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Kelvin Bridge Replacement Project in Pinal County, Arizona

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1 INTRODUCTION

1.1 Background

In 2012, the Bureau of Land Management (BLM) issued a permanent and temporary construction right-of-way (ROW) grant No. AZA-35391 to Pinal County to allow for the construction of a new bridge on the Florence-Kelvin Highway over the Gila River. The project is referred to as "the Kelvin Bridge Replacement Project." An environmental assessment (EA) was completed in accordance with the National Environmental Policy Act (NEPA) and the BLM Tucson Field Office (TFO) issued a Finding of No Significant Impact (FONSI) for the project (Appendix A).

The Kelvin Bridge Replacement Project is located on the Florence-Kelvin Highway south of the town of Kelvin in Pinal County, Arizona. The existing bridge has only one traffic lane and there is an at-grade railroad crossing located on the bridge approach on the north side of the river. The Florence-Kelvin Highway is a minor collector road managed by Pinal County that serves traffic traveling between Florence and the towns of Kelvin, Kearny, and Riverside. The Proposed Action analyzed in the 2012 EA (BLM 2012a) and approved in the FONSI (BLM 2012b) would replace the existing bridge with a two-lane bridge that spans the Gila River and the railroad. The existing one-lane bridge would remain for non-motorized traffic only. The project is located in the NW ¼ of Section 12, Township 4 South, Range 13 East, on the U.S. Geological Survey (USGS) Kearny 7.5-minute quadrangle (Figures 1 and 2).

The 2012 EA analyzed the proposed action to be constructed outside the breeding season for the Yellow-billed Cuckoo (YBCU) and the Southwestern Willow Flycatcher (SWFL) in order to reduce impacts to these species. The cumulative breeding seasons for these two species restricted construction from occurring between April 15 and September 30. By avoiding the breeding season under the original proposal, construction of the new bridge would only occur between October 1 and April 14. Due to these construction schedule constraints, construction equipment and crews would mobilize and demobilize three or more times, vegetation clearance would be required prior to each mobilization for any regrowth that occurred during the breeding season, and the total construction timeframe would take 3 or more years.

Pinal County has determined that the construction schedule analyzed in the 2012 EA is no longer feasible due to the additional cost of multiple construction mobilizations and total construction timeframe that would be required to avoid constructing during the breeding season for the newly listed YBCU and the SWFL. Furthermore, the bridge design has been updated since the 2012 EA with the following modifications:

- Modifying the bridge pier locations to avoid all impacts to waters of the U.S. (the Gila River)
- Reducing the height of the proposed bridge by 2 feet across the span of the bridge
- Changing the bridge support pier system design from three dual-column piers system to seven single-column piers system

Based on these factors, Pinal County is requesting that the BLM amend and reauthorize the permanent and temporary construction ROW grant to allow for a modified construction schedule and the bridge design updates. These changes are being requested by Pinal County to reduce construction costs, reduce impacts to vegetation, and to avoid impacts to waters of the U.S. As a result of the changes to the proposed action described and analyzed in the 2012 EA, and upon which the FONSI was issued, a new analysis is considered in this EA in light of the modified proposed action.

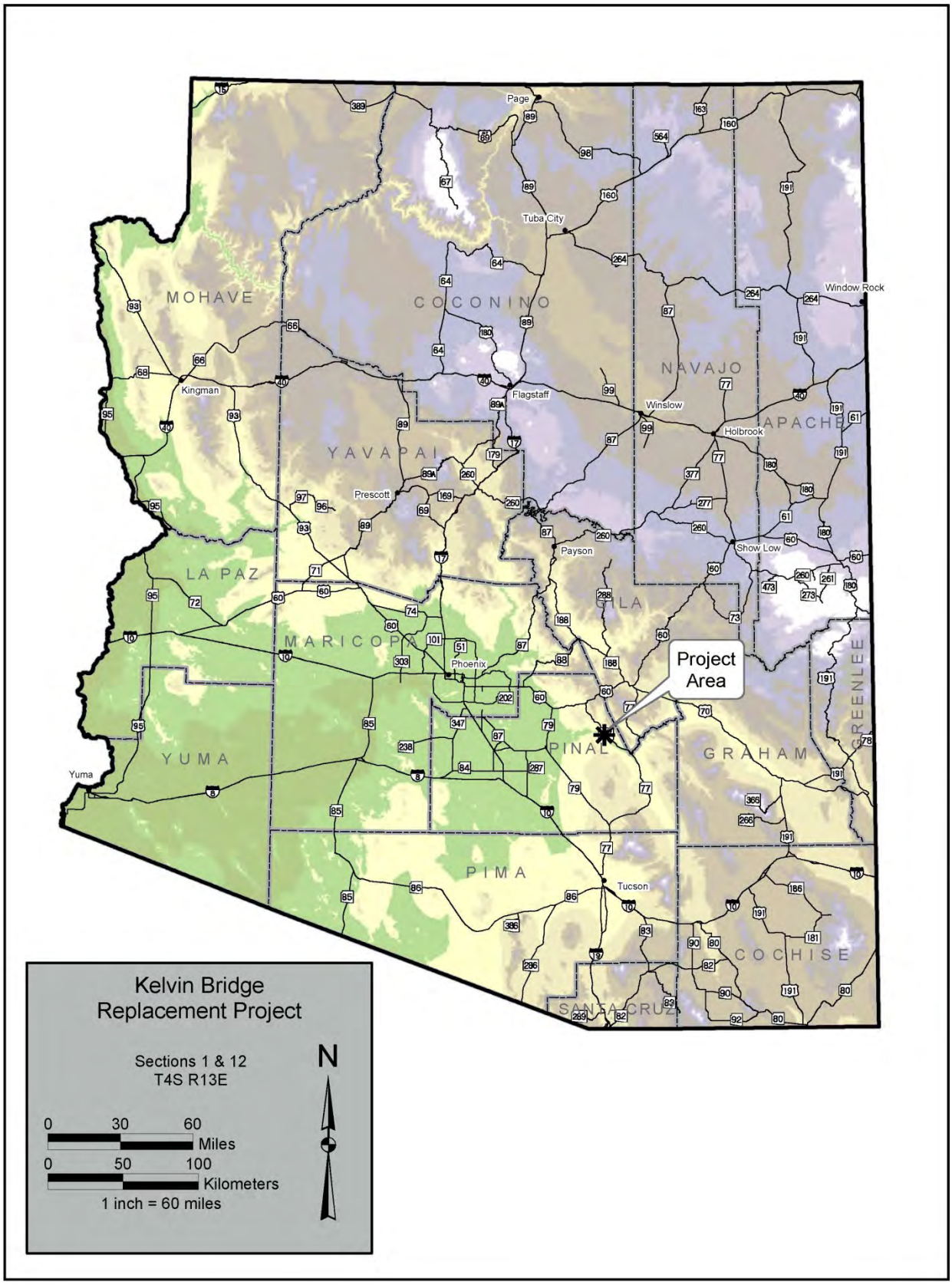

Figure 1. General location of the project area.

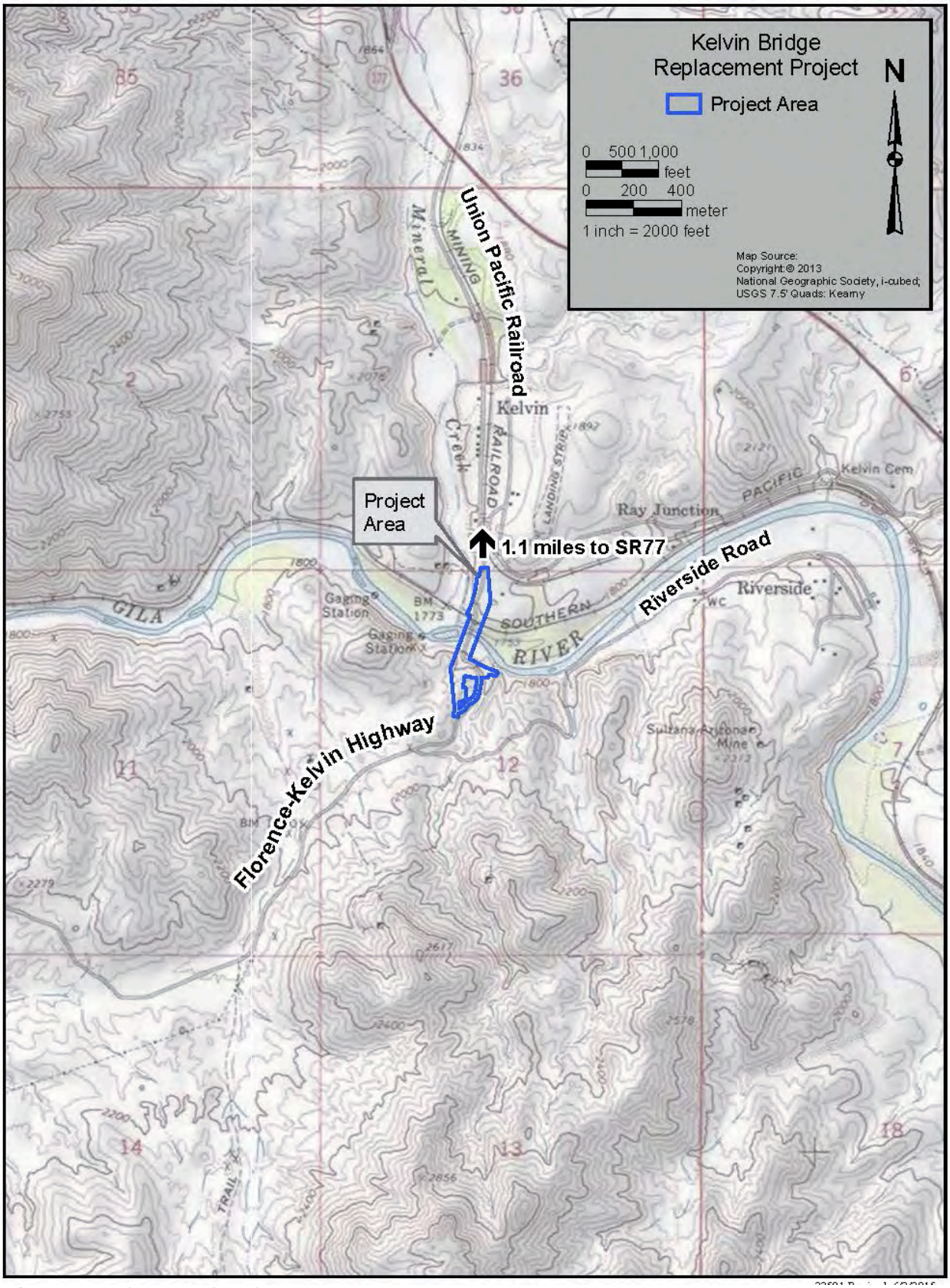

Figure 2. Project area location.

1.2 Purpose and Need for Action

The purpose of the proposed action is for BLM to amend and approve Pinal County's ROW grant No. AZA-35391 to allow for the construction of the Kelvin Road Bridge Project with the modified construction schedule and bridge design. The amended and approved ROW grant would authorize Pinal County to construct the new Kelvin Bridge during the breeding season for the YBCU and SWFL per the new bridge design. Construction of the new Kelvin Bridge would allow for improved access to the town of Kelvin along the Florence-Kelvin Highway.

The need for the proposed action is to respond to a Federal Land Policy and Management Act of 1976 (FLPMA) (43 United States Code [USC] 1761–1771) ROW request to amend and approve an existing ROW grant submitted by Pinal County to construct a new bridge on the Florence-Kelvin Highway over the Gila River on public lands administered by the BLM TFO.

The BLM has received a ROW amendment application from the County and must determine whether to allow the use of BLM-administered public lands for portions of the proposed project. In accordance with the FLPMA and the BLM's ROW regulations (43 Code of Federal Regulations [CFR] 2800), the BLM must manage public lands for multiple uses that take into account the long-term needs of future generations. The Secretary of the Interior is authorized to grant ROWs for "…roads, trails, highways, railroads, canals, tunnels, tramways, airways, livestock driveways, or other means of transportation…" (43 USC 1761(a)(6)).

Taking into account the BLM's multiple-use mandate, the need for the project is established by the BLM TFO's responsibility, under Title V of FLPMA (43 USC 1761) to respond to Pinal County's request for a ROW grant amendment on BLM-administered public land while avoiding or minimizing adverse impacts to other resource values and to locate the uses in conformance with land use plans.

The BLM's action is to respond to a ROW amendment application submitted by Pinal County to construct, operate, and maintain a roadway on public lands administered by the BLM in compliance with FLPMA, BLM regulations, and other applicable Federal laws and policies.

1.3 Decision to be Made

BLM: The BLM TFO will decide whether or not to approve the amended ROW grant No. AZA-35391, and if so, under what terms and conditions.

Arizona Department of Transportation (ADOT)/Federal Highway Administration (FHWA): Prior to federal obligation for construction activities, the FHWA will require an additional NEPA document that fulfills the requirements of 23 CFR 771.117. To fulfill this requirement, the ADOT will issue a reevaluation of the Categorical Exclusion (CE) that was approved on November 9, 2006, in accordance with 23 CFR 771.129(c) for FHWA approval.

1.4 Conformance with Applicable Land Use Plan(s)

1.4.1 BLM Resource Management Plan (RMP)

It is the BLM's policy to coordinate on local plans that occur on land managed by the BLM where feasible and consistent with BLM law, regulation, and policy. The Proposed Action is in conformance with the December 1988 Phoenix RMP with Record of Decision (ROD). According to the Land Use Management section of the RMP, land use authorizations, including ROWs, will be issued to promote the maximum utilization of existing ROW routes (BLM 1988). The Proposed Action will involve improvements to and expansion of an existing ROW and is thereby in general conformance with the RMP.

This Proposed Action has been reviewed to determine if it conforms to the land use plan terms and conditions required by 43 CFR 1610.5, BLM MS 1617.3, Title V of the FLPMA, and 43 CFR 2,800. The Proposed Action is located within the BLM White Canyon Resource Conservation Area (RCA). No portions of the Proposed Action are within a BLM Area of Critical Environmental Concern (ACEC).

1.4.2 Pinal County Comprehensive Plan

According to the Pinal County Comprehensive Plan (Pinal County 2009), the land use designation for the project area is “major open space.” Because the proposed action is limited to an existing road that is managed by Pinal County, the proposed action would be in conformance with the existing land use designations of the Pinal County Comprehensive Plan.

No other local jurisdiction plans exist for the project area.

1.5 Relationship to Statutes, Regulations, or Other Plans

The following is a summary of selected statutes, regulations, and executive orders (EOs) applicable to the proposed project.

American Indian Religious Freedom Act. The American Indian Religious Freedom Act (AIRFA) says that on and after August 11, 1978, “it shall be the policy of the United States to protect and preserve for American Indians their inherent right of freedom to believe, express, and exercise the traditional religions of the American Indian, including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites.” This law is designed to protect American Indians rights of religious freedom. It does not mandate that American Indian concerns are paramount but requires that the federal government consider such concerns in its decisions.

Arizona Native Plant Law. The Arizona Native Plant Law (ANPL) states that “a person shall not take, transport or possess any protected native plant taken from the original growing site in this state without possessing a valid permit issued by the Arizona Department of Agriculture [ADA]” (Arizona Revised Statutes [ARS] 3-906). The ANPL applies to listed plants that are naturally occurring, but not to landscaped or planted individuals. Native plants that are protected by the ANPL include all cacti, yucca, agave, and many leguminous tree species such as paloverde, mesquite, and ironwood.

Archaeological Resources Protection Act of 1979, as amended. This act provides for protection of archaeological resources on federal lands. The act requires permits for the excavation or removal of federally administered archaeological resources and encourages cooperation between federal agencies and private individuals in identifying and protecting important resources. In addition, the act invokes penalties for excavating, removing, damaging, or defacing any archeological resources older than 100 years on public or Indian lands.

Clean Air Act of 1963, as amended. The Clean Air Act (CAA) requires any federal entity engaged in an activity that may result in the discharge of air pollutants to comply with all applicable air pollution control laws and regulations (federal, state, or local). This act directs the attainment and maintenance of the National Ambient Air Quality Standards (NAAQS) for six different criteria pollutants: carbon monoxide (CO), ozone (O3), particulate matter (PM), sulfur oxides, nitrogen oxides (NOx), and lead. As the proposed project is not located within a designated maintenance or non-attainment area, particulate matter is the only criteria pollutant considered in this analysis. Pinal County Air Quality Rules outline measures to be incorporated into construction specifications to minimize potential dust emissions.

Clean Water Act of 1977, as amended. Section 404 of the Clean Water Act (CWA) identifies conditions under which a permit is required for construction projects that result in the discharge of fill or dredged material into waters of the U.S. (WUS). Section 402 of the CWA establishes the National Pollutant Discharge Elimination System (NPDES) to regulate point source discharges of pollutants into WUS. Arizona is the authorized authority for enforcing the NPDES permit program.

Endangered Species Act of 1973, as amended. Section 7 of the ESA requires federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) to ensure that undertaking, funding, permitting, or authorizing an action is not likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat, as defined under the act, exists only after USFWS officially designates it. Critical habitats are 1) areas within the geographic area that have features essential to the conservation of the species and that may require special management consideration or

protection; and 2) those specific areas outside the geographic area occupied by a species at the time it is listed that are essential to the conservation of the species.

