAS, A PEIS is being prepared for a selected alternative in compliance with the National Environmental Policy Act of 1969 as amended (NEPA); and

WHEREAS, The purpose of the PEIS document is to identify the anticipated short and long term impacts to the human environment which may be construction related along with the operation and maintenance of the system to the best degree possible; and

WHEREAS, The Community has the opportunity to select a preferred alternative of which will serve as a basis for the PEIS which will be used as a planning overview to identify all the associated activities reasonably foreseeable in the project area; and

WHEREAS, After numerous open discussions and public meetings, the consensus appears to identify The Study Plan -Alternative #4 as the Community's selection; and

WHEREAS, The Study Plan -Alternative #4 may provide the Community with the most flexibility in terms of planning, design and subsequently the construction phase of the project.

Gila River Indian Community
Resolution GR-95-95
Page 2

NOW, THEREFORE BE IT RESOLVED THAT, The Study Plan -Alternative #4 of the Gila River Indian Community Water Management Project is hereby adopted and authorization given to the Director of the Department of Land and Water Resources to initiate this action.

C E R T I F I C A T I O N

Pursuant to authority contained in Article XV, Section 1, (a), (1), (9), (13), (18), and Section 4 of the amended Constitution and Bylaws of the Gila River Indian Community, ratified by the Tribe January 22, 1960 and approved by the Secretary of the Interior on March 17, 1960, the foregoing Resolution was adopted this 19th day of July 1995, at a Regular Community Council Meeting held in District #3, SACATON, ARIZONA, at which a quorum of 15 members were present by a vote of 14 FOR; 1 OPPOSE; 0 ABSTAIN; 1 ABSENT; 1 VACANCY.

GILA RIVER INDIAN COMMUNITY


GOVERNOR

ATTEST:


COMMUNITY COUNCIL SECRETARY



GILA RIVER INDIAN COMMUNITY

SACATON, AZ 85247

RESOLUTION GR-55-97

A RESOLUTION ACCEPTING THE PECOS ROAD TRIBAL AREA FOR CONSTRUCTION OF THE MAIN LINE OF THE PIMA-MARICOPA IRRIGATION PROJECT IN FISCAL YEAR 1997

WHEREAS, the Gila River Indian Community Council (the "Community Council") approved Resolution GR-95-95 authorizing the Department of Land and Water Resources to pursue, study and refine The Study Plan - Alternate 4 under the Central Arizona Project, Water Management Project; and

WHEREAS, the Community Council approved entering into a Self-Governance Annual Funding Agreement with the Bureau of Reclamation to plan, design, construct, and operate and maintain Central Arizona Project-Indian Distribution Division ("CAP-IDD") facilities with Resolution GR-43-95; and

WHEREAS, the Department of Land and Water Resources has completed four Alternative Alignment Studies for the main canal of the Pima-Maricopa Irrigation Project ("P-MIP") for the design of CAP-IDD facilities; and

WHEREAS, the Department of Land and Water Resources has presented the preferred alternative alignments to each of the seven Districts many times, to three landowners associations, and to the Community Council several times and have received letters of support for this alignment from Districts 1, 3, 5, and 6; from the Youth Council; from the Water Conservation Committee; and from Elderly Concerns; and

WHEREAS, the Community Council approved Resolution GR-03-97 accepting the Price Road Pecos Road area as the priority design area for the main line of the P-MIP; and

WHEREAS, it is imperative to start construction in fiscal year 1997 in order to help the Gila River Indian Community in the water rights struggle, in order to not jeopardize the federal funding stream that has started for the P-MIP, and to coordinate with the Gila Drain Floodway crossing of I-10.

NOW THEREFORE BE IT RESOLVED, that the Community Council accepts the Pecos Road Tribal area for construction of the main line of the Pima-Maricopa Irrigation Project in fiscal year 1997 and directs the Department of Land and Water Resources to proceed with the construction of the pipeline in this area.

BE IT FINALLY RESOLVED, that the Governor, or in the Governor's absence the Lieutenant Governor, is authorized to approve all documents required for the construction of the pipeline in the Pecos Road Tribal area.

CERTIFICATION

Pursuant to authority contained in Article XV, Section 1, (a), (7), (9), (18), and Section 4 of the amended Constitution and Bylaws of the Gila River Indian Community, ratified by the Tribe January 22, 1960 and approved by the Secretary of the Interior on March 17, 1960, the foregoing Resolution was adopted this 7th day of May, 1997, at a Regular Community Council Meeting held in District #3, Sacaton, Arizona, at which a quorum of 14 members were present by a vote of 13 FOR; 0 OPPOSE; 1 ABSTAIN; 3 ABSENT; 0 VACANCY.

