



— BUREAU OF —  
RECLAMATION

# Final Environmental Assessment

**Gila River Indian Community Reclaimed Water Pipeline Project  
Gila River Indian Community, Pinal County, Arizona**



**U.S. Department of the Interior  
Bureau of Reclamation  
Interior Region 8: Lower Colorado Basin  
Phoenix Area Office  
Glendale, Arizona**

**July 2023**

## **Mission Statements**

The Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated 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

A+	A-plus
Act	Colorado River Basin Project Act
ADEQ	Arizona Department of Environmental Quality
af	acre-feet
AMA	Active Management Area
APE	area of potential effects
AQP	Air Quality Program
AZGFD	Arizona Game and Fish Department
BIA	U.S. Bureau of Indians Affairs
BMPs	Best Management Practices
CAP	Central Arizona Project
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cfs	cubic feet per second
CO	carbon monoxide
Community	Gila River Indian Community
CRMP	Cultural Resources Management Program
EA	Environmental Assessment
EIS	Environmental Impact Statement
EMF	East Maricopa Floodway
EO	Executive Order
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FPEIS	Final Programmatic Environmental Impact Statement
GHG	greenhouse gas
GRIC	Gila River Indian Community
I-10	Interstate 10
ITA	Indian Trust Asset
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NO <sub>2</sub>	nitrogen dioxide
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
O <sub>3</sub>	ozone
O&M	operations and maintenance
PL	Public Law
P-MIP	Pima-Maricopa Irrigation Project
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
Proposed Action	Gila River Indian Community Reclaimed Water Pipeline Project

PVC	polyvinyl chloride
Reclamation	U.S. Bureau of Reclamation
Reservation	Gila River Indian Reservation
ROW	right-of-way
RWPP	Reclaimed Water Pipeline Project
Secretary	Secretary of the Interior
SR	State Route
U.S.	United States
USC	U.S. Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WOTUS	Waters of the United States

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# 1.0 Introduction, Background, Purpose, and Need

## 1.1 Introduction

This Environmental Assessment (EA) has been prepared to evaluate the potential environmental effects of the United States (U.S.) Bureau of Reclamation's (Reclamation) proposed funding assistance agreement between Reclamation and the Gila River Indian Community (Community; GRIC) for construction of the Community's Reclaimed Water Pipeline Project (RWPP; Proposed Action). The Proposed Action would include the construction of approximately 19.2 miles of pipeline to transport A-plus (A+) reclaimed water to agricultural lands within the Gila River Indian Reservation (Reservation) in Pinal County, Arizona (Figure 1). The Pima-Maricopa Irrigation Project (P-MIP<sup>1</sup>), an entity within the Community whose mission is to develop and construct a water delivery system for the beneficial use of Community water resources, would construct the RWPP. P-MIP is currently working to meet the Community's goals of rehabilitating or redeveloping previously and currently irrigated agricultural lands and bringing new lands into agricultural production on the Reservation.

The Community has been working to achieve the RWPP to help mitigate drought impacts on the Community's water supply. The focus of the RWPP is on the main conveyance facilities, which would have sufficient capacity to provide local distribution of City of Mesa and City of Chandler reclaimed water to surrounding agricultural lands and to transport additional water to upstream irrigation components of the P-MIP system. The RWPP would enable up to 15,700 acre-feet (af) of Chandler's reclaimed water to be pumped upstream and 29,400 af of Mesa's reclaimed water to be gravity-fed and pumped upstream and south of the Gila River, where it can be used by existing growers who are facing a high possibility of future water shortages. Development of the RWPP would permit the Community, through PMIP, to service nearly all 77,000 acres targeted for agricultural production.

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<sup>1</sup> P-MIP is *both* the name of the entity within the Community whose mission is to develop and construct a water delivery system that will enable the Community to use its water resources *and* the name of the Community's water distribution system for the Community's Central Arizona Project Water. The RWPP would be constructed by the P-MIP entity, but the RWPP is not Federally owned or part of the P-MIP system, including as P-MIP works are defined under the Master Agreement between the United States and Gila River Indian Community for Repayment of Construction Costs and Operation, Maintenance, and Replacement of a Water Distribution System, Central Arizona Project, Contract No. 6-07-30-W0345, as amended.



Figure 1. Project overview.

The Proposed Action would provide sufficient additional reclaimed exchange water to the Community to allow for up to 20,000 af per year of the Community's Central Arizona Project (CAP) water to be available each year for system efficiency water for the benefit of the Colorado River System. In exchange for Reclamation's funding of the pipeline, the Community would agree to provide a total of 78,000 af in system efficiency water for the benefit of the Colorado River system over a 10-year period beginning in water year 2025 and ending in water year 2034. This system efficiency water will remain in Lake Mead as unordered Community CAP water for the benefit of the Colorado River system in coordination with Reclamation and within the terms of the financial assistance agreement.

The Proposed Action would involve the use of reclaimed wastewater. Wastewater reuse is the practice of treating and managing wastewater to produce water of suitable quality for beneficial uses. Reclaimed water is typically municipal wastewater from a wastewater treatment plant that has gone through a series of mechanical, biological, and chemical processes prior to reuse. A+ reclaimed water is wastewater that has gone through multiple treatment steps, including disinfection, and is the highest quality of reclaimed water, as classified by Arizona Department of Environmental Quality (ADEQ) standards. Allowable uses for A+ reclaimed water include irrigation of food crops, residential landscape, school ground irrigation, toilet flushing, snow making, and closed loop air conditioning. The benefits of reclaimed water include improved agricultural production; reduced energy consumption associated with production, treatment, and distribution of water; and environmental benefits, such as reduced nutrient loads to receiving waters due to reuse of the treated wastewater (U.S. Environmental Protection Agency [EPA] 2012). Reclaimed water is often used to address issues related to water supply scarcity and water supply demands.

This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 U.S. Code (USC) 4321 et seq.; Public Law (PL) 91-190, as amended<sup>2</sup>), the Council on Environmental Quality's (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] 1500–1508)<sup>3</sup>, the Department of the Interior's NEPA regulations (43 CFR 46), and other relevant Federal and State laws and regulations.

## 1.2 Background

Congress passed the Colorado River Basin Project Act (Act) (PL 90-537) on September 30, 1968. The Act authorized the Secretary of the Interior (Secretary), through Reclamation, to construct the CAP, a water resource development and management project with the primary purpose of furnishing Colorado River water for irrigation, and municipal and industrial uses, in central and southern Arizona. On October 22, 1992, the Secretary entered into a water service contract with the

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<sup>2</sup> Division C, Title III of the Fiscal Responsibility Act of 2023, Pub. L. 118-5 (June 3, 2023).

<sup>3</sup> Including 87 FR 23453 (Apr. 20, 2022). The analysis in this EA is consistent with Administration priorities and policies, including Secretary's Order No. 3399, requiring bureaus and offices to use "the same application or level of NEPA that would have been applied to a proposed action before the 2020 Rule [85 FR 43304 (July 16, 2020)] went into effect."

Community for the annual delivery of 173,100 af of CAP water. On December 10, 2004, President Bush signed into law the Arizona Water Settlements Act of 2004 (PL 108-451), which authorized the Community's water rights settlement and, among other things, authorized the Reclaimed Water Exchange Agreement among the cities of Chandler and Mesa, Arizona, the Community, and the United States. Extensive investigation of different methods for delivery and use of CAP water on the Reservation determined that the Community could obtain maximum benefit by integrating its CAP and settlement waters with other Community water resources into a common-use irrigation delivery system. This common-use irrigation delivery system, known as P-MIP, would be capable of conveying irrigation water from all available sources to a maximum of 146,330 acres identified for agricultural development.

A Final Programmatic Environmental Impact Statement (FPEIS) was prepared for P-MIP in 1997 to comply with NEPA. The FPEIS described impacts associated with delivery and use of CAP water based on the best information available at that time. The FPEIS assessed the impacts of P-MIP at full development and committed to provide site-specific environmental evaluations of the separate project components as they receive consideration for implementation.

### **1.3 Project Location**

The RWPP would be located on the Reservation in northwestern Pinal County, Arizona, and crosses portions of the Blackwater and Santan Management Areas in Districts 2, 3, and 4 of the Reservation. The project area is bounded on the north by the Pinal–Maricopa County line (Reservation boundary), on the south by the 4 Mile Post Pump Station, on the east by the Pima Lateral, and on the west by Gila River Farms and Community farmland west of Interstate 10 (I-10) (Figures 2a–2e; see Figure 1).

### **1.4 Purpose and Need**

The purpose of the Proposed Action is to provide funding assistance to the Community for construction of the RWPP. The need for the RWPP is to deliver up to 15,700 af of Chandler's reclaimed water to be pumped upstream and 29,400 af of Mesa's reclaimed water to be gravity-fed and pumped upstream and south of the Gila River to provide irrigation water to existing agricultural land. The Proposed Action would help the Community to alleviate critical water shortages associated with continued and prolonged drought in the southwestern United States. The Secretary has issued a Tier 2a shortage declaration on the Colorado River for 2023, reducing CAP deliveries in Central Arizona. With the possibility of future shortage declarations, Community growers could face critical water shortages.

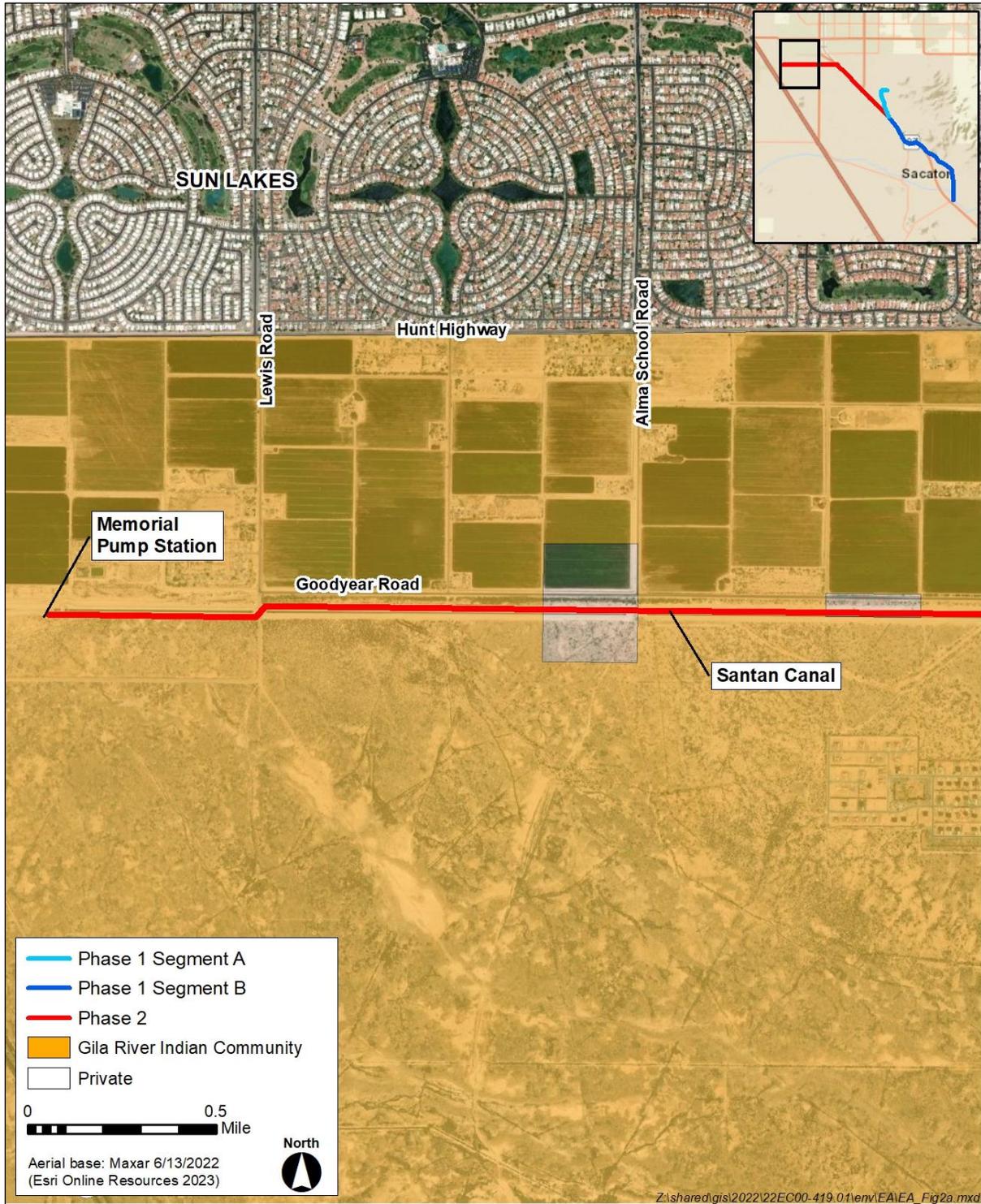


Figure 2a. Project location (1 of 5).

