

# RECLAMATION

*Managing Water in the West*

## **SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT**

### **Consolidated Canal Extension and Goodyear Lateral**

**Pima-Maricopa Irrigation Project  
Gila River Indian Community  
Pinal County, Arizona**



**U.S. Department of the Interior  
Bureau of Reclamation  
Phoenix Area Office**

**April 2011**

## **Mission Statements**

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

## ACRONYMS AND ABBREVIATIONS

BIA	Bureau of Indian Affairs
CAA	Clean Air Act
CAP	Central Arizona Project
CCE	Consolidated Canal Extension
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CRMP	Cultural Resource Management Program
CY	Cubic yards
dBA	Decibels of sound on the A-scale of a sound meter
FEA	Final Environmental Assessment
FHWA	Federal Highway Administration
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
FR	Federal Register
FWS	U.S. Fish and Wildlife Service
GHG	Greenhouse Gas
$L_{eq}(h)$	Equivalent steady-state sound level over a period of 1 hour
MBTA	Migratory Bird Treaty Act
NAAQ	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
PIE	Permanent irrigation easement
PM <sub>2.5</sub>	Particulate matter with a diameter of 2.5 microns or less
PM <sub>10</sub>	Particulate matter with a diameter less than 10 microns
P-MIP	Pima-Maricopa Irrigation Project
PEIS	Programmatic Environmental Impact Statement
Reclamation	Bureau of Reclamation
Reservation	Gila River Indian Reservation
SR	State Route
TCE	Temporary construction easement
TIP	Tribal Implementation Plan

## TABLE OF CONTENTS

CHAPTER 1 – PURPOSE AND NEED .....	1
1.1 Project Background.....	1
1.2 Purpose and Need .....	1
1.3 Decision Framework.....	2
1.4 Public Involvement .....	2
1.5 Statutory and Regulatory Authority.....	2
CHAPTER 2 – PROPOSED ACTION AND ALTERNATIVES .....	4
2.1 Proposed Action.....	4
2.2 Project Location.....	5
2.3 No Action Alternative.....	5
CHAPTER 3 – ENVIRONMENTAL CONSEQUENCES .....	7
3.1 Biological Resources .....	8
3.1.1 Affected Environment - Vegetation .....	8
3.1.2 Environmental Consequences - Vegetation .....	8
3.1.3 Affected Environment - Wildlife .....	9
3.1.4 Environmental Consequences - Wildlife.....	9
3.1.5 Affected Environment - Federally Listed Species .....	10
3.1.6 Environmental Consequences - Federally Listed Species.....	10
3.2 Geology and Soils.....	12
3.2.1 Affected Environment .....	12
3.2.2 Environmental Consequences .....	12
3.3 Air Quality .....	12
3.3.1 Affected Environment .....	12
3.3.2 Environmental Consequences .....	13
3.4 Cultural Resources.....	14
3.4.1 Affected Environment .....	14
3.4.2 Environmental Consequences .....	14
3.5 Public Health and Safety .....	15
3.5.1 Affected Environment .....	15
3.5.2 Environmental Consequences .....	15
3.6 Indian Trust Assets.....	15
3.6.1 Affected Environment .....	15
3.6.2 Environmental Consequences .....	16
3.7 Hazardous Material and Solid Waste .....	16
3.7.1 Affected Environment .....	16
3.7.2 Environmental Consequences .....	17
3.8 Noise .....	17
3.8.1 Affected Environment .....	17
3.8.2 Environmental Consequences .....	18
CHAPTER 4 – MITIGATION MEASURES .....	20

CHAPTER 5 – CONSULTATION AND COORDINATION .....	21
CHAPTER 6 – LIST OF PREPARERS AND CONTRIBUTORS .....	22
CHAPTER 7 – LITERATURE CITED .....	23
APPENDIX A – CONSOLIDATED CANAL EXTENSION/GOODYEAR LATERAL .....	24
APPENDIX B – TYPICAL CANAL CROSS SECTIONS .....	28
APPENDIX C – NHPA SECTION 106 CONSULTATION .....	30

## **CHAPTER 1 – PURPOSE AND NEED**

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### **1.1 PROJECT BACKGROUND**

The Santan Canal, a major component of the Pima-Maricopa Irrigation Project (P-MIP), conveys irrigation water to agricultural lands in the Santan Area of the Gila River Indian Reservation (Reservation). Site-specific impacts associated with construction of the Santan Canal and other water delivery infrastructure within the Santan Area were analyzed in a Final Environmental Assessment (FEA) prepared for the Bureau of Reclamation in September 2001 (EcoPlan 2001). Reclamation signed a Finding of No Significant Impact (FONSI) for the project on September 21, 2001. The Santan Area FEA was tiered to the P-MIP Programmatic Environmental Impact Statement (PEIS, EcoPlan 1997), which considered the direct, indirect, and cumulative impacts of canal construction and agricultural development throughout the Reservation.

The FEA evaluated the impacts of constructing an extension of the Salt River Project's (SRP) off-reservation Consolidated Canal along the east side of State Route (SR) 587 from the Reservation boundary to Reach ST-ID of the newly constructed Santan Canal. Under Phase 1 of this project, an initial 0.2-mile segment of the Consolidated Canal Extension (CCE) was constructed in September 2006 to connect the Consolidated Canal with the San Carlos Irrigation Project (SCIP) Canal 9. As proposed under Phase 1, the CCE will be extended south to connect with Reach ST-ID of the Santan Canal. Originally, the CCE was proposed with a 100-foot wide permanent irrigation easement (PIE). However, the current proposal for Phase 1 construction requires a wider PIE than was considered in the FEA. In addition, the Goodyear Lateral, which is described as the Santan Lateral and the old Santan Canal in the FEA, would be constructed east and south from the existing SCIP Canal 9 to Reach ST-IC of the new Santan Canal. Construction of the Goodyear Lateral represents Phase 2 of the proposed project.

The purpose of this Supplemental EA is to analyze the environmental impacts of completing Phase 1 construction of the CCE and Phase 2 construction of the Goodyear Lateral. This document is tiered to and supplements the FEA and PEIS.

### **1.2 PURPOSE AND NEED**

The purpose of and need for the proposed action is to construct water delivery infrastructure to connect the off-reservation Consolidated Canal with Reaches ST-ID and ST-IC of the new Santan Canal. The proposed infrastructure would facilitate delivery of Central Arizona Project (CAP) and other water to Reach ST-ID (via the CCE) and Reach ST-IC (via the Goodyear Lateral) for distribution in the Santan Area of P-MIP.

### **1.3 DECISION FRAMEWORK**

The Responsible Official for Reclamation (Area Manager of the Phoenix Area Office) must authorize the expenditure of Reclamation funds to implement the proposed action, or decide to take no action. If this Supplemental EA demonstrates that there are no significant effects, the Area Manager will record this determination in a FONSI and approve funding for the proposed action. Reclamation's FONSI and decision to implement the proposed action would be available at <http://www.usbr.gov/lc/phoenix>.

The Responsible Official for the Bureau of Indian Affairs (BIA Superintendent of the Pima Agency) must decide whether to issue the grants of easement to P-MIP to allow for the completion of the CCE and the realigned Goodyear Lateral. If this Supplemental Environmental Assessment (EA) demonstrates that there are no significant effects, the Superintendent will record this determination in a FONSI and approve the grants of easement for the two canals. The BIA's FONSI would be available at <http://www.usbr.gov/lc/phoenix>.

### **1.4 PUBLIC INVOLVEMENT**

The Supplemental EA was made available for a limited public review and comment period of 10 days due to the expedited need to meet construction deadlines. A public notice regarding the availability of the Supplemental EA was posted at the BIA Pima Agency, P-MIP Offices, and U.S. Post Offices on the Reservation. In addition, the Supplemental EA was available for public review at <http://www.usbr.gov/lc/phoenix>.