GILA RIVER INDIAN COMMUNITY

Mary V. Thomas
GOVERNOR 5-13-97

ATTEST:

Janice F. Astaw
COMMUNITY COUNCIL SECRETARY (ACTING)

RECEIVED
PIMA AGENCY
MAY 14 3 36 PM '97

APPENDIX B

Endangered Species Act Compliance





United States Department of the Interior

BUREAU OF RECLAMATION

Phoenix Area Office
P.O. Box 9980
Phoenix, Arizona 85068-0980

RECEIVED

JAN 28 1997

DEPT. OF LAND & WATER
RESOURCES

REPLY REFER TO:

PXAO-1500 ENV-1.10
97000280 7957

JAN

Mr. E. Lee Thompson
Director
Department of Land and Water Resources
Gila River Indian Community
PO Box E
Sacaton, Arizona 85247

Subject: Scope of Environmental Assessment (EA) for Pecos-Price Pipeline Project

Dear Mr. Thompson:

The purpose of this letter is to clarify the scope and coverage of the EA currently being prepared by the Department of Land and Water for the subject pipeline project. We met with members of your staff and EcoPlan Associates, Inc., on January 13, 1997, and participated in a field trip along the pipeline alignment on January 19, 1997. Based on our discussions, we have determined that the EA should focus on the pipeline construction and its impacts. The agricultural lands which will ultimately be served by the pipeline should be identified in the EA, but it is not necessary to describe the impacts associated with the distribution system and land improvements at this time. This is because the layout of the distribution system has not been completed, and it may be some time before such information is available. The EA should make a commitment to carry out additional NEPA compliance documentation when detailed planning for the distribution system is available.

Consistent with this approach, we have completed the necessary documentation for Endangered Species Act compliance through an internal memorandum to the files (copy enclosed). This memorandum documents Reclamation's conclusion of "no effect" to threatened and endangered species, and should be referenced or included in the EA.

Please call Mr. Bruce Ellis at 602-395-5685 or Mr. Del Holz at 303-236-8299, extension 437, if you have any questions.

Sincerely,

Acting For Thomas H. Burbey
Dennis E. Schroeder
Area Manager

Enclosure

cc: Mr. Don Metz, Fish and Wildlife Service, 2321 West Royal Palm Road,
Suite 103, Phoenix, Arizona 85021
Mr. Errol Blackwater, Department of Land and Water Resources, Gila
River Indian Community, PO Box E, Sacaton, Arizona 85247
Mr. Bruce Brown, EcoPlan Associates, Inc., 1845 South Dobson Road,
Suite 111, Mesa, Arizona 85202
(w/encl to ea)

January 16, 1997

TO: PXAO-1500 Files

FROM: Brian Mihlbachler, Biologist, PXAO-1500

SUBJECT: Determination of No Effect on Listed Species from the Price-Pecos Pipeline Alignment, Pima-Maricopa Irrigation Project (PMIP), Gila River Indian Community (GRIC)

In accordance with Section 7 (c) of the Endangered Species Act of 1973, as amended, the Bureau of Reclamation (BOR) conducted a biological assessment for the subject project.

On January 15, 1997, Errol Blackwater (GRIC), Don Metz (US Fish and Wildlife Service), and Brian Mihlbachler (BOR) drove the alignment of the proposed Price-Pecos pipeline to be constructed as part of the PMIP (see attached map). The entire alignment follows existing farmed fields or dirt roads which presently serve as a utility corridor and perimeter road around the GRIC reservation. No significant biological resources or listed species were identified which would be impacted by construction and operation of the pipeline. Therefore, Reclamation has determined that the proposed project will not affect any listed or proposed species or its critical habitat.

Impacts to biological resources, including listed species, which may occur as a result of water delivery via the Price-Pecos pipeline to newly subjugated desert or other adjacent farmed lands will be addressed in future biological assessments and tiered NEPA documents prepared for the PMIP.

Brian Mihlbachler

APPENDIX C

SHPO Concurrence to Survey Report





United States Department of the Interior

BUREAU OF RECLAMATION

Phoenix Area Office
P.O. Box 9980
Phoenix, Arizona 85068-0980



IN REPLY REFER TO

PXAO-1500 ENV-3.00
97000382 7986

JAN 29 1997

RECEIVED

MAR 03 1997

DEPT. OF LAND & WATER
RESOURCES

Mr. James Garrison
State Historic Preservation Office
Arizona State Parks
1300 West Washington
Phoenix, Arizona 85007

Subject: Section 106 Consultation - Geotechnical Testing Along Pecos-Price
Alignment, Pima-Maricopa Irrigation Project, Gila River Indian
Community

Dear Mr. Garrison:

The Staff from the Gila River Indian Community-Cultural Resources Management Program (GRIC-CRMP) recently completed an intensive survey of the Pecos-Price Alignment. No archaeological sites were found by the survey, although there is a possibility for buried prehistoric canals in a portion of the survey. A testing program has been developed by the GRIC-CRMP and submitted to your office for review and comment. A copy of the survey report was submitted previously to your office for review and comment and was found acceptable.

Limited geotechnical testing is planned for the Pecos-Price Alignment. Thirty-three subsurface borings (approximately 8 inches in diameter) will be made along the edge of an existing dirt road to provide engineering characteristics for the formulation of bedding material and for pipeline design recommendations. Although a testing program is planned by the GRIC-CRMP to investigate the possibility of buried prehistoric canals, drilling is not expected to have any impacts on the testing program.