Executive Order 11988, Floodplain Management, May 24, 1977. EO 11988 requires federal agencies to avoid to the extent possible both long- and short-term adverse impacts associated with occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.

Executive Order 11990, Protection of Wetlands, May 24, 1977. EO 11990 requires federal agencies or federally funded projects to restrict uses of federal lands for the protection of wetlands through avoidance or minimization of adverse impacts. The EO was issued to "avoid to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands whenever there is a practicable alternative."

Executive Order 13007, Indian Sacred Sites, May 24, 1996. This EO requires that all Executive Branch agencies (including BLM) having responsibility for the management of federal lands will, where practicable, permitted by law, and not clearly inconsistent with essential agency functions, provide access to and ceremonial use of Indian sacred sites by Indian religious practitioners and will avoid adversely affecting the integrity of such sacred sites. The EO also requires that federal agencies, when possible, maintain the confidentiality of sacred sites.

Executive Order 13112, Invasive Species, February 3, 1999. This EO seeks to improve coordination between federal agencies in efforts to combat invasive plant and animal species. EO 13112 established the National Invasive Species Council as a high-level, interdepartmental federal advisory panel to provide leadership and planning in the prevention and control of invasive species nationwide.

Executive Order 13274, Environmental Stewardship and Transportation Infrastructure Project Reviews, September 18, 2002. The goal of this EO is to promote environmental stewardship in the nation's transportation system and to streamline the environmental review and development of transportation infrastructure projects. An interagency task force monitors the environmental reviews of certain high-priority projects.

Federal Land Policy and Management Act of 1976. Section 102 of the FLPMA mandates that the BLM manage public lands on the basis of multiple use and sustained yield. The FLPMA recognizes ROW grants as a valid use of the public lands and requires BLM to manage ROWs in the context of public use.

Migratory Bird Treaty Act of 1918, as amended. The Migratory Bird Treaty Act (MBTA) provides for the protection of migratory birds and prohibits their unlawful take or possession. The act bans "taking" any native birds; "taking" can mean killing a wild bird or possessing parts of a wild bird, including feathers, nests, or eggs. Exceptions are allowed for hunting game birds and for research purposes, both of which require permits.

National Environmental Policy Act of 1969, as amended. NEPA requires federal agencies to take into consideration the environmental consequences of proposed actions as well as input from state and local governments, Indian tribes, the public, and other federal agencies during their decision-making process. The Council on Environmental Quality (CEQ) was established under NEPA to ensure that all environmental, economic, and technical considerations are given appropriate consideration in this process.

National Historic Preservation Act of 1966, as amended. Major federal projects must comply with Section 106 of the NHPA, which mandates that potential impacts to significant historic properties be considered prior to approval of such projects. Significant historic properties are defined as sites, districts, buildings, structures, and objects eligible for the National Register of Historic Places (NRHP). Consideration of these resources is to be made in consultation with the relevant State Historic Preservation Office (SHPO) and other interested agencies and parties.

Native American Graves Protection and Repatriation Act of 1990. This act requires protection and repatriation of Native American cultural items found on, or taken from, federal or tribal lands and requires repatriation of cultural items controlled by federal agencies or museums receiving federal funds. Should previously unidentified cultural resources, especially human remains, be encountered during construction, work will stop immediately at that location and BLM's cultural resources staff will be notified to ensure proper treatment of these resources.

Noise Pollution and Abatement Act. This act requires that all federal agencies establish mechanisms for setting emission standards for source of noise, including motor vehicles, aircraft, etc. The act also enables local governments to address noise mitigation in land use planning efforts.

Noxious Weed Act of 1974, as amended. This act requires that all federal agencies develop a management program to control undesirable plants on federal lands under the agency's jurisdiction; establish and adequately fund the program; implement cooperative agreements with state agencies to coordinate management of undesirable plants on federal lands; and establish integrated management systems to control undesirable plants targeted under cooperative agreements.

Taylor Grazing Act of 1934, as amended. Section 315 and 315b of this act established grazing districts and grazing permits and fees. The act recognizes grazing as a valid use of the public lands and requires BLM to manage livestock grazing in the context of public use.

Title 43 CFR Part 4100. This governs regulations for grazing administration on public lands. Approval of the amended ROW grant No. AZA-35391 would be authorized under the FLPMA (Title V [43 USC 1761–1771]).

1.6 Scoping and Public Issues

1.6.1 Scoping

The BLM Interdisciplinary team (ID Team) met on July 5, 2015, at the Tucson Field Office and the Proposed Action was presented to the BLM ID Team. The BLM IDT determined that the Proposed Action of amending and approving Pinal County's ROW grant does not require public scoping because of the relatively small change in the project scope since it was last analyzed in 2012. The BLM ID Team identified the following issues to address:

Issue 1: What would be the effect of dust generated during road construction and maintenance on air quality?

Issue 2: What would be the effect of road and bridge construction, vegetation removal, and road maintenance on floodplain function?

Issue 3: What would be the effect of road and bridge construction, vegetation removal, and road maintenance on YBCU and SWFL habitat?

Issue 4: What would be the effect of vegetation disturbance and removal on migratory bird habitat?

Issue 5: What would be the effect of vegetation disturbance and removal on wildlife habitat?

Issue 6: What would be the effect of the alternatives on hydrologic function?

Issue 7: What would be the effect of the alternatives on wetlands and riparian areas?

Issue 8: How would the Kelvin Bridge Relocation Project effect vegetation?

Issue 9: What would be the effect of the alternatives on the spread of invasive and non-native weeds from off-site vehicles and construction activities?

Issue 10: What would be the effect of the alternatives on soil erosion?

Issue 11: What would be the effect of the alternatives on public health and safety?

Issue 12: What would be the effect of the alternatives on recreational land users?

Issue 13: What would be the effect of the alternatives on visual resources?

Issue 14: What would be the effect of the alternatives on access and transportation?

1.6.2 Issues to be Analyzed

As a result of the scoping process, a number of issues to be analyzed were identified. Table 1-1 provides the resource issues identified during the scoping process and where the issues have been addressed in the EA. Issues for each resource are discussed in detail in Chapter 3, Affected Environment and Environmental Consequences.

Table 1-1. Summary of Issues Identified during Scoping

Issues	Where Addressed in EA
• Air Quality	Chapter 3 Section 3.2
• Topography and Soils	Chapter 3 Section 3.3
• Cultural Resources	Chapter 3 Section 3.6
• Biological Resources (including wildlife, vegetation, and noxious and invasive species)	Chapter 3 Section 3.5
• Water Resources	Chapter 3 Section 3.4
• Visual Resources	Chapter 3 Section 3.10
• Transportation Resources	Chapter 3 Section 3.8
• Recreation	Chapter 3 Section 3.9
• Socioeconomic Resources	Chapter 3 Section 3.7

2 PROPOSED ACTION AND ALTERNATIVE(S)

2.1 Introduction

This chapter provides a description of the proposed project and includes information pertaining to the no action alternative. As described in Chapter 1, Pinal County is proposing to improve construction the Kelvin Bridge Replacement Project with a modified construction schedule and updated bridge design since the project was analyzed in the 2012 EA (BLM 2012a).

2.2 Proposed Action

In 2012, the BLM issued a permanent and temporary construction ROW grant No. AZA-35391 to Pinal County to allow for the construction of a new bridge on the Florence-Kelvin Highway over the Gila River. The project is referred to as "the Kelvin Bridge Replacement Project." An EA was completed in accordance with NEPA and the BLM TFO issued a FONSI for the project (BLM 2012a, 2012b). Pinal County requests that the BLM TFO amend and reauthorize ROW grant No. AZA-35391 to allow for two modifications to the Proposed Action that was analyzed in the 2012 EA.

The primary modification to the Proposed Action analyzed in this EA is Pinal County's request to allow construction activities to occur during breeding season of the SWFL and the YBCU. The cumulative breeding season for these two species is between April 15 and September 30. Specifically, the SWFL breeding season is between April 15 and September 30, and the breeding season for the YBCU is between May 15 and September 30. In order to amend and reauthorize the ROW grant, the BLM must analyze the impacts of the modified proposed action of permitting construction activities during the breeding season of these species. The modification is being requested by Pinal County in order to minimize construction impacts to vegetation by avoiding the need to clear vegetation more than once and to reduce construction costs by only having to mobilize construction crew and equipment once.

In addition to this primary modification of the Proposed Action, several minor bridge design elements have updated since the 2012 EA in order to minimize surface water impacts and reduce construction costs. These bridge design changes are identified in Section 2.2.2 below.

The project's preliminary estimated cost is $8 million and would be funded by a combination of funds from the FAHP administrated through the FHWA and Pinal County funds. Because FAHP funds would be used for the project, ADOT would bid and administer project construction.

2.2.1 Location

The Kelvin Bridge Replacement Project is located in the E ½ of the NW ¼ of Section 12, Township 4 South, Range 13 East, Gila and Salt River Baseline and Meridian, as indicated on the Kearny, Arizona (1991), 7.5-minute 1:24:000 U.S. Geological Survey (USGS) topographic quadrangle (see Figures 1 and 2). The bridge replacement project would permanently impact 2.21 acres from the new bridge piers and roadways, and would temporarily impact 1.36 acres during construction from the geotechnical tests, temporary roads, and temporary bridge. The bridge replacement project would shift traffic from the existing two-lane bridge to the new bridge location. After construction of the new bridge is completed, the existing bridge would remain accessible for non-motorized use only as part of the Arizona National Scenic Trail (ANST).

Lands within and adjacent to the project area are owned or managed by the BLM, Pinal County, Union Pacific Railroad (UPRR), American Smelting and Refining Company (ASARCO), LLC, and private individuals (Figure 3). The East Florence-Kelvin Highway and existing Kelvin Bridge are managed by Pinal County and are located on ROW easements granted by the BLM. Within the project area, BLM lands account for 2.71 acres of land and private lands account for 5.31 acres. To improve clarity, the term "project area" is used when describing the 8.05-acre area within which all construction activities would occur, such as the geotechnical studies, the new and temporary bridge, roadway approach and bridge footings, etc. as depicted by the blue lines in Figure 3.

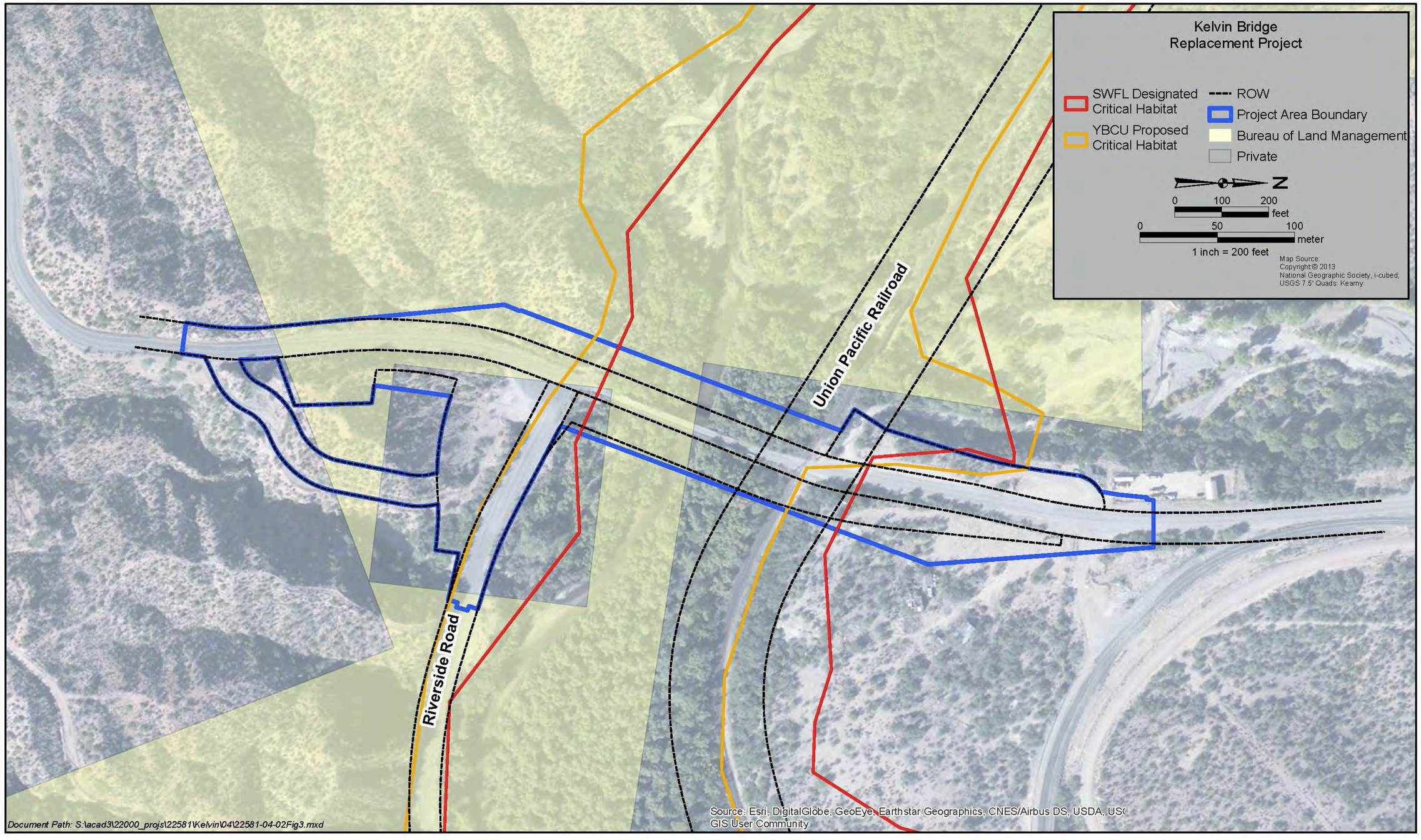

Figure 3. Project area and land ownership.

2.2.2 Project Description

The proposed bridge design and construction activities are generally consistent with their descriptions in the 2012 EA (BLM 2012a). However, the following bridge design changes have been made since the 2012 EA in order to minimize surface water impacts and reduce construction costs:

- Modifying the bridge pier locations to avoid all impacts to waters of the U.S.
- Reducing the height of the proposed bridge by 2 feet across the span of the bridge
- Changing the bridge support pier system design from a three dual-column piers to seven single-column piers system

There would be no difference in the types of construction activities (e.g., blading, grading, and paving road approach realignments, pier construction, bridge deck construction) as identified in the 2012 EA with respect to these design changes.

ACCESS

Bridge and approach roadwork would involve 2,100 feet of new roadway construction, of which 660 feet would be for the bridge itself. The bridge replacement project would begin approximately 800 feet south of the edge of the existing bridge and would end approximately 700 feet north of the edge of the existing bridge. A new access road would be constructed north of the river on the west side of the new bridge alignment to maintain access to the existing bridge as well as to residential areas west of the highway. South of the Gila River, access to the existing bridge would be provided following construction of the new bridge by a pedestrian path access road that crosses beneath the new bridge to connect with Riverside Road.

Approximately 1,500 feet of the Florence–Kelvin Highway would be realigned within the project area, and the existing bridge would be left in place but would no longer be a part of the Florence–Kelvin Highway. It would, however, become a corridor for pedestrian non-motorized use, and would continue to be a part of the Arizona National Scenic Trail (ANST) system. Ownership and maintenance responsibilities for the existing bridge would remain with Pinal County. Following construction of the new bridge, access to the ANST from the south side of the new bridge would be provided by a non-motorized path underneath the new bridge. The new bridge is designed to span the portion of the Gila River riparian corridor that contains flowing water and wetlands. Heavy equipment would not be used in the flowing channel or abutting wetlands. Paving the temporary traffic route road would not be necessary to allow for heavy construction machinery to access the site, since the ground surface consists of hard-packed soils that are not susceptible to becoming muddy or sandy.

BRIDGE

The deck of the new bridge would be approximately 30 feet higher than the existing bridge, and would span the existing railroad grade located north of the river. The bridge height would provide clearance for trains to safely pass underneath the bridge. The bridge design would allow for the clearance of a 100-year flood event to pass underneath the proposed bridge. The proposed roadway would be designed in conformance with Pinal County Standard Specifications for Public Improvements (Pinal County 2003). The new bridge would have two 3.7-m-wide (12-foot-wide) lanes and 1.8-m (6-foot) shoulders, thereby meeting current ADOT design standards, and would be paved with asphalt-concrete. The existing highway approaches and abutments would be horizontally and vertically re-aligned. Bridge abutments would be supported by 4-foot-diameter cast-in-place concrete shafts.

Seven single-column piers would be placed to support the new bridge span, and would be supported belowgrade by 8-foot-diameter concrete shafts. The concrete footings would not be placed within outside the delineated boundaries of the Gila River. Temporary disturbance impacts within the delineated boundaries of the Gila River would also be avoided during the installation a single temporary bridge to be used for transporting heavy equipment across the river, should the temporary bridge be determined necessary for construction.