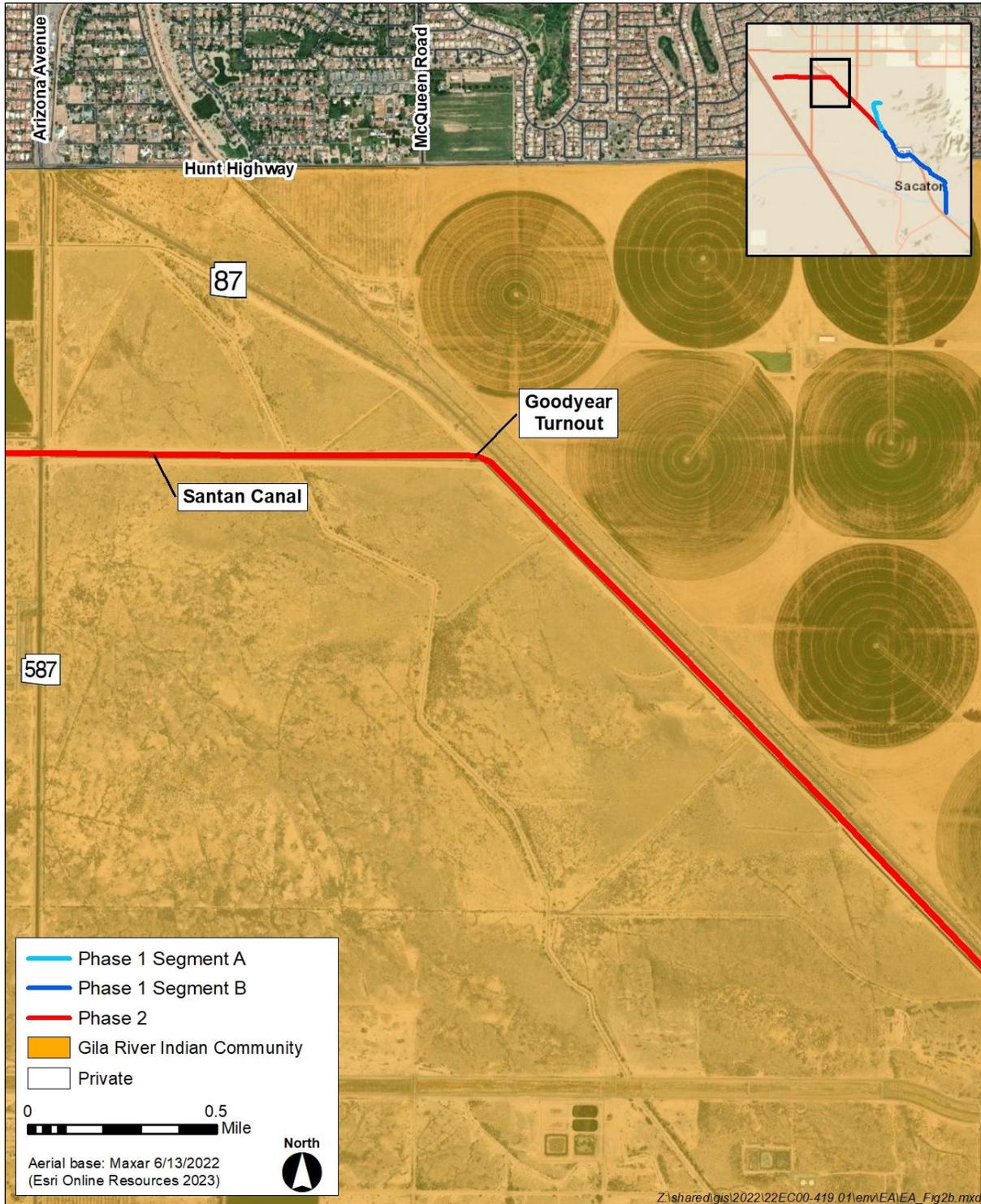


Figure 2b. Project location (2 of 5).

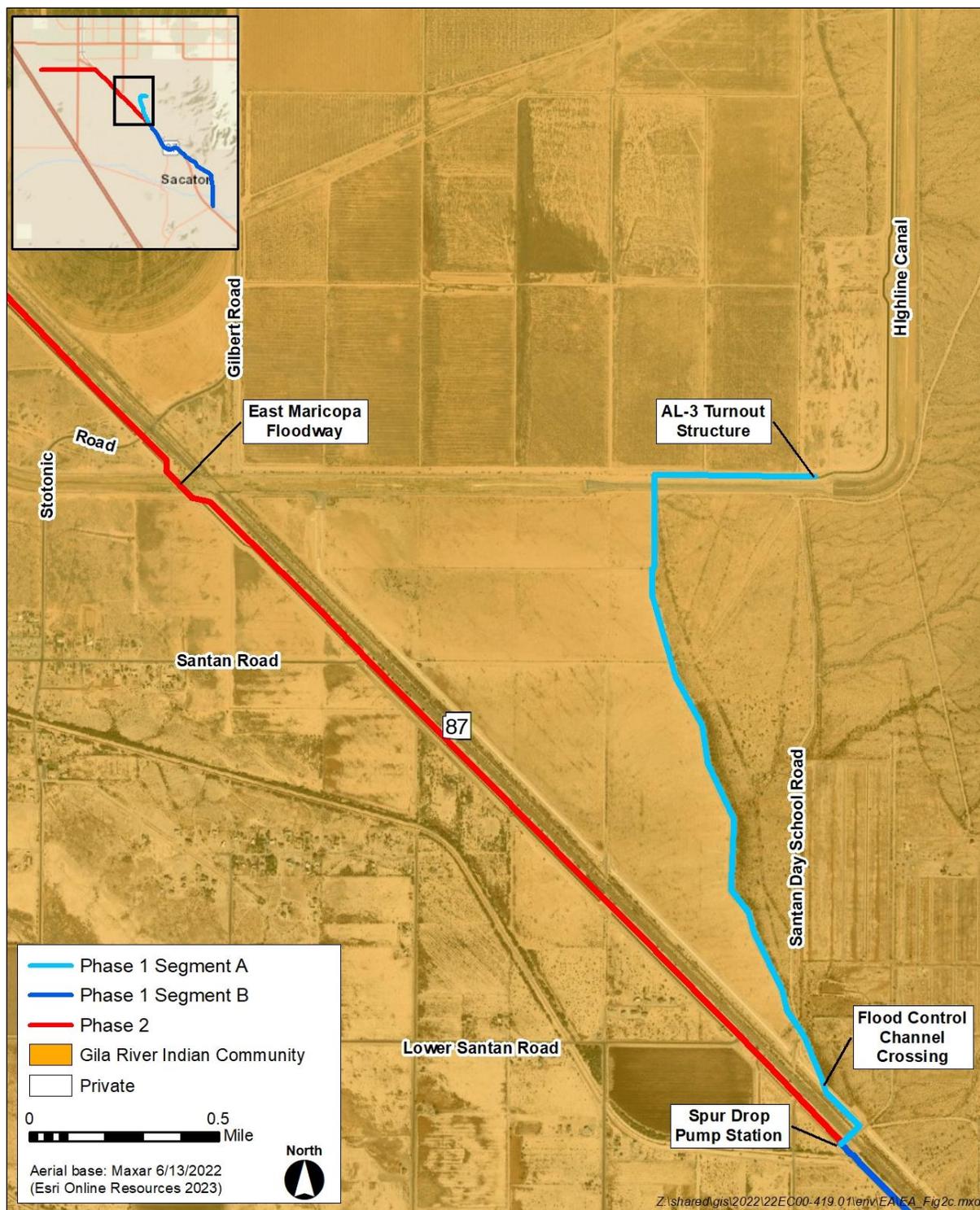


Figure 2c. Project location (3 of 5).

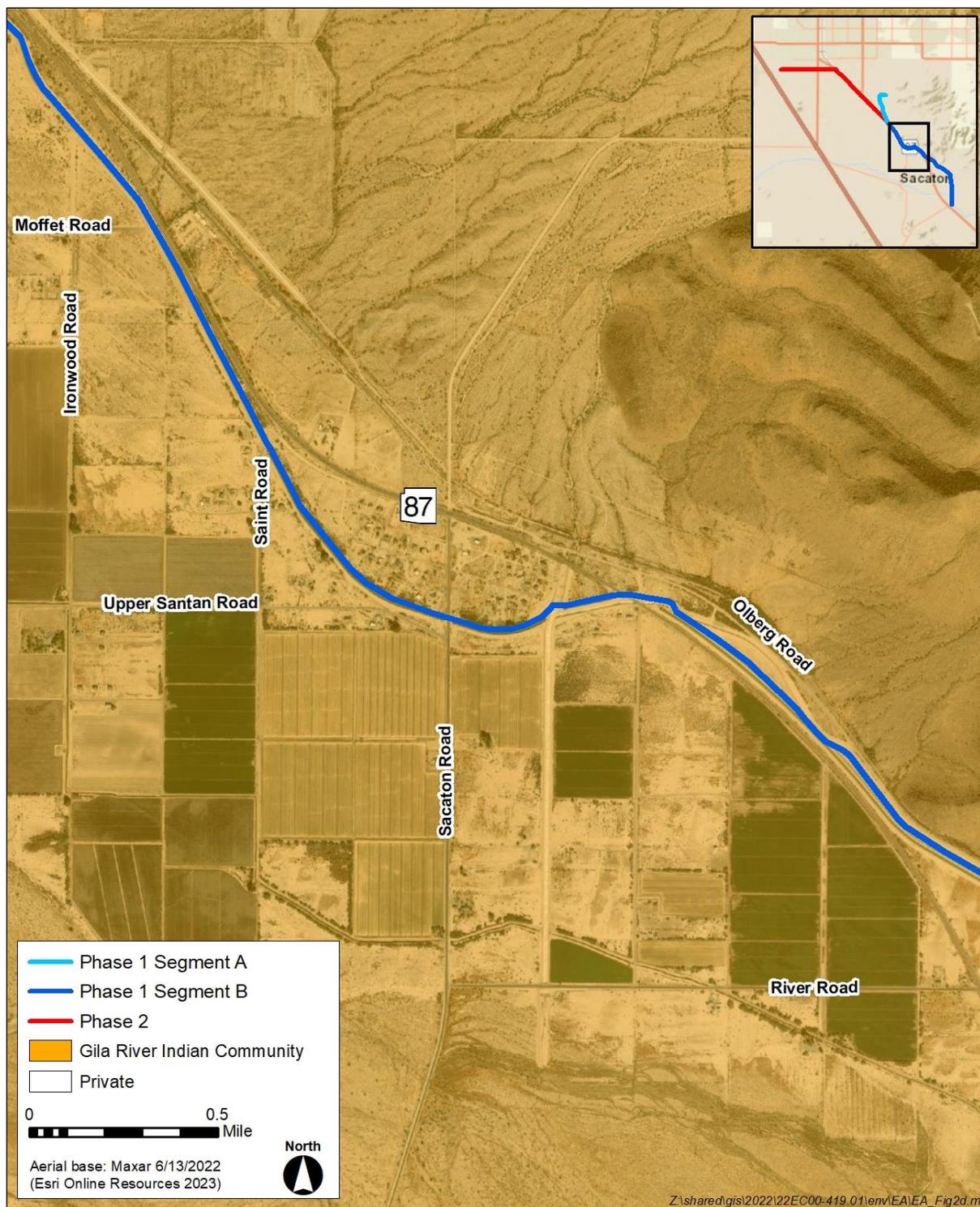


Figure 2d. Project location (4 of 5).