Mr. Mike Foster of the GRIC-CRMP indicated in a telephone conversation with Mr. Jon S. Czaplicki, of my staff, that he will field check each flagged boring site prior to drilling and will monitor the drilling as it progresses. My staff is satisfied that the geotechnical testing will have no affect on cultural resources. Under the 1990 Programmatic Agreement for Negative Findings Cultural Resources Surveys, we are preparing a Categorical Exclusion for the geotechnical testing.

If you have any questions about this project, please contact Mr. Czaplicki at 602-395-5693.

Sincerely,

Bruce D. Ellis

Bruce D. Ellis
Chief, Environmental Resource
Management Division

CONCUR

James G. Howard
ARIZONA STATE HISTORIC PRESERVATION OFFICER
ARIZONA STATE PARKS BOARD

2/24/97



United States Department of the Interior APR 12 '97

BUREAU OF RECLAMATION
Phoenix Area Office
P.O. Box 9788
Phoenix, Arizona 85062-0788

FILE COPY WITH DATE		
DATE	ROUTE TO	MAILER'S
3/17	106	✓
	1500	
R E C E I V E		
ENVIRONMENTAL		
PROJECT NUMBER - 1		
ORDER ID 117/99		
UPDATE		
ARIZONA STATE PARKS BOARD		

IN REPLY REFER TO:

PKAO-1500 ENV-3.00
97001583 7986

APR 3 1997

ENV2
97002501
7986-2

Mr. James Garrison
State Historic Preservation Office
Arizona State Parks
1300 West Washington
Phoenix, Arizona 85007

Subject: Section 106 Consultation - Supplemental Survey of Price-Pecos Canal Alignment - Pima-Maricopa Irrigation Project, Gila River Indian Community (GRIC)

Dear Mr. Garrison:

Staff from the GRIC Cultural Resources Management Program recently completed an intensive survey of additional right-of-way for Price-Pecos Canal Alignment. A copy of their report, "A Supplemental Cultural Resources Survey of the Pecos Road Segment of the Price-Pecos Canal Alignment, Santan Extension (Memorial) Management Area, Pima-Maricopa Irrigation Project, Gila River Indian Community, Maricopa County, Arizona," is enclosed for review and comment by your staff. Two archaeological sites were found by the survey, one of which is considered potentially eligible for the National Register of Historic Places pending the results of limited testing to assess its significance. The other site is not considered eligible. We agree with these assessments and seek your concurrence.

If you have any questions about this project, please contact Mr. Jon S. Czaplinski at 602-395-5693.

Sincerely,

Bruce D. Ellis
for Bruce D. Ellis
Chief, Environmental Resource
Management Division

Enclosure

CONCUR

Ann V. Howard 5/6/97
ARIZONA STATE HISTORIC PRESERVATION OFFICER
ARIZONA STATE PARKS BOARD

We look forward to further consultation if features are found at GR-559 (re: eligibility, the need for further work, + the appropriate level of effort).
Thank you.

APPENDIX D

SHPO Concurrence to Testing Plan



APPENDIX E

Permission Request Form for Archaeological Investigations



AN AGREEMENT TO CONDUCT ARCHAEOLOGICAL INVESTIGATIONS

_____ being the owner/allottee of record property with the proposed project area identified as _____ with legal description _____ does hereby grant permission to the Gila River Indian Community Cultural Resource Management Program for access to the project area under study. _____ does also give permission to conduct archaeological investigations as necessary on said property. Authorization to conduct archaeological studies in conjunction with the project has been provided by the sponsor, _____ and the Gila River Indian Community. The GRIC Cultural Resource Management Program shall make every effort to protect private property and to retain its original condition within limits imposed by project work requirements.

I hereby grant the GRIC Cultural Resource Management Program and its contractors reasonable and adequate time for study of archaeological resources recovered during excavation. It is understood that all archaeological resources, cultural material, and other specimens recovered shall be desposited in Gila River Indian Community's Cultural Resource Respository until such time that the allottees may claim them.

To the extent permitted by law, the GRIC Cultural Resource Management Program shall save and hold harmless the landowner/allottee from all claims, demands, suits, actions, proceedings, loss, costs and damages which may arise out of any act or omission by the GRIC Cultural Resource Management Program and its employees, agents, representatives, contractors or associates that may be incurred during the archaeological investigation.

WITNESS: _____

Property Owner/Allottee

GRIC Cultural Resource Management Program

APPENDIX F

Cultural Resources Testing Plan for Pecos Road Corridor



TESTING PLAN

Subsurface testing for cultural resources in the Pecos project area will be accomplished through the excavation of a series of backhoe trenches. It is possible that some areas or features identified may be further tested and evaluated through the use of 1 m by 1 m or 2 m by 2 m test units.