The construction schedule of the Kelvin Bridge Replacement Project would ultimately be determined by ADOT (who would bid and administer project construction) and the construction contractor based on availability of equipment, materials, and crew, and the need to phase-out construction. The following description of construction activities and construction schedule is based on the assumption that construction of the project would only occur on one side of the river at a time. After construction activities are completed on one side of the river, construction would start on the other side of the river with the assistance of a temporary bridge to transport heavy equipment across the river. This assumption was made because this scenario would represent the longest continuous construction schedule (between 18 and 21 months) and, consequently, have the longest temporal temporary impacts within and adjacent to the project area.

Other construction scenarios, such as building on both sides of the river simultaneously could shorten the construction schedule and may preclude the need for the temporary bridge to transport equipment. Under such construction scenarios, more equipment and crew would be present at any given point in time during construction, but the project would be completed sooner and have shorter temporal impacts than the assumed scenario. The applicability of the shortened construction schedule scenarios would not be known until prior to construction. Therefore, this EA analyzes the construction scenario where construction would only occur on one side of the river at a time with the use of a temporary bridge in order to analyze the potential construction scenario worst case scenario with the longest potential temporal greatest potential impacts.

Under the assumed construction scenario, construction of the Kelvin Bridge Replacement Project would take between 18 and 21 months and would begin between October and December, 2017. An estimated project schedule is shown in Table 2-1. Construction would occur in four phases: 1) geotechnical and site preparation; 2) bridge construction; 3) local access and detour road construction; and 4) bridge approach road realignment construction. The following text provides a basic summary of the major construction elements that would occur for each phase; these phases and elements are described in greater detail in the following sections.

Phase 1: Geotechnical and Bridge Site Preparation (from October 2016 to December 2016):

- Vegetation clearance of approximately 0.1 acre
- Construct temporary fencing. Fencing shall be constructed before vegetation clearance in order to prevent unauthorized soil and vegetation disturbance outside of authorized ROW.
- Drill three new geotechnical borings
- Grade temporary construction area
- All native trees in the riparian corridor, such as cottonwood and willow, shall be marked before construction and left in place. If a native tree on BLM land in the riparian corridor must be removed, then BLM approval for removal shall be obtained by the contractor prior to removal.

Phase 2: Bridge Construction (from December 2016 to January 2018)

- Construct bridge superstructure (pier foundations, the abutments, footings, bridge deck and piers)
- Construct a temporary 80-foot bridge to transport construction equipment

Phase 3: Detour and Local Access Roads and Bridge Realignment (from October 2017 to November 2017)

- Vegetation removal near the southern portion of the bridge for bridge approach and realignment construction
- Detour road preparation (excavation, grading, and installation of traffic control)

Phase 4: Removing Detour Roads and Revegetation (from February 2017 to March 2017)

- Removal of detour road infrastructure and traffic control
- Temporary detours and temporary bridge workspace reseeded with appropriate species

Table 2-1. Estimated Project Schedule

	Oct 2016	Nov 2016	Dec 2016	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Sept 2017	Oct 2017	Nov 2017	Dec 2017	Jan 2018	Feb 2018	Mar 2018
Activity Type	Geotech Borings	Clear Vegetation	Bridge Construction														Revegetation	
Activity Type			Temporary Bridge										Detour Roads		Permanent Roads			
Activity Type																	Remove Detours	
Equipment and Schedule (Estimated Noise 50 feet from Source)	**(Anticipated working days and hours per week (estimates are for purposes of analysis only)**																	
Diesel Work Truck 1 (85 dBA)	6am-6pm, Monday-Sunday	6am-6pm, Monday-Sunday	24 hours/day, Monday-Sunday															
Diesel Work Truck 2 (85 dBA)		6am-6pm, Monday-Sunday	24 hours/day, Monday-Sunday														24 hours/day, Monday-Sunday	
Diesel Work Truck 3 (85 dBA)		6am-6pm, Monday-Sunday	24 hours/day, Monday-Sunday															
Crane (1) (85 dBA)					24 hours/day, Monday-Sunday	24 hours/day, Monday-Sunday	24 hours/day, Monday-Sunday	24 hours/day, Monday-Sunday	24 hours/day, Monday-Sunday	24 hours/day, Monday-Sunday	24 hours/day, Monday-Sunday							
Dozer (up to 2) (85 dBA)	..														24 hours/day, Monday-Sunday	24 hours/day, Monday-Sunday	24 hours/day, Monday-Sunday	
Excavator (1) (85 dBA)															24 hours/day, Monday-Sunday	24 hours/day, Monday-Sunday	24 hours/day, Monday-Sunday	
Cement Truck (1) (85 dBA)				24 hours/day, Monday-Sunday	24 hours/day, Monday-Sunday	24 hours/day, Monday-Sunday	24 hours/day, Monday-Sunday	24 hours/day, Monday-Sunday	24 hours/day, Monday-Sunday	24 hours/day, Monday-Sunday	24 hours/day, Monday-Sunday	24 hours/day, Monday-Sunday	24 hours/day, Monday-Sunday	24 hours/day, Monday-Sunday	24 hours/day, Monday-Sunday	24 hours/day, Monday-Sunday		
Drill Rig (1) (84 dBA)	6am-6pm, Monday-Sunday	6am-6pm, Monday-Sunday	24 hours/day, Monday-Sunday	24 hours/day, Monday-Sunday	24 hours/day, Monday-Sunday													
Paving Machine and roller (up to 2) (85 dBA)																	24 hours/day, Monday-Sunday	

* If construction does not begin in October of 2015 or 2016, then subsequent construction start dates involving soil and vegetation disturbance shall also be outside the April 1–September 30 nesting season.

Figures 4a and 4b show the overview of the proposed construction activities for the north and south sides of the Gila River, respectively. Figures 5a and 5b show the proposed temporary and permanent construction impacts for the north and south sides of the Gila River, respectively. Overall, the proposed action would disturb approximately 7.2 acres. This includes 2.1 acres of permanent impacts (shown as permanent impacts and permanent detour areas in Figures 5a and 5b), and 5.1 acres of temporary impacts (shown as temporary impacts in Figures 5a and 5b and temporary detour area on Figure 5b) associated with construction of this project.

As noted, one key change and reason for amending the ROW grant is due to project construction during breeding season. The project area contains 2.9 acres of designated critical habitat for the SWFL (USFWS 2013a) and 3.6 acres of proposed critical habitat for the YBCU, most of which overlap each other. Figures 4a and 4b through 5a and 5b show the critical habitat boundaries for these species. Some areas within the designated and proposed critical habitat boundaries do not contain habitat conditions, i.e., existing bridge, railroad, upland vegetation, and barren ground, but the majority of the critical habitat contains appropriate vegetative cover for nesting, foraging, and migration. As a result, this project would remove approximately 1.2 acres (0.4 acre permanent and 0.8 acre temporary) of SWFL designated critical habitat with vegetation and 1.7 acres (0.6 acre permanent, 1.1 acres temporary) of YBCU proposed critical habitat with vegetation. The total impacts to critical habitat for both species combined would be 2.9 acres. Table 2-2 summarizes these impacts.

Table 2-2. Permanent and Temporary Impacts within and outside Critical Habitat

	Impacts in SWFL and YBCU Critical Habitat with Vegetation (acres)	**Impacts outside Critical Habitat (acres)**	**Total (acres)**
Permanent	0.4	0.6	1.0
Temporary	0.8	1.1	1.9
Total	1.2	1.7	**2.9**

CONSTRUCTION PHASES AND SCHEDULE IN DETAIL

Construction phases of the bridge and its supporting elements, as depicted in the 95% design plans developed by Entellus, Inc., are described in the subsections below. The design modifications have not changed the types of construction activities (e.g., blading, grading, and paving road approach realignments, pier construction, bridge deck construction) since the 2012 EA (BLM 2012a).
The construction schedule has changed since the 2012 EA to include construction activities during breeding seasons for the SWFL and YBCU, as identified in Table 2-3. As noted, construction would take between 18 to 21 months under the assumed scenario that construction would only occur on one side of the river at a time. Construction would begin between October and December 2016 (or subsequently in October of future years) and would take place in four general phases:

1. Geotechnical borings and vegetation removal for bridge construction
2. Bridge construction
3. Local access, detour road construction and bridge approach road realignment construction (including vegetation removal for roads)
4. Detour road removal and revegetation

Notwithstanding local, state or federal restrictions, construction can be expected to occur at various levels of capacity throughout each day (for example, up to 24 hours a day, 7 days a week) within the specified time frames.

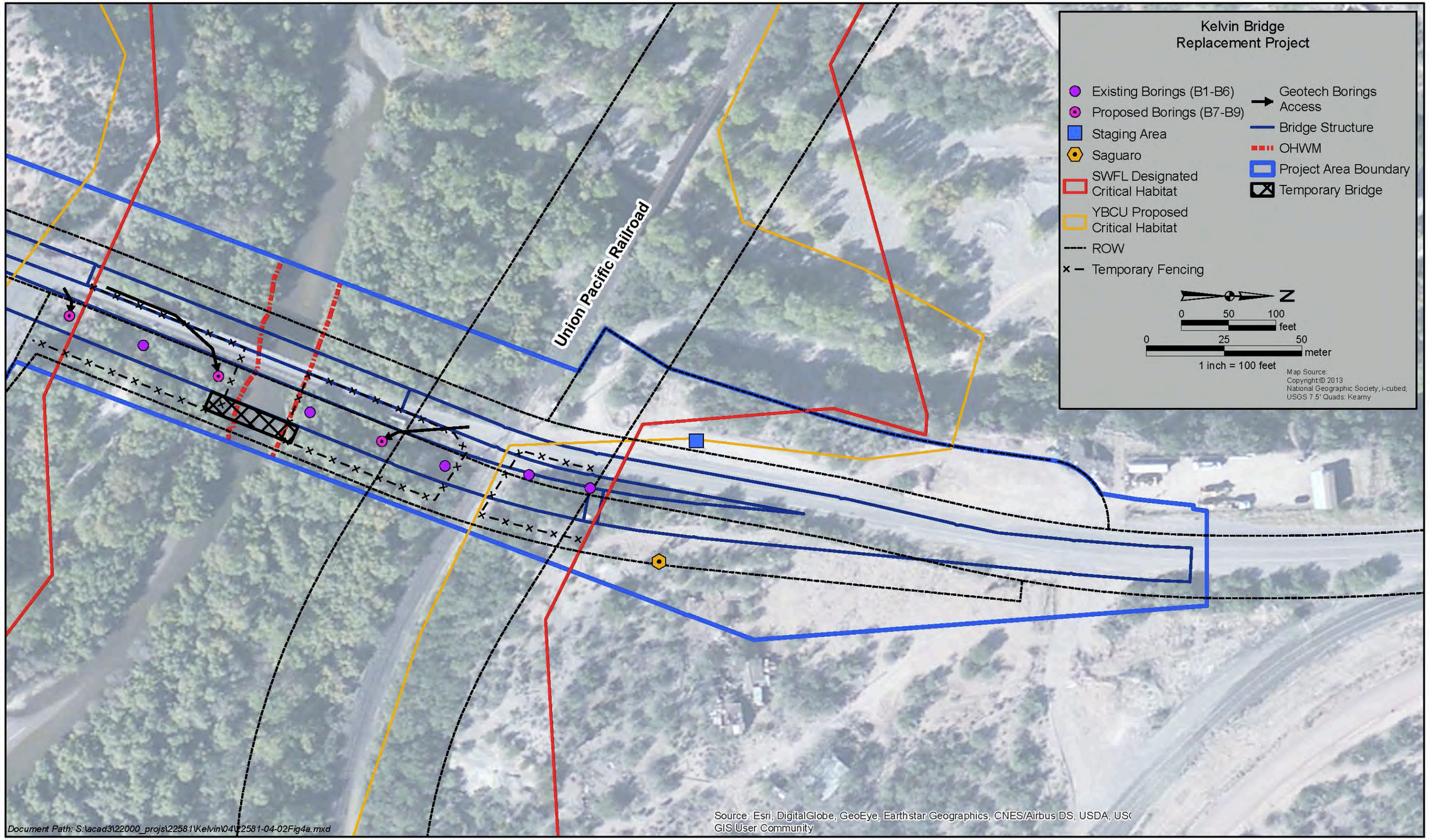

Figure 4a. Project area and Proposed Activities, northern end detail.

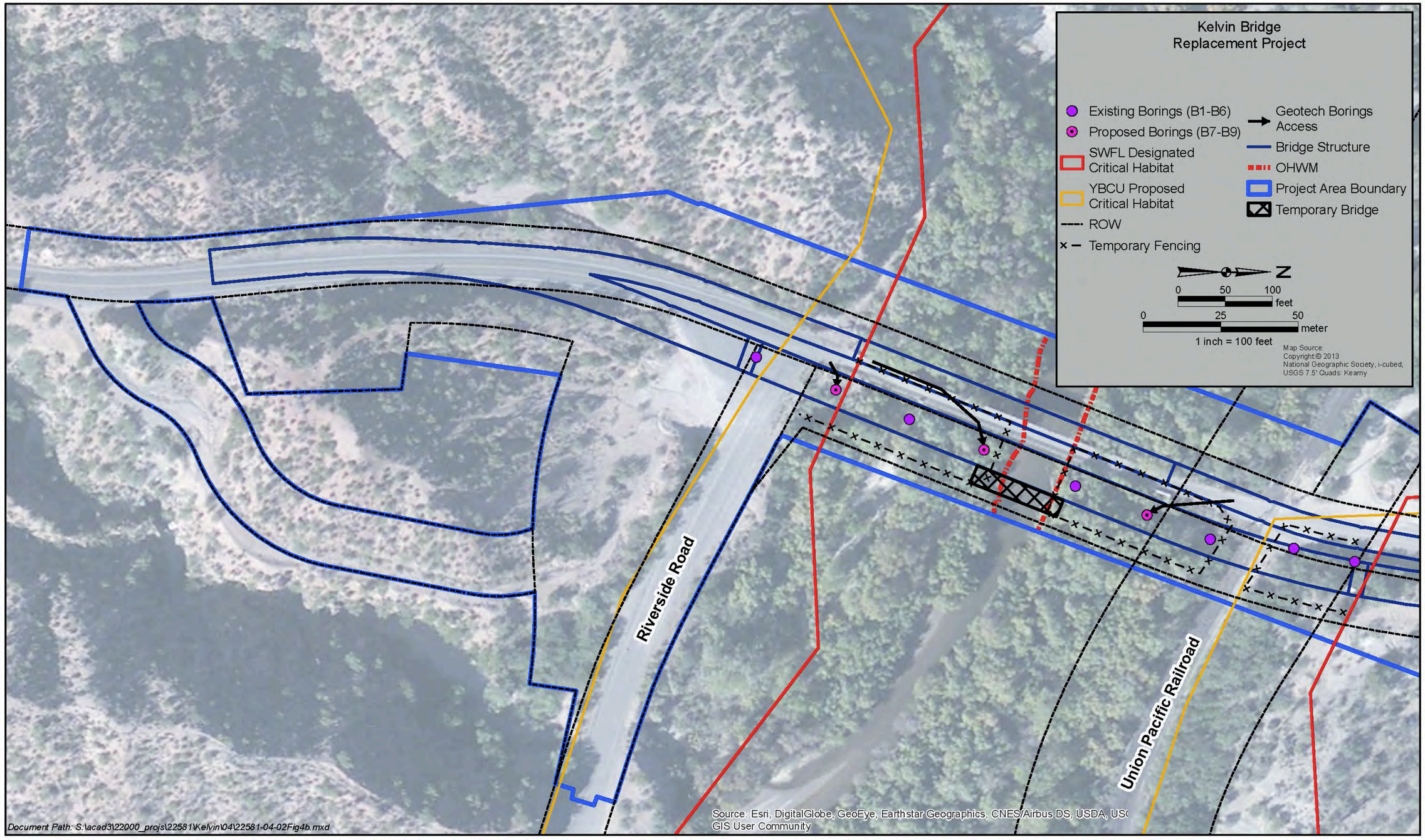

Figure 4b. Project area and Proposed Activities, southern end detail.