### **1.5 STATUTORY AND REGULATORY AUTHORITY**

The Supplemental EA was prepared in accordance with the National Environmental Policy Act, as amended (NEPA), Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations (CFR) 1500-1508), and Department of the Interior NEPA regulations (43 CFR 46). Reclamation is the lead Federal agency and the BIA and P-MIP are cooperating agencies as defined in 43 CFR 46.225-46.230.

Other applicable laws, regulations, and Executive Orders (EO) that may relate to the project include, but are not limited to, the following:

- American Indian Religious Freedom Act
- Archaeological Resources Protection Act
- Clean Air Act
- Clean Water Act
- Endangered Species Act
- Farmland Protection Policy Act
- Migratory Bird Treaty Act
- National Historic Preservation Act
- EO11988, Floodplain Management
- EO 11990, Protection of Wetlands

- EO 12898, Environmental Justice
- EO 13007, Indian Sacred Sites
- EO 13175, Consultation and Coordination with Indian Tribal Governments
- EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds
- EO 12514, Federal Leadership in Environmental, Energy, and Economic Performance
- Departmental Manual at 512 DM 2, Protection of Indian trust Assets

## CHAPTER 2 – PROPOSED ACTION AND ALTERNATIVES

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### 2.1 PROPOSED ACTION

Under the proposed action, the CCE and an associated drainage channel would be extended approximately 0.56 mile to Reach ST-ID of the Santan Canal. The CCE and parallel drainage channel would require a 116-foot wide PIE, with an additional 20-foot wide temporary construction easement (TCE). The drainage channel would then continue approximately 0.62 mile along the north side of the Santan Canal to Canal 9, requiring a 70-foot wide PIE and an additional 20-foot wide TCE. The PIE and TCE for the final 0.62-mile long segment of drainage channel are entirely within the existing Santan Canal ST-ID easement. Phase 1 construction would include site clearing, excavation for canal and drainage channels, emplacement of earthen embankments, concrete-lining the canal and riprap-lining in the drainage channel. The CCE would have a 4-foot bottom width and 4-foot vertical height. Unpaved 16-foot wide service roads would be constructed on each side of the canal. Additional information on the alignment and design characteristics of the CCE is provided in Appendix A and B.

The Goodyear Lateral would be a new concrete-lined canal that connects the CCE to Reach ST-IC of the Santan Canal. An existing 1,290-foot long section of Canal 9 would be used to establish a connection between the CCE and the proposed Goodyear Lateral. From Canal 9, approximately 1.2 miles of new canal and associated drainage channel would be constructed along the west side of SR 87 to Reach ST-IC of the Santan Canal. The initial 1.0-mile segment would have a 92-foot wide PIE and 20-foot wide TCE. The PIE of the southernmost 0.2-mile segment would increase to 152 feet wide, with an additional 20-foot wide TCE. Phase 2 construction would include site clearing, excavation for canal and drainage channels, emplacement of earthen embankments, concrete-lining the canal, and riprap-lining the drainage channel. Like the CCE, the Goodyear Lateral would have a 4-foot bottom width and 4-foot vertical height lined with concrete. Unpaved 16-foot wide service roads would be constructed on each side of the canal. Construction of the Goodyear Lateral represents a realignment of Canal 9 between the CCE and Santan Canal; consequently, use of the old Canal 9 channel for irrigation water conveyance along this alignment would be discontinued. Additional information on the alignment and design characteristics of the Goodyear Lateral is provided in Appendix A and B.

The proposed action would require grants of permanent easement for the CCE and Goodyear Lateral rights of way.

## 2.2 PROJECT LOCATION

The proposed project is located within the northern portion of District 4 on the Reservation, Pinal County, Arizona. The legal description for the project is Sections 2 and 3, Township 3 South, Range 5 East, Gila and Salt River Baseline and Meridian. The project area consists of the combined PIE and TCE for Phase 1 and Phase 2 construction. Potential effects on environmental resources that adjoin the project area are also considered in the analysis. The location of the project is shown in Figures 1 and 2.

## 2.3 NO ACTION ALTERNATIVE

Under the no action alternative, the CCE and Goodyear Lateral would not be constructed and CAP water from the Consolidated Canal could not be delivered to the Santan Canal. No grants of permanent easement would be issued by BIA.