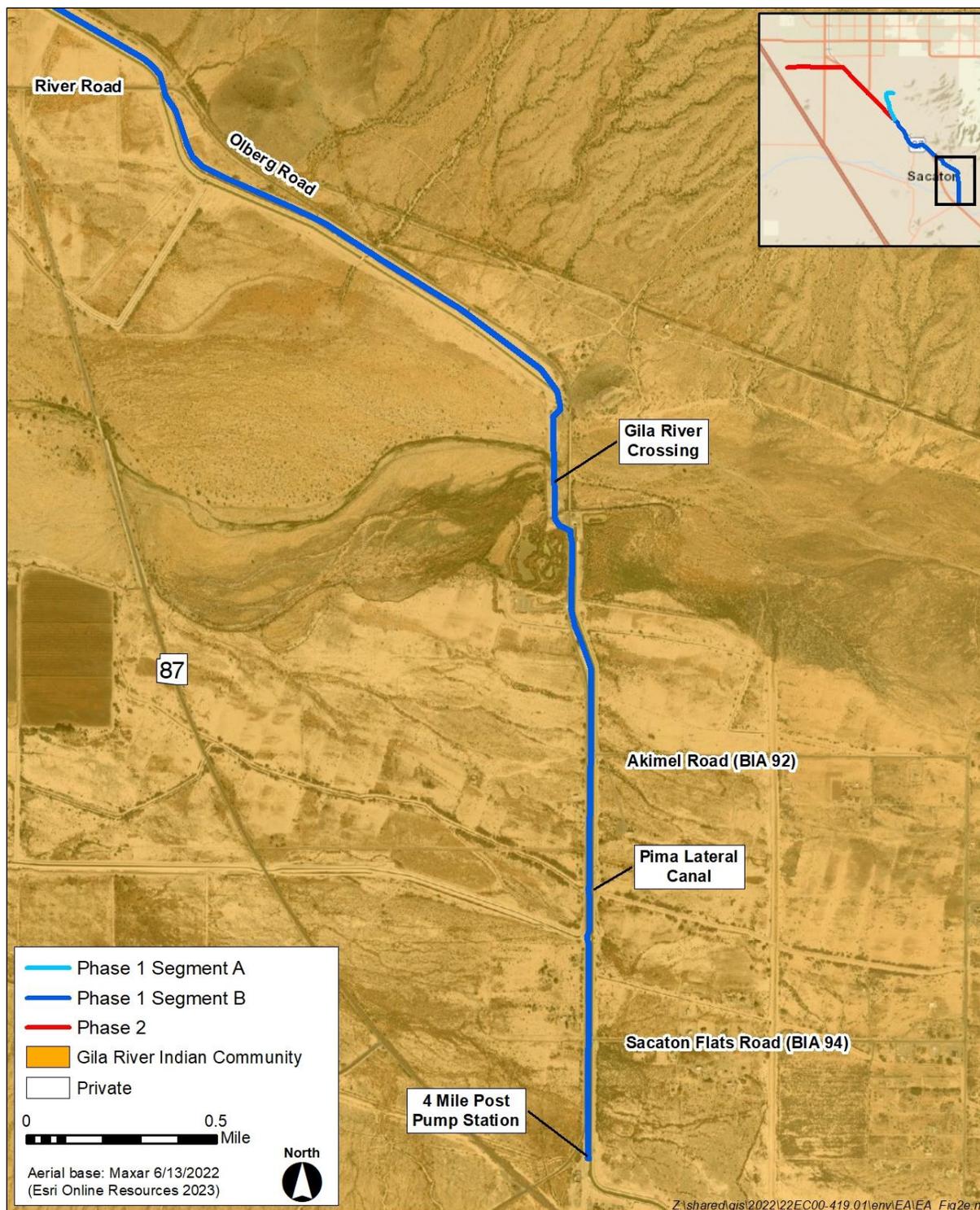


Figure 2e. Project location (5 of 5).

## **1.5 Cooperating Agencies**

The U.S. Bureau of Indian Affairs (BIA) Pima Agency and Western Region offices were invited to be cooperating agencies in preparation of this EA due to their jurisdiction by law and special expertise, in accordance with 40 CFR § 1501.8. The BIA Pima Agency office accepted the cooperating agency invitation and the Western Region office declined.

## **1.6 Prior Compliance with the National Environmental Policy Act**

In accordance with 40 CFR § 1501.12, agencies shall incorporate material, such as planning studies, analyses, or other relevant information, into environmental documents by reference when the effect will be to cut down on bulk without impeding agency and public review of the action. This EA incorporates by reference the information and analysis from the FPEIS for P-MIP (Reclamation 1997), the San Tan Area P-MIP EA and Finding of No Significant Impact (Reclamation 2001), and the Blackwater Area P-MIP EA and Finding of No Significant Impact (Reclamation 2003). Information from these NEPA analyses has been evaluated for updates and accuracy, and where necessary, the text reflects those updates.

## **1.7 Public Involvement**

Reclamation solicited input from the public on the Proposed Action to assist in identifying key issues and defining the scope of the project and environmental analysis. Reclamation conducted scoping via email and traditional mail. Project information was sent to all agencies and entities listed in Section 5.0. A 15-day comment period was initiated on April 13, 2023, and closed on April 28, 2023. Within the 15-day scoping period, Reclamation received two comments. Scoping comments are provided in Appendix C.

## 2.0 Proposed Action and Alternatives

### 2.1 Proposed Action

#### 2.1.1 U.S. Bureau of Indian Affairs

The BIA has a responsibility to respond to applications for right-of-way (ROW) over or across lands held in trust for Indian Tribes, and to address encroachments on BIA roads crossed by the RWPP. The BIA must review actions on Tribal lands held in trust for the benefit of the Community (25 USC 323–328 et seq.). BIA’s Federal action, pursuant to 25 CFR 169.2, would be to deny, grant, or grant with modifications the ROW agreements needed for implementation of the Proposed Action. The BIA Pima Agency office would be responsible for reviewing the ROW agreements necessary for the Proposed Action. In addition, BIA’s Western Region office would need to issue road encroachment permits for locations at which the proposed pipeline would cross BIA roads. For more information, see the *Rights-of-Way on Indian Lands Handbook* (BIA 2022) and its corresponding *Indian Affairs Manual* chapter on processing ROW (BIA 2021), which provides the general authorities and responsibilities for the BIA and is the official policy for processing ROW on Indian land. The BIA is relying on the environmental analysis within this EA to support its decisions related to the Proposed Action.

#### 2.1.2 Reclamation

Reclamation’s Federal action is to provide funding to the Community for the proposed RWPP, which would include the construction of approximately 19.2 miles of underground pipeline and two lift pump stations.

The Proposed Action includes two phases: Phase I and Phase II. Phase I includes the construction of the Mesa Reclaimed Water Pipeline and Phase II is the construction of the Chandler Reclaimed Water Pipeline. In total, the RWPP would be capable of distributing approximately 45,100 af of reclaimed water to support 77,000 acres of land for agricultural production. Construction is anticipated to begin in July 2023 and last approximately 18 to 24 months. The major components of each phase are summarized below, and detailed descriptions of each phase are provided in Sections 2.1.3 and 2.1.4.

##### 2.1.2.1 Phase I, Mesa Reclaimed Water Pipeline, Segment A

- Installation of approximately 2.5 miles of new 30-inch-, 42-inch-, and 48-inch-diameter pipeline
- Installation of the Spur Drop Pump Station with three vertical turbine pumps
- Installation of two Rubicon SlipMeter gates
- Coordination with the BIA to acquire ROW for approximately 63,883 square feet (1.46 acres) of Community trust land for crossing the East Maricopa Floodway (EMF)

- Although there are no road crossings on Segment A, P-MIP will secure encroachment permits from the BIA Western Regional Office for all BIA road crossings on Phase 1, Segment B and Phase 2.
- Directional drilling underneath the EMF

### **2.1.2.2 Phase I, Mesa Reclaimed Water Pipeline, Segment B**

- Installation of approximately 8.1 miles of 48-inch-diameter pipeline
- Directional drilling under the following features: State Route (SR) 87 and Casa Blanca Inlet Structure
- Open cut the following road crossings: Saint Road, Sacaton Road, River Road, Olberg Road, Sacaton Flats Road, and Akimel Road
- P-MIP will work with the BIA Western Regional Office to secure encroachment permits for all BIA road crossings, including Saint Road, Sacaton Road, River Road, Olberg Road, Sacaton Flats Road, and Akimel Road

### **2.1.2.3 Phase II, Chandler Reclaimed Water Pipeline**

- Installation of approximately 8.6 miles of 36-inch-diameter pipeline
- Installation of the Memorial Pump Station with two vertical turbine pumps
- Directional drilling underneath SR 587
- Open cut the following road crossings: Stotonic Road, Santan Road, Lower Santan Road, and Santan Day School Road
- P-MIP will work with the BIA Western Regional Office to secure encroachment permits for all BIA road ROW, including Stotonic Road, Santan Road, Lower Santan Road, and Santan Day School Road

## **2.1.3 Phase I, Mesa Reclaimed Water Pipeline**

Phase I Segment A would include installation of an approximately 2.5-mile-long underground 30-inch-, 42-inch-, and 48-inch-diameter gravity-fed pipeline (see Figures 2c–2e). The pipeline would begin at the existing Santan Ranch AL-3 turnout structure located at the end of the Highline Canal in the Santan Ranch Service Area. There is an existing 30-inch-diameter polyvinyl chloride (PVC) pipe that connects to an existing 30-inch-diameter stub-out pipe and then follows the existing AL-3 pipeline for about 2,250 feet. At this point, the new 30-inch-diameter PVC pipe and the existing AL-3 30-inch-diameter pipe enter a new pressure manhole box that delivers water south via a new 42-inch-diameter gravity-fed pipeline.

Two Rubicon SlipMeter gates would be installed at the existing AL-3 turnout structure to control flow. At the new pressure manhole box, the new proposed 48-inch-diameter pipe would turn south

and cross under the EMF within a new 50-foot-wide ROW for a length of 1,320 feet. The Community would work with the BIA Pima Agency to obtain one ROW acquisition that would be required south of the EMF totaling 63,883 square feet (1.47 acres) of Community trust land. The crossing of EMF would require a jack-and-bore directional drilling operation.

The new 42-inch-diameter pipeline would then follow the existing centerline of Canal 9-7.4N for about 4,700 feet and connect to the new 48-inch-diameter pipeline for approximately 3,907 feet. The new 48-inch-diameter pipeline would then connect to an existing 42-inch-diameter pipeline that crosses under the Union Pacific Railroad's Santan Spur and SR 87 to deliver water to the Santan Canal Reach via an existing turnout structure. The existing turnout structure is located on the right bank of the Santan Canal and on the upstream side of the existing check structure. The newly constructed Spur Drop Pump Station would be installed on the south bank of Santan Canal Reach and would consist of three vertical turbine pumps, each with a capacity of 30 cfs. The Spur Drop Pump Station would allow for Phase II connection that would bring City of Chandler A+ reclaimed water to the 4 Mile Post Pump Station.

Phase I Segment B would include installation of approximately 8.1 miles of underground 48-inch-diameter pressurized pipeline. The Phase I Segment B pipeline would begin at the proposed Spur Drop Pump Station and would be constructed within the existing ROW for the Santan Canal and the Pima Lateral Canal. The 48-inch-diameter pipeline would follow the existing operations and maintenance (O&M) road of the Santan Canal until the north side of the Gila River, at which point the 48-inch-diameter pipeline would turn south to cross the Gila River within the existing Gila River siphon ROW. The crossing of the Gila River would require an open cut trench of varying depth, but at maximum 30 feet deep and 8 feet wide for approximately 1,800 feet. Construction across the Gila River is anticipated to take 36 days and would not occur during the summer rainy season. The 48-inch-diameter pressure pipeline would then follow the left O&M road of the Pima Lateral Canal and terminate on the north side of the existing Four Mile Post inlet structure.

The Segment B pressure pipeline would cross under multiple BIA roads and SR 87. The BIA road crossings include Saint Road, Sacaton Road, Olberg Road, Akimel Road, and Sacaton Flats Road. The BIA roads would be crossed using the open cut method and the Community would work with the BIA Western Region Office to obtain road encroachment permits. The crossing of SR 87 (requiring an ADOT encroachment permit) and the Casa Blanca Canal Inlet structure would require a jack-and-bore directional drilling operation.

A majority of the Phase I Segment B pipeline would be installed within the existing canal O&M roads or adjacent to the canal toe of slope. The pipeline would be installed in a new 84-inch-wide trench, and the bore pits would be approximately 10-feet-deep and 20-feet-wide. All spoil would be temporarily stored on-site on the canal slope. Equipment required for construction would include an excavator, graders, a backhoe, a crane, a water truck, compactors, dump trucks, a pumper (for concrete placement), and pickup trucks. All equipment would be staged within existing canal O&M roads. New roads or modifications to existing roads would not be required for construction or

operations. The total construction footprint for the pipeline would vary in width from 120 feet to approximately 300 feet.

#### **2.1.4 Phase II, Chandler Reclaimed Water Pipeline**

Phase II Chandler Reclaimed Water Pipeline would include installing approximately 8.6 miles of underground 36-inch-diameter pressurized pipeline (see Figures 2a–2c). The pipeline would begin at the existing Memorial Pipeline check structure located at the end of the Santan Canal and west of Lewis Road in District 4 of the Community. A new pump station (Memorial Pump Station) would be installed at the Memorial Pipeline turnout. The pump station would include two vertical turbine pumps, with one serving as a backup pump. Both pumps would be used/operated on an equal basis to maintain pump function and reduce overall single pump wear. An additional small pump would also be installed to pump small flows (0–6 cfs). The pump station would include a surge tank, air/vacuum valve and vault, and mechanical and electrical equipment. Supervisory control and data acquisition facilities for remote gate/valve monitoring and control would be installed in addition to the major pump station components.