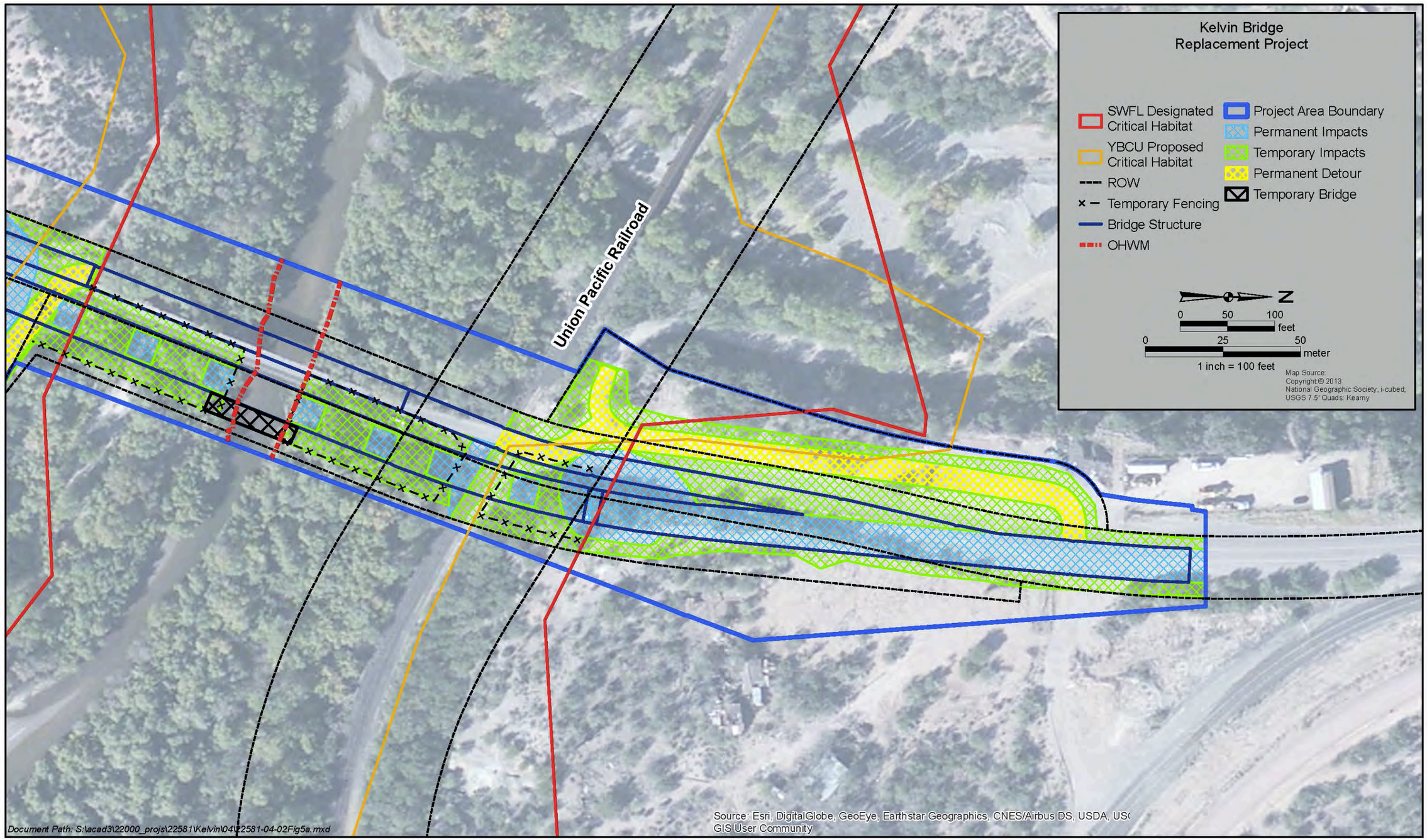

Figure 5a. Project area and Proposed Impacts, northern end detail.

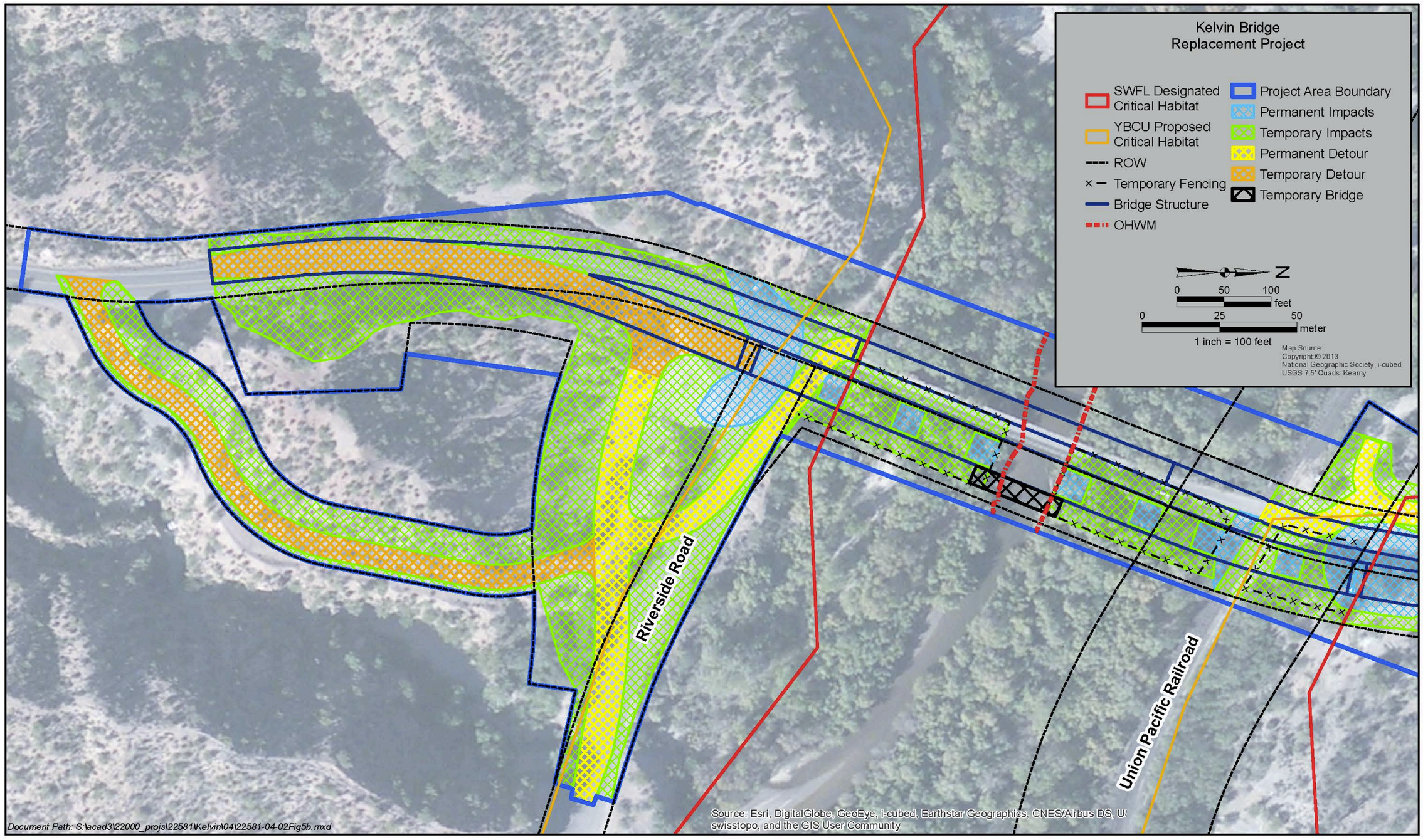

Figure 5b. Project area and Proposed Impacts, southern end detail.

Dates, times, and descriptions are approximate and used for analysis, however the only hard constraint applies to vegetation clearing for bridge construction and Phase 3: Detour and Local Access Roads and Bridge Realignment (from October 2016 to November 2016), which would only begin outside of the migratory bird (including YBCU and SWFL) breeding season. Specific construction equipment and times of use cannot be anticipated as those are determined by the contractor chosen for the work and could change over the course of construction. Table 2-3 provides an overview of the estimated construction activity timing and estimated range of noise generated by anticipated construction equipment.

CONSTRUCTION PHASE 1 - GEOTECHNICAL AND BRIDGE SITE PREPARATION PHASE

Construction Activity: Geotechnical Borings

Anticipated Start Date Range and Duration: Vegetation removal would be needed for drill rig access. It is anticipated that the three borings can be done in less than one day. Because vegetation removal will be required, this phase can only occur outside the migratory bird (including YBCU and SWFL) breeding season. Anticipated start date would be in October 2016.

Key Equipment: One truck-mounted drill rig for geotechnical boring holes with one work/haul truck and crew to man the drill rig and clear the vegetation.

Disturbance Summary: In order to complete the final bridge design, additional geotechnical borings need to be conducted to determine the structural integrity of the existing soil. This bearing capacity would affect the final bridge design. There are a total of nine boring locations, including six (B1–B6) existing borings that were completed in 2004, and the drilling of three (B7–B9) new holes (see Figures 4a and 4b). Also depicted in Figures 4a and 4b are the proposed access routes required to drill the new borings. The borings would be achieved by the use of a truck-mounted drilling rig that can back into each testing location. The (4- to 6-inch) drill would take core samples of the soil that can be taken to a geotechnical lab for further analysis. Vegetation would be cleared in a path that would allow the truck to back down to the boring location and to exit the boring site through the same path. This is the same process that was followed in testing the soil in 2004.

Acreage removal is assumed to be part of the stage for bridge construction due to the overlapping area and timing.

Construction Activity: Bridge Site Preparation

Anticipated Start Date Range and Duration: Between October 2016 and December 2016. The date range does not imply vegetation removal would last the entire range; rather, it is only an estimate of when overall project construction would begin, with geotechnical work and vegetation clearing being the first task of the phase.

Key Equipment: One dozer, and up to 3 work/haul trucks and crew to conduct vegetation removal.

Following geotechnical testing to confirm how deep pier supports need to be constructed, vegetation clearing where bridge construction crosses the Gila River would be needed for temporary work space. Fencing which delineates the area of soil and vegetation disturbance shall be constructed before any soil and vegetation disturbance occurs. Work trucks and crews would remove larger vegetation out of the riparian area, only within the prescribed limits.

No detour roads would be needed during bridge construction, thus vegetation removal for this element would occur following bridge construction, during the road realignment and approach phase.

Impact Summary: This phase involves clearing the vegetation within the project limits of the new bridge. Vegetation would be cleared for temporary workspace along the upper banks of the Gila River where bridge supports would be erected.

Table 2-3. Project-Related Noise Information

	Oct 2016	Nov 2016	Dec 2016	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Sept 2017	Oct 2017	Nov 2017	Dec 2017	Jan 2018	Feb 2018	Mar 2018
Listed Species Migratory Presence in Arizona																		
Southwestern Willow Flycatcher Activity†	Absent						Migration	Breeding				Migration		Absent				
Yellow-billed Cuckoo Activity‡	Migration	Absent						Migration	Breeding			Migration		Absent				
Ambient/Baseline Noise Levels at 100 feet																		
Train (twice/day) (70–95 dBA)																		
Train Whistle (twice/day) (95–115 dBA)																		
Local Traffic (50 dBA)																		
Construction Activities																		
Activity Type	Geotech Borings	Clear Vegetation	Bridge Construction														Revegetation	
Activity Type			Temporary Bridge										Detour Roads		Permanent Roads			
																	Remove Detours	
Equipment Noise Levels 50 feet from Source																		
Diesel Work Truck 1 (85 dBA)																		
Diesel Work Truck 2 (85 dBA)																		
Diesel Work Truck 3 (85 dBA)																		
Crane (85 dBA)																		
Dozer (85 dBA)																		
Excavator (85 dBA)																		
Cement Truck (85 dBA)																		
Drill Rig (84 dBA)																		
Paving Machine (85 dBA)																		
Highest Level of Combined Construction Noise*	87	91	91	92	93	92	92	92	92	92	92	91	91	91	93	93	91	

Notes:

† SWFL are usually considered breeding from mid-April through end of Sept. (with early and late nesting or re-nesting attempts). Migration may be in Sept. for some birds, but not all birds.

‡ YBCU are usually considered breeding from very late May through end of Sept. (with early and late nesting or re-nesting attempts). Migration may be in Sept. for some birds, but not all birds.

Source for noise levels by equipment and local traffic from Federal Highway Administration (2006).

Train noise information from Federal Railroad Administration (2014).

* The combination of noise from multiple sources was calculated following this guidance: 1) two noises with equal or ±1 dB combine to raise the noise level by 3 dB; 2) two noises that differ by more than 10 dB, then no increase is made; 3) two noises that differ by 2 to 3 dB combine to raise the noise level by 32 dB; and 4) two noises with that differ by 4 to 9 dB combine to raise the noise level by 1 dB.

Vegetation would be removed during this phase in the area south of the existing bridge, at the southern end of the project area where the new roadway would be aligned and also the bridge piers and rip rap areas. Temporary impact areas would be seeded after bridge construction, while some vegetation would grow back on its own after bridge construction. Native trees (e.g., willow, cottonwood) would be replanted using potted plants with local genotypes or using pole plantings. Plantings would receive irrigation for the first two years after planting.

Temporary fencing would be placed to denote the boundary of vegetation removal, which would be limited to the ROW and outside of waters of the U.S. The temporary construction area would be graded, and excess soils removed would be stockpiled or used for restoration after construction. The contractor would also use soils from an approved and permitted ADOT borrow pit facility when needed for grading activities. In addition, the required Stormwater Pollution Prevention Plan (SWPPP) will be used during the phase to prevent excess sediment (i.e., affect to water quality) from reaching the river following vegetation removal.

CONSTRUCTION PHASE 2: BRIDGE CONSTRUCTION

Anticipated Duration: December 2016–January 2018.

Key Equipment: One crane, one cement truck, one drill rig, up to 3 work/haul trucks and crew.

No detour roads would be needed during bridge construction, thus vegetation removal for this element would occur following bridge construction, during the road realignment and approach phase.

Impact Summary: No additional vegetation removal would take place in this phase. The permanent impacts in this stage include pillar footings, piers, riprap, bridge deck and one bridge support.
The temporary elements would include a temporary bridge to transport materials and machinery across the river (see Figures 4a and 4b), and temporary workspace. The bridge would span the Gila River, and the river itself would not be altered.

Bridge construction requires drilling for pier foundations and installing steel wire cages and concrete belowgrade. Abovegrade, the piers would be framed and poured and then precast concrete girders would be lifted into place with a crane. The concrete deck would then be formed and poured, which would require frequent delivery of materials by concrete trucks to the project site.

Due to the presence of the Gila River, the bridge would be built in two steps; construction equipment would need to move from one side of the Gila River to the other when the bridge is roughly half way complete. To facilitate this process, the contractor would construct a temporary bridge across the river to transport materials and equipment from one side to the other. Load limit of the existing bridge is 15 tons, and insufficient for transporting heavy equipment and material from one side of the river to the other.

The temporary bridge would span 80 feet (see Figures 4a and 4b), avoiding impact to the Gila River's flowing channel and banks and all WUS, including wetland areas.

With respect to this process, higher than normal flows are not expected to be an issue during construction. The temporary bridge design is not final, but would be anchored via prefabricated concrete footings or driven piles located outside of the OHWM. In the event of a flood, water would likely overtop the temporary bridge in place, which the bridge would be designed to withstand. After subsiding, the temporary bridge's short approach ramps (consisting of ADOT-approved fill material) on either end would be rebuilt as needed.

During bridge construction, a netting device (or something similar as designed by the contractor and approved by the ADOT District Engineer) would be installed in order to keep any materials from falling into the Gila River below. However, users of the Gila River (i.e., for recreation) would not be impeded where it crosses the project area; the netting, temporary bridge and other items would allow access.

In those areas of temporary impacts, some of the vegetation removed in the previous phase is expected to grow back naturally at the completion of this phase, as well as through the proposed revegetation efforts following bridge completion.

CONSTRUCTION PHASE 3: REALIGNMENT OF DETOUR AND LOCAL ACCESS ROADS AND BRIDGE APPROACH REALIGNMENT

Construction Activity: Temporary Detour Roads

Anticipated Duration: October 2016-November 2016.

Key Equipment: One cement truck and up to 3 work/haul trucks and crew.

Impact Summary: Vegetation removal would take place within the detour road alignments prior to blading and grading the detour roads. As previously noted, paving the temporary traffic route road would not be necessary to allow for heavy construction machinery to access the site.

The temporary detour roads are south of the bridge and in the southeastern portion of the project area (see orange-hatched area in Figure 5b). This construction element would also take place outside of the breeding season. Moreover, unlike the vegetation removal under Phase 1, no riparian habitat or vegetation would be removed in this construction element; vegetation removal needed to construct the detour roads consist of upland desertscrub vegetation community with some pre-existing disturbances (e.g., an old road alignment that is not vegetated is planned to serve as a temporary traffic route, and one of the temporary workspace areas is along the road and currently is devoid of vegetation).

Traffic control signage for vehicle and pedestrian traffic detours would be implemented for the duration of the project.

Construction Activity: Bridge Approach Realignment

Anticipated Duration: December 2016 - February 2017.

Key Equipment: One excavator, bull dozer, paving machine and roller, cement truck and up to 3 work/haul trucks and crew.

Impact Summary: This construction element includes vegetation removal, most of which is south of the bridge, in the southeastern portion of the project area (see yellow-hatched area in Figures 5a and 5b). This phase would also take place outside of the breeding season. Moreover, unlike the vegetation removal under Phase 1, no riparian habitat or vegetation would be removed in this construction element; vegetation removal needed to construct the roads consist of upland desertscrub vegetation community with some disturbances; vegetative cover is approximately 25%; The remainder of the area contains either existing roadway or barren ground.

This construction element would include grading and removing some soil for use in other locations throughout the project. Excess dirt from upland and riparian areas will be stored separately (not mixed) in order to ensure the appropriate soil type is used for revegetation efforts in upland and riparian areas. Soils for use in restoration of the riparian area would come from these riparian stockpiled sources. If additional fill material is required, the additional fill material would come from an ADOT permitted materials source. Permanent roads, including realigning the Florence-Kelvin highway to the new bridge and a new local resident access road would last approximately 2 to 3 months, after completion of the detour roads. This would involve clearing the vegetation in areas for the new roadway followed by grading and paving. Construction of these roads is expected to take approximately 1 to 2 months.