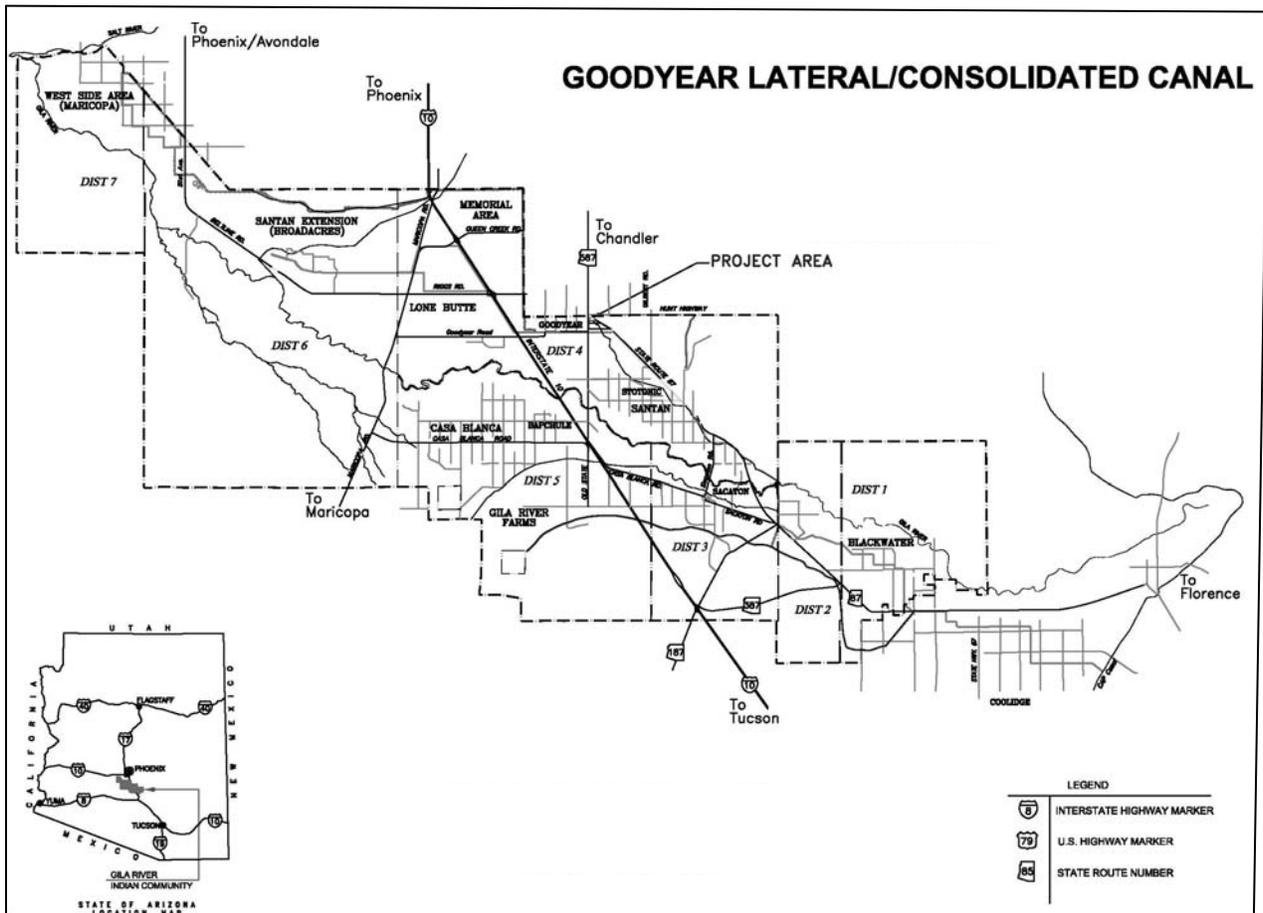
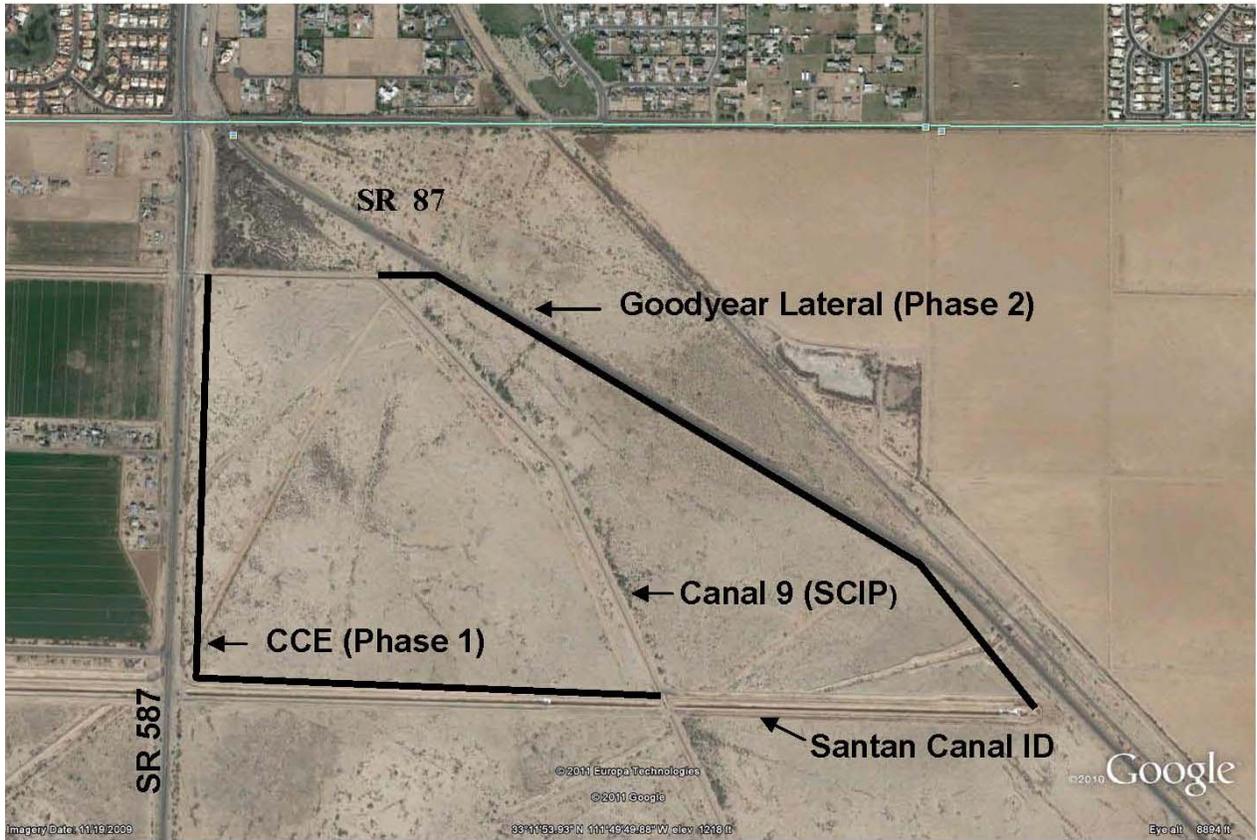


Figure 1. Location map.



**Figure 2. Proposed canal and drainage channel alignments.**

## CHAPTER 3 – ENVIRONMENTAL CONSEQUENCES

The proposed canals would be incorporated into P-MIP’s Santan Area distribution system. For the purpose of conciseness, only relevant site-specific impacts associated with the proposed action are considered in this supplemental document. Impacts to water resources, socioeconomics, and land use patterns in the Santan Area were analyzed in the FEA and PEIS and are not considered here.

There are no wildlife refuges, parks and other recreational areas, forests, aquatic resources, Clean Water Act Section 404 jurisdictional waters, wetlands, sole source aquifers, floodplains, wilderness areas, unique ecological areas, or other unique or rare characteristics of the land or viewshed that occur in or near the project area; consequently, there would be no effect on these resources. Other environmental issues for which Reclamation has made a no effect determination are listed in Table 1.

**Table 1. Effects determination for specified environmental issues.**

Environmental Issues	No	Yes	Uncertain
This action would affect Prime and Unique farmlands.	X		
This action or group of actions would have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources.	X		
This action would have highly uncertain environmental effects or involve unique or unknown environmental risks.	X		
This action would establish a precedent for future actions or represent a decision in principle about future actions with potentially substantial effects.	X		
This action would violate Federal, State, local, or tribal law or requirements imposed for protection of the environment.	X		
This action would have a disproportionately high and adverse effect on low income or minority populations as defined in EO 12898 (Environmental Justice).	X		
This action would limit access to and ceremonial use of Indian sacred sites on Federal lands by Indian religious practitioners or substantially adversely affect the physical integrity of such sacred sites.	X		
This action would contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area or result in actions that may promote the introduction, growth, or expansion of the range of such species.	X		

## **3.1 BIOLOGICAL RESOURCES**

### **3.1.1 Affected Environment – Vegetation**

The project area occurs within a half section of land near the intersection of SR 587 and SR 87. This portion of the Reservation lies within the Sonoran Desertscrub Community, Lower Colorado River Subdivision, and encompasses a mingling of the creosote-white bursage and saltbush series as defined by Brown (1994).

The Lower Colorado River Subdivision extends over much of southwestern Arizona reaching nearly to Tucson. The creosote-white bursage series occupies the lower elevational gradients and is composed mainly of shrubs and dwarf shrubs such as creosote bush (*Larrea tridentata*), triangle-leaf bursage, and saltbush (*Atriplex* sp.) with a few cacti such as cholla (*Cylindropuntia* spp.) and prickly pear (*Opuntia* spp). The saltbush series occurs on gently sloping lands and valleys; much of this series is now under cultivation. These two vegetation forms typically intergrade with one another (Brown 1994).

Although the immediate project area consists of native vegetation, the surrounding area is fragmented by roads, canals and agricultural and urban development. Vegetation in the project area is very sparse with occasional patches of denser habitat and consists of allscale (*Atriplex polycarpa*), creosote bush, thornbush (*Lycium* sp.), and mesquite (*Prosopis velutina*) with a very sparse understory of plantain (*Plantago* spp.) and sixweeks grama (*Bouteloua barbata*). There are no concentrations of noxious and/or invasive plant species in the project area.

### **3.1.2 Environmental Consequences – Vegetation**

#### **No Action Alternative**

Under the no action alternative, there would be no direct impact on native vegetation because no project would be implemented or constructed. Nearby urban and agricultural development would continue to have an adverse effect on native vegetation.

#### **Proposed Action**

The project area is located adjacent to the rights of way of existing roads or canals. Vegetation is extremely sparse along the proposed CCE alignment between SR 587 and Canal 9. Impacts would be limited to the loss of scattered shrubs. Vegetation along the remainder of the CCE and Goodyear Lateral alignments is predominately low density. Implementation of the proposed action would result in the loss of creosote, mesquite, lycium, and saltbush vegetation on approximately 26.5 acres within these canal alignments.

The area encompassing the proposed project has seen a steady progression of activities associated with the subjugation of new agricultural lands and/or the rehabilitation of existing agricultural facilities. The effect of the proposed action on vegetation, when incrementally combined with other human-induced impacts, would be minor and limited in size and scope.