From the Memorial Pump Station, the pipeline would extend east toward SR 87 and south toward the Spur Drop Pump Station. The pipeline would be located within the existing Santan Canal ROW, with the majority within the existing Santan Canal embankment toe of slope. However, in areas where the existing ROW is limited, the new pipeline would be located within the existing Santan Canal O&M roads. The proposed pipeline would be installed on the south side of the canal until the Lewis Road alignment, at which time the pipeline would shift to the north. The pipeline would remain on the north side of the canal until it joins and terminates at the Spur Drop Pump Station.

The Phase II Chandler Reclaimed Water Pipeline would cross under several roads, including SR 587 (ADOT encroachment permit), and the following BIA roads for which P-MIP will work with the BIA Western Regional Office on encroachment permits: Stotonic Road, Santan Road, Lower Santan Road, and Santan Day School Road. Jack-and-bore directional drilling operations would be required at SR 587, with the remaining road crossings to be open cut.

The 36-inch-diameter PVC pressure pipeline would have a minimum cover of 3 feet and include air/vacuum valves spaced at approximately 0.25-mile intervals and high points, and associated cast-in-place or precast housing structures. Reinforced concrete structures include pump inlet and outlet structures, a pump station structure, pump manifold(s), pipe supports, inlet structures at the Memorial Turnout, and other miscellaneous structures.

A majority of the Phase I pipeline would be installed within the existing canal O&M roads or adjacent to the canal toe of slope. The pipeline would be installed in a new 60-inch-wide trench, and the bore pits would be approximately 10 feet deep and 20 feet wide. All spoils would be temporarily stored on-site on the canal slope. Equipment required for construction would include an excavator, graders, a backhoe, a crane, a water truck, compactors, dump trucks, a pumper (for concrete placement), and pickup trucks. All equipment would be staged within the existing canal O&M roads. New roads or modifications to existing roads would not be required for construction. The total

construction footprint for the Phase I pipeline would vary in width from 120 to approximately 300 feet.

Electrical work for all phases would include electrical power and controls for the new pump station; electrical equipment in the existing control building at the Memorial Pipeline turnout; control systems for the new vertical turbine pumps, including water level controls; a flow meter; underground electrical conduit and conductors adjacent to the existing control building for construction of the new pump stations; site lighting; and other electrical and control appurtenances.

## **2.2 No Action Alternative**

Under the No Action Alternative, Reclamation would not issue funding to the Community for the construction of the Proposed Action. Mesa and Chandler would continue to deliver reclaimed water to the Community pursuant to the Reclaimed Water Exchange Agreement and to distribute reclaimed water for beneficial reuse purposes to parks, schools, churches, businesses, golf courses, and city-owned aquifer recharge facilities. The No Action Alternative would prevent the construction of the RWPP and the delivery of up to 15,700 af of Chandler A+ reclaimed water and up to 29,400 af of Mesa A+ reclaimed water to the south side of the Gila River. The lands within and adjacent to the Community would continue to face the threat of water shortages and would not have access to the steady flow of Mesa and Chandler reclaimed water. The Community would not provide the 78,000 af in system efficiency water for the benefit of the Colorado River System over a 10-year period. Lands on Gila River Farms, the most at risk for shortages, would remain vulnerable and isolated from reclaimed water supplies, and growers within the Casa Blanca Service Area and growers along Canals 9 and 10 in the Santan Service Area would be limited to existing water resources. Selection of the No Action Alternative would also eliminate any additional water savings derived from less groundwater pumping on the Reservation.

## **2.3 Alternatives Considered but Eliminated from Further Study**

One additional alternative was evaluated that was ultimately determined to be infeasible. This alternative would have conveyed Chandler's reclaimed water as it currently is delivered to the Santan Canal Reach ST-ID/Memorial Pipeline inlet but instead of piping the water upstream, the water would be discharged in the upstream canal pool to back the water up, and then use pumps to lift the water from pool to pool. The same process would have been conducted with the Mesa reclaimed water. This alternative would have necessitated lift pumps at each of the 35 check/drop/road/siphon crossings. In addition, the first pool was too flat, and it would have been difficult or impossible to back the water up under SR 587 into the upstream pool, short of construction of an expensive lift station. Upon evaluation, this alternative was deemed impractical.

## 3.0 Affected Environment and Environmental Consequences

This chapter presents the resources in the project area that have the potential to be affected and discloses the potential environmental effects that would be reasonably expected from implementing the Proposed Action and alternatives. Best Management Practices (BMPs) or other mitigative or protective measures described in the following sections are considered part of the Proposed Action and are taken into consideration when predicting environmental consequences. Per 40 CFR 1508.1(g), effects (impacts) are defined as changes to the human environment from the Proposed Action or alternatives that are reasonably foreseeable. Cumulative effects are defined and described further in Section 4.0.

### 3.1 Impact Analysis Methods and Terminology

The impact analysis for each resource is focused only on areas where the applicable resource is likely to be impacted by the Proposed Action and alternatives. The term “project area” refers to all lands within a 0.25-mile radius of the pipeline, with the exception of groundwater resources. The project area for groundwater resources is described in Section 3.3.1. However, not all resources would experience impacts within the project area, and not all impacts from the Proposed Action or alternatives would extend across the entire analysis area.

For each resource, this section describes the current conditions, followed by an analysis of the impacts of the Proposed Action and alternatives using the following impact type descriptors:

- **Direct**—A direct impact is an effect on a resource that is caused by the action and occurs at a particular time and place.
- **Indirect**—An indirect impact is an effect on a resource that is caused by the action later in time or farther away and is still reasonably foreseeable (e.g., increased likelihood of nonnative, invasive species moving into the area after disturbance). Indirect impacts could occur upstream or downstream of any direct impacts due to hydrologic changes.
- **Negligible or inconsequential**—This indicates no measurable or observable change from current conditions: The impact on the resource would be at or below the levels of detection.
- **Minor or minimal**—This indicates a small, detectable, or measurable change. The impact could be:
  - outside the range of natural or typical variability but occur for a very brief duration; or
  - within the natural or typical range of variability but occur for a longer time. Mitigation, if implemented, would be easily applied and successful with a high degree of certainty.

- **Moderate**—This indicates an easily discernible or measurable change. The effects would either:
  - be readily apparent or would result in measurable impacts on the resource; these impacts would affect the availability or natural recovery of those environmental elements over the long-term; or
  - could be substantial but of a short duration with no permanent impact on the resource. It is anticipated that mitigation, if implemented, would be successful with a high degree of certainty, based on prior examples with similar effects and documented mitigation outcomes.
- **Major**—This indicates a large observable or measurable change. The effects would result in substantial impacts to the resource that would be readily apparent, consequential, and outside the natural or typical range of variability. Mitigation, if implemented, would be uncertain in its success, or ineffective with consequent long-term and permanent changes in the availability or natural recovery of the resource.
- **Beneficial**—This indicates a positive change in the condition, appearance, or function of the resource.
- **Adverse**—This indicates a negative change that moves the resource away from or detracts from its condition, appearance, or function.

The analysis captures effects to the extent reasonably possible, based on the best available information.

## **3.2 Resources Eliminated from Further Study**

The following resources were considered but are not addressed further in this EA because it was determined that the resources are not present or that minimal or no impacts would result from the Proposed Action.

### **3.2.1 Visual Resources**

The Proposed Action is located in a rural area surrounded by agricultural land, canals and irrigation facilities, and vacant desert lands. Primary visual elements in the landscape include agricultural fields, existing paved and dirt roadways, irrigation canals and facilities, transmission lines and poles, vacant desert land, and scattered residences. There are no designated scenic vistas or scenic roadways located in the project area. Construction of the Proposed Action would occur within a previously disturbed area and would be located primarily underground. The structures that would be installed would be consistent with the visual elements already present in the landscape. Impacts on visual resources would not occur.

### **3.2.2 Recreation**

The Community's MAR 5 Interpretive Trail is located south of the Gila River and approximately 500 feet west of the proposed Phase I Segment B pipeline. Construction of the pipeline would not

affect access to the trail or use of trail facilities. The nearest recreational facility to the Phase II pipeline is Oasis Park, located approximately 0.8 miles north of the proposed Memorial Pump Station within the Sun Lakes Country Club residential development. Construction of the Proposed Action would not affect opportunities or access for recreation at the park. There are no other designated parks or trails or opportunities for recreation in the project area, and impacts on recreation would be negligible.

### **3.2.3 Socioeconomics**

Impacts to socioeconomics are discussed in terms of effects on the economy, population, housing, tax revenues, property values, and public services. The Proposed Action would not create a substantial number of jobs that would affect the existing population, tax revenues, housing availability or property values, or public services. There would be no increase in demand for public housing or public services. The jobs created would be temporary and represent a negligible temporary increase in employment. Providing reclaimed water for continued agricultural production will provide benefits to tribal landowners and growers who will be able to rely on a permanent supply of water during times of severe drought and shortage declarations on the Colorado River and water shortages on the Gila River. This in turn will have a minor beneficial effect for local landowners and the local economy.

### **3.2.4 Noise**

There are a few scattered residences located along the entire project that may be exposed to noise from equipment and vehicles during construction. However, the level of noise would be similar to the noise generated from vehicle traffic along SR 87 and other roadways in the project area and would not be considered substantial. Construction noise would be short-term, temporary, and localized to the project site. Impacts related to noise would be minor.

### **3.2.5 Environmental Justice**

Environmental justice analyzes the potential for disproportionately high and adverse human health and environmental impacts to occur on minority or low-income populations. The 2020 U.S. Census data and the U.S. Environmental Protection Agency (EPA) Environmental Justice Mapping and Screening Tool were reviewed to determine the presence of environmental justice communities. Minority and low-income populations consisting predominantly of Native Americans are located in the project area (EPA 2022a; U.S. Census Bureau 2020). Temporary and negligible adverse environmental and human health impacts may occur on these populations during construction of the Proposed Action. Impacts would be related to noise, fugitive dust, and other types of disruption occurring during construction and are not considered disproportionately high or adverse. Providing reclaimed water for continued agricultural production is expected to have a minor beneficial economic impact on minority and low-income populations.

### **3.2.6 Land Use**

The Proposed Action is located entirely on lands under the jurisdiction of the BIA and within Community Districts 2, 3, and 4. The Community is in a rural area with a population of 10,498

residents (U.S. Census Bureau 2020). The Phase I pipeline is located within Community Districts 2 and 3. District 2 is the smallest district and is primarily residential, and District 3 is approximately 39 square miles and includes the community of Sacaton, which is the center of commerce and government activity for the Community (Community 2015). The Phase II pipeline is located within Community District 4. District 4 is approximately 119 square miles and contains the most commercial, agricultural, business, and industrial development due to its close proximity to the Phoenix metropolitan area and access from I-10. Land uses in the project area and immediately surrounding the pipeline consist primarily of agricultural fields, vacant desert lands, existing paved and dirt roadways, transmission lines and poles, scattered residences, and irrigation facilities. There are no commercial or industrial buildings or facilities in the project area. Construction of the pipeline would occur along existing canals and canal O&M roads and would be consistent and compatible with the existing land uses already in the project area. Impacts on land use would not occur.

### **3.2.7 Hazardous Materials**

There are no brownfields, landfills, hazardous waste sites, Superfund sites, or hazardous waste generators located in the project area (ADEQ 2023a). The Proposed Action would involve the transport, use, and disposal of hazardous materials during construction. Hazardous materials that may be transported and used during construction include diesel fuel, solvents, hydraulic fluid, and oil for equipment and trucks. All hazardous materials would be used in small quantities, transported and stored in designated areas designed to prevent accidental release to the environment, and disposed of according to the rules and regulations of Community, State, and Federal agencies. Existing emergency response services would have the capacity to respond to any potential inadvertent spills or project-related incidents, which would be minimized through project design and implementation of industry standards. Impacts related to hazardous materials are not anticipated.

### **3.2.8 Public Health and Safety**

Potential risks to public health and safety associated with construction of the project may include falling or tripping, exposure to extreme weather, wildfires, exposure to hazardous materials, and injury from equipment and materials. All project personnel will strictly adhere to Occupational Safety and Health Administration safety requirements and protocols to minimize the risk of accident or injury. All Federal, State, and Tribal laws, ordinances, rules, and regulations pertaining to fire prevention and suppression would be strictly adhered to. All personnel would be advised of their responsibilities under the applicable fire laws and regulations, and all personnel would carry suppression tools and equipment. Specific construction-related activities and safety measures would be implemented during construction to prevent fires and to ensure quick response and suppression if a fire occurs.

### **3.2.9 Topography and Geology**

Topography in the project area generally ascends from northwest to southeast. Elevations range from approximately 1,194 feet at the new Memorial Pump Station to 1,309 feet at the 4 Mile Post Pump Station. The project is located in the Basin and Range physiographic province. This province is characterized by the abrupt elevation differences between the narrow mountain ranges and

adjacent, arid flat valleys. The project is in the Middle Gila River Watershed and skirts the upper terraces of the Gila River floodplain and the western toe of the Santan Mountains. The Proposed Action would be within an already disturbed area and follows the alignment of existing canals; construction would not impact the topography or the geology of the project area.