PHASE 4: REMOVING DETOUR ROADS AND REVEGETATION

Anticipated Duration: February-March 2017.

Key Equipment: One excavator and up to 3 work/haul trucks and crew.

Impact Summary: No additional vegetation removal or ground disturbance would take place during this phase. Removal of detour road infrastructure and traffic control is expected to last approximately 1 month of construction time, expected within February 2017. The portions of the detour roads that are not permanent would be removed, and the areas would be reseeded with species that are indigenous to the project area, and approved by BLM for use on BLM land.

Restoration plans involve several components:

1. Pinal County would prepare a site restoration plan, to be implemented by the project contractor, using native woody riparian plant species within proposed and designated critical habitat. The site restoration plan would be reviewed and approved by the ADOT Roadside Development and BLM

2. Pinal County would employ a qualified senior biologist (as defined by ADOT standards, with qualifications approved by ADOT and BLM) to monitor native woody riparian plant species planted as part of the site restoration plan, and naturally reestablishing vegetation, within proposed and designated critical habitat at least twice a year, in March and September, for a period of two years following construction to ensure that restoration efforts are successful and to track natural rates of re-colonization and recruitment of tamarisk and native riparian vegetation.

3. A report shall be provided to the BLM biologist on an annual basis which would include planting success rate by species with mapped locations, and species/density of any exotic plants with mapped locations. Irrigation of replanted woody vegetation should occur for two years following planting.

4. Pinal County would participate with other entities involved in cooperative restoration of the middle Gila and lower San Pedro Rivers (e.g., Lower San Pedro Partnership or Lower San Pedro Collaborative Conservation Initiative).

2.2.3 Construction Activities Common to All Phases

DRAINAGE

No culverts or major drainage improvements are included in the Proposed Action. The project is designed to mitigate flood risk of to the bridge from the Gila River.

TRAFFIC CONTROL

Traffic would be re-routed temporarily during construction south of the bridge construction area (see Figure 4b). The temporary traffic route would not be paved; as noted, the proposed route is an existing unpaved road, and its surface provides adequate support for construction equipment.

There would be no signalization included in the Proposed Action. U.S. Department of Transportation standards recommend regulatory signs at each crossover, major intersections, approaches, traffic interchanges, and arterial connections. Passive temporary signage (stop signs, barricades, turn signs, etc.) would be used for the duration of the project.

Local traffic access would be maintained during construction via the temporary detour route connecting the existing bridge to the detour road.

A detailed signing configuration in keeping with the American Association of State Highway and Transportation Officials (AASHTO) and Pinal County Department of Transportation requirements for the Proposed Action is included in the final design and engineering.

DUST CONTROL

Dust-control measures would be utilized as necessary during construction as required under the Pinal County Dust Control Permit. Water from approved off-site sources shall be used as needed to provide water for dust control. Water application by truck would be the primary means of dust control at areas impacted by construction. Speed limits of 5 to 10 miles per hour on access roads within the construction zone and the ROW would reduce particulate matter emissions. Gravel or other similar material would be used where dirt access roads intersect paved roadways to prevent mud and dirt track-out. All paved roads would be kept clean of objectionable amounts of mud, dirt, or debris, as necessary.

EROSION CONTROL

A SWPPP, including spill prevention, would be prepared for construction of the Proposed Action by Pinal County or a chosen contractor in compliance with the Arizona Pollutant Discharge Elimination System (AZPDES) requirements. In accordance with the best management practices (BMPs) in the SWPPP, totally enclosed containment would be provided for all hazardous materials (if needed) and trash.

All construction waste including trash, litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials would be removed to a disposal facility authorized to accept such materials.

In general, construction erosion control would consist of BMPs, including techniques such as hay bales, silt fences, and revegetation, to minimize or prevent soils exposed during construction from becoming sediment carried off the site. Hay bales, silt fences, and/or other methods of erosion control shall not contain any netting due to the potential of creating entrapment hazards to wildlife.

TEMPORARY CONSTRUCTION EASEMENTS AND CONSTRUCTION STAGING

No temporary construction easements would be required outside the requested 100-foot ROW.

The County intends to utilize areas under its jurisdiction that are already disturbed primarily located northwest of the existing bridge. A staging area for construction equipment and materials would be required during the course of construction. The proposed staging area is to be located north of the Gila River along the west side of the existing highway in a previously-disturbed area. The construction staging area would be approximately 50 feet by 50 feet and fenced using self-supporting, chain-link temporary construction fencing.

Use of soils and gravel from an ADOT permitted borrow pit would be necessary if the quantity of salvaged soil was not sufficient for fill material needs; specific material source brokers have not been identified at this time. All excess dirt that may be generated from grading would be reused in revegetation efforts. Excess dirt from upland and riparian areas will be stored separately (not mixed) in order to ensure the appropriate soil type is used for revegetation efforts in upland and riparian areas.

The County would not disturb areas outside the ROW without prior written permission from the appropriate land managing agency or individual owner.

Temporary construction staging areas would be kept in an orderly condition throughout the construction period. Refuse and trash, including stakes and flags, would be removed from the sites and disposed of in an approved manner at an approved refuse facility.

Totally enclosed containment would be provided for all trash and hazardous materials such as oil or diesel fuel and would be located out of the floodplain of the Gila River. All construction waste, including

trash, litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials would be removed to a disposal facility authorized to accept such materials.

No construction equipment oil, antifreeze, or fuel would be drained on the ground. Oils or chemicals would be hauled to an approved site for disposal. No open burning of construction trash would be allowed on BLM-administered lands. No unauthorized use would be permitted on the bridge during construction of the project.

CONSTRUCTION WATER USE AND SOURCE

No new groundwater wells would be required for this project, and no surface water sources would be needed for construction water use. The County would provide construction water and water trucks from approved, off-site sources.

CONSTRUCTION EQUIPMENT ROSTER AND WORKFORCE

The estimated number of workers required to construct the proposed Project would be approximately 20 crew members. Other secondary machinery that may be used during Project construction include a loader and a water truck. Additional equipment may be required on an as-needed basis to mobilize, maintain, and demobilize the other equipment.

2.2.4 Bridge Operation and Maintenance

Typical road operation and maintenance activities would include repairs to the roadway surface, roadway re-surfacing, and removal of sediment from the roadway. Maintenance activities would occur as needed. A sweeper would be used to clear sediment as needed.

The speed limit on the proposed roadway would be 25 miles per hour. The bridge would be monitored for issues that would affect roadway safety and integrity as specified in the right-of-way grant terms.

If the bridge is damaged as a result of flooding, repairs would restore the bridge to its original state after the flooding has subsided. If damage to the bridge is severe, the road would be closed, and Pinal County engineers would assess the damage to recommend the proper repairs that need to be completed in order for the bridge to reopen. Emergency consultation with the USFWS would occur for any necessary bridge repairs.

2.3 No Action

In addition to considering the proposed action, as described in Section 2.4, the no action alternative “provides a benchmark, enabling decision makers to compare the magnitude of environmental effects of the action alternatives” (CEQ 1981:question 3). The No Action Alternative provides the environmental baseline against which the other alternatives are compared.

Under the No Action Alternative, the BLM would not amend ROW Grant # AZA-35391 to allow construction of the project to occur during the breeding season of the YBCU and SWFL. Pinal County would not construct the Kelvin Bridge Project as permitted by the BLM under the existing ROW grant because construction schedule restrictions during the breeding season for migratory birds from April 15 to September 30 would make the cost of the project too expensive to construct. Travelers on the Florence-Kelvin Highway would continue to cross the Gila River on the existing one-lane Kelvin Bridge and would cross the railroad at the at-grade railroad crossing.

2.4 Alternatives Considered but Eliminated from Detailed Study

Alternatives to the Proposed Action (BLM amending and reissuing ROW Grant AZA-35391 to allow for construction during migratory bird breeding season) other than the No Action Alternative are not feasible because any alternative that would modify the proposed construction schedule would not meet the

purpose of the Proposed Action. As described in Section 2.2, construction scenarios such as simultaneously constructing on both sides of the river could shorten the construction schedule and still meet the purpose of the Proposed Action. The construction schedule of the Kelvin Bridge Replacement Project would ultimately be determined by ADOT (who would bid and administer project construction) and the construction contractor based on availability of equipment, materials, and crew, and the need to phase-out construction. While construction scenarios that would shorten the construction schedule may still be employed for this project, they are not analyzed in this EA because this EA analyzes the construction scenario that would have the longest temporal temporary impacts within and adjacent to the project area. Therefore, no other alternatives are carried forward for detailed analysis in this EA.

2.5 Design Features

The following section describes the common features of the proposed Kelvin Bridge Project that were developed by ADOT, the BLM, and Pinal County, as well as activities that are anticipated to occur before and during project construction and throughout operation and maintenance of the project. Compliance with the design features listed in Table 2-4 below would be required for the implementation of the project.

2.6 ROW Grant Stipulations

Thirty ROW Stipulations were included in the October 30, 2012, approved ROW grant for the Kelvin Bridge Project and would be carried forward with the amended ROW grant. Pinal County would be required to adhere to the following ROW stipulations:

1. The holder of right-of-way No. AZA-35391 agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 USC 9601, et seq., or the Resource Conservation and Recovery Act of 1976, 42 USC 6901, et seq.) on the right of way, unless the release is wholly unrelated to the right of way holder's activity on the right-of- way. This agreement applies without regard to whether a release is caused by the holder, its agent, or an unrelated third party.

2. The holder shall fully indemnify, or hold harmless, the United States for any liability, damage, or claims arising in connection with the holder's use and occupancy of the right- of-way.

3. The holder shall maintain the right of way in a safe, useable condition, as directed by the authorized officer and a regular maintenance program shall be maintained.

4. The Copper Basin Railway and local residents will be notified of the construction prior to the start of construction.

5. If any species listed as threatened or endangered under the Endangered Species Act is encountered during construction activities, all work will cease and telephone notification of the discovery will immediately be made to USFWS for those species without an incidental take statement in the biological opinion. Reinitiation of consultation will be required for any species encountered during construction activity that is not covered in the biological opinion. Construction activity may resume only after the authorized officer has issued a continuance.

6. In accordance with the Arizona Pollutant Discharge Elimination System (AZPDES), the construction contractor will develop a Storm Water Pollution Prevention Plan (SWPPP) and will submit the SWPPP and a Notice of Intent (NOI) to ADEQ to obtain a General Construction Permit. The SWPPP will include BMPs that ensure construction will not adversely impact soils and/or water quality in the Proposed Action area.

Table 2-4. Design Features for Environmental Protection by Resource

Feature by Resource	ROW	Construction	Operation and Maintenance
Standard Mitigation			
Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder or any person working on the holder's behalf, on public or federal land shall be immediately reported to the authorized officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine the appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of the evaluation, and any decision as to the proper mitigation measures will be made by the authorized officer after consulting with the holder.	X	X	X
As required by Native American Graves Protection and Repatriation Act regulations at 43 CFR 10.4(g), "If in connection with the project operations under this authorization, any human remains, funerary objects, scared objects or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (P.L. 101-601; 104 Stat. 3048; 25 USC 3001) are discovered, the ROW holder shall stop operations in the immediate area of the discovery, protect the remains and objects, and immediately notify the Authorized Officer of the discovery. The ROW holder shall continue to protect the immediate area of the discovery until notified by the Authorized Officer that operations may resume."	X	X	X
The boundaries of construction activities would be predetermined and staked or flagged prior to any construction activity. No paint or permanent markings would be applied to rocks or vegetation.	X	X	
Prior to construction, all construction personnel would be instructed on the protection of cultural and ecological resources.	X		
All vehicle movement would be restricted to designated access, contracted acquired access, or public roads.	X	X	X
To limit disturbance, existing access roads would be used to the extent practicable, provided that doing so does not additionally impact resource values. Widening and grading of roads would be kept to the minimum required for access by project construction equipment.	X	X	X
All construction vehicle movement would be restricted to predesignated access, construction-required access, and public roads.		X	
Any vehicles and equipment that are brought in from outside the area would be power-washed, including the undercarriage, prior to entering the ROW and afterward before moving vehicles and equipment onto any other public lands, to prevent the introduction and spread of noxious weeds and/or invasive species.	X	X	X
The construction contractor shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes any access roads and adjacent land affected by the establishment of weeds as a result of this action. The operator shall consult with the authorized officer for acceptable weed control methods, which include following U.S. Environmental Protection Agency and BLM requirements and policies.	X	X	X
The width of construction and new temporary access roads would be kept to the minimum needed to avoid sensitive areas and to limit ground disturbance.		X	

Table 2-4. Design Features for Environmental Protection by Resource (Continued)

Feature by Resource	ROW	Construction	Operation and Maintenance
Reclamation			
Reclamation would be accomplished with native species, unless otherwise approved.		X	X
Seeding with a native seed mix would occur between November and March to ensure a greater chance of success.		X	X
Air Quality			
Dust-control measures would be utilized as necessary during construction as required under the Pinal County Dust Control Permit. Water from approved off-site sources may be used as needed to provide water for dust control. Water application by truck would be the primary means of dust control at areas impacted by construction. Speed limits of 5 to 10 miles per hour on access roads within the construction zone and the ROW would reduce particulate matter emissions. Gravel or other similar material would be used where dirt access roads intersect paved roadways to prevent mud and dirt track-out. All paved roads would be kept clean of objectionable amounts of mud, dirt, or debris, as necessary.		X	X
All necessary air quality permits would be obtained prior to construction or operating equipment that would result in regulated atmospheric or fugitive dust emissions.	X		
Topography and Soils			
Excess dirt from upland and riparian areas will be stored separately (not mixed) in order to ensure the appropriate soil type is used for revegetation efforts in upland and riparian areas. Soils for use in restoration of the riparian area would come from these riparian stockpiled sources.		X	
All disturbed areas will be revegetated with an approved seed mix and native trees. Native trees (e.g., willow, cottonwood) will be replanted using potted plants with local genotypes or using pole plantings. Plantings will receive irrigation for the first two years after planting.		X	
Any additional soil needed for grading activities will come from an approved and permitted ADOT borrow pit facility.		X	
In general, construction erosion control would consist of BMPs, including techniques such as hay bales, silt fences, and revegetation, to minimize or prevent soils exposed during construction from becoming sediment carried off the site. Hay bales, silt fences, and/or other methods of erosion control shall not contain any netting due to the potential of creating entrapment hazards to wildlife.		X	
Cultural Resources			
All known and discovered cultural resources will be avoided. During construction, if any cultural resources are discovered, the construction crew shall cease work immediately and contact the BLM.		X	
An archaeological monitor shall be present during all ground-disturbing activities. Should any archaeological resources or vertebrate fossils be discovered during construction, all surface-disturbing activities in the area of discovery shall cease. The archaeological monitor will evaluate the discovery and provide recommendations to the Authorized Officer. Surface-disturbing activities shall not resume until permission is obtained from the Authorized Officer.		X	

Table 2-4. Design Features for Environmental Protection by Resource (Continued)

Feature by Resource	ROW	Construction	Operation and Maintenance
Biological Resources			
Temporary fencing will be installed to delineate limits of vegetation clearing and ground-disturbing activities during construction.	X	X	
Mark all native trees in the riparian corridor, such as cottonwood and willow, prior to construction and left in place. If a native tree on BLM land in the riparian corridor must be removed, then BLM approval for removal shall be obtained by the contractor prior to removal.	X		
To minimize vegetation impacts from geotechnical boring, vegetation would be cleared in a path that would allow the truck to back down to the boring location and to exit the boring site through the same path.		X	
Water Resources			
The bridge's seven single-column pier system is designed to avoid all impacts to waters of the U.S.		X	
A project-specific construction SWPPP would be prepared prior to the start of construction of the road improvements in compliance with any CWA Section 402 permit terms and conditions, if required. As part of the SWPPP, soil disturbance at structure construction sites and access roads would be the minimum necessary for construction and would be designed to prevent long-term erosion, through activities such as restoration of disturbed soil, revegetation, and/or construction of permanent erosion control structures.	X	X	
During bridge construction, a netting device (or something similar as designed by the contractor and approved by the Engineer) will be installed in order to keep any materials from falling into the Gila River below.		X	
Heavy equipment will not be used in the flow channel or abutting wetlands.		X	
Travel Management			
Prior to the start of construction, Pinal County will inform local residents in an effort to minimize the proposed project's impacts to local traffic and roadways.	X	X	
Local traffic access would be maintained during construction via the temporary detour route connecting the existing bridge to the detour road.		X	
The new bridge will span the existing at-grade railroad crossing on the north side of the Florence Kelvin highway.			X
Recreation			
Public access to public lands that are currently open for recreational use would be maintained.	X	X	X
To prevent motorized access on the ANST, large boulders will be placed at the entrance of the trailheads within the project area.		X	X
The existing Kelvin Bridge will remain open for non-motorized use following construction and will continue to be a part of the Arizona National Scenic Trail (ANST).			X

Table 2-4. Design Features for Environmental Protection by Resource (Continued)

Feature by Resource	ROW	Construction	Operation and Maintenance
Human Health and Safety			
All hazardous materials would be disposed in approved manner at off-site, approved facilities by Pinal County and/or Pinal County contractors.		X	
Hazardous Materials and Waste			
All solid waste, such as residential-type garbage, shall be removed from the Proposed Action area on a daily basis.		X	
Totally enclosed containment would be provided for all trash and hazardous materials such as oil or diesel fuel and would be located out of the floodplain of the Gila River. All construction waste including trash, litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials would be removed to a disposal facility authorized to accept such materials.		X	
No construction equipment oil, antifreeze, or fuel would be drained on the ground. Oils or chemicals would be hauled to an approved site for disposal. No open burning of construction trash would be allowed on BLM-administered lands. No unauthorized use would be permitted on the bridge during construction of the project.		X	
A SWPPP, including spill prevention, would be prepared for construction of the Proposed Action by Pinal County or a chosen contractor in compliance with the Arizona Pollutant Discharge Elimination System (AZPDES) requirements. In accordance with the best management practices in the SWPPP, totally enclosed containment would be provided for all hazardous materials (if needed) and trash.		X	

7. Prior to construction, wetland areas within the Proposed Action area, as delineated by SWCA Environmental Consultants (SWCA), and the OHWMs of the Gila River will be fenced with 1.5-m-high (5-foot-high) chain-link and orange construction fencing to reduce impacts the waters of the U.S. and the Gila River. The enclosed wetlands are to remain undisturbed, and the disturbance within the OHWM is to only occur to the extent described above.