TRENCHING

Testing for cultural resources will occur in the pipeline corridor along the Pecos section of the Pecos-Price Canal Alignment. It is proposed that subsurface trenching will focus on the center line of the pipeline corridor. Additional areas (stockpile and barrow areas, access routes) may also require subsurface testing if ground disturbance is to occur. A series of 10 m-long trenches excavated at intervals of 10 m along the pipeline corridor (oriented east-west) will be excavated along the length of the Pecos segment of the Pecos-Price Canal Alignment. The initial trench pattern alignment will be established using a total station. Each trench will have a datum stake placed at one end and a pin flag at the other marking the length and location of the trench. Normally, for safety purposes, trench depth will not exceed 5 ft. If it becomes necessary to excavate a trench to a depth greater than 5 ft. to explore a cultural feature or conduct geomorphological assessments, one vertical face of the trench will be left intact and the other face will be cut down in a stepped fashion or the trench will be braced according to OSHA standards. Each end of the trench will be ramped for access.

Data from J. Howard (1992) indicates an east-west oriented canal may enter the northeast corner of Section 1, T2S, R4E. A series of north-south oriented trenches will be excavated in this area to determine if such a canal alignment is present.

Trench locations will be determined by access and availability, but in general will be located according to the plan outlined above. The location of trenches will be recorded using a total station. Trench locations will be tied to cadastral markers (known points on the landscape so that their locations can be recorded and referenced to other landmarks).

It is possible that a prehistoric reservoir is located in the NW1/4 of Section 3, T3S, R4E (see Figure 3). It is also likely that prehistoric canals entering the reservoir may also be encountered. Any canals encountered will be investigated by cutting a series of cross-trenches perpendicular to the canal in order to obtain data on canal morphology and gradient. Sections of canals will also be trenched longitudinally in order to better describe canal morphology and fill, and to explore for evidence of internal features.

If the reservoir is identified in one of the trenches, that trench will be extended east or west or both until the limits of the feature are defined. Several trenches will also be excavated perpendicular to the trench. These too will be excavated to help determine the limits of the reservoir within the boundary of the GRIC property. Additionally, by cutting these perpendicular trenches it will be possible to develop a three-dimensional perspective of the reservoir to better understand its fill sequence. Although the reservoir may have been cleaned out periodically, it is likely that pockets of older fill remain and may be exposed with additional trenching.

APPENDIX G

Cultural Resources Programmatic Agreement



United States Department of the Interior

BUREAU OF RECLAMATION

Phoenix Area Office

P.O. Box 9980

Phoenix, Arizona 85068-0980

IN REPLY REFER TO:

PXAO-1500 ENV-3.00
97003159 7986

JUN 18 1997

Honorable Mary V. Thomas
Governor
Gila River Indian Community
PO Box 97
Sacaton, Arizona 85247

Subject: Signed Programmatic Agreement (PA) for Treatment of Cultural Resources Affected by Development of the Pima-Maricopa Irrigation Project (PMIP)

Dear Governor Thomas:

I am pleased to send you a copy of the final signed PA for the cultural resources mitigation project associated with development of the PMIP. With the PA now in place, the Gila River Indian Community (GRIC) can continue to move forward with the cultural resource investigations with the assurance that adequate guidance is in place for both the GRIC Cultural Resources Management Program and Reclamation with regard to the survey, mitigation, and consultation efforts that will be required prior to initiating construction related to the PMIP.

I want to thank you and your cultural resources staff for your assistance in completing this important and necessary document. If you have any questions about the PA, please do not hesitate to call me at 602-395-5685.

Sincerely,

Bruce D. Ellis
Chief, Environmental Resource
Management Division

Enclosure

cc: ✓ John C. Ravesloot, Ph.D., Cultural Resources Coordinator, Department of Lands and Water, Gila River Indian Community, PO Box E, Sacaton, Arizona 85247 (w/encl)

Programmatic Agreement

AMONG

THE GILA RIVER INDIAN COMMUNITY,
THE UNITED STATES BUREAU OF RECLAMATION,
THE ARIZONA STATE HISTORIC PRESERVATION OFFICE, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

TREATMENT OF CULTURAL RESOURCES AFFECTED BY DEVELOPMENT OF THE
PIMA-MARICOPA IRRIGATION PROJECT ON THE GILA RIVER INDIAN RESERVATION

WHEREAS, The Bureau of Reclamation (Reclamation) and the Gila River Indian Community (GRIC) have implemented, through an Annual Funding Agreement, the Tribal Self-Governance Act of 1994 (Title II of P.L. 103-413); and

WHEREAS, as a result of implementation of Tribal Self-Governance, GRIC will assume from Reclamation certain programs, services, functions, and activities, including cultural resource survey and mitigation, associated with development and construction of a water delivery system to deliver from 173,100 acre feet of Central Arizona Project water to potentially as much as 771,581 acre feet of total water that affect as many as 146,000 gross acres of GRIC land; and

WHEREAS, project construction may occur on lands owned by the GRIC and held in trust by the Bureau of Indian Affairs (BIA), allotted lands on the GRIC, Federal lands administered by the Bureau of Land Management (BLM) (several sections of the Northside Canal cross BLM land), the National Park Service (NPS) (the Pima Canal crosses NPS land adjacent to Casa Grande National Monument), Federal water and power withdrawn lands administered by the BIA's San Carlos Irrigation Project (SCIP) (the Pima and Northside canals are under SCIP jurisdiction), Federal water and power withdrawn lands administered by Reclamation, Arizona State Trust Lands administered by the Arizona State Land Department (ASLD) (portions of the Pima Canal, the Northside Canal, and the proposed Santan Mountain Canal cross ASLD holdings), and land owned by the Arizona Department of Transportation (ADOT) (proposed canals may cross I-10, Maricopa Road, and State Route 87), and approximately 200 private parcels of land owned by individuals, corporations, schools, churches, and railroads, and