### **3.2.10 Traffic and Transportation**

The Proposed Action crosses the following road segments under the jurisdiction of the BIA—Saint Road, Sacaton Road, River Road, Olberg Road, Sacaton Flats Road, Akimel Road, Stotonic Road, Lower Santan Road, and Santan Day School Road—as well as SR 87 and SR 587. The BIA roadways will be crossed via an open cut. Motorists may experience a minor disruption to travel along these roads during construction. The delays would be of short duration. The state roads would be crossed via jack-and-bore directional drilling traffic. Traffic would remain open; however, motorists may experience minor disruptions during the drilling procedures.

## **3.3 Air Quality, Including Climate Change**

### **3.3.1 Affected Environment**

The Community's Department of Environmental Quality Air Quality Program (AQP) has developed a set of regulations for air pollution sources that are outlined in the Community's Air Quality Management Plan. The Community has the authority to regulate sources of air pollution, conduct compliance inspections, and take enforcement actions in the Community through its AQP. The Community's Air Quality Ordinance also regulates, monitors, and requires permits for all major stationary sources of emissions. These major sources are typically associated with larger industrial facilities. Although there are several regulated facilities in Pinal County, there are no regulated facilities or major stationary sources of emissions located in the project area.

The EPA regulates criteria air pollutants using National Ambient Air Quality Standards (NAAQS), including six nationally regulated ambient air pollutants (criteria pollutants). These criteria pollutants include carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), sulfur dioxide, and lead. The NAAQS are intended to protect public health by setting limits on the allowable level of each pollutant in the ambient air. The Community's AQP operates three regulatory stations that record ambient concentrations of two criteria pollutants: PM<sub>10</sub> and O<sub>3</sub>. The AQP does not monitor for the other pollutants because they have been found, through sampling and emission inventory, to be at background ambient air quality concentrations, and there are no major stationary pollution sources that emit these criteria pollutants within the Community's jurisdictions (Community 2022). If the air quality in a geographic area meets the NAAQS for a criteria pollutant, it is called an attainment area for that pollutant. If the air quality in a geographic area does not meet the NAAQS for a criteria pollutant, it is called a nonattainment area for that pollutant. The project area is currently in attainment for all criteria pollutants (Table 1; ADEQ 2023a). Sources of PM<sub>10</sub> emissions within the Community and project area include fugitive dust generated by land disturbances such as industrial and construction activities, agricultural activities,

dust storms, and wildfires. The major source of CO, NO<sub>2</sub>, PM<sub>2.5</sub>, and O<sub>3</sub> is exhaust generated by vehicles traveling on I-10 and the surrounding area.

**Table 1. Gila River Indian Community Attainment Status for National Ambient Air Quality Standards**

NAAQS	Land Area <sup>a</sup>	Status
Lead	Main Reservation	Unclassifiable/attainment
NO <sub>2</sub>	Main Reservation	Unclassifiable/attainment
Sulfur dioxide	Main Reservation	Unclassifiable/attainment
CO	Main Reservation	Unclassifiable/attainment
2012 PM <sub>2.5</sub>	Main Reservation	Unclassifiable/attainment
2008 8-hour O <sub>3</sub>	Main Reservation	Unclassifiable/attainment
2015 8-hour O <sub>3</sub>	Main Reservation	Attainment
1987 PM <sub>10</sub>	Main Reservation—portion in Maricopa County	Serious nonattainment; part of Phoenix Nonattainment Area
	Main Reservation—portion in Pinal County	Undesignated; deferred

Note: Data provided by GRIC Department of Environmental Quality, June 28, 2023.

<sup>a</sup> The project area is located within lands identified as Main Reservation.

Climate change includes major changes in temperature, precipitation, and wind patterns that occur over an extended period. Climate change and increasing temperatures are caused mostly by increasing concentrations of greenhouse gases (GHGs) in the atmosphere. The largest source of GHG emissions from human activities in the United States is from burning fossil fuels for commercial and residential uses, transportation, agriculture, industrial processes, and electric power (EPA 2022b). According to the climate profile of the Community, the largest source of GHG emissions are from vehicles traveling on I-10 (Meadow et al. 2017).

Sensitive receptors are residences, schools, and hospitals where children, the elderly, the acutely or chronically ill, and others who are sensitive to air pollution are at a higher risk of developing negative health symptoms if exposed to air pollution. Two or three existing residences are located along the Phase I pipeline west of Olberg Road and north of Indian Route 94, and a few residences are located north and south of the pipeline near Sacaton Road. The nearest residences to the Phase II

pipeline are located west of the pipeline near Lower Santan Road and north of the pipeline near Lewis Road. The Santan Head Start facility is located approximately 1.0 mile west of the pipeline and south of Lower Santan Road.

### **3.3.2 Environmental Consequences**

#### **3.3.2.1 No Action**

Under the No Action Alternative, the pipeline and associated facilities would not be constructed, and impacts related to fugitive dust, air quality, and GHGs would not occur.

#### **3.3.2.2 Proposed Action**

Potential effects to air quality from construction of the Proposed Action on local and regional air quality could result from fugitive dust emissions and vehicle exhaust emissions, primarily during construction of the Proposed Action. The main sources of fugitive dust (particulate matter, PM<sub>10</sub> and PM<sub>2.5</sub>) in the vicinity of the project area would include vehicular traffic on unpaved roads, surface disturbances created during construction of the pipeline, and windblown dust from disturbed areas. Fugitive dust would be reduced through watering or other dust control measures. With the implementation of BMPs for dust control, effects from fugitive dust would be short-term and minor, and would not require additional measures to minimize or avoid adverse impacts.

During construction there would be short-term, localized, and minor increases in vehicle emissions associated with the Proposed Action. Once construction is completed, operation of the Proposed Action is not expected to contribute to measurable or detectable impacts to air quality. GHG emissions generated during construction of the Proposed Action would be short-term, highly localized, and not substantial enough to cause a violation or exceedance of the existing NAAQS or GHG emission thresholds or cause a significant impact on air quality. GHG emissions from the Proposed Action would equate to an infinitesimal amount of the total worldwide GHG inventory. As such, the Proposed Action would have a minor effect on climate change.

### **3.3.3 Best Management Practices**

During construction of the Proposed Action, the following best management practices would be implemented:

#### **3.3.3.1 Fugitive Dust Control**

- All active construction areas, including on-site haul roads, contractor use areas, and open stockpiles, would be effectively stabilized against dust emissions by applying water, other reasonable measures, or both.
- Land disturbances would be limited to areas needed for construction.
- Speeds of less than 25 miles per hour would be maintained within the construction footprint.
- Trucks hauling soil or sediment would be covered.

### **3.3.3.2 Administrative Controls**

- Locate diesel engines, motors, and equipment staging area as far as possible from residential areas and other sensitive receptors (e.g., schools, daycare centers, hospitals, senior centers).
- Reduce construction-related trips of workers and equipment, including trucks.
- The contractor would not be permitted to dispose of construction materials by burning.
- The contractor would not operate equipment and vehicles that show excessive exhaust emissions until corrective repairs or adjustments are made to reduce such emissions to acceptable levels. Unnecessary idling of diesel-powered construction equipment would be minimized.

## **3.4 Water Resources**

### **3.4.1 Affected Environment**

#### **3.4.1.1 Floodplains**

Executive Order (EO) 11988, Floodplain Management, addresses the potential loss of the natural functions of floodplains as well as the increased cost to Federal, State, and local governments from flooding caused by floodplain development. Federal agencies are required to avoid to the extent possible the long- and short-term adverse impacts associated with floodplain development. The regulatory floodplain is defined by areas inundated by a 100-year or 500-year rain event. For most projects, any activities occurring in the 100-year floodplain require analysis under EO 11988. For any activities associated with a critical facility, such as a hospital or fire department, the 500-year floodplain triggers the EO (Federal Emergency Management Agency [FEMA] 2015). The project area is located within FEMA floodplain Zone D. Zone D consists of areas with possible but undetermined flood hazards and where no flood hazard analysis has been conducted. The Proposed Action is not located within the 100-year floodplain, and there are no special flood hazard areas in the project area.

#### **3.4.1.2 Surface Water**

The Clean Water Act and EO 11990 for Protection of Wetlands requires Federal agencies to minimize the destruction, loss, or degradation of wetlands and preserve and enhance the natural and beneficial values of wetlands. In accordance with the Clean Water Act and EO 11990, a review was conducted to evaluate the surface water features in the project area to identify the presence of wetlands and other potential Waters of the United States (WOTUS). The desktop review identified several ephemeral drainage features in the project area mapped by the ADEQ and the U.S. Fish and Wildlife Service (USFWS), including the Gila River (ADEQ 2023a; USFWS 2023b). A jurisdictional delineation of potential WOTUS was not conducted; however, the ephemeral drainages identified within the project area are presumed to be WOTUS. These ephemeral drainages generally flow in a southwesterly direction and do not intersect or flow into the project area. The Gila River is classified as Riverine Wetlands, which includes wetlands and deepwater habitats contained within a channel, and flows intermittently. Due to the upstream diversions and flood and irrigation control structures,

the Gila River within the Community has ephemeral and perennial flow patterns. None of the other ephemeral drainage features in the project area cross the proposed pipeline, with the exception of the Gila River. The Phase I Segment B pipeline would be an open cut across the Gila River. There are no permanent surface water features in the project area.

### **3.4.1.3 Groundwater**

The RWPP is located within the Pinal Active Management Area (AMA), which covers approximately 4,000 square miles in central Arizona. The AMA consists of five subbasins with unique groundwater underflow, storage, and surface water characteristics. These subbasins include Maricopa-Stanfield, Eloy, Vekol Valley, Santa Rosa Valley, and Aguirre Valley. The boundaries of the subbasins follow the highest elevation of topographic divides separating areas from where surface water runoff emanates. The boundaries that separate the Eloy and Maricopa-Stanfield subbasins also signify the presence of groundwater divides that define the extent of groundwater underflow (ADEQ 2023b).

## **3.4.2 Environmental Consequences**

### **3.4.2.1 No Action**

Under the No Action Alternative, the pipeline and associated facilities would not be constructed, and impacts related to water resources would not occur.

### **3.4.2.2 Proposed Action**

#### **Surface Water and Floodplains**

Construction of the pipeline would result in surface disturbance that could increase the potential for erosion, sedimentation, and surface runoff. The removal of vegetation and compaction of soils from construction vehicles and equipment have the potential to cause erosion and stormwater runoff and affect nearby surface water features or drainages. Impacts associated with erosion and stormwater runoff would be minimized through implementation of the conservation and mitigation measures that follow. Erosion control measures would minimize erosion by directing runoff away from disturbed areas, decreasing velocities, and improving water infiltration. Surface disturbance would also be limited to project-specific approved areas, and a project-specific Stormwater Pollution Prevention Plan would be required to minimize impacts. Reclamation of disturbed land after construction would stabilize disturbed areas, reducing long-term impacts associated with erosion. Construction of the pipeline across the Gila River would be permitted under a Clean Water Act Section 404 non-notifying Nationwide Permit 58—Utility Line Activities for Water and Other Substances. Construction activities would follow the guidelines and special conditions outlined in the permit.

Construction of the Proposed Action would enable up to 15,700 af of Chandler reclaimed water to be pumped upstream and 29,400 af of Mesa reclaimed water to be gravity-fed and pumped upstream and south of the Gila River, where it can be used by existing agricultural producers who are facing water shortages. The use of reclaimed water would facilitate conservation of surface water supplies, reduce the need to construct new water supply facilities, and reduce discharge and disposal costs for

wastewater. Transporting the water via pipeline rather than open canal may also reduce the amount of water lost through evaporation.

### **Groundwater**

The project area for groundwater resources includes a 5-mile buffer around the pipeline. Construction of the Proposed Action would enable up to 15,700 af of Chandler reclaimed water to be pumped upstream and 29,400 af of Mesa reclaimed water to be gravity-fed and pumped upstream and south of the Gila River. The use of reclaimed water could reduce reliance on existing groundwater supplies, reduce groundwater aquifer pumping, and reduce energy consumption related to water pumping and transport. The use of reclaimed water would allow water to remain in the environment and be preserved for future uses while meeting the water requirements of the present.

Class A+ reclaimed water is wastewater that has undergone secondary treatment, filtration, nitrogen removal treatment, and disinfection. These treatments are in place to protect public health and water resources. Due to existing treatment, the use of reclaimed water on existing agricultural fields is not anticipated to cause groundwater quality impacts related to infiltration.