### **3.1.3 Affected Environment – Wildlife**

Wildlife in the project area is limited by the sparseness of the vegetation and the fragmentation of habitat in the area. The predominate wildlife species in the project area are small mammals and passerine birds. Typical small mammals include the round-tailed ground squirrel (*Spermophilus tereticaudus*), cactus mouse (*Peromyscus eremicus*), desert cottontail (*Sylvilagus auduboni*), black-tailed jackrabbit (*Lepus californicus*), and coyote (*Canis latrans*). Avian species typical of this habitat type include mourning dove (*Zenaida macroura*), northern mockingbird (*Mimus polyglottos*), Gambel's quail (*Callipepla gambelii*), burrowing owl (*Athene cunicularia*), loggerhead shrike (*Lanius ludovicianus*), and greater roadrunner (*Geococcyx californianus*). Herpetofauna typical of the project area include gophersnake (*Pituophis catenifer*), zebra-tail lizard (*Callisaurus draconoides*), and western whiptail (*Apidoscelis tigris*).

### **3.1.4 Environmental Consequences – Wildlife**

#### **No Action Alternative**

Under the no action alternative, there would be no direct impact on wildlife because no project would be implemented or constructed. Nearby urban and agricultural development would continue to have an adverse effect on many species of wildlife.

#### **Proposed Action**

The majority of wildlife impacts would consist of the loss of small mammals, snakes and lizards that are unable to escape the earthmoving activities. Negative effects from actual habitat loss would be minimized by the limited width of the project alignments and the fact that the construction boundaries are adjacent to existing disturbed areas.

On April 12, 2011, the project area was surveyed for the presence of burrowing owls. There were 12 to 15 mammal burrows identified as potentially suitable for burrowing owls, but only one burrow showed signs of occupation (owl pellets and whitewash at the burrow entrance). Burrowing owls and their nests are protected under the MBTA. The Burrowing Owl Project Clearance Guide for Landowners publication is available at [www.azgfd.gov/pdfs/w\\_c/owl/BurrowingOwlClearanceProtocol.pdf](http://www.azgfd.gov/pdfs/w_c/owl/BurrowingOwlClearanceProtocol.pdf). It provides guidance on avoiding liability under the MBTA and would be consulted prior to implementation of the project. In addition, P-MIP would contract with Wild at Heart, a federally permitted organization, to excavate the suspect burrow and relocate any burrowing owls and nest contents that might be present. In accordance with 50 CFR Part 13 and 50 CFR 21.27, the U.S. Fish and Wildlife Service (FWS) issued a Special Purpose Permit (dated April 19, 2011) authorizing the Gila River Indian Community through P-MIP to relocate burrowing owls from portions of the project area.

### **3.1.5 Affected Environment – Federally Listed Species**

Table 2 presents the FWS listed, proposed, and candidate species that occur in Pinal County. Listed species and proposed species are afforded protection under the Endangered Species Act (ESA). Candidate species are those for which the FWS has sufficient information to propose them as endangered or threatened, but for which listing is precluded due to other higher priority listings. Candidate species are not afforded protection under the ESA.

### **3.1.6 Environmental Consequences – Federally Listed Species**

#### **No Action Alternative**

Under the no action alternative, there would be no direct impact on federally listed or proposed species because no project would be implemented or constructed. As noted below, no federally listed or proposed species are known to occur in or near the project area.

#### **Proposed Action**

The FWS identifies 12 federally listed endangered, threatened or proposed species that potentially exist within Pinal County. Several other sensitive species are also listed as potentially occurring in Pinal County. Project area suitability for these species was evaluated based on the site visit of April 12, 2011. All 12 federally listed species and other sensitive species have been determined not to be affected because their known geographic ranges are significantly outside the project area and/or the project area does not contain habitat required to support these species.

**Table 2. Federally listed and candidate species in Pinal County.**

Common Name	Scientific Name	Status *	Potential to Occur in Project Area
Arizona Hedgehog Cactus	<i>Echinocereus triglochidiatus</i> var. <i>arizonicus</i>	E	None. The species range occurs outside of the project area.
Desert Pupfish	<i>Cyprinodon macularius</i>	E	None. There is no habitat for this species in the project area.
Gila Chub	<i>Gila intermedia</i>	E	None. There is no habitat for this species in the project area.
Lesser Long-nosed Bat	<i>Leptonycteris curasoae yerbabuena</i>	E	None. The project area is within the range of this species. However, there is no foraging or roosting habitat for this species in the project area.
Loach Minnow	<i>Tiaroga cobitis</i>	T	None. There is no habitat for this species in the project area.
Mexican Spotted Owl	<i>Strix occidentalis lucida</i>	T	None. There is no habitat for this species in the project area.
Mountain Plover	<i>Charadrius montanus</i>	PT	
Nichol Turk's Head Cactus	<i>Echinocactus horizonthalonius</i> var. <i>nicholii</i>	E	None. The species range occurs outside of the project area.
Razorback Sucker	<i>Xyrauchen texanus</i>	E	None. There is no habitat for this species in the project area.
Southwestern Willow Flycatcher	<i>Empidonax traillii eximius</i>	E	None. There is no habitat for this species in the project area.
Spikedace	<i>Meda fulgida</i>	T	None. There is no habitat for this species in the project area.
Yuma Clapper Rail	<i>Rallus longirostris yumanensis</i>	E	None. There is no habitat for this species in the project area.
Acuna Cactus	<i>Echinomastus erectocentrus</i> var. <i>acunensis</i>	C	None. There is no habitat for this species in the project area.
Desert Tortoise (Sonoran Pop.)	<i>Gopherus agassizii</i>	C	None. There is no habitat for this species in the project area.
Northern Mexican Gartersnake	<i>Thamnophis eques megalops</i>	C	None. There is no habitat for this species in the project area.
Roundtail Chub	<i>Gila robusta</i>	C	None. There is no habitat for this species in the project area.
Tucson Shovel-nosed Snake	<i>Chionactis occipitalis klauberi</i>	C	None. The project area is within the range of this species. However, there is no habitat for this species in the project area.
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	C	None. There is no habitat for this species in the project area.
American Peregrine Falcon	<i>Falco peregrinus anatum</i>	D	None. There is no habitat for this species in the project area.
Bald Eagle	<i>Haliaeetus leucocephalus</i>	D	None. There is no habitat for this species in the project area.
Cactus Ferruginous Pygmy-owl	<i>Glaucidium brasilianum cactorum</i>	D, P	None. There is no habitat for this species in the project area.
California Brown Pelican	<i>Pelecanus occidentalis californicus</i>	D	None. There is no habitat for this species in the project area.

\* E (endangered), T (threatened), PT (proposed threatened), C (candidate), D (delisted), P (petitioned for relisting)

## **3.2 GEOLOGY AND SOILS**

### **3.2.1 Affected Environment**

The project area consists entirely of soils from four mapping units: Casa Grande complex, 0 percent to 5 percent slopes; Casa Grande fine sandy loam, 0 to 3 percent slopes; Kamato complex, 0 percent to 5 percent slopes; and Shontok-Redun complex, 0 percent to 3 percent slopes (NRCS 2008). These soils are derived from basin alluvium and generally consist of layered profiles of fine sandy loam, clay loam, and sandy loam. Soils within the project area are well drained.

### **3.2.2 Environmental Consequences**

#### **No Action Alternative**

Under the no action alternative, there would be no direct impact to soils and geologic features, since no project would be constructed. Existing soil conditions would persist into the foreseeable future.

#### **Proposed Action**

Ground disturbing activities would be confined to approximately 31.8 acres within the proposed alignments of the CCE and Goodyear Lateral. Within this area, approximately 50,000 cubic yards (CY) of soil would be excavated to create the canal and drainage channels. This excavated material would be reused to construct the compacted embankments on which the service roads would be placed (Appendix B). Drainage channels would be excavated along the toe of each upslope embankment to prevent ponding of storm runoff. The drainage channels would be lined with approximately 950 CY of riprap to minimize erosion.