WHEREAS, GRIC and Reclamation have agreed that Reclamation, represented by the Phoenix Area Office as its agent, will maintain lead responsibility for compliance under Section 106 of the National Historic Preservation Act (NHPA) (16 USC 470f) as an inherently Federal function of the project, as authorized by 43 CFR 2800; and

WHEREAS, Reclamation has determined that the project may have an effect on properties listed on or eligible for inclusion on the National Register of Historic Places, and has consulted with the Arizona State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (Council) pursuant to 36 CFR 800.13 regarding implementation of Section 106 of the NHPA, and

WHEREAS, Reclamation will maintain lead responsibility for compliance with the Native American Graves Protection and Repatriation Act (NAGPRA) (25 U.S.C. 30003 and 3005), and will consult with GRIC and other Native American tribes, as necessary, on all NAGPRA issues; and

WHEREAS, this agreement addresses all activities of the water delivery project that may be done in segments or phases,

WHEREAS, the BIA, BLM, NPS, SCIP, ASLD, and ADOT have been invited to concur with this agreement;

NOW, THEREFORE, GRIC, Reclamation, SHPO, and the Council agree that the project shall be administered in accordance with the following stipulations in order to satisfy Section 106 responsibilities for all aspects of the project.

STIPULATIONS

Reclamation shall ensure that the following measures will be carried out:

I. Inventory, Evaluation, and Effect Determination

- A. Reclamation in consultation with GRIC, BIA, SHPO, and SCIP will assure completion of an historic properties inventory for all lands affected or potentially affected by construction of the proposed water delivery system. Reclamation will ensure that this inventory shall be conducted in a manner consistent with the Secretary of the Interior's Standards and Guidelines for identification of historic properties and with the inventory standards and guidelines established in Reclamation Manual, Directives and Standards LND 06-01. Reclamation will further ensure that any additional staging or use areas or rerouted alignments related to this undertaking shall be inventoried in a manner consistent with the delivery system inventory. GRIC will

undertake the required historic properties inventories and will report the results of any and all inventories to Reclamation, who will submit copies to BIA, SHPO, and SCIP for review and comment. GRIC will provide Reclamation with recommendations of National Register of Historic Places eligibility for all cultural resources identified as a result of inventory.

A.1 For project areas located off the Gila River Indian Reservation (Reservation), affected land managers (ALM) (for example, NPS, BLM, ASLD, and ADOT) will be consulted in decisions affecting cultural resources on project lands under their respective jurisdiction. Participation shall be limited to only those resources located on the ALM's affected property and includes eligibility determinations for historic properties; determinations of effect; review of draft survey reports, mitigation or data recovery plans, or both, and draft final reports; discovery situations; and, when appropriate, information on Traditional Cultural Properties (TCPs) that are located on land under jurisdiction of the ALM.

A.2 Upon receipt of draft reports or plans, Reclamation will submit the report or plan to the relevant ALM for review and comment, concurrent with submittal to the SHPO. Reviewing parties shall have 30 days from receipt to review and provide comments to Reclamation. If comments are not received from a reviewing party within the 30-day review period, Reclamation shall take the lack of comment for concurrence.

B. GRIC shall identify areas that may be sensitive or otherwise considered to be TCPs that could be affected by construction or by operation and maintenance activities. Reclamation in consultation with GRIC, and when appropriate with ALMs and other Native American tribes, groups, or individuals, will identify at a general level of specificity (that is, in sufficient detail to provide locational information necessary for planning and design purposes and for determining eligibility without jeopardizing sensitive or sacred cultural information about the sites), and if necessary will avoid areas that have been identified as TCPs according to guidelines set forth in National Register Bulletin 38.

B.1 If a TCP cannot be avoided by project construction, then GRIC, Reclamation, and when appropriate ALMs, will consult to determine eligibility and the adequate level of information on the TCP required by Reclamation to complete consultation with the SHPO regarding TCP eligibility determination.