Water would be required during construction of the pipeline for dust abatement, trench dewatering, and horizontal directional drilling. The quantity of water required would not be considered substantial, and water use would be temporary. Water would be hauled to the site using water haul trucks. Groundwater use or withdrawal would not be required.

### **3.4.3 Best Management Practices**

The following measures would be implemented to reduce impacts on water resources:

- Construction materials would not be stockpiled in areas where they can be washed away by high water or storm flows.
- The construction contractor's petroleum product storage would be located at least 20 feet from storm water channels, washes, and rivers. The petroleum storage areas would be lined and diked to permit safe containment of leaks and spills.

## **3.5 Soils**

### **3.5.1 Affected Environment**

The Reservation and the project area are in the Lower Colorado River Valley subdivision of the Sonoran Desertscrub portion of the Basin and Range Physiographic Province. The Reservation is characterized by broad desert plains dissected by arroyos, valleys, and rugged low-lying mountains. Elevations range from 1,600 feet above mean sea level east of the Reservation to less than 1,000 feet at the northwest corner. Toward the east and northeast of the Reservation, the terrain slopes upward to an elevation of more than 5,000 feet in the Superstition Mountains (U.S. Geological Survey [USGS] 1991).

Major soil types within the Phase I pipeline project area include Denure-Pahaka complex, Shontik-Redun complex, Gadsden silty clay loam, and Gadsden silty clay loam. These sandy loam and silty loam soils are formed in alluvium fans and located on 0–3% slopes. The Denure-Pahaka and Shontik-Redun complex consist of deep, well-drained soils with low runoff rates and moderate permeability (Natural Resources Conservation Service [NRCS] 2023). Gadsden soils consist of very deep, well-drained soils with low runoff rates and permeability. The Gadsden and Shontik-Redun soils are considered Farmland of Unique Importance. Unique farmland is land other than prime farmland that is used to produce specific high-value food and fiber crops, such as citrus, tree nuts, olives, cranberries, and other fruits and vegetables. The Denure-Pahaka soils are considered prime farmland if irrigated.

Major soil types in the Phase II pipeline project area include Casa Grande complex, Kamato complex, and Shontik-Redun complex. These sandy loam and fine sandy loam soils are formed in alluvium and mixed alluvium and located on 0–3% and 0–5% slopes (NRCS 2023). All three soils types are deep, well-drained soils with low runoff rates and permeability, and are considered Farmland of Unique Importance.

Due to the existing canals, irrigation facilities, and O&M roads in the project area, most of the soils have been previously disturbed. Construction of the pipeline would occur within a 120- to 300-foot-wide ROW parallel to the existing San Tan Canal and Highline Canal, and within existing canal O&M roads on previously disturbed soils.

### **3.5.2 Environmental Consequences**

#### **3.5.2.1 No Action**

Under the No Action Alternative, the pipeline and associated facilities would not be constructed. No ground disturbance or impacts on soils would occur.

#### **3.5.2.2 Proposed Action**

Pipeline construction activities, such as clearing, grading, trench excavation, backfilling, and heavy equipment traffic, could result in minor impacts to soil resources along the construction ROW, in temporary work areas, and on existing access roads. Construction and ground disturbance could result in soil compaction, loss of soil due to accelerated wind and water erosion, and reduction in soil productivity. Trenching and clearing could remove protective vegetation cover and expose soils to the effects of wind erosion and the transport of sediment. However, the entire pipeline is being constructed along Highline Canal, Santan Canal, and along existing canal dirt O&M roads in areas that have been heavily disturbed. There is little to no vegetation within the proposed pipeline corridor. Excavated soil would be stockpiled on-site on the canal slope and be used for backfilling. Soil stockpiles would be covered to prevent wind erosion and soil loss. The soils located in the project area are primarily composed of sandy and silty loam and are not prone to compaction. Construction would not occur during high wind conditions to prevent soil erosion. Although there are soils within the corridor that are considered Farmland of Unique Importance, the soils are not

being irrigated or used for agriculture or crop production; therefore, no impacts to Farmland of Unique Importance would occur.

## 3.6 Biological Resources

### 3.6.1 Affected Environment

#### 3.6.1.1 Vegetation

A biological field survey was conducted for the project area by a qualified senior biologist on January 6 and 11, 2023. A Biological Evaluation was prepared for the Proposed Action in March 2023 (Pavlick 2023). The sections below summarize the results of the Biological Evaluation.

The project area is mapped as Lower Colorado River subdivision of the Sonoran Desertscrub biome, as described by Brown (1994). The project area is in the Middle Gila River Watershed and skirts the upper terraces of the Gila River floodplain and the western toe of the Santan Mountains. Elevations range from 1,194 feet at the new Memorial Pump Station to 1,309 feet at the 4 Mile Post Pump Station. Phase I Segment A descends from approximately 1,286 feet at its origin to 1,270 feet at the Spur Drop Pump Station (Pavlick 2023). The biological field survey indicated that nearly all the project limits are barren and maintained for access on both sides of the canal. The project limits are primarily surrounded by existing canals, fallow and active cropland, range, and roadways.

Areas with natural vegetation in the Phase I and Phase II project areas are generally homogenous desert shrub-scrub communities. Dominant plants include creosote bush (*Larrea tridentata*), desert broom (*Baccharis sarothroides*), and saltbush (*Atriplex* spp.), with occasional patches of small velvet mesquite (*Prosopis velutina*), paloverde (*Parkinsonia microphylla*), catclaw acacia (*Senegalia greggii*), and wolfberries (*Lycium* spp.). A general list of plants observed in the project area during the biological field survey is provided in Table 2.

**Table 2. Plants Observed in the Project Area**

Common Name	Scientific Name
<b>Trees</b>	
Five-stamen tamarisk	<i>Tamarix chinensis</i>
Ironwood	<i>Olneya tesota</i>
Tree tobacco	<i>Nicotiana glauca</i>
Velvet mesquite	<i>Prosopis velutina</i>
Yellow [foothill] paloverde	<i>Parkinsonia [Cercidium] microphylla</i>
<b>Shrubs</b>	
Berlandier's wolfberry	<i>Lycium berlandieri</i>
Brittlebush	<i>Encelia farinosa</i>
Broom snakeweed	<i>Gutierrezia sarothrae</i>
Catclaw acacia	<i>Senegalia [Acacia] greggii</i>
Cattle saltbush	<i>Atriplex polycarpa</i>

<b>Common Name</b>	<b>Scientific Name</b>
Creosote bush	<i>Larrea tridentata</i>
Desert broom	<i>Baccharis sarothroides</i>
Four-wing saltbush	<i>Atriplex canescens</i>
Lotebush [graythorn]	<i>Ziziphus obtusifolia</i>
Rubber rabbitbrush	<i>Ericameria nauseosa</i>
Russian thistle	<i>Salsola kali</i>
Spiny [desert] hackberry	<i>Celtis [pallida] ehrenbergiana</i>
Triangle bur ragweed [triangle-leaf bursage]	<i>Ambrosia deltoidea</i>
Water jacket [Anderson's wolfberry]	<i>Lycium andersonii</i>
<b>Cacti</b>	
Engelmann's hedgehog cactus	<i>Echinocereus engelmannii</i>
Saguaro	<i>Carnegiea gigantea</i>
<b>Grasses</b>	
Bermudagrass	<i>Cynodon dactylon</i>
Big sacaton	<i>Sporobolus wrightii</i>
Carelessweed [Palmer's amaranth]	<i>Amaranthus palmeri</i>
Common dandelion	<i>Taraxacum officinale</i>
Lehmann lovegrass	<i>Eragrostis lehmanniana</i>
Pelotazo	<i>Abutilon incanum</i>
Silverleaf nightshade	<i>Solanum elaeagnifolium</i>
Tobosagrass	<i>Pleuraphis mutica</i>
<b>Non-native Species</b>	
Buffelgrass	<i>Pennisetum ciliare</i>
London rocket	<i>Sisymbrium irio</i>

### 3.6.1.2 Wildlife

Wildlife in the project area is typical of those species associated with the Lower Colorado subdivision and the Arizona Upland subdivision of Sonoran Desertscrub. Wildlife observed during biological field survey consisted primarily of raptors and waterfowl in existing canals. Wildlife observed in the project area at the time of the biological survey are provided in Table 3.

Federally listed Threatened, Endangered, or Candidate species evaluated in the project area were based on the biological field survey and official species lists provided by the USFWS through the Information for Planning and Consultation website. Two Threatened, one Candidate, and one experimental population were found to occur in the project area. There is no critical habitat in the project area. The species evaluated and their effects determination are provided in Table 4. The project area also contains suitable habitat for burrowing owl (*Athene cunicularia*), a listed migratory bird. Although burrowing owl has the potential to occur in the project area and the Proposed Action may impact individuals or their habitat, it is unlikely to contribute toward Federal listing or the loss of viability for the species. The Community does not have its own Tribal sensitive species list.

**Table 3. Wildlife or Signs of Wildlife Observed in the Project Area**

<b>Common Name</b>	<b>Scientific Name</b>
<b>Mammals</b>	
Coyote	<i>Canis latrans</i>
Ringtail	<i>Bassariscus astutus</i>
<b>Birds</b>	
Turkey vulture	<i>Cathartes aura</i>
Great egret	<i>Ardea alba</i>
Great blue heron	<i>Ardea herodias</i>
Double-crested cormorant	<i>Nannopterum auritum</i>
Common merganser	<i>Mergus merganser</i>
American coot	<i>Fulica americana</i>
Mallard	<i>Anas platyrhynchos</i>
Redhead	<i>Aythya americana</i>
Lesser scaup	<i>Aythya affinis</i>
Killdeer	<i>Charadrius vociferus</i>
Mourning dove	<i>Zenaida macroura</i>
Cliff swallow	<i>Petrochelidon pyrrhonota</i>
American kestrel	<i>Falco sparverius</i>
Red-tailed hawk	<i>Buteo jamaicensis</i>
Northern harrier	<i>Circus cyaneus</i>
Common black hawk	<i>Buteogallus anthracinus</i>
Ferruginous hawk	<i>Buteo regalis</i>
Common raven	<i>Corvus corax</i>
Black-throated sparrow	<i>Amphispiza bilineata</i>
<b>Fish</b>	
Common carp	<i>Cyprinus carpio</i>

**Table 4. Listed and Proposed Species Excluded from Further Evaluation with a No Effect Determination**

<b>Common Name Scientific Name</b>	<b>Status</b>	<b>Habitat Requisites and Distribution</b>	<b>Exclusion Rationale</b>
Sonoran pronghorn <i>Antilocapra americana sonoriensis</i>	EPN	Pronghorns are timid herbivores that use open, flat habitats in broad intermountain alluvial valleys in low-elevation Sonoran Desertscrub with creosote-bursage and palo verde–mixed cacti associations from 400 to 1,600 feet elevation (AZGFD 2021). In Arizona, the experimental population of Sonoran pronghorn is listed south and west I-10 (USFWS 2023a).	Very unlikely to occur. The project limits are mostly barren and contain canals and roadways. Further, the project area is outside the area within which the experimental population is listed.
Yellow-billed cuckoo (Western DPS) <i>Coccyzus americanus</i>	T	This insectivorous bird is a riparian obligate that uses large, contiguous patches of multilayered riparian gallery forests, usually with habitat, such as cottonwoods or willows, along rivers and streams from 3,564 to 5,480 feet elevation (AZGFD 2022).	Very unlikely to occur. There is no suitable riparian habitat in the project area, which is lower than yellow-billed cuckoo typically occurs.
Northern Mexican garter snake <i>Thamnophis eques megalops</i>	T	This riparian obligate species chiefly feeds on frogs and tadpoles, and it occurs in and around densely vegetated cienegas and stock tanks of riparian woodlands and forests, and streamside gallery forests from 3,000 to 8,500 feet elevation (AZGFD 2012).	Very unlikely to occur. There is no suitable riparian habitat in the project area, which is lower than northern Mexican garter snake is known to occur.
Monarch butterfly <i>Danaus plexippus</i>	C	Monarchs are nectar feeders that prefer <i>Asclepias</i> species (milkweed) as host plants. They migrate in Arizona summer through fall, mostly October through April. In Arizona, they are found from the low deserts to higher elevations. Other food plants include species from the genera <i>Zinnia</i> and <i>Baccharis</i> (Bailowitz and Brock 1991).	Very unlikely to occur. No milkweeds were observed within the project limits. An abundance of nectar-producing plants suitable for foraging were not present nor expected to occur within the disturbed project limits.

Key: AZGFD = Arizona Game and Fish Department; C = Candidate; DPS = Distinct Population Segment; EPN = Experimental Population, Non-Essential; T = Threatened; USFWS = U.S. Fish and Wildlife Service (USFWS 2023a).

## **3.6.2 Environmental Consequences**

### **3.6.2.1 No Action**

Under the No Action Alternative, the pipeline and associated facilities would not be constructed, and no ground disturbance or impacts on vegetation, wildlife, or biological resources would occur.