8. All construction equipment shall be maintained in good working condition in order to minimize impacts to air quality in the Proposed Action area from exhaust emissions.

9. Fugitive dust emissions shall be minimized in the Proposed Action area during construction by regular water application. A Desert Tortoise survey shall be performed prior to construction to assess whether or not the Proposed Action area is utilized by this species.

10. A Desert Tortoise survey shall be performed prior to construction to assess whether or not the proposed action area is utilized by the species. The standard Mitigation Measures outlined in *Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects* (AGFD 2014) shall be mandatory measures and are attached in Appendix B.

11. Prior to construction, orange construction fencing 1.5 m (5 feet) in height shall be placed 6.1 m (20 feet) beyond and parallel to the edges of the new bridge to delineate the eastern and western bridge construction access limits within SWFL critical habitat.

12. The construction contractor and qualified senior biologist shall closely monitor the Proposed Action area during construction to ensure that impacts to vegetation are minimized. Clearing of SWFL critical habitat required for construction access will be limited to no more than 6.1 m (20 feet) beyond the edge of the new bridge, as delineated by the placement of construction fencing described above. No vegetation shall be trimmed, removed, or otherwise disturbed within the Ordinary High Water Mark (OHWM) of the Gila River, except as that described above.

13. Data recovery at AZ V: 13:33(ASM) shall be completed prior to construction.

14. An archaeological monitor shall be present during all ground-disturbing activities. Should any archaeological resources or vertebrate fossils be discovered during construction, all surface-disturbing activities in the area of discovery shall cease. The archaeological monitor will evaluate the discovery and provide recommendations to the Authorized Officer. Surface-disturbing activities shall not resume until permission is obtained from the Authorized Officer.

15. After construction of the Proposed Action, Pinal County will continue to maintain the historic Kelvin Bridge in perpetuity. A letter to this effect can be found in Appendix C of the EA.

16. If previously unidentified cultural resources are identified during construction of the new bridge, work will cease at that location, and the ADOT District Environmental Coordinator and BLM will be notified. The applicant will arrange for proper treatment of these resources. A treatment plan shall be approved by the Arizona SHPO if the discovery is on non-BLM land and by the Arizona SHPO and BLM if the discovery is on BLM land.

17. Any archaeological or historic artifacts or remains or vertebrate fossils discovered during operations shall be left intact and undisturbed; all work in the area shall stop immediately; and the Assistant Field Manager for Planning and Monitoring shall be notified immediately. Commencement of operations shall be allowed upon clearance by the Assistant Field Manager.

18. An additional cultural and paleontological resource survey may be required in the event the project location is changed or additional surface disturbing operations are added to the project after the initial survey. Any such survey would have to be completed prior to commencement of operations.

19. If in connection with operations under this authorization, any human remains, funerary objects, sacred objects or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (NAGPRA) (L. 101-601; Stat. 3048; 25 USC 3001) are discovered, the permittee shall stop operations in the immediate area of the discovery, protect the remains and objects, and immediately notify the Assistant Field Manager for Planning and Monitoring of the discovery. The permittee shall continue to protect the immediate area of the discovery until notified by the Assistant Field Manager that operations may resume.

20. With regard to portions of the current project area that cross lands administered by Pinal County, the client and all subcontractors are reminded that, in accordance with §41-844 of the Arizona Revised Statutes, the person supervising any survey, excavation, construction, or like activity on lands administered by the State of Arizona or any of its administrative subdivisions (i.e., counties or municipalities) is required, upon incidentally encountering cultural deposits more than 50 years old, to halt all work on the undertaking and immediately notify the Director of the Arizona State Museum (ASM) of the finding, so that a consultation process can be initiated and an appropriate course of treatment decided upon. Work in the area is not to resume until authorization is received from the Director.

21. With regard to portions of the project area that lie on privately owned land, the client and all subcontractors are reminded that, in accordance with §41-865 of the Arizona Revised Statutes, should buried human remains or funerary goods be encountered incidentally on private lands during any ground-disturbing activities associated with the current project or any follow-up work done at any time in the future, all such work must immediately be halted in the vicinity of the finding and the Director of the ASM must immediately be informed, so that a consultation process can be initiated and an appropriate course of treatment decided upon. Under the statute, the Director must make an initial response to such a notification within 10 working days; there is, however, no specified limit on the length of time that work may be delayed in order to deal with the finding in an appropriate manner. In any case, work is not to resume until authorization is received from the Director of the ASM. Should the Director fail to respond to the notification within the ten-day window provided in the statute, it can be assumed that authorization to resume work has been given.

22. The historic Kelvin Bridge shall be made a part of the Arizona Trail to be used as a pedestrian crossing over the Gila River.

23. Project plans shall be submitted to SHPO for review and comment and will comply with the Secretary of Interior's Standards for the Treatment of Historic Properties in order to ensure no adverse impacts occur to the visual context of the existing Kelvin Bridge.

24. A Spill Prevention Control and Countermeasures (SPCC) plan addressing the storage, handling, and release of fuels and lubricants on-site shall be followed during construction. The SPCC plan shall be in accordance with all Federal and state laws regarding the use of fuels and lubricants.

25. A Waste Management Plan (WMP) addressing the safe handling, storage, transportation, and disposal of solid waste, hazardous materials, or other waste used in the Proposed Action area shall be followed during construction. The WMP shall be in accordance with all applicable Federal and state laws regarding waste materials.

26. All solid waste, such as residential-type garbage, shall be removed from the Proposed Action area on a daily basis.

27. The construction contractor shall be held responsible if federal and state-listed noxious weeds become established within the project area. Weed control shall be required in areas where noxious weeds exist, which include the floodplain of the Gila River, roadsides, and adjacent areas affected by the establishment of weeds due to the Proposed Action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

28. All vehicles and equipment brought in from outside the project area shall be power- washed, including the undercarriage, prior to entering the right of way and before moving vehicles onto any other public lands, in order to prevent the introduction and spread of noxious weeds and invasive species.

29. If suspected hazardous materials are encountered during construction or a spill occurs due to an unforeseen circumstance such as an equipment malfunction, the construction contractor will notify ADOT and the BLM. In the event of a hazardous materials spill, the construction contractor will take appropriate measures to remove the contaminated soil and properly dispose of the contaminated soil at a certified hazardous materials disposal facility.

30. Yellow-billed cuckoo, southwestern willow flycatcher and Acuna cactus surveys shall be completed by the proponent's contractor in the summer immediately preceding soil and vegetation disturbing activities.

2.7 Mitigation Measures

The following environmental protection measures and BMPs were developed by ADOT, BLM and the County to ensure that the Kelvin Bridge Project does not result in unnecessary or unreasonable environmental degradation. These mitigation measures are intended to compliment the environmental protection measures included in the design features and ROW grant stipulations listed above. Environmental protection measures and BMPs are actions, practices, or design features that are part of the project and would be implemented by the proponent (the County). Under all alternatives, the mitigation measures listed in Table 2-5 are recommended to be implemented to minimize adverse impacts of the Proposed Action to sensitive environmental resources. The Decision Record for this project will determine which mitigation measures would be carried forward, would be included as conditions of approval, and would be binding in the event that Kelvin Bridge Project were transferred to or operated by another entity.

Table 2-5. Mitigation Measures

GENERAL	
Project Area	The Engineer will inform ADOT and the BLM if any change to the designated work area is needed. Any change to the work area may require additional environmental analysis.
Project Area	The contractor shall not conduct any activities outside of the designated work area without the approval of the Engineer and Pinal County designee. The contractor shall not conduct any activities outside of the designated ROW or Temporary Construction Easement (TCE) on BLM land.
Construction	One pre-construction meeting, one on-site pre-vegetation clearing meeting, and up to three on-site construction meetings with project staff from ADOT, BLM, Pinal County, and the construction contractor (including the senior biologist construction monitor) will be held. The purpose of these meetings is to coordinate construction plans, ROW clearing limits, vegetation marking, etc. so that there is a common understanding of the construction activities.
Design	The final plan set will show the critical habitat areas, wetlands, ordinary high water-mark and vegetation clearing limits. Vegetation clearing within southwestern willow flycatcher and yellow-billed cuckoo critical habitat required for construction access will be limited to no more than 20 feet beyond the edge of the new bridge, as shown in the final plan set.

Table 2-5. Mitigation Measures (Continued)

TOPOGRAPHY AND SOILS	
Soils	A site restoration plan will be prepared and will require that restoration activities include the use of native woody riparian plant species within proposed and designated critical habitat such as Fremont Cottonwood (*Populus fremontii*), Goodding Willow (*Salix gooddingii*), and Velvet Ash (*Fraxinus velutina*). Trees planted shall be of varying heights in order to produce a layered vegetation effect. Native understory plant species such as Seepwillow (*Baccharis glutinosa)* and Burrobrush (*Hymenoclea monogyra*) shall also be planted. All disturbed soils, inside and outside of proposed and designated critical habitat, that will not be landscaped or otherwise permanently stabilized by construction will be seeded using species native to the project vicinity. Any seed mix used on BLM land shall be approved by BLM prior to seeding. The site restoration plan will include a preconstruction inventory of native plants in all areas where native vegetation will be disturbed in order to determine the location and number of plants that may be destroyed or removed. The site restoration plan will be reviewed and approved by the ADOT, and the BLM for all BLM land, and shall be implemented by the contractor following construction of the bridge and roadway improvements.
BIOLOGICAL RESOURCES	
General	At least 45 (forty-five) days prior to construction, the Engineer will contact the construction project manager to arrange for a qualified senior biologist to monitor construction activity. The biological monitor shall monitor mitigation related to special status species, critical habitat, migratory birds, and impacts to vegetation. The biological monitor shall monitor as often as daily during vegetation clearing activities, during temporary bridge construction, and during pier construction adjacent to the wetted channel. At a minimum, the biological monitor shall conduct weekly visits to monitor these activities. The biological monitor shall serve on an on-call basis to respond to incidental biological concerns at the request of the Engineer. The monitor shall notify the ADOT and the BLM project manager of any biological issues/concerns that cannot be addressed on-site. A biological report will be sent to ADOT and BLM on a weekly basis. The monitor shall report any noncompliance to ADOT and the BLM within 24 hours.
General	If the senior biologist monitor determines that unacceptable levels of resource damage are occurring outside of authorized activity, the senior biologist shall request that the Engineer immediately issues a work-stop order for the area where the unacceptable levels of resource damage is occurring. Pinal County and the BLM shall be immediately notified of any stop work decisions.
Vegetation	A qualified senior biologist will monitor native woody riparian plant species planted as part of the site restoration plan, and naturally reestablishing vegetation, within proposed and designated critical habitat at least twice a year, in March and September, for a period of two years following construction to ensure that restoration efforts are successful and to track natural rates of re-colonization and recruitment of tamarisk and native riparian vegetation. A report shall be provided to the BLM TFO on an annual basis which will include planting success rate by species with mapped locations, and species/density of any federal and state-listed noxious weed species with mapped locations.
Vegetation	At least 15 (fifteen) days prior to commencement of ground-disturbing or vegetation clearing activities, the Arizona Department of Transportation District or contractor-employed senior biologist, and the BLM representative will walk the site and agree on the designated work area and correctly mark/flag them.
Vegetation	A Pesticide Use Proposal will be submitted to the BLM for approval prior to controlling federal and state-listed noxious and invasive plant species in the project area. Adhere to USFWS guidelines for herbicide use contained in our detailed guidance, *Recommended Protection Measures for Pesticide Applications in Region 2 of the U.S. Fish and Wildlife Service* (White 2007).
Vegetation	If restoration of native vegetation within the temporary impacts is not successful, as determined by BLM on BLM land, then Pinal County and ADOT shall coordinate with BLM and provide further restoration efforts, such as seeding or plantings on the BLM land.
Vegetation	At least 10 (ten) days prior to commencement of ground-disturbing or vegetation clearing activities, the Engineer, Arizona Department of Transportation District or contractor employed senior biologist and BLM representative will walk the site and identify the trees to be pruned or removed. Native trees/shrubs/and cacti that are not to be removed shall be marked with flagging. Pinal County shall not prune or remove flagged plants or additional trees without the approval of the Engineer, ADOT Environmental Planning Group biologist and the BLM biologist.

Table 2-5. Mitigation Measures (Continued)

Vegetation	When cutting down a native tree (cottonwood, willow, hackberry, mesquite, etc.), retain the stump (1 foot above the ground or at least above the first limbs to facilitate resprouting) wherever possible.
Vegetation	Tree inventory must be shown clearly on construction plans and engineering data will be provided for tree locations, which can be easily identified in the field. Tree removals need to be identified precisely by tree names, tree sizes, trunk sizes and removal details. Trees not identified for removal will not be removed.
Wildlife	A qualified senior biologist will present an environmental awareness program to personnel who will be on-site during construction, including, but not limited to, contractors, contractors' employees, supervisors, inspectors, and subcontractors. This program will contain, at a minimum, information concerning the biology and distribution of the endangered southwestern willow flycatcher (*Empidonax traillii extimus)* and their critical habitat; and the threatened western yellow-billed cuckoo (*Coccyzus americanus*) and their proposed critical habitat; Sonoran Desert tortoise (*Gopherus morafkai*) and; and, construction avoidance areas such as wetlands, ordinary high water mark, and vegetation clearing limits. The Standard Mitigation Measures for Projects in Sonoran Desert Tortoise Habitat (2008) and the Sonoran Desert Tortoise Handling Procedures (2013) shall be mandatory measures and are attached in Appendix B.
Wildlife	Consider incorporating roosting sites for bats into bridge designs.
Wildlife	Only wildlife-friendly fence design shall be used for permanent fencing.
Wildlife	A Spill Prevention and Pollution Prevention Plan will be developed to prevent impacts to the Gila River and southwestern willow flycatcher and yellow-billed cuckoo critical habitat areas in the Gila River, which are protected under the Endangered Species Act. The spill prevention and pollution prevention plan shall state that the contractor will notify the Engineer immediately of any spills. The plan shall be submitted to the BLM and Engineer for review and approval, in coordination with the Arizona Department of Transportation District or contractor employed biologist and Pinal County designee. The approved plan shall be implemented by the contractor during construction and monitored by the biological monitor to ensure compliance.
Wildlife	At least 10 (ten) days prior to commencement of ground-disturbing or vegetation clearing activities, Arizona Department of Transportation District or contractor employed senior biologist, and BLM representative will ensure that the designated work area and sensitive resource areas have been clearly fenced or flagged. Vegetation clearing within southwestern willow flycatcher critical habitat yellow-billed cuckoo proposed critical habitat required for construction access shall be limited to no more than 20 feet beyond the edge of the new bridge, as shown in the final plan set.
Wildlife	Vegetation clearing activities such as vegetation trimming or removal and grubbing shall be restricted to October 1st – March 31st of any given year. No vegetation clearing activities will occur between April 1st and September 30th or dates set by the USFWS in a Biological Opinion.
Wildlife	If active bird nests are identified during pre-construction surveys or during construction, no construction activities will be allowed within 100 feet of any active nest. The avoidance area will be marked in the field with orange plastic fence or T-posts with flagging. The Engineer will contact the Arizona Department of Transportation District or contractor employed biologist to determine the appropriate avoidance strategies until the nestlings have fledged from the nest and the nest is no longer active.
Wildlife	Consultation on wildlife mitigation designs and siting during development of the final engineering plans and construction phases would be conducted with AGFD and USFWS in coordination with the BLM.
Wildlife	Minimize removal of xeroriparian vegetation during construction at wash crossings.
Wildlife	A project speed limit of 25 mph would be followed when in the project area.
Wildlife	Yellow-billed cuckoo, southwestern willow flycatcher, and Acuna cactus surveys shall be completed by the proponent's contractor in the summer immediately preceding soil and vegetation-disturbing activities.
WATER RESOURCES	
Gila River	A containment plan will be developed for debris and construction materials to avoid contamination of Gila River. The containment plan shall be approved by the Engineer prior to construction. The qualified senior biologist will monitor the implementation of the plan to ensure compliance.