- C. Reclamation shall ensure that any and all inventory reports will be submitted to the SHPO (and to ALMs as appropriate) for review and comment.
- D. Reclamation and SHPO shall ensure that determinations of eligibility and findings of effect are made in accordance with 36 CFR 800.4© and 36 CFR 800.9 for all historic properties (including TCPs) within the area of potential effect, including any additional staging or use areas or rerouted alignments. Reclamation will consult with GRIC and the ALM on proposed eligibility recommendations prior to its formal consultation with the SHPO. If Reclamation, GRIC, SHPO, or the ALM disagree on eligibility, determinations will be forwarded to the Keeper of the National Register for resolution. SHPO will provide comment on Reclamation's findings within 30 days of receipt. If no such comment is received within 30 days, Reclamation may assume concurrence.
- E. Prior to requesting SHPO comments on eligibility for TCPs, Reclamation shall consult with GRIC regarding the appropriateness of seeking determinations of eligibility for TCPs and shall seek recommendations on the eligibility of TCPs identified in the areas of potential effect on the Reservation. For TCPs identified in off-Reservation portions of areas of potential effect, Reclamation shall consult with the ALMs and seek recommendations from all potentially interested Native American tribes, groups, or individuals pursuant to National Register Bulletin 38. Reclamation shall ensure strict confidentiality of all TCP information it receives, consistent with the requirements of Section 304 of the NHPA. Confidentiality will be maintained by designating one individual to manage all TCP data. Access to these data shall be on a need-to-know basis and after consultation with appropriate tribes.
- F. Reclamation shall seek public comment on the effect of the undertaking on historic properties in coordination with its procedures for implementing the NHPA and the National Environmental Policy Act.
- G. Reclamation, in consultation with SHPO and GRIC, shall apply the criteria of Effect and of Adverse Effect in 36 CFR 800.9 to all historic properties within the area of potential effect, including any additional staging or use areas or rerouted alignments. If Reclamation, GRIC, and SHPO agree that any portion(s) of the undertaking shall have no effect on any listed or eligible properties, Reclamation may, after obtaining permission from the landowner or the land managing agency, provide authorization to GRIC to proceed with construction in such area(s), providing that Reclamation has

determined that such authorization does not compromise its ability to consider options for treatment or avoidance in adjacent areas or segments of the project.

G.1 In cases where historic properties are located off the Reservation, Reclamation will also consult with ALMs. If Reclamation, SHPO, and the ALM agree that the portion of the undertaking shall have no effect on any listed or eligible properties, Reclamation may provide authorization for GRIC to proceed with construction.

II. NAGPRA

- A. Reclamation shall identify those Native American tribes having a potential for claiming cultural or ancestral affinity, or both, within the project area under the provisions of the NAGPRA (PL 101-601; 43 CFR Part 10). Further, Reclamation shall attempt to resolve any disputed claims and, upon resolution of any such disputes, consult with claimants regarding appropriate procedures for the recovery, analysis, treatment, and disposition of human remains, associated funerary objects, and objects of cultural patrimony in accordance with the provisions of NAGPRA and with any subsequent implementing regulation as it is promulgated.
- B. In off-Reservation project areas, Reclamation shall seek comments of all interested Native American tribes, groups, and individuals pursuant to the NHPA and 43 CFR Part 10 of NAGPRA, taking into account the Council's policy statement of September 27, 1988, regarding determinations of effect where human remains are likely to be encountered during data recovery mitigation. For that portion of the project area located on the Reservation, Reclamation will consult directly with the GRIC.
- C. Human remains identified on State or private lands will be treated pursuant to A.R.S. 41-844 and 41-865.

III. Preparation of a Mitigation Plan

- A. Reclamation, in consultation with SHPO, shall ensure that an 'umbrella' mitigation plan is developed by GRIC for the entire project area for the mitigation of anticipated effects on historic properties that will result from the project and from any related uses and activities. Development of the 'umbrella' mitigation plan is a priority and will be one of the first tasks undertaken by GRIC once the agreement is in effect. A schedule for completion of the mitigation plan will be negotiated between Reclamation and GRIC. The 'umbrella' mitigation plan will serve as a broad-based

document for defining general research contexts for all future mitigation efforts. Further, GRIC, in consultation with Reclamation, ALM, and SHPO, shall ensure the development of location and property specific Data Recovery Plans for each individual phase or segment of the project that will be considered as supplements to the 'umbrella' mitigation plan. The supplements shall be tiered off of the 'umbrella' mitigation plan and shall provide more specific research goals within the contexts outlined in the 'umbrella' mitigation plan.

- B. The mitigation plan shall be consistent with the Secretary of the Interior's Standards and Guidelines (48 FR 44716-44742), the Council's handbook Treatment of Archeological Properties, and any applicable regulations and guidance of the Department of the Interior.
- C. The mitigation plan shall specify, at a minimum:
1. The historic properties to be affected by the project as a whole and the nature of those effects.
 2. A general research design that will contain the research questions and goals that are applicable to the project area as a whole and that will be addressed through data recovery, along with an explanation of their relevance, importance, and potential public benefit. These research questions and goals shall reflect the concept of historic contexts as defined in the National Register Bulletin 16 and shall take into consideration any such historic contexts established by the SHPO and Reclamation.
 3. Fieldwork and analytical methods and strategies applicable to the project area as a whole, along with an explanation of their relevance to the research questions. Such treatment methods will be developed for each class of historic property identified in the project inventory.
 4. Propose mitigative measures, when appropriate, for TCPs, rock art, historic buildings and structures, and landscapes. Programmatic treatments for dealing with these resources will be discussed.
 5. Methods to be used in data management and dissemination of data.
 6. Methods and procedures for the identification, recovery, analysis, treatment, and disposition of human remains, associated funerary objects, and objects of cultural patrimony, as defined by NAGPRA and state statutes A.R.S. 41-844 and 865, that reflect any concerns or conditions,

or both, identified as a result of consultations between Reclamation, the GRIC, and any other affected Native American groups.