### **3.6.2.2 Proposed Action**

#### **Vegetation**

Pipeline construction activities, such as clearing, grading, trench excavation, backfilling, and heavy equipment traffic, could result in minor impacts to vegetation along the construction ROW and in temporary work areas. Grading, excavation, and backfilling could result in the mixing of topsoil, which could result in the introduction of noxious and invasive weeds. However, construction would occur within a localized and previously disturbed area with little vegetation, and the spread of invasive species and impacts to native vegetation communities would be minor. No culturally sensitive plants or plants that are protected under GRIC's Native Plant Ordinance were observed within the planned construction area. Although GRIC protected native plants occur in the general project area, there are no protected native plants that occur within the area of direct effect, and no impacts to native plants would occur. BMPs listed in Section 3.6.3 would be implemented during construction to minimize impacts on vegetation and prevent the spread of invasive plant species to off-site locations.

#### **Wildlife**

Due to previous ground disturbance related to construction and operation of existing canal facilities and surrounding agricultural development, most of the project area contains low-quality habitat for wildlife. A negligible amount of habitat is expected to be lost through minimal vegetation removal associated with construction of the Proposed Action. Noise, vibration, and dust generated during construction may temporarily disrupt wildlife and migratory birds in the project area, but these impacts would be minimized with the implementation of the conservation and mitigation measures described in Section 3.6.3.

## **3.6.3 Best Management Practices**

The following measures would be implemented to reduce impacts to biological resources:

- To ensure compliance with the Migratory Bird Treaty Act, all vegetation scheduled to be disturbed between March 15 and August 31 that may contain active bird nests would be surveyed by a trained biologist immediately prior (within 24 hours) to being disturbed.
- If an active nest is discovered, vegetation clearing activities would not be allowed to proceed in the vicinity of the nest(s). No activities shall occur within an appropriate buffered distance from active nests until after the young birds have fledged from the nest. If an active nest is discovered, Reclamation would determine the appropriate buffered distance.
- Avoidance of impacts is a recognized form of mitigation. Several features of the Proposed Action have been designed or located to avoid impacts to existing vegetation.

- All work in the immediate area would cease if any Federally listed species are observed in the construction area. Reclamation and USFWS personnel would be notified immediately.
- Construction personnel would be instructed not to collect, disturb, or molest wildlife species.
- The contractor would be instructed to exercise care to preserve the natural landscape and conduct operations to prevent unnecessary destruction, scarring, or defacing of the natural surroundings in the vicinity of the work.
- To prevent the spread of invasive plant species, all construction equipment would be washed at the contractor's storage facility prior to entering the construction site. In addition, the contractor would inspect construction equipment and remove all attached plant debris prior to leaving the construction site to prevent the spread of invasive plant species to off-site locations.

## **3.7 Indian Trust Assets**

### **3.7.1 Affected Environment**

Indian Trust Assets (ITAs) are legal interests in assets held in trust by the United States for the benefit of Federally recognized Indian Tribes or individual Tribal members. The Secretary's duty to protect and maintain ITAs reserved by or granted to Indian Tribes or individuals by treaties, statutes, and EOs. ITAs may include legal interest in land, Federally reserved water rights, minerals, hunting and fishing rights, money, or claims. ITAs in the project area include the Community's water rights. The Gila River Decree of 1935 recognized the right of the United States to demand and divert Gila River water for irrigation of 50,546 acres of farmland within the Community. The Community's Water Rights Settlement was approved and implemented by the Arizona Water Settlements Act of 2004. The agreement provided the Community with a water budget of 653,500 af of water annually. The budget is composed of water from the CAP, the Gila River, the Salt River, and groundwater. The Community has an allocation of 311,800 af per year of water from the CAP (Meadow et al. 2017).

### **3.7.2 Environmental Consequences**

#### **3.7.2.1 No Action**

Under the No Action Alternative, the pipeline and associated facilities would not be constructed, and impacts on ITAs would not occur.

#### **3.7.2.2 Proposed Action**

Impacts on ITAs are described in terms of the ITA's value, use, loss, damage, or enjoyment. Construction of the Proposed Action would not result in the loss of the Community's water rights to the Gila River or CAP water supplies. Rather, the Proposed Action would facilitate the Community's use of the reclaimed water it received as part of its settlement. The Community would continue to receive CAP water allocations, and water delivery would not be affected. Using reclaimed wastewater to irrigate surrounding agricultural lands would facilitate the creation of system

efficiency water and may enable conservation of the Community's Gila River and CAP water supplies and provide a beneficial impact on the Community.

## 3.8 Cultural Resources

### 3.8.1 Affected Environment

The Community's Cultural Resources Management Program (CRMP) conducted a Class I cultural resources inventory and monitoring plan for the Proposed Action in October 2022 to identify all previously recorded archaeological investigations and documented cultural resources within the area of potential effects (APE) (Woodson 2022). The cultural resources APE for the Proposed Action encompasses 19.2 miles of pipeline within the existing P-MIP ROW and included the additional ROW across the East Maricopa Floodway and includes approximately 1,507 acres of land. The entirety of the APE has been previously investigated through Class III pedestrian survey as part of P-MIP and other projects. According to the Class I cultural resources inventory and monitoring plan, 34 previously documented cultural resources that encompass roughly 478 acres have been documented within the APE (Table 5). These 34 cultural resources are comprised of 10 structures, 23 archaeological sites, and 1 object. These cultural resources represent a wide array of activities, including habitation, resource procurement, agriculture, long-distance exchange, water control, and transportation, dating from approximately A.D. 200 to the present. Of the 34 previously documented cultural resources, 27 have been determined Eligible for inclusion in the National Register of Historic Places (NRHP), with 15 Eligible under Criterion D, 9 Eligible under Criteria A and D, 1 Eligible under Criteria A, B, and C, and 1 Eligible under A, B, C, and D. The Pima Lateral Canal is Eligible under Criterion A only. One historic property, the Sacaton Dam and Bridge (GR-443), has been listed in the NRHP. Four cultural resources (GR-425, GR-444, GR-1709, and GR-7001) within the APE have been determined Not Eligible. Finally, two archaeological sites (GR-223 and GR-409) within the APE have not been evaluated for inclusion in the NRHP, and additional data are required.

**Table 5. Cultural Resources within the Area of Potential Effects**

Site	Other Names or Numbers	Site Type Culture/Period	NRHP Eligibility and Criteria	Management Recommendation
GR-100	Southern Pacific Railroad	Railroad; Euro-American/Historic	Eligible (A, D)	Monitor
GR-164	–	Artifact scatter, canal, habitation, village/Hohokam; Preclassic-Classic, Historic	Eligible (D)	Monitor
GR-165	AZ U:14:18(ASM)	Artifact scatter, village; Hohokam/Pioneer-Classic	Eligible (D)	Monitor
GR-181	AZ U:14:208(ASM)	Bedrock features, rock art/Hohokam; Prehistoric	Eligible (D)	Monitor

Site	Other Names or Numbers	Site Type Culture/Period	NRHP Eligibility and Criteria	Management Recommendation
GR-219	–	Artifact scatter, canal, habitation, trading post, trash dump/Hohokam, Akimel O’odham; Pre-Classic–Classic Period, Historic–Modern	Eligible (A, D)	Monitor
GR-223	–	Artifact scatter/undefined culture/period	Unevaluated; need data	Monitor
GR-224	–	Artifact scatter, canal, church, habitation/Hohokam, Akimel O’odham, Euro-American; Pre-Classic Period, Historic Period, Historic–Modern	Eligible (D)	Monitor
GR-409	–	Artifact scatter/Hohokam Akimel O’odham; Classic, Historic	Unevaluated; need data	Monitor
GR-415	–	Artifact scatter/Hohokam Akimel O’odham; Sedentary, Historic	Eligible (D)	Monitor
GR-425	–	Canal/Akimel O’odham; Late Historic	Not Eligible	Proceed
GR-436	–	Artifact scatter, canal/Hohokam; Pre-Classic–Classic	Eligible (D)	Monitor
GR-441	AZ U:14:8(ASM), AZ U:14:26(ASU)	Artifact scatter, ballcourt, canal, dry agriculture, habitation, platform mound, rock features, trading post, trail/Hohokam, Akimel O’odham; Pre-Classic–Classic Period, Historic–Modern Period	Eligible (A, B, C, D)	Monitor
GR-442	–	Artifact scatter, habitation/Hohokam, Akimel O’odham; Pre-Classic–Sedentary Period, Historic	Eligible (D)	Monitor
GR-443	Sacaton Dam and Bridge	Bridge/Euro-American; Historic	Listed	Avoid
GR-444	–	Artifact scatter/Hohokam; Pre-Classic–Classic	Not Eligible	Proceed

Site	Other Names or Numbers	Site Type Culture/Period	NRHP Eligibility and Criteria	Management Recommendation
GR-445	AZ U:14:11(ASU)	Artifact scatter, canal, habitation/Hohokam, Akimel O'odham; Pre-Classic Period, Historic	Eligible (D)	Monitor
GR-446	–	Habitation/Akimel O'odham; Historic	Eligible (D)	Monitor
GR-449	–	Artifact scatter, dry agriculture, quarry, rock art, trail/Akimel O'odham, Undefined; Historic, Undefined	Eligible (D)	Monitor
GR-504	–	Artifact scatter, habitation/Hohokam; Colonial–Classic	Eligible (D)	Monitor
GR-505	–	Artifact scatter, cemetery, habitation/Hohokam; Sedentary–Classic	Eligible (D)	Monitor
GR-520	–	Habitation, artifact scatter/Hohokam; Sedentary–Classic	Eligible (D)	Monitor
GR-522	AZ U:13:149(ASM), AZ U:13:6(ASM)	Artifact scatter: ceramic, artifact scatter, ballcourt, canal, cemetery, habitation, platform mound, reservoir, trail, village/Hohokam, Akimel O'odham; Pre-Classic–Classic Period, Proto–Historic–Modern	Eligible (A, C, D)	Monitor
GR-799	Four-Mile Trading Post, AZ U:14:290(ASM)	Habitation	Eligible (A, D)	Monitor
GR-1148	–	Artifact scatter, habitation/Akimel O'odham; Historic	Eligible (D)	Monitor
GR-1412	Cottonwood Canal	Canal	Eligible (D)	Monitor
GR-1422	Casa Blanca Canal, AZ U:13:250(ASM)	Artifact scatter, canal/Hohokam, Akimel O'odham, Euro-American; Classic Period, Historic Period, Historic–Modern	Eligible (A, D)	Monitor
GR-1538	Sacaton Road	Roadway	Eligible (A, D)	Avoid

Site	Other Names or Numbers	Site Type Culture/Period	NRHP Eligibility and Criteria	Management Recommendation
GR-1579	AZ AA:6:63(ASM), SR 87, Mesa-Coolidge Highway/Old Chandler to Casa Grande Highway/Old Olberg Road	Roadway/Euro-American, Akimel O'odham; Historic Period, Modern	Eligible (A, D)	Avoid
GR-1647	Well Ditch	Water control/Euro-American; Historic	Eligible (A, D)	Monitor
GR-1689	AZ U:13:248(ASM), Old Highway 93	Roadway/Euro-American; Historic	Eligible (A, D)	Avoid
GR-1693	Santan Flood Canal	Water control/Euro-American; Historic	Eligible (A, D)	Monitor
GR-1709	–	Dry agriculture/Euro-American, Pee Posh, Akimel O'odham; Historic–Modern	Not Eligible	Proceed
GR-7001	–	Roadside memorial	Not Eligible	Avoid
–	AZ AA:2:130(ASM), Pima Lateral Canal	Canal/Euro-American; Historic-Modern	Eligible (A)	Proceed

### 3.8.2 Environmental Consequences

#### 3.8.2.1 No Action

Under the No Action Alternative, the pipeline and associated facilities would not be constructed, and no impacts on cultural resources would occur.

#### 3.8.2.2 Proposed Action

Impacts to cultural resources result from actions that alter certain aspects of integrity, such as location, design, setting, materials, workmanship, feeling, and association, which contribute to the criterion or criteria under which a cultural resource has been determined (or may be recommended) Eligible. Because these cultural resources are all situated within the existing P-MIP ROW, to which the Proposed Action would be restricted as well as the additional 1.46 acres of new ROW, adverse effects to historic properties from the construction of the P-MIP within the APE have been previously resolved through extensive archaeological and historic investigations. Nevertheless, construction of the Proposed Action would result in ground disturbance from construction vehicles and equipment that could adversely affect several NRHP-Eligible or potentially NRHP-Eligible cultural resources that fall within the APE. Therefore, the Community's CRMP would implement a Monitoring and Discovery Plan, which includes avoidance and monitoring measures to prevent adverse effects to cultural resources from the construction of the Proposed Action. Reclamation made a preliminary determination of *No Adverse Effect* for the Proposed Action provided that the

monitoring and avoidance measures described in Section 3.8.3 are followed. In a March 29, 2023, letter, Reclamation consulted on its preliminary determination and the proposed Monitoring and Discovery Plan. The GRIC Tribal Historic Preservation Officer concurred with Reclamation's determination and the Monitoring and Discovery Plan on March 30, 2023. The San Carlos Irrigation Project, a division of the BIA, concurred on April 25, 2023. The BIA Pima Agency concurred on April 27, 2023.