## **3.3 AIR QUALITY**

### **3.3.1 Affected Environment**

Air quality is determined by the ambient concentrations of pollutants that are known to have detrimental effects on public health and the environment. In accordance with Section 109 of the Clean Air Act (CAA), the U.S. Environmental Protection Agency (EPA) has promulgated National Ambient Air Quality Standards (NAAQS) for six criteria pollutants: carbon monoxide, nitrogen dioxide, particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), ozone, sulfur dioxide, and lead. Areas with air quality that do not meet the standards are designated as “nonattainment areas.”

Designation of nonattainment submits an area to regulatory control of pollutant emissions so that attainment of the NAAQS can be achieved within a designated time period. The EPA published a Final Rule in the *Federal Register* (76 FR 17028) on March 28, 2011, approving a Tribal Implementation Plan (TIP) for the Gila River Indian Community. The TIP includes ambient air quality standards, permitting requirements for minor sources of air pollution, enforcement

authorities, and requirements of area sources of fugitive particulate matter. Tribal lands in and around the project area are presently designated “unclassifiable” (attainment) for all regulated NAAQS.

The EO 13514 directs Federal agencies to promote pollution prevention and reduce emissions of greenhouse gases (GHGs) that result from their actions. In accordance with this EO, the CEQ defines GHGs as carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The CEQ has proposed an annual reference threshold of 25,000 metric tons of carbon dioxide (CO<sub>2</sub>)-equivalent GHG emissions as a useful indicator for agencies to consider when analyzing potential action-specific GHG emissions in NEPA documents (CEQ 2010). This threshold was considered relevant by CEQ because it is a minimum standard for reporting GHG emissions from specified industries under the CAA (EPA’s Mandatory Reporting of Greenhouse Gases Final Rule, 74 FR 56260). According to the CEQ draft guidance, no quantitative analysis of GHGs is necessary if emissions from a proposed action are not likely to exceed the annual presumptive threshold of 25,000 metric tons of CO<sub>2</sub>-equivalent GHGs. Principal local sources of GHGs include combustion emissions from industry and heavy equipment and light vehicles used in farming, construction, and personal and commercial transportation.

### **3.3.2 Environmental Consequences**

#### **No Action Alternative**

Under the no action alternative, there would be no direct impact to air quality, since no project would be constructed. Existing levels of ambient air quality would persist into the foreseeable future.

#### **Proposed Action**

The release of fugitive dust during implementation would have a minor transient effect on ambient air quality within or adjacent to the project area. During construction, short-term and localized degradation of air quality would occur due to fugitive particulate matter emissions generated by earthmoving operations, concrete lining, and various other activities. Dust entrained by wind erosion of disturbed construction areas is a secondary source. Particulate emissions would vary on a daily basis depending on the nature and magnitude of ground-disturbing activities and local weather conditions. As required under the TIP, the construction contractor would submit a Dust Control Plan and permit application to the Gila River Indian Community Department of Environmental Quality prior to construction.

Dust picked up and dispersed by construction traffic would increase the concentration of total suspended particulates along travel routes within the project area, but traffic volumes and speed would be low and emissions sporadic and brief. Vehicular access to the project area is provided by paved roads (SR 587 and SR 87).

The operation of construction equipment would generate minor amounts of engine combustion products such as nitrogen oxides, carbon monoxide, and reactive organic gases. These emissions would not produce measurable changes in ambient concentrations of regulated pollutants or result in a change in attainment status for the air quality region.

Particulate and gaseous exhaust emissions (including GHGs) from the proposed project would be cumulative to pollutants emitted from other natural and anthropogenic sources into the atmosphere. The very small quantities of pollutants released during construction would have a negligible, short-term cumulative effect on local air quality or global processes that lead to climate change.

### **3.4 CULTURAL RESOURCES**

#### **3.4.1 Affected Environment**

The Gila River Indian Community Cultural Resource Management Program (CRMP) previously surveyed the area of potential effect for the proposed action. Four cultural properties were document in the proposed alignments for the CCE and Goodyear Lateral. Only two of the properties identified are considered eligible for the National Register of Historic Properties: the Consolidated Canal (East Branch) AZ U:13:254(ASM) under Criterion A and SCIP Canal 9.

#### **3.4.2 Environmental Consequences**

##### **No Action Alternative**

Under the no action alternative, there would be no direct impact cultural resources, since no project would be implemented or constructed. On-going maintenance and repair of existing facilities could affect the integrity of eligible canal segments.

##### **Proposed Action**

The segment of Consolidated Canal being proposed for construction is an entirely new canal that would not affect the integrity of the existing Consolidated Canal. A Historic American Engineering Record for the irrigation component of SCIP, which includes Canal 9, is considered by the State Historic Preservation Office as acceptable mitigation under Section 106 of the National Historic Preservation Act for any adverse impacts resulting from CAP (P-MIP) undertakings. Consequently, the CRMP recommended that “No Adverse Effect” to eligible historic properties will result from implementation of the proposed action. The Tribal Historic Preservation Officer concurred with this recommendation on April 7, 2011 (Appendix C).

## **3.5 PUBLIC HEALTH AND SAFETY**

### **3.5.1 Affected Environment**

The project area consists of desert scrub and existing rights of way associated with the other canals, such as the Santan Canal, Canal 9, and Consolidated Canal. The broader area encompassing the project includes mostly agricultural land (both active and fallow), desert scrub and scattered residences. High density housing occurs just beyond the Reservation boundary, approximately 0.25 mile north of the project area.

Accidental injury is possible on construction sites, but risk can be reduced through implementation of appropriate safety protocol and access control during construction. Unfenced canals represent an attractive nuisance and potential drowning hazard, particularly for children. Large canals, such as those operated by the CAP and SRP, are typically equipped with protective barriers and/or escape ladders. However, most small irrigation canals found in rural areas often are not built with public safety features. P-MIP canals and appurtenances are constructed in accordance with Reclamation standards.

### **3.5.2 Environmental Consequences**

#### **No Action Alternative**

Under the no action alternative, there would be no direct impact public health and safety, since no project would be constructed.

#### **Proposed Action**

During the implementation phase, the construction contractor would operate in accordance with a safety plan approved by P-MIP. Access to the project area during construction would be restricted to reduce potential risk to the public. The proposed CCE and Goodyear Lateral present a low hazard to public safety due to their relatively small size and isolated location. Normal water depth would range between 2.4 feet and 2.8 feet. Concrete lining within the prisms of both canals would have a 1.0:1.5 slope and height of 4 feet. The canal alignments are not contiguous with residential areas, schools, walkways, or other public venues where pedestrian traffic would concentrate.

## **3.6 INDIAN TRUST ASSETS**

### **3.6.1 Affected Environment**

Indian trust assets are legal interests in property held in trust by the United States through the Department of the Interior (DOI) for federally recognized Indian tribes or individual tribal members. Examples of things that may be trust assets are lands, mineral rights, hunting, fishing, or traditional gathering rights, and water rights. The United States, including all of its bureaus

and agencies, has a fiduciary responsibility to protect and maintain rights reserved by or granted to Indian tribes or individual tribal members by treaties, statutes, and Executive Orders. This trust responsibility requires that all Federal agencies, including Reclamation, ensure their actions protect trust assets. Secretarial Order 3175 (incorporated into the Departmental Manual (DM) at 512 DM 2) requires that when proposed actions of a DOI agency might affect trust assets, the agency must address those potential impacts in planning and decision documents and the agency consult with the tribal government whose trust assets are potentially affected.