7. A Monitoring and Discovery Plan to ensure that previously unknown historic properties or properties affected in an unanticipated manner are taken into account. This plan shall specify the location of all identified properties and the means by which they will be marked and avoided if construction is allowed in nearby portions of a right-of-way. The plan shall also provide detailed procedures for dealing with unanticipated discovery situations.
 8. Measures to be implemented for benefit of the public.
 9. Consistent with standard Reclamation policy for large cultural resource mitigation projects, the GRIC-Cultural Resources Management Program (CRMP) shall assemble a Peer Review Team to review, comment on, and provide guidance to the GRIC-CRMP during the course of the mitigation phase. This team shall consist of between three and five professional prehistoric and historical archaeologists, anthropologists, and historians familiar with Hohokam archaeology, the protohistoric and historic periods, and O'odham history. The Peer Review Team will review and comment on the GRIC-CRMP draft mitigation plan, draft research design(s), and draft reports resulting from the mitigation effort. The Peer Review Team may also be asked to participate in field visits during the mitigation project.
- D. Each Data Recovery Plan developed for a specific project phase or segment shall represent a dependant plan and document that is supplemental to the mitigation plan. It will provide specific direction for the conduct of data recovery within any given project phase or segment. It shall conform to the general requirements of the mitigation plan. At a minimum, it shall specify:
1. The historic properties to be affected in the specific project segment or module and the nature of those effects.
 2. Measures to either avoid or mitigate affects to non-archaeological properties.
 3. The research questions identified in the mitigation plan that will be appropriate for the specified project segment or module and that will be addressed through data

recovery. Any additional research questions compatible with the mitigation plan shall be identified, and their relevance to the overall research goals as established in the mitigation plan shall be explained.

4. The specific fieldwork and analytical strategies identified in the mitigation plan, as well as any other strategies that will be employed in specified project segment or module.
5. A proposed schedule for submission of progress, summary, and other reports to appropriate agencies.
6. Qualifications of personnel and consultants employed to undertake the implementation of the Data Recovery Plan.

IV. Comment on the Mitigation Plan and Data Recovery Plan(s)

- A. Upon receipt of the draft "umbrella" Mitigation and Data Recovery plan(s), Reclamation will submit for review such drafts concurrently to SHPO, BIA, and SCIP (and ALMs as stipulated in I.A.1 and I.A.2 above). Reviewing parties will have 30 days from receipt to review and provide comments to Reclamation. If comments are not received from a reviewing party within the 30-day review period, Reclamation shall take the lack of comment as concurrence.
 1. The Council will be provided an opportunity to review and comment on the draft "umbrella" mitigation plan, concurrent with review by SHPO, BIA, SCIP and ALMs.
- B. If Reclamation determines that revisions to the plans are needed, based on reviewers' comments, Reclamation will consult with GRIC regarding revisions. GRIC will make any necessary revisions to the plans. Reclamation will submit the revised plans to SHPO, BIA, and ALMs for review. All signatories to this agreement have 30 days from receipt to review and comment on the revisions. If no comments are received within this period, Reclamation may assume that the reviewers concur with the revisions.
- C. Once the mitigation plan is determined adequate by Reclamation, Council, SHPO, BIA, and ALMs, or objections resolved in accordance with Stipulation VIII, GRIC may proceed with development of the Data Recovery Plan(s).
- D. Once the Data Recovery Plan(s) is determined adequate by Reclamation, SHPO, BIA, and ALMs, GRIC shall implement the plan. Review and comment periods for all reviewing parties are as listed in A and B above.

E. Any signatory may choose not to review each data recovery work plan.

V. Construction

Reclamation, after consultation with SHPO and with other ALMs when appropriate, may issue authorization to GRIC to proceed with construction in those portions of the project rights-of-way that contain historic properties, once the agreed-upon fieldwork or treatment specified in the mitigation plan and Data Recovery Plan(s) has been completed. Such notice to proceed is subject to acceptance by Reclamation, SHPO, and the AIM of the adequacy of the work performed under those plans. Whenever possible, Reclamation acceptance will be based on field inspection and review of a preliminary report documenting the accomplishment of the Treatment Plan and Data Recovery Plan(s). Other signatories, as appropriate, may be invited to attend field inspections and review pertinent preliminary reports. Their attendance and comment on performance shall constitute project review that Reclamation shall take into account when approving work.

VI. Curation

Reclamation shall ensure that all records and materials resulting from identification and data recovery efforts are curated in accordance with standards and guidelines set forth in 36 CFR Part 79 where applicable and in consideration of any claims or conditions recognized as a result of consultation with affected Native American groups according to the provisions of NAGPRA. All material to be returned or otherwise repatriated will be treated with dignity and respect until their analysis is complete and they are returned.

VII. Permits and Allotted Land

A. Prior to excavation or removal of material from tribal lands, GRIC will contact the BIA Phoenix Area Office about the nature and location of the proposed work and allow ten (10) working days after either written or oral (provided it is documented) notification for response.