2.8 Summary of Environmental Effects

Table 2-6 presents a summary comparison of resources potentially affected by the No Action Alternative and the Proposed Action. The information presented in this table is a summary comparison of the data presented in detail in Chapter 3 of this EA. The effects identified in this table also assume that BMPs and mitigation measures will have been implemented. The comparison of effects also includes effects that are common to the alternatives and Proposed Action to demonstrate the relative effect of each.

Table 2-6. Summary of Environmental Effects

Resource Section	No Action	Proposed Action
AIR QUALITY	No impact.	Short-term, minor impacts to air quality from fugitive dust and equipment emissions during construction. Negligible impacts to climate change.
BIOLOGICAL RESOURCES	No impact.	Long-term impacts to vegetation from construction activities and permanent loss of vegetation and habitat on 2.1 acres. Short-term, minor impacts to wildlife, migratory birds, and special status species from construction, and temporary impacts to habitat on up to 7.2 acres.
CULTURAL RESOURCES	No impact.	No impact because known cultural resources within the project area have been recovered. In the event of an unanticipated discovery of cultural material during project activities, all work would stop at that location until the find is evaluated by a professional archaeologist.
GEOLOGY AND SOILS	No impact.	Construction of the Proposed Action could temporarily impact up to 7.1 acres of soil resources. Permanent impacts to 2.1 acres would result from the construction of the new bridge approaches and bridge. Direct impacts to the soils include erosion from the removal of vegetative cover and compaction from heavy equipment resulting in the loss of soil structure and porosity.
HUMAN HEALTH AND SAFETY	No impact.	The construction of the Proposed Action is expected to take between 18 and 21 months and would be confined to the footprint of the road within the ROW; thus the increase of potential risk to human health and safety associated with construction activities would be short-term and minor. The Proposed Action would provide a long-term moderate beneficial impact to public safety because traffic would no longer have to cross the railroad at an at-grade crossing.
HAZARDOUS MATERIALS	No impact.	During construction, operation, and maintenance, there is a potential risk of contamination to soil through leaks from equipment, vehicles or accidental releases along the ROW. A SWPPP will be developed to minimize the risk of an accidental release. If previously unidentified hazardous materials are encountered during construction or operation and maintenance, work would stop at that location until the material was investigated and proper action implemented. No adverse direct or indirect effects from hazardous materials are expected.

Table 2-6. Summary of Environmental Effects (Continued)

Resource Section	No Action	Proposed Action
NOISE	No impact.	Short-term, minor impacts resultant from temporary increase in noise levels (e.g., vehicles and construction equipment) during daytime hours may cause localized impacts in the immediate vicinity of the project during construction only.
RECREATION	Long-term minor impact would occur as a result of the existing Kelvin Bridge not becoming a non-motorized segment of the Arizona National Scenic Trail.	Temporary, minor impacts to recreation may occur during construction as a result of construction noise and temporary access restrictions to the trailhead for the Arizona National Scenic Trail, but would cease during operation and maintenance. Long-term beneficial impact would occur as a result of the existing Kelvin Bridge being converted to a non-motorized use bridge and incorporated into the Arizona National Scenic Trail. The trailhead at the bridge would be improved over existing condition as well.
SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE	Long-term, moderate impact to quality of life for area residents because there would be no new bridge construction, thus not improving access.	Long-term beneficial impacts would be expected to occur as a result of the improved access to Kelvin provided by the new Kelvin Bridge. Roadway users and nearby residents would benefit from the bridge by no longer needing to wait for opposing traffic on the bridge and no longer crossing the railroad at an at-grade crossing. No impact to environmental justice.
TRAVEL MANAGEMENT	No impact.	Because the existing Kelvin Bridge would remain open during construction, traffic delays during construction would not occur. The Proposed Action would have major beneficial impacts to local transportation because vehicles would no longer be required to wait for opposing traffic to clear the bridge. In addition, the Florence-Kelvin Highway would span the railroad; therefore traffic would no longer be delayed by trains at the existing at-grade railroad crossing.
WATER RESOURCES	No impact.	No impact to water resources. The bridge will span the OHWM of the Gila River and mitigation measures such as implementation of a SWPPP will prevent indirect impacts to surface waters.
VISUAL RESOURCES	No impact.	The Proposed Action would result in a minor modification of the existing landscape. The Proposed Action would not dominate the view of the casual observer. Since the Phoenix RMP does not specify visual resource management objectives, the minor modification would not be in conflict with the Phoenix RMP.

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1. Introduction

This chapter describes the affected environment and the potential impacts to the resources and uses that exist in the affected environment. The affected environment is the baseline against which each project alternative is evaluated in terms of impacts to the human environment that would result from its implementation. The following sections describe the human environment that may potentially be affected by the proposed project and alternatives, including both natural and physical resources in the area and the relationships of people to these resources (40 CFR 1508.14).

Relevant environmental conditions and human uses within the analysis area have been identified and described using geographic information system (GIS) data, literature searches, electronic searches, interviews, detailed field surveys, and information from BLM resource specialists.

3.1.1. Resource Values and Uses Brought Forward for Analysis

Based on internal scoping, or issue identification, a number of issues and concerns were identified for analysis in this EA (see Chapter 1, Section 1.6). In order to analyze and respond to the issues and concerns, the resource values and uses of the affected environment must be identified and described. For this EA analysis, the following resources and uses are brought forward for analysis and are presented in this chapter.

- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Socioeconomics and Environmental Justice
- Transportation
- Water Resources
- Visual Resources
- Recreation

3.1.2 Resource Values and Uses Considered but not Carried Forward for Analysis

Because the intent of a NEPA document is to concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail (40 CFR 1500.1(b)), elements that are not present or that would not be affected are not carried forward for detailed analysis in this EA. Internal scoping conducted by the BLM determined the following resources will not be analyzed in detail:

- Tribal Concerns
- Human Health and Safety
- Cave Resources
- Rangeland Resources
- Paleontological Resources
- Wild Horse and Burro Management

- Wilderness Characteristics
- Wildland Fire Management
- Special Designations

3.1.3 Analysis Area

The term “analysis area” describes the geographic extent of the resource or use that encompasses the area on which the impact assessment is focused. The analysis area varies by resource value or use, depending on the geographic extent of the resource or use and the extent of the effects of the Proposed Action and No Action Alternative on a resource or use. In this EA, the analysis area for identifying existing conditions and determining impacts to resources is the project area, unless specified otherwise in resource sections below. The project area is defined as the area within which all ground-disturbing activities will occur (refer to Figure 1).

3.1.4 Impact Definitions

The direct and indirect effects of the Proposed Action and Alternative 1 on resources present and brought forward for detailed analysis are discussed in this section. Direct effects are caused by the action and occur at the same time and place. Indirect effects are caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable. The effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems (40 CFR 1508.8). The terms “effect” and “impact” are synonymous under NEPA. Actions that could impact the human environment (i.e., the natural and physical environment and the relationship of people with that environment) have been analyzed, and the conclusions drawn from analysis are described under the appropriate resource sections.
The resource issues identified during agency and public scoping are considered during detailed analysis in terms of whether or not potential impacts would occur. Each resource issue identified in Chapter 1 of this EA (Section 3.1.1) is addressed in the applicable resource section presented below.

Potential impacts are described in terms of type, context, duration, and intensity. Definitions are defined as follows.

- Type describes the classification of the impact as either beneficial or adverse, direct or indirect:
  - *Beneficial*: A positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition.
  - *Adverse*: A change that moves the resource away from a desired condition or detracts from its appearance or condition.
  - *Direct*: An effect that is caused by an action and occurs at the same time and place.
  - *Indirect*: An effect that is caused by an action but occurs later in time or is farther removed in distance but is still reasonably foreseeable.
- Context describes the area or location in which the impact would occur. Are the effects site specific, local, regional, or even broader?
- Duration describes the length of time an effect would occur, either short term or long term:
  - *Short-term* impacts generally last only during construction, and the resources return to preconstruction conditions within 5 years or less.
  - *Long-term* impacts last beyond the life of the ROW grant, and the resources may not return to preconstruction conditions for more than 50 years.
- Intensity describes the degree, level, or strength of an impact. For this analysis, intensity has been categorized as negligible, minor, moderate, and major.

An impact would be considered negligible if impact is at the lowest level of detection with neither adverse nor beneficial consequences. Impacts are considered minor if project-related impacts would occur but resources would retain existing character and overall baseline conditions. Impacts are considered moderate if project-related impacts would occur and resources would partially retain their existing character. Some baseline conditions would remain unchanged. Finally, major project-related impacts would occur that would create a high degree of change within the existing resource character and overall condition of resources.

A cumulative impact, as defined by the CEQ (40 CFR 1508.7), is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts are interdisciplinary and multi-jurisdictional and usually do not conform to political boundaries. To determine any cumulative effects, all applicable past, present, and future actions within the same geographic extent as the Proposed Action and Alternative 1 were evaluated in each resource section. A discussion of past, present, and reasonably foreseeable future actions that have been taken into consideration in developing the cumulative effects analysis is included in each resource section.

3.2 Air Quality

3.2.1 Affected Environment

REGULATORY STANDARDS AND GOVERNING AGENCIES

Since 1970, the federal Clean Air Act (CAA) and subsequent amendments have provided the authority and framework for EPA regulation of emission sources and the establishment of requirements for the monitoring, control, and documentation of activities that will affect ambient concentrations of certain pollutants that may endanger public health or welfare. Under the CAA, each State or delegated permitting authority has the responsibility to achieve and maintain air quality that meets the NAAQS. EPA regulates activities affecting air quality on federal lands and most Indian lands. Federal lands are not subject to Arizona's State Implementation Plan.

The EPA has promulgated primary and secondary NAAQS for six criteria pollutants: carbon monoxide (CO), nitrogen dioxide (NO2), two size categories of particulate matter (PM10 and PM2.5), O3, sulfur dioxide (SO2), and lead. The primary standards are concentration levels of pollutants in ambient air, averaged over a specific time interval, designed to protect public health with an adequate margin of safety. The secondary standards are concentration levels judged necessary to protect public welfare and other resources from known or anticipated adverse effects of air pollution. Although States may promulgate more stringent ambient standards, the State of Arizona has adopted standards identical to the federal levels (see Arizona Administrative Code Title 18, Chapter 2, Article 2). Table 3-1 presents the NAAQS for five of the six "criteria" pollutants, including both primary standards (pertaining to human health) and secondary standards (pertaining to human welfare, such as visibility, socioeconomics, and effects on flora and fauna). Lead is not measured, as it generally does not pose a problem since the removal of lead from gasoline.

Table 3-1. National Ambient Air Quality Standards

Pollutant	Averaging Period	Primary ($\mu g/m^3$)	Secondary ($\mu g/m^3$)
NO_2	Annual	100 (0.05 ppm)	100 (0.05 ppm)
SO_2	3-hour	–	1,300
	24-hour	365 (0.14 ppm)	–
	Annual	80 (0.03 ppm)	–
CO	1-hour	40 (35 ppm)	–
	8-hour	10 (9 ppm)	–

Table 3-1. National Ambient Air Quality Standards (Continued)

Pollutant	Averaging Period	Primary ($\mu g/m^3$)	Secondary ($\mu g/m^3$)
O_3	1-hour	240 (0.12 ppm)	240 (0.12 ppm)
	8-hour	160 (0.08 ppm)	160 (0.08 ppm)
$PM_{2.5}$	24-hour	65	65
	Annual	15	15
PM_{10}	24-hour	150	150
	Annual	50	50

Source: EPA (2011)
Note: $\mu g/m^3$ = micrograms per cubic meter; ppm = parts per million

CRITERIA POLLUTANT NONATTAINMENT AREAS IN THE PROJECT VICINITY

EPA identifies “attainment” areas as those regions within the country where the concentration of one or more criteria pollutants is below the NAAQS. “Nonattainment” areas are regions within the country where the concentration of one or more criteria pollutants exceeds the NAAQS. Particulate matter consists of small solid and liquid particles 10 microns in diameter or smaller, also called PM_{10}. The proposed project area is located within the Hayden Planning Nonattainment area for PM_{10} and less than 1 mile away from the Nonattainment area for lead. Therefore, the analysis area for air quality is the Hayden Planning Nonattainment Area.

CLIMATE CHANGE

Climate change is a global phenomenon that results from global greenhouse gas (GHG) emissions. GHGs are chemical compounds in the Earth’s atmosphere that allow incoming short-wave solar radiation but absorb long-wave infrared radiation re-emitted from the Earth’s surface, trapping heat. The Phoenix RMP does not address climate change; however, information from the Lower Sonoran RMP climate change section is included for analysis. Most studies indicate that the Earth’s climate has warmed over the past century due to increased emissions of GHGs and that human activities affecting emissions to the atmosphere are likely an important contributing factor (BLM 2012c).

Climate change may be affected by numerous other factors, including solar radiation, ocean circulation, and human activities such as burning fossil fuels or altering the Earth’s surface through deforestation or urbanization (EPA 2015). There are more sources and actions emitting GHGs (in terms of both absolute numbers and types) than are typically encountered when evaluating the emissions of other pollutants. These emissions are often categorized as either anthropogenic (human-caused) or nonanthropogenic (naturally occurring). From a quantitative perspective, there is no single dominating anthropogenic source and fewer sources that would even be close to dominating total GHG emissions. Global climate change is much more the result of numerous and varied sources, each of which might seem to make a relatively small addition to global atmospheric GHG concentrations.

Global climate change models project impacts to include air temperature increases; sea level rise; changes in the timing, location, and quantity of precipitation; and increased frequency of extreme weather events such as heat waves, droughts, and floods. These changes vary regionally and may affect renewable resources, aquatic and terrestrial ecosystems, and agriculture. Although uncertainties remain regarding the timing and magnitude of climate change impacts, the scientific evidence predicts that continued increases in GHG emissions will lead to increased climate change. According to the Intergovernmental Panel on Climate Change (IPCC), increased atmospheric levels of CO2 are correlated with rising temperatures. Climate models indicate that temperatures will likely increase by 1.1 to 6.4 degrees Celsius (°C) (2.0 degrees Fahrenheit [°F] to 11.5°F) by 2100 (IPCC 2014). However, the Nongovernmental International Panel on Climate Change concluded that models are not the best predictors of climate change (Idso et al. 2013).

The BLM recognizes the importance of global climate change and the potential effects it may have on the local environment. Activities within the air quality analysis area that may generate emissions of climate changing pollutants (i.e., CO2, CH4, and N2O) include, as examples, urban development, agricultural activities, large wildfires, and the use of internal-combustion engines (e.g., recreational use, transportation use, or commuter use). Other activities may sequester CO, such as managing vegetation and riparian areas, which may function as carbon sinks (BLM 2009).

Preliminary GHG emissions inventories have been prepared for each state in a cooperative effort between the Center for Climate Strategies (CCS) and the environmental departments for each state. According to the inventory for Arizona, the GHG emissions for reporting year 2000 were 89 million metric tons of carbon dioxide equivalent (CO2e). The reference case GHG emissions for year 2020 were estimated at 153.5 million metric tons of CO2e (CCS 2005).

3.2.2 Impacts from the No Action Alternative

DIRECT AND INDIRECT IMPACTS

No impacts to air quality would occur as a result of the No Action Alternative.

CUMULATIVE IMPACTS

Under the No Action Alternative, no additional impacts to air quality would occur. Sources of criteria pollutants within the Hayden Planning Area for PM_{10}, such as the nearby Ray Mine and off-road vehicle use, would be expected to continue to contribute to the planning area's nonattainment status.

3.2.3 Impacts from the Proposed Action

DIRECT AND INDIRECT IMPACTS

Regulated air pollutant emissions that would be emitted as a result of the Proposed Action include diesel exhaust and PM_{10}. All construction activities under the proposed action would have temporary, minor impacts to air quality by emitting these criteria pollutants from combustion engines on vehicles and equipment and particulate matter emissions as fugitive dust from ground-disturbing activities. Emissions of all criteria pollutants would result from construction activities, including combustion of fuels from on-road haul trucks transporting materials and employee commuter emissions. Fugitive dust emissions would be greatest during initial site preparation activities and would vary from day to day, depending on the type of activity and prevailing weather conditions. Because the proposed project is not designed to increase traffic capacity of the existing roads, post-construction emissions from vehicles would not increase over current levels.

Direct and minor adverse impacts to air quality are expected during construction of the Proposed Action. These impacts will be from vehicle and equipment exhaust as well as from dust produced by construction activities. Fugitive dust will be limited by dust control measures, such as watering of disturbed areas by a spray bar–equipped water truck as necessary to comply with ADEQ, local ordinances, and/or other jurisdictional agencies' requirements. Exhaust emissions from equipment will be limited to the extent possible by the performance of proper maintenance as specified by the equipment manufacturers.

Construction vehicle and equipment use would temporarily emit GHGs during construction, but the emissions would not be expected to be a significant contributor to the CO2e of Arizona. Because the new bridge is not designed to increase traffic over current levels and would prevent vehicles from idling while waiting for cross traffic to clear the bridge, GHGs emitted from traffic using the new bridge would be the same or lower than current levels.