As considered in the FEA, the Santan Area is predominantly rural with interspersed pockets of commercial, industrial, and residential developments. Reservation land consists of privately owned allotments and Tribal land. One common characteristic in both allotted and Tribal land is the trust responsibility of the Federal government administered by the BIA. Use of Indian trust lands for the proposed project would require the issuance of easements by BIA.

### **3.6.2 Environmental Consequences**

#### **No Action Alternative**

Under the no action alternative, there would be no direct impact to Indian trust assets, since no project would be constructed or implemented.

#### **Proposed Action**

Total temporary and permanent easements required for construction and operation of the CCE and Goodyear Lateral would affect approximately 31.8 acres of uninhabited allotted and Tribal lands (Appendix A). The CCE would require approximately 9.36 acres in PIE and 1.74 acres in TCE. The Goodyear Lateral would require approximately 17.32 acres in PIE and 3.38 acres in TCE.

The proposed improvement to the irrigation delivery system would provide Community members with better access to CAP and other water. The proposed action is expected to enhance the value of Reservation land and water resources. Indian trust assets within the project area may be affected by use limitations but also may realize increased value to landowners from monetary compensation.

## **3.7 HAZARDOUS MATERIAL AND SOLID WASTE**

### **3.7.1 Affected Environment**

No sites contaminated with hazardous or non-hazardous solid wastes are known to occur within or adjacent to the project area (<http://www.epa.gov/enviro>). Use, storage, and disposal of hazardous materials and solid waste associated with construction have the potential to adversely affect the environment if these materials are improperly managed. In general, most potential impacts are associated with the release of these materials to the environment. Direct impacts of

such releases would include contamination of soil, water, and vegetation, which could result in indirect impacts to wildlife, aquatic life, and humans.

### **3.7.2 Environmental Consequences**

#### **No Action Alternative**

Under the no action alternative, there would be no direct impact regarding use of hazardous materials, since no project would be constructed or implemented. Existing conditions would prevail within the project area.

#### **Proposed Action**

The proposed action would require the short-term use of limited quantities of fuels, lubricants, and other fluids that would be used to power and operate equipment during construction of the barrier. Chemical toilets would also be present at the worksite. These materials would be managed in accordance with Federal and Tribal regulations. Spills of hazardous material would require immediate corrective action and cleanup to minimize any potential adverse effect on sensitive resources.

Any solid waste generated by construction would be removed by the contractor and disposed of in accordance with Federal and State regulations. Excess or unused quantities of hazardous materials would be removed upon project completion. Although hazardous waste generation is not anticipated, any such wastes produced by the project would be properly containerized, labeled, and transported to an appropriately permitted hazardous waste disposal facility in accordance with Federal regulations.

Appropriate hazardous material management and waste disposal would obviate any impacts on the environment.

## **3.8 NOISE**

### **3.8.1 Affected Environment**

Several residential properties are located along the west side of SR 587, approximately 275 feet from the proposed CCE alignment. These properties represent the only sensitive noise receptors that could be affected by construction. Existing primary sources of noise include low-flying aircraft and traffic on SR 587, SR 87, and Hunt Highway.

Numerous environmental factors determine the level of perceptibility of sound at a given point of reception. These factors include: distance from the source of sound to receptor, surrounding terrain, ambient sound level, time of day, and wind direction. The characteristics of a sound (i.e., loudness and pitch) are also important factors for determining possible noise effects. Generally, at distances greater than 50 feet from a noise source, every doubling of the distance

produces a 6 decibel (dBA)<sup>1</sup> reduction in sound. Additional noise attenuation (approximately 1.5 dBA for every doubling of distance) is provided by natural topography, soil, and vegetation between the point of noise generation and noise reception. There is also a 20-30 dBA reduction between the exterior and interior of most homes.

Most humans find an ambient sound level of 60 to 70 dBA as beginning to create a condition of noise impact (EPA 1978). Similar sound propagation levels were considered by the Federal Highway Administration (FHWA) in determining traffic noise impacts and abatement considerations for highway projects. According to the FHWA, a traffic noise impact occurs in residential areas (including settings with parks, schools, churches, and hospitals) when  $L_{eq}(h)$  (i.e., the equivalent steady-state sound level over a period of 1 hour) exceeds 67 dBA. This standard is also a useful tool for considering noise impacts associated with construction.

### 3.8.2 Environmental Consequences

#### No Action Alternative

Under the no action alternative, there would be no direct impact on sensitive noise receptors or levels because no project would be implemented or constructed. Existing noise levels would prevail within and adjacent to the project area.

#### Proposed Action

The operation of earthmoving equipment, concrete mixers, portable generators, water trucks, and power equipment would result in short-term levels of noise of varying duration and magnitude along the project alignment. Construction is performed in discrete steps, each of which has its own mix of equipment and, consequently its own noise characteristics. These various sequential phases would change the character of the noise generated and, therefore, the noise levels along the project alignments as construction progresses. Typical noise levels generated by representative pieces of construction equipment are listed in Table 3.

**Table 3. Typical noise from common construction equipment (dBA).**

Equipment	50 Feet from Source	275 Feet from Source (with terrain attenuation)
Generator	82	64
Bulldozer	85	67
Backhoe	80	62
Grader	85	67
Concrete mixer truck	85	67
Dump truck	84	65
Excavator	85	67

Source: Thalheimer 2000

<sup>1</sup> Sound pressure levels (decibels) on the A-scale of a sound meter are abbreviated dBA.

Noise generated from construction equipment operating along a 900 foot segment of CCE would be audible at the residential properties on the west side of SR 587. Construction along this segment would produce intermittent noise levels in the range of 62-67 dBA at a distance of 275 feet. An  $L_{eq}(h)$  in excess of 67 dBA at that distance is not expected. Maximum noise levels within the interiors of the affected homes would be 37-47 dBA.

The noise levels generated by construction would be comparable and cumulative to noise levels generated by traffic on SR 587. Typical noise levels for passenger vehicles and medium trucks travelling at 55 miles per hour at a distance of 50 feet are 72-74 and 80-82 dBA, respectively. This equates to a range of 63-73 dBA at the residents.

The effect of the proposed action on noise sensitive receptors is considered minor because anticipated noise from construction would be short term and intermittent, would fall within acceptable limits, and would not exceed existing ambient noise levels.

## CHAPTER 4 – MITIGATION MEASURES

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### Burrowing Owls

- P-MIP has obtained a Special Purpose Permit for removal of burrowing owls from the potentially active burrow identified during the survey of April 12, 2011. P-MIP has also contacted Wild at Heart to excavate the burrow and relocate any burrowing owls present.
- P-MIP will monitor the remaining potential burrows to ensure they are abandoned prior to construction to avoid violation of the MBTA and the Federal Nest Destruction Policy.
- If burrowing owls are discovered in the project area during construction, all construction activities in the area proximal to the occupied burrow must stop and personnel from Reclamation and FWS will be contacted. Construction operations near the burrow may not resume until appropriate actions have been taken to eliminate potential impacts to burrowing owls.

### Cultural Resources

- If any previously undetected or unreported cultural resources are encountered during construction, all ground disturbing activities must be discontinued in the area proximal to the cultural material and the CRMP will be consulted to evaluate the nature and significance of the material.