### **3.8.3 Monitoring and Avoidance Measures**

The following measures would be implemented to prevent adverse effects to cultural resources:

- The portions of the APE within most site boundaries (all except GR-522) have been previously investigated prior to the construction of the P-MIP; therefore, work may proceed within the previously disturbed P-MIP ROW with the provision that an archaeological monitor is present for all ground-disturbing activities. This includes all NRHP-Eligible and Unevaluated archaeological sites within the APE: GR-100, GR-164, GR-165, GR-219, GR-223, GR-224, GR-409, GR-415, GR-436, GR-441, GR-442, GR-445, GR-446, GR-449, GR-504, GR-505, GR-520, GR-522, GR-799, GR-1148, GR-1412, GR-1647, and GR-1693.
- Avoidance is recommended for all documented roadways (GR-1538, GR-1579, and GR-1689) as well as the Sacaton Dam and Bridge (GR-443). These properties are unlikely to be impacted by the Proposed Action. If for some reason avoidance is impossible, then monitoring is recommended for these properties to ensure no adverse effects to these historic properties result from construction activities.
- The Pima Lateral Canal, AZ AA:2:130(ASM), has been determined Eligible for the NRHP but has been extensively documented prior to construction of the P-MIP. No additional cultural resources investigations are recommended for this historic property prior to construction.
- No further work is recommended at the four archaeological sites previously determined Not Eligible (GR-425, GR-444, GR-1709, and GR-7001).
- Although data recovery investigations have not been completed for the roughly 2-km-long portion of the APE along the east edge of GR-522, if the pipeline is installed without modifying the shape of the channel, then only archaeological monitoring is recommended. If it is necessary to extensively modify the existing canal channel to install the pipeline, then data recovery investigations are recommended for the east edge of GR-522 prior to implementation of the Proposed Action.

## 4.0 Cumulative Effects

A cumulative effect is defined under NEPA as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (40 CFR 1508.7). Cumulative effects were determined by combining the impacts of the alternatives on the affected environment with other past, present, and reasonably foreseeable future actions.

### 4.1 Past, Present, and Reasonably Foreseeable Future Actions

Reasonably foreseeable future projects are those that are, or could reasonably be, located in the vicinity of the Proposed Action and that have potential to impact resources in the project area. For each resource topic, the cumulative effects analysis area is the same as the analysis area for direct and indirect environmental effects. Table 6 lists the past, present, and reasonably foreseeable future projects analyzed for cumulative impacts for resources presented in Chapter 3. The locations of these projects are shown in Figure 3.

**Table 6. Past, Present, and Reasonably Foreseeable Future Projects**

Project Name	Description	Status/Schedule	Location
Canal 13	13.6 miles of concrete canal lining	June 2023	West of I-10, north of Casa Blanca Road
Canal 14	2.8 miles of concrete lined canal with appurtenant structures	June 2023	West of I-10, north of Casa Blanca Road, and east of Maricopa Road
Canal 16	4.9 miles of earthen canal going into pipeline	Late 2023–early 2024	West of I-10, south of Casa Blanca Road
Westside IE-IF	8.5 miles of new pipeline	Early 2025	East of 51st Avenue near community of St. Johns
Canal 15	Replacing 6 miles of open canal with pipeline	Early 2024	West of I-10, south of Casa Blanca Road
Highline Canal	2.8 miles of concrete-lined canal	Completed 2004	Northeast of EMF at the beginning of Phase 1 Segment A
Santan Canal ID	4.71 miles of concrete-lined canal	Completed 2011	Parallel to SR 87 adjacent to Phase 2
Santan Canal IC	3.8 miles of concrete-lined canal	Completed 2011	Parallel to SR 87 adjacent to Phase 2
Santan Canal IB	5.96 miles of concrete lined canal	Completed 2020	Parallel to SR 87 adjacent to Phase 1 Segment B

Project Name	Description	Status/Schedule	Location
Pima Lateral	11.21 miles of concrete-lined canal (including 0.34 miles of 132-inch-diameter siphon under the Gila River	Completed 2016	Parallel to Olberg Road adjacent to Phase 1 Segment B

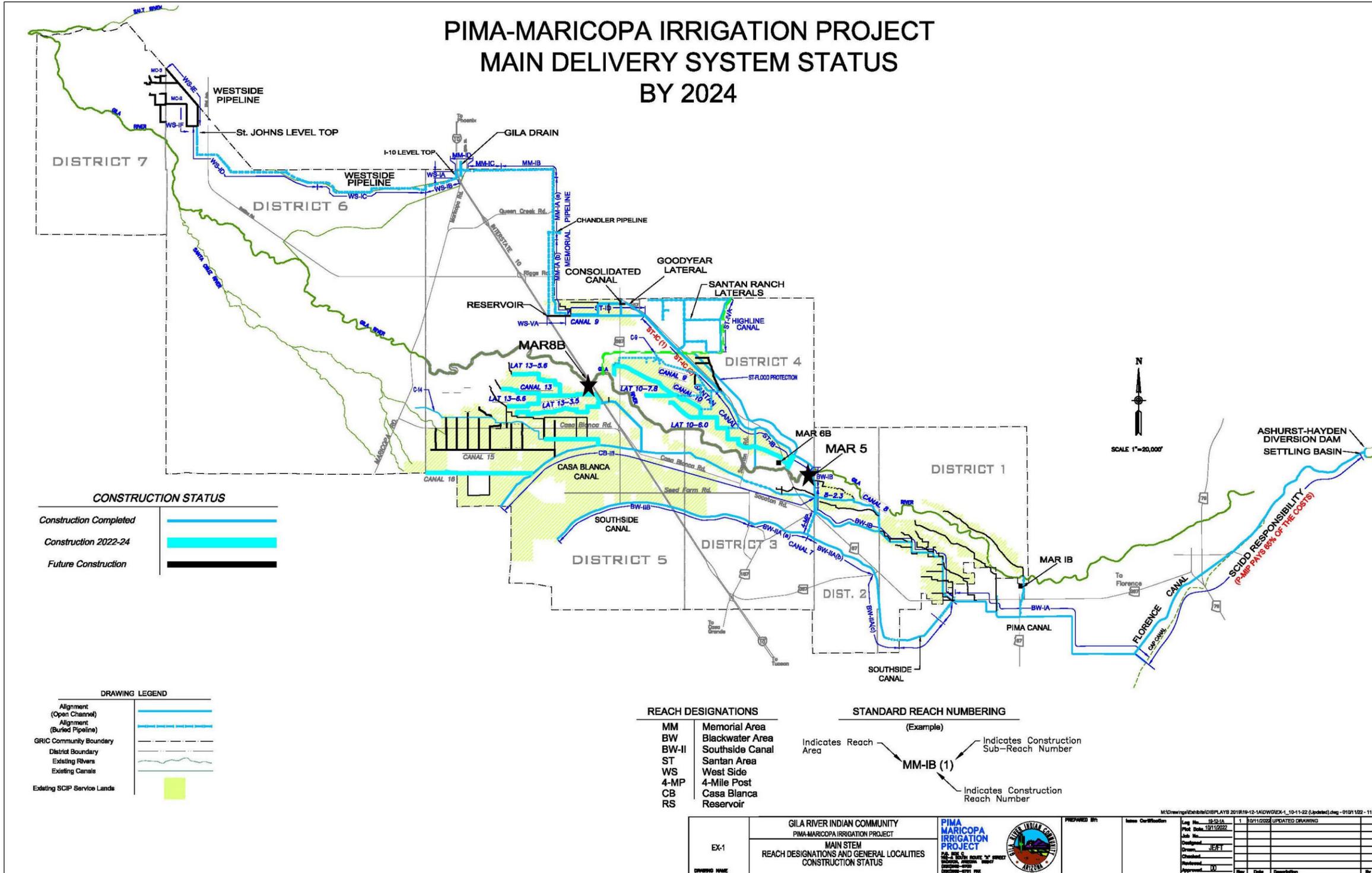


Figure 3. Pima-Maricopa Irrigation Project main delivery system status by 2024.

### **4.1.1 Air Quality, Including Climate Change**

The Proposed Action would overlap with the projects identified in Table 6 and would result in additional minor and temporary cumulative impacts to air quality from fugitive dust and GHG emissions generated during construction. Cumulative impacts would be temporary and not substantial enough to cause a violation or exceedance of the existing NAAQS or GHG emission thresholds or cause a significant cumulative impact on air quality.

### **4.1.2 Water Resources**

The Proposed Action and the projects identified in Table 6 include components aimed at reducing groundwater pumping and conserving existing water supplies. It is anticipated that these future projects, in addition to the Proposed Action, would continue to conserve water resources and help reduce the demand on existing water supplies and have a beneficial impact on water resources.

### **4.1.3 Soils**

Impacts to soils from the Proposed Action would result in localized, compaction, increased erosion potential, loss of soil productivity, and increased likelihood of establishment of noxious weeds, as described in Section 3.6. The Proposed Action would overlap with the cumulative projects identified in Table 6 and would cumulatively result in a localized short- and long-term minor increase in surface disturbance. However, these effects would be minimized through implementation of erosion control measures and BMPs.

### **4.1.4 Biological Resources**

#### **4.1.4.1 Vegetation**

The Proposed Action, in addition to the cumulative projects identified in Table 6, would involve construction activities, such as clearing, grading, and heavy equipment traffic, which could result in minor impacts to vegetation along the construction ROW and in temporary work areas. Most disturbance would likely occur within previously disturbed ROW and within highly localized areas. The incremental cumulative impact on vegetation resources would be considered negligible.

#### **4.1.4.2 Wildlife**

Due to previous ground disturbance and vegetation removal related to construction and operation of existing canal facilities and surrounding agricultural development, the Proposed Action, in addition to the cumulative projects, would result in a negligible amount of vegetation and habitat loss. Noise, vibration, and dust generated during construction may temporarily disrupt wildlife and migratory birds in the project area, but these impacts would be minimized with the implementation of BMPs and cumulative impacts would be minor.

### **4.1.5 Indian Trust Assets**

The Proposed Action would facilitate the creation of system efficiency water and may enable conservation of the Community's Gila River and CAP water supplies. The cumulative projects include improvements to the existing canal facilities, which could also improve water efficiency and

use. The Proposed Action, in addition to the cumulative projects, could have a beneficial cumulative impact on water supply.

#### **4.1.6 Cultural Resources**

The Proposed Action would not contribute to cumulative impacts to cultural resources because adverse impacts to historic properties would be avoided by the Proposed Action through the implementation of an agency-approved Monitoring and Discovery Plan for cultural sites, buffers around identified cultural resources, monitoring of ground-disturbing construction activities within 50 feet of a historic property, imported borrow material from approved Arizona Department of Transportation sources, and cultural awareness training for construction workers.

Future projects to modify and improve P-MIP facilities could lead to increased impacts to archaeological resources, primarily resulting from construction activities. Consideration under the applicable laws would be completed in the design stage of these possible future projects to avoid impacts to cultural resources.

## 5.0 Consultation and Coordination

### 5.1 Agency and Tribal Coordination

Reclamation solicited input from the public and agencies during development of the EA to assist in identifying key issues and defining the scope of the Proposed Action and environmental analysis. Reclamation conducted scoping via mail. Scoping letters and project information were sent to the following agencies and entities:

- Gila River Indian Irrigation and Drainage District
- Gila River Indian Community Department of Environmental Quality
- Gila River Indian Community Cultural Resources Management Program
- Gila River Indian Community Law Office
- Ak-Chin Indian Community
- San Carlos Apache Tribe
- Salt River Pima-Maricopa Indian Community
- Bureau of Reclamation
- U.S. Fish and Wildlife Service
- Bureau of Indian Affairs
- U.S. Army Corp of Engineers
- U.S. Department of Agriculture, Natural Resources Conservation Service
- National Park Service
- Arizona Game and Fish Department
- Arizona Department of Environmental Quality
- Arizona Department of Transportation
- Arizona State Land Department
- Arizona State Parks and Trails
- Arizona State Historic Preservation Office
- City of Chandler
- City of Mesa

- Central Arizona Water Conservation District

## **5.2 List of Preparers**

This EA has been prepared in coordination with the individuals below.

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- Linda Countryman, Tierra Right of Way Services, Ltd.
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# Appendix A Preliminary Plan Set

# **Appendix B    Scoping Letter**

# Appendix C Scoping Comments