Archaeological resources excavated or removed from allotments remain the property of the individuals having rights of ownership of such land. Applications for a BIA Archaeological Resources Protection Act Permit from GRIC shall include the following:

1. Written permission from the landowner(s), containing such terms and conditions as the landowner(s) requests;

2. Where the ownership of an allotment is multiple, written permission must be granted by the owners of a majority of interests;
3. Written agreement by the landowner(s) to release archaeological resources for curation or to allow a reasonable period of time for study;
4. In the event of release by landowner(s) of archaeological resources, written consent from a curatorial facility or institution to take those resources into custody. No written consent is needed if the landowner plans to retain artifacts.

B. Prior to initiating any fieldwork on lands on or off the Reservation that are under the jurisdiction of another agency (for example, BLM, NPS, ASLD, or ADOT), GRIC (and its subcontractors) shall obtain all necessary permits and comply with all applicable statutes required to conduct cultural resources investigations on these lands.

VIII. Dispute Resolution

Should any signatory to this agreement or member of the public object within 30 days to any action(s) or plans provided for review pursuant to this agreement, Reclamation shall consult with the objecting party to resolve the objection. The objection must be specifically identified, and the reasons for objection documented. If Reclamation determines that the objection cannot be resolved, Reclamation shall forward all documentation relevant to the dispute to the Council and notify SHPO as to the nature of the dispute. Within 30 days of receipt of all pertinent documentation, the Council shall either:

- A. Provide Reclamation with recommendations, which Reclamation shall take into consideration in reaching a final decision regarding the dispute; or
- B. Notify Reclamation that it will comment within an additional 30 days in accordance with 36 CFR 800.6(b). Any Council comment provided in response to such a request will be taken into account by Reclamation in accordance with 36 CFR 800.6(c)(2) with reference to the subject of the dispute.

Any recommendation or comment provided by the Council will be understood to pertain only to the subject of the dispute; Reclamation's responsibility to carry out all actions under this Agreement that are not the subject of the dispute will remain unchanged.

IX. Amendment

Any party of this agreement may request that it be amended, whereupon the parties will consult to consider such amendment in accordance with 36 CFR 800.13.

X. Termination

GRIC, Reclamation, SHPO, or the Council may terminate this agreement by providing 30 days written notice to the other parties, provided that the parties will consult during that period to seek agreement on amendments or other actions that would avoid termination. In the event of termination, Reclamation will comply with 36 CFR 800.4 through 800.6.

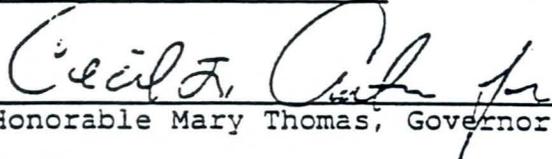
XI. Failure to Carry Out the Terms of the Agreement

In the event that the terms of this agreement are not carried out, Reclamation shall comply with 36 CFR 800.4 through 800.6 with regard to individual actions covered by this agreement or with other applicable Programmatic Agreement.

XII. This agreement is limited in scope to the GRIC Central Arizona Project Water Delivery System Project, associated facilities, and both existing agricultural and proposed new agricultural lands. Additionally, within the scope of this project area any related water settlement agreements that may affect the Central Arizona Project delivery system. It is entered into solely for that purpose.

Execution and implementation of this agreement evidences that Reclamation has afforded the Council an opportunity to comment and has, therefore, satisfied its Section 106 responsibilities for individual actions of this undertaking.

GILA RIVER INDIAN COMMUNITY

By: 
Honorable Mary Thomas, Governor

Date: May 5, 1997

U.S. DEPARTMENT OF THE INTERIOR, BUREAU OF RECLAMATION

By: 
Dennis E. Schroeder, Area Manager

Date: 5/6/97

STATE HISTORIC PRESERVATION OFFICER

By: James Garrison
James Garrison
State Historic Preservation Officer

Date: 5/19/97

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By: John M. Fowler
John M. Fowler
Acting Executive-Director, Western Office

Date: 6/2/97

CONCUR:

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

By: Theodore Quasula
Theodore Quasula, Area Director

Date: 5-15-97

BUREAU OF LAND MANAGEMENT, PHOENIX FIELD OFFICE

By: Michael A. Taylor
Michael A. Taylor, Acting Field Manager

Date: 5/20/97

NATIONAL PARK SERVICE, CASA GRANDE RUINS NATIONAL MONUMENT

By: Donald Spencer
Donald Spencer, Superintendent

Date: May 6, 1997

SAN CARLOS IRRIGATION PROJECT

By: Ralph Esquerre
Ralph Esquerre, Project Engineer

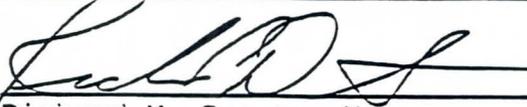
Date: 5-6-97

ARIZONA STATE LAND DEPARTMENT

By: 
J. Dennis Wells, Commissioner

Date: 5/13/97

ARIZONA DEPARTMENT OF TRANSPORTATION

By: 
Richard M. Duarte, Manager
Environmental Planning Section

Date: 5.19.97