## **CHAPTER 5 – CONSULATATION AND COORDINATION**

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### **Indian Communities**

Gila River Indian Community (P-MIP, Cultural Resources Management Program, Law Office, District 4 Service Center)

Hopi Tribe

### **Federal Agencies**

Bureau of Indian Affairs (Pima Agency, SCIP, and Western Regional Office)

U.S. Fish and Wildlife Service

### **Other**

Salt River Project

## CHAPTER 6 – LIST OF PREPARERS AND CONTRIBUTORS

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### *Preparers*

Diane M. Laush, Reclamation, Wildlife Biologist  
John W. McGlothlen, Reclamation, NEPA Specialist

### *Contributors*

David H. DeJong, Director, Pima-Maricopa Irrigation Project

## CHAPTER 7 – LITERATURE CITED

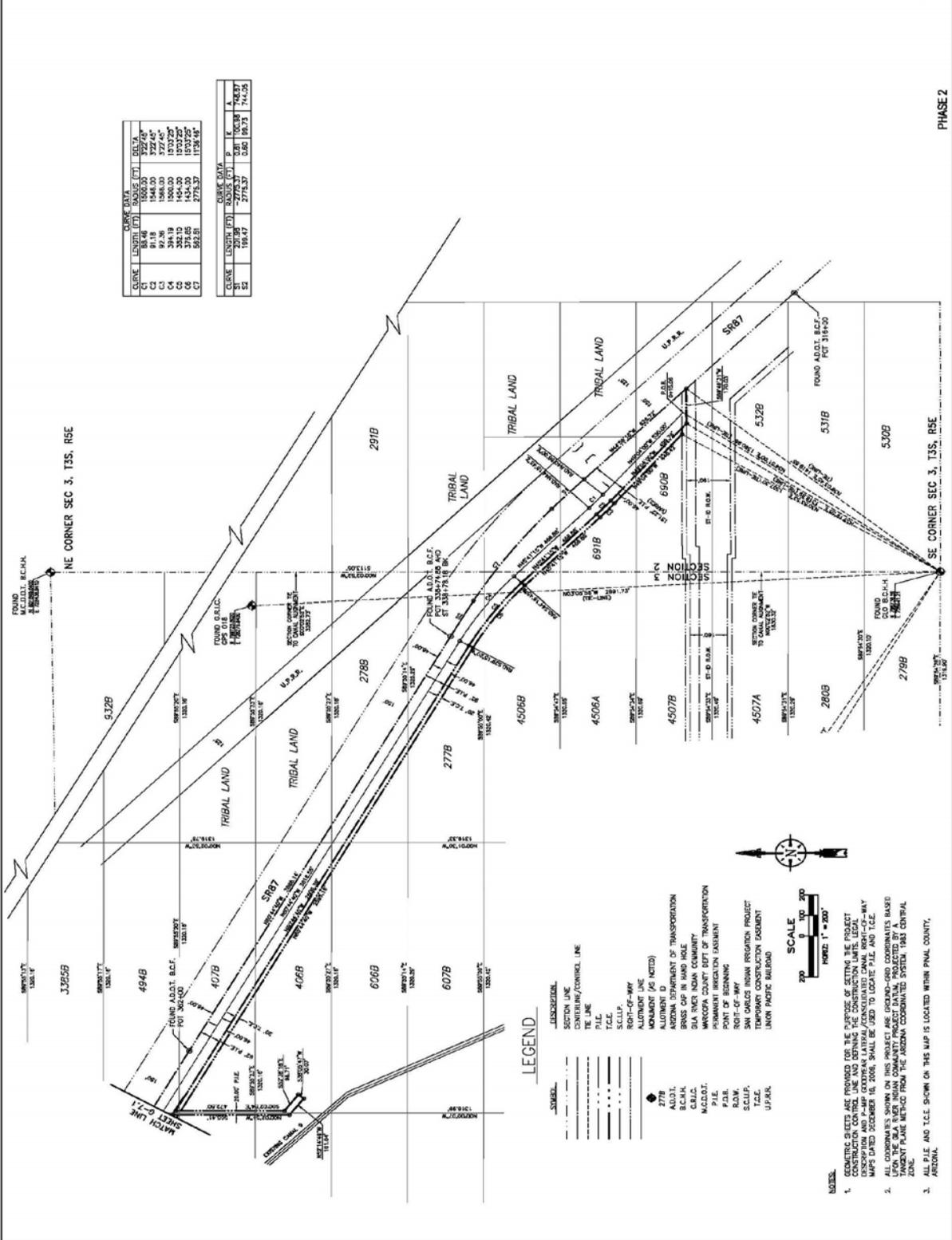
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**APPENDIX A**

**CONSOLIDATED CANAL EXTENSION  
AND  
GOODYEAR LATERAL**





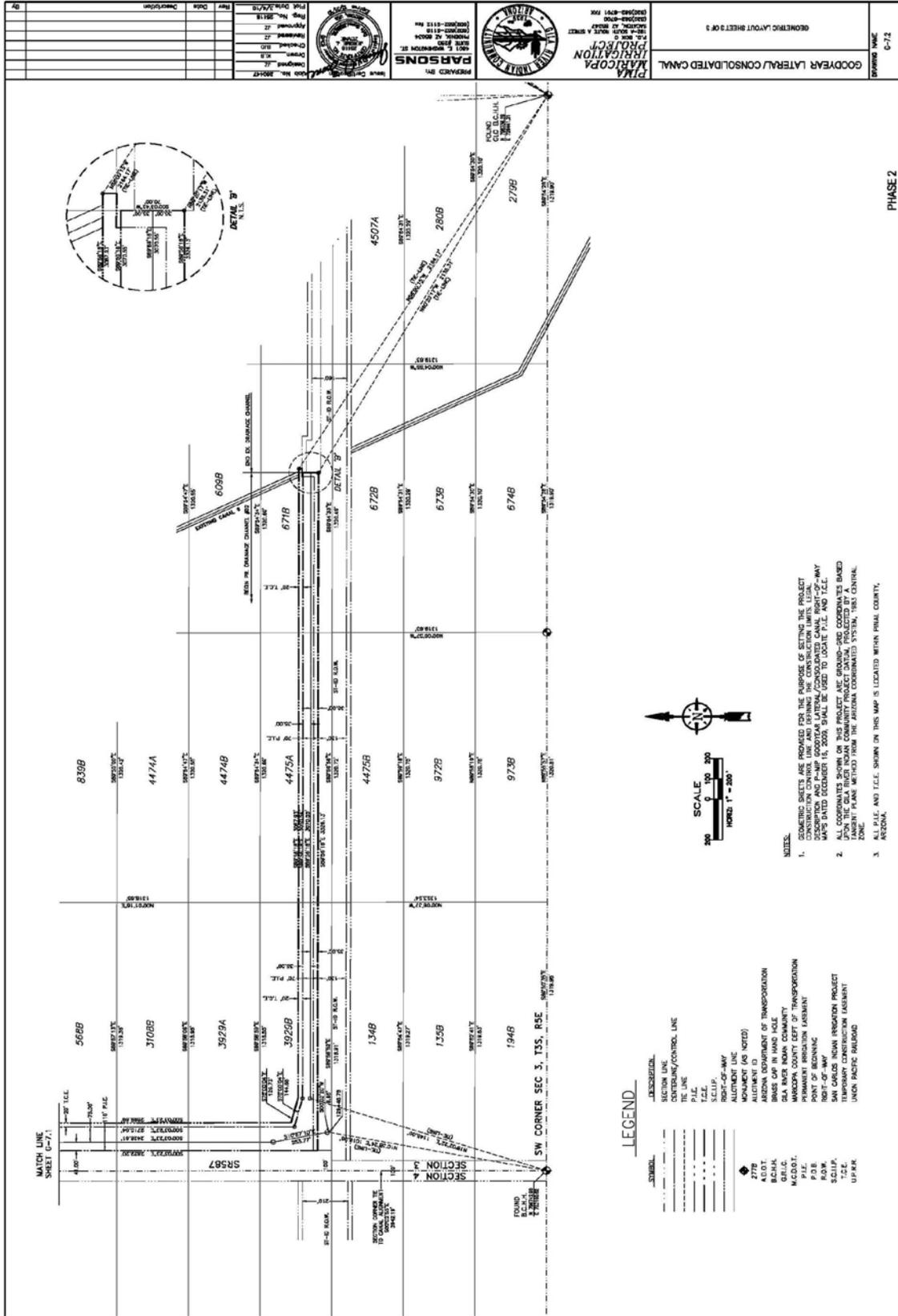
CURVE DATA	STATION	LENGTH (FT)	RADIUS (FT)	DELTA (DEG)	CHORD (FT)	AREA (SQ FT)
C1	2778.00	154.00	154.00	90.00	107.25	154.00
C2	2778.00	154.00	154.00	90.00	107.25	154.00
C3	2778.00	154.00	154.00	90.00	107.25	154.00
C4	2778.00	154.00	154.00	90.00	107.25	154.00
C5	2778.00	154.00	154.00	90.00	107.25	154.00
C6	2778.00	154.00	154.00	90.00	107.25	154.00
C7	2778.00	154.00	154.00	90.00	107.25	154.00

**LEGEND**

- SECTION LINE
- CONVEYOR/CONVEYOR LINE
- PALE
- T.C.E.
- SC.L.P.
- RIGHT-OF-WAY
- ALIGNMENT (AS NOTED)
- ADJ. 1.
- B.C.H.H.
- C.R.L.C.
- M.C.D.O.T.
- P.L.S.
- R.O.W.
- SC.L.P.
- T.C.E.
- U.P.R.R.

**NOTES**

1. GEOMETRIC SHEETS ARE PROVIDED FOR THE PURPOSE OF SETTING THE PROJECT DESCRIPTION AND P-MAP GOODYEAR LATERAL/CONSOLIDATED CANAL RIGHT-OF-WAY MAPS DATED DECEMBER 18, 2008. SHALL BE USED TO LOCATE PALE AND T.C.E.
2. ALL COORDINATES SHOWN ON THIS PROJECT ARE GROUND-GRID COORDINATES BASED ON THE NAD 83 DATUM. THE GROUND-GRID COORDINATES WERE DERIVED BY TRANSFORMING THE NAD 83 DATUM COORDINATES TO THE CENTRAL ZONE.
3. ALL PALE AND T.C.E. SHOWN ON THIS MAP IS LOCATED WITHIN PINAL COUNTY, ARIZONA.



## **APPENDIX B**

### **TYPICAL CANAL CROSS SECTIONS**



**APPENDIX C**

**NHPA SECTION 106 CONSULTATION**



# GILA RIVER INDIAN COMMUNITY

POST OFFICE BOX 2140, SACATON, AZ 85147

CULTURAL RESOURCE MANAGEMENT PROGRAM

(520) 562-7150  
(520) 562-7165  
Fax: (520) 562-3268

April 7, 2011

Cecilia Martinez  
Superintendent  
Bureau of Indian Affairs, Pima Agency  
P.O. Box 8  
Sacaton, Arizona 85147

**Re: Status of Cultural Resources in P-MIP Right-of-Way for the Goodyear Lateral and Consolidated Canal in District 4 the Gila River Indian Community**

Dear Superintendent:

Per your request, I am writing this letter in regard to the status of cultural resources within the proposed right-of-way (ROW) addition by the Pima-Maricopa Irrigation Project (P-MIP) in the Goodyear Lateral/Consolidated Canal portion of the Santan area in District 4 of the Gila River Indian Community (GRIC; Figure 1). The proposed project area is situated near the intersection of State Route (SR) 87 and SR 587 at the northern edge of the GRIC, in portions of Sections 2, 3, and 4 in Township 3 South, Range 5 East.

The GRIC Cultural Resource Management Program (CRMP) previously addressed the status of cultural resources within this project area in a letter report (P-MIP Technical Report No. 2007-02) to the U.S. Bureau of Reclamation on April 12, 2007. All parts of the proposed ROW were surveyed previously, and four cultural properties were documented within the ROW (see Figure 1). Old SR 93/SR 587 (AZ U:13:248 [ASM]) and GR-521 are considered ineligible for the National Register of Historic Places (NRHP). The Consolidated Canal (East Branch), AZ U:13:254 (ASM), is considered to be eligible under Criterion A; however, the segment in the APE is only in fair condition and lacks the integrity to contribute to the overall eligibility of the site. The Santan Canal (SCIP Canal 9) is considered to be a contributing element to the irrigation component of the SCIP, which is eligible for inclusion in the NRHP as a district. The Historic American Engineering Record (HAER) for the irrigation component of the SCIP is considered by the SHPO as "acceptable mitigation under Section 106 for any adverse impacts" resulting from the proposed CAP (P-MIP) undertakings (Pfaff 1996:6).

Both the Bureau of Reclamation (BOR) and the Arizona State Historic Preservation Office (SHPO) concurred previously that the proposed actions will have No Adverse Effect on cultural

resources (see attached letter). The GRIC CRMP recommends that the No Adverse Effect determination continues to be correct and that no further documentation of the Santan Canal is warranted for the proposed undertaking including the additional ROW.

If you have any questions, please contact me at 562-7151.

Sincerely,



J. Andrew Darling  
Director

Reference Cited

Pfaff, C.

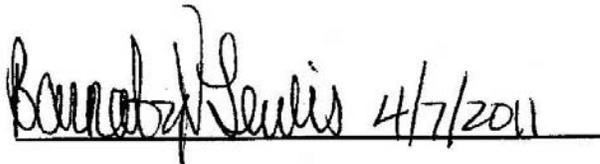
1996 *San Carlos Irrigation Project—Photographs: Written Historical and Descriptive Data*. Historic American Engineering Record No. AZ-50. National Park Service, Western Region, San Francisco, CA.

Attachments:

- Figure 1. Map of a portion of the USGS 7.5' Gila Butte quadrangle showing the location of previously recorded archaeological sites in and adjacent to the APE for the Goodyear Lateral/Consolidated Canal.
- Letter dated December 21, 2007 from Bruce D. Ellis (Bureau of Reclamation) to JoAnne Medley (State Historic Preservation Office) with SHPO concurrence with finding of No Adverse Effect for cultural resources

cc: Barnaby V. Lewis, Tribal Historic Preservation Officer, Gila River Indian Community  
David H. DeJong, Project Manager, Pima-Maricopa Irrigation Project

Concur:



Barnaby V. Lewis  
GRIC Tribal Historic Preservation Officer



13/736466



PXAO-1500  
ENV-3.00

Proj. 94.19 x 29, PTK 2007-02  
~~SEP~~ 2008-0007 (35125)

United States Department of the Interior  
BUREAU OF RECLAMATION

Phoenix Area Office  
6150 West Thunderbird Road  
Glendale, Arizona 85306-1001

DEC 21 2008

02-25-2010 2:22

DATE	TIME
11/04/08	1:50
<b>RECEIVED</b>	
CLASSIFICATION	
2008-0007-02-2008	

Ms. JoAnne Medley  
State Historic Preservation Office  
Arizona State Parks  
1300 West Washington  
Phoenix, Arizona 85007

Subject: Section 106 Consultation - Connection of the Consolidated Canal (East Branch) to San Carlos Irrigation Project (SCIP) Canal 9 and Construction of Pima-Maricopa Irrigation Project (P-MIP) Goodyear Lateral and Drainage on the Gila River Indian Community, Pinal County, Arizona

Dear Ms. Medley:

The enclosed letter report is provided for your review. The report was revised earlier this year at the request of Reclamation to clarify the discussion of the area of potential effect (APE) on page 2. We have reviewed the revised letter report and concur with the recommendation that the proposed undertaking will have ~~no adverse effect~~ to the four cultural properties within the APF. We seek your concurrence with this recommendation.

If you have any questions about this project, please contact Staff Archaeologist Mr. Jon S. Czaplicki at 623-773-6253.

Sincerely,

Bruce D. Ellis  
Chief, Environmental Resource  
Management Division

Enclosure

CONCUR

*William Collins 11/10/08*  
ARIZONA STATE HISTORIC PRESERVATION OFFICER  
ARIZONA STATE HISTORIC PRESERVATION