CUMULATIVE IMPACTS

When combined with air quality impacts from other sources within the Hayden Planning Area such as ongoing operations at Ray Mine and continued off-road vehicle use, air quality impacts associated with the Proposed Action's construction activities would have temporary minor cumulative impacts to the

Hayden Planning Area's nonattainment status for PM_{10} during construction activities and emission of GHGs. The air quality cumulative impacts would not be expected to be a significant contribution to the CO2e of Arizona.

MITIGATION MEASURES AND RESIDUAL IMPACTS

Dust control measures would be utilized as necessary during construction as required under Pinal County Dust Control Permit, speeds would be limited to 5 miles per hour within the construction zone and ROW, gravel and other similar materials would be used where dirt access roads intersect paved roadways, all paved roads would be kept clean of mud, dirt or debris, and disturbed areas including material stock piles would be watered to prevent excessive dust conditions.

Dust control measures would minimize PM10 emissions during construction activities, but would not eliminate all fugitive dust emissions. Therefore, temporary minor impacts to air quality within the Hayden Planning Nonattainment Area would occur during construction of the Proposed Action.

3.3 Soils and Prime and Unique Farmlands

3.3.1 Affected Environment

SOILS

Soils data from the Natural Resources Conservation Service (2015) indicate that three soil types are present in the project area. These soils include fig family-Topock complex, 5 to 50 percent slopes, Stagecoach-Delnorte complex, 5 to 45 percent slopes, and Quiburi-Gila complex, 0 to 3 percent slopes. All soil types are moderately- to well-drained, deep soils (over 80 inches to restrictive feature) found in floodplains and/or alluvial fans formed from mixed stream alluvium.

PRIME AND UNIQUE FARMLANDS

Of the three soil types, only the Quiburi-Gila complex is suitable for prime and unique farmlands; however, this soil type is only suitable for prime and unique farmlands if it is protected from flooding. This soil type is on the northern bank of the Gila River that is frequently flooded by releases from the Coolidge dam upstream. None of the soils in the project area are currently used for agriculture and there is currently no flood protection (NRCS 2015).

3.3.2 Impacts from the No Action Alternative

DIRECT AND INDIRECT IMPACTS

Under the No Action Alternative, no construction activities would occur. Therefore, no direct or indirect impact would occur to soils and prime and unique farmlands.

CUMULATIVE IMPACTS

No cumulative impacts to soils within the project area would occur as a result of the No Action Alternative.

3.3.3 Impacts from the Proposed Action

DIRECT AND INDIRECT IMPACTS

Soils

Construction of the Proposed Action could temporarily impact up to 5 acres of soil resources. Permanent impacts to 2.1 acres would result from the construction of the bridge piers and bridge approaches. Direct impacts to the soils would include erosion from the removal of vegetative cover and compaction from heavy equipment, resulting in the loss of soil structure and porosity. These impacts could lead to increased rainfall runoff and susceptibility to high wind events and, consequently, increased erosion. The proposed action includes activities that would reduce impacts to soils such as stockpiling topsoil

types separately for use during post construction reclamation and cleaning all construction equipment prior to entering or leaving the project area to minimize the risk of spreading invasive weeds.

Indirect impacts to soil resources can include colonization of noxious weeds on disturbed soils. This can occur anywhere soil is disturbed. Weeds can outcompete native species due to their ability to thrive under conditions with low soil moisture content, poor nutrient availability, and coarse soil textures. BMPs such as washing construction equipment and removing any lodged vegetation prior to entering and leaving the constructions site would be used to prevent the spread of weeds.

Prime and Unique Farmlands

Because no farmlands currently exist within the project area, the Proposed Action would have no direct or indirect impacts to prime and unique farmland

CUMULATIVE IMPACTS

No known reasonably foreseeable future actions would impact soils within or adjacent to the project area; therefore no cumulative impacts to soils would be expected as a result of the Proposed Action.

MITIGATION MEASURES AND RESIDUAL IMPACTS

Design features, ROW grant stipulations, and mitigation measures for soils are identified in Sections 2.5, 2.6, and 2.7, respectively, above. In general, impacts to soils would be minimized through the implementation of a SWPPP during construction and reclamation of all disturbed areas, including revegetation with a BLM-approved seed mix. Soils removed during construction would be stockpiled by soil type (upland vs riparian) in order to facilitate revegetation efforts after ground-disturbing activities. The SWPPP and revegetation efforts cannot completely mitigate impacts to soils from ground-disturbing activities; therefore short-term minor adverse residual impacts to soils would occur in the project area as a result of the Proposed Action.

3.4 Water Resources

3.4.1 Affected Environment

SURFACE WATER

Surface water resources generally consist of wetlands, lakes, rivers, and streams. All of these surface water components contribute to the economic, ecological, recreational, and human health of a community. Waters of the US are defined within the CWA, and jurisdiction is addressed by the EPA and the USACE. These agencies assert jurisdiction over traditional navigable waters and their relatively permanent tributaries, along with the wetlands that are adjacent to these waters.

The USACE regulates the discharge of dredged and fill material (e.g., concrete, riprap, soil, cement block, gravel, sand) into waters of the United States, including adjacent wetlands, under Section 404 of the CWA and work on structures in or affecting navigable waters of the United States under Section 10 of the Rivers and Harbors Act of 1899.

The proposed bridge would span the perennial Gila River, a traditional navigable water that generally flows from east from its source in New Mexico to west at the river's confluence with the Colorado River. The Gila River is defined by ACOE and an 'impaired water' as defined under Section 303 of the CWA. Peak flow generally occurs in August during the monsoon season. The period of lowest flow generally occurs during November, prior to the onset of winter precipitation (SWCA 2015). Mean peak flow measured just downstream of the project area is 837 cubic feet per second (cfs) in August. The lowest average level is 137 cfs in November (USGS 2015). Average annual flow is 302 cfs (USGS 2015).

The flow of the Gila River at the proposed bridge location is controlled by the Coolidge Dam, approximately 25 miles upstream to the east of the project area. The Coolidge Dam manages the

seasonal release of water from the San Carlos Reservoir to irrigate farmlands downstream in central Arizona.

In addition to the Gila River, the ephemeral Mineral Creek is located just west of the proposed project area. No inflow from Mineral Creek occurs except during infrequent periods of heavy local rains (USGS 2015).

100-YEAR FLOODPLAIN

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panel 951E (effective December 4, 2007), the project area is within a 100-year floodplain.

GROUNDWATER

According to the Arizona Department of Water Resources (ADWR), the proposed project area is located in the Lower Sand Pedro Groundwater Basin but is not located within an active management area. There are approximately 30 wells registered with ADWR within 1 mile of the project area. Depth to groundwater at the three wells closest to the proposed project area varies between 11 to 17 feet. These wells are used for water production for domestic use (ADWR 2015). No wells are located within the proposed project area.

3.4.2 Impacts from the No Action

DIRECT AND INDIRECT IMPACTS

Under the No Action Alternative, the BLM would not amend the ROW grant, and no construction would take place. Thus, no adverse direct or indirect impacts to water resources would occur.

CUMULATIVE IMPACTS

No known reasonably foreseeable future actions would impact water resources within or adjacent to the project area; therefore no cumulative impacts to water resources would be expected as a result of the No Action Alternative.

3.4.3 Impacts from the Proposed Action

DIRECT AND INDIRECT IMPACTS

Surface Water

The proposed bridge is designed to completely span the ordinary high water mark of the Gila River and its floodplain; therefore no Section 404 permit will be needed. The ACOE agreed with this determination on June 26, 2015, and the email correspondence is provided in Appendix D. BMPs identified in a SWPPP would be implemented during construction to meet Arizona stormwater regulations. Therefore no direct or indirect impacts to surface waters would occur.

100-year Floodplain

The proposed bridge is designed to completely span the floodplain of the Gila River; therefore the proposed action would not have a direct or indirect impact on the 100-year floodplain.

Groundwater

Construction excavation would not reach groundwater levels; therefore no direct or indirect impacts to groundwater resources would occur.

CUMULATIVE IMPACTS

No known reasonably foreseeable future actions would impact water resources within or adjacent to the project area; therefore no cumulative impacts to water resources would be expected as a result of the Proposed Action Alternative.

MITIGATION MEASURES AND RESIDUAL IMPACTS

The Proposed Action would avoid direct impacts to surface water because the project's design feature to span the OHWM and 100-year floodplain of the Gila River. Indirect impacts to the Gila River would be minimized or avoided by the implementation of a spill prevention plan for the construction of the bridge, as identified in the ROW grant stipulations in Section 2.6. Therefore, no residual impacts to water resources would occur as a result of the Proposed Action.

3.5 Biological Resources

3.5.1 Affected Environment

VEGETATION

General Vegetation

The analysis area has both upland and riparian vegetation. The upland portions of the analysis area are dominated by plants typical of the Arizona Upland subdivision of the Sonoran Desertscrub biotic community as defined by Brown (1994). The portions of the analysis area that are located adjacent to the Gila River are typical of the Sonoran riparian deciduous forest, Sonoran riparian scrubland, and Sonoran interior marshland biotic communities, and contain mixed native-exotic riparian vegetation communities and native wetland vegetation communities. The analysis area also has areas that have been previously disturbed.

To the south of the Gila River, dominant upland species include desertbroom (*Baccharis sarothroides*), jojoba (*Simmondsia chinensis*), yellow paloverde (*Parkinsonia microphylla*), purple three-awn grass (*Aristida purpurea*), sandmat (*Chamaesyce* sp.), catclaw acacia (*Acacia greggii*), annual buckwheat (*Eriogonum* sp.), and turpentine bush (*Ericameria laricifolia*). North of the river, dominant upland species include cholla (*Cylindropuntia* sp.), Coulter's spiderling (*Boerhavia coulteri*), velvet mesquite (*Prosopis velutinus*), purple three-awn grass, catclaw acacia, red brome (*Bromus rubens*), and Coues' cassia (*Senna covesii*) (SWCA 2015).

Along floodplain of the Gila River, the Sonoran riparian deciduous forest and Sonoran riparian scrubland communities is dominated by saltcedar (*Tamarix* sp.), with Fremont cottonwood (*Populus fremontii*), Gooding willow (*Salix gooddingii*), burrobrush (*Hymenoclea monogyra*), desertbroom, Bermudagrass (*Cynodon dactylon*), mule-fat (*Baccharis salicifolia*), and velvet mesquite. The Sonoran interior marshland communities within the project area contained primarily cattail (*Typha domingensis*), bulrush (*Schoenoplectus pungens*), Mexican sprangletop grass (*Leptochloa uninervia*), Bermudagrass, and clustered dock (*Rumex conglomeratus*) (SWCA 2015).

Arizona Native Plant Law Protected Species

Thirteen plant species were identified within the analysis area that are Arizona Protected Native Plants: velvet mesquite, chain-fruit cholla (*Cylindropuntia fulgida*), Engelmann prickly pear (*Opuntia engelmannii*), blue paloverde (*Parkinsonia florida*), yellow paloverde, banana yucca (*Yucca baccata*), Kelvin pricklypear (*Cylindropuntia* × *kelvinensis*), barrel cactus (*Ferocactus wislizeni*), Engelmann's hedgehog (*Echinocereus engelmannii*), pincushion cactus (*Mammillaria grahamii* var. *grahamii*), saguaro (*Carnegiea gigantea*), ocotillo (*Fouquieria splendens*), and desert Christmas cactus (*Cylindropuntia leptocaulis*).

WILDLIFE

General Wildlife

The analysis area supports habitat for a variety of wildlife species, including small and medium-sized mammals, carnivores, big-game species, reptiles, aquatic species, and birds.

Wildlife species observed in the analysis area include raccoon (*Procyon lotor*), pocket mouse (*Perognathus* sp.), beaver (*Castor canadensis*), gray fox (*Urocyon cinereoargenteus*), white-throated wood rat (*Neotoma albigula*), Harris' antelope squirrel (*Ammospermophilus harrisii*), desert cottontail (*Sylvilagus audubonii*), side-blotched lizard (*Uta stansburiana*), and western whiptail (*Aspidoscelis tigris*). Aquatic species observed in the project area include mosquitofish (*Gambusia affinis*), a non-native fish species, and crayfish (*Orconectes virilis*), a non-native crustacean.

Birds

Desertscrub and riparian vegetation within the analysis area provide habitat for a variety of bird species. Bird species observed in the project area include ladder-backed woodpecker (*Picoides scalaris*), sharp-shinned hawk (*Accipiter striatus*), ruby-crowned kinglet (*Regulus calendula*), northern cardinal (*Cardinalis cardinalis*), northern flicker (*Colaptes auratus*), Gila woodpecker (*Melanerpes uropygialis*), verdin (*Auriparus flaviceps*), Anna's hummingbird (*Calypte anna*), Gambel's quail (*Callipepla gambelii*), common raven (*Corvus corax*), phainopepla (*Phainopepla nitens*), black-throated sparrow (*Amphispiza bilineata*), white-crowned sparrow (*Zonotrichia leucophrys*), rock wren (*Salpinctes obsoletus*), Abert's towhee (*Pipilo aberti*), cliff swallow (*Petrochelidon pyrrhonota*), house sparrow (*Carpodacus mexicanus*), curve-billed thrasher (*Toxostoma curvirostre*), mourning dove (*Zenaida macroura*), black-tailed gnatcatcher (*Polioptila melanura*), great blue heron (*Ardea herodias*), black phoebe (*Sayornis nigricans*), and common ground dove (*Columbina passerina*). All these bird species are protected under the Migratory Bird Treaty Act (MBTA).

Special Status Species

Threatened, endangered, and special-status plant and wildlife species were reviewed for the potential to occur in the analysis area. Twenty-nine special status species were determined to have the potential to occur in the analysis area. According to Arizona Heritage Geographic Information System (AZHGIS), there are nine occurrence records for special status species within 3 miles of the project area: southwestern willow flycatcher (*Empidonax traillii extimus*), designated critical habitat for the southwestern willow flycatcher, proposed critical habitat for the yellow-billed cuckoo (*Coccyzus americanus*), common black-hawk (*Buteogallus anthracinus*), Mississippi kite (*Ictinia mississippiensis*), California leaf-nosed bat (*Macrotus californicus*), Gila longfin dace (*Agosia chrysogaster chrysogaster*), desert sucker (*Catostomus clarkii*), and Sonora sucker (*Catostomus insignis*) (AZHGIS 2014). Of these species, only the southwestern willow flycatcher and critical habitat, and yellow-billed cuckoo and proposed critical habitat are currently protected under the authority of the Endangered Species Act. No proposed wildlife corridors occur within 3 miles of the analysis area (AZHGIS 2014).

Federally Listed Species

Out of the 18 species listed as threatened, endangered, proposed, and candidate species for Pinal County by USFWS, seven species may occur in the project area, with two having designated or proposed critical habitat (see Figures 4a and 4b). For the remaining 11 species, the project area is clearly beyond the known geographic or elevational range of these species, or it does not contain vegetation or landscape features known to support these species, or both (SWCA 2015). Species with the potential to occur in the project area are presented in Table 3-2.

BLM Special Status Species

Within the Gila District Office, the BLM lists 62 species as BLM Sensitive. Twenty-two of the 62 BLM Sensitive Species may occur in the project area. For the remaining 40 species, the project area is clearly beyond the beyond the known geographic or elevational range of these species, or it does not contain

vegetation or landscape features known to support these species, or both (SWCA 2015). Species with the potential to occur in the project area are presented in Table 3-2.

Table 3-2. Special Status Species with the Potential to occur in the Project Area

Common Name	Scientific Name	Status*
Southwestern willow flycatcher	*Empidonax traillii extimus*	E
Yellow-billed cuckoo	*Coccyzus americanus*	T
Lesser long-nosed bat	*Leptonycteris curasoae yerbabuenae*	E
Ocelot	*Leopardus pardalis*	E
Loach minnow	*Tiaroga cobitis*	E
Roundtail chub	*Gila robusta*	C
Spikedace	*Xyrauchen texanus*	E
Southwestern willow flycatcher Designated Critical Habitat	*Empidonax traillii extimus*	Designated
Yellow-billed cuckoo Proposed Critical Habitat	*Coccyzus americanus*	Proposed
Allen's (Mexican) big-eared bat	*Idionycteris phyllotis*	BLMS
American peregrine falcon	*Falco peregrinus anatum*	BLMS
Aravaipa sage	*Salvia amissa*	BLMS
Arizona myotis	*Myotis lucifugus occultus*	BLMS
Bald eagle	*Haliaeetus leucocephalus*	BLMS
Cactus ferruginous pygmy-owl	*Glaucidium brasilianum cactorum*	BLMS
California leaf-nosed bat	*Macrotus californicus*	BLMS
Cave myotis	*Myotis velifer*	BLMS
Desert purple martin	*Progne subis hesperia*	BLMS
Desert sucker	*Catostomus clarki*	BLMS
Gilded flicker	*Colaptes chrysoides*	BLMS
Golden eagle	*Aquila chrysaetos*	BLMS
Great Plains narrow-mouthed toad	*Gastrophryne olivacea*	BLMS
Greater western mastiff bat	*Eumops perotis californicus*	BLMS
Longfin dace	*Agosia chrysogaster*	BLMS
Lowland leopard frog	*Lithobates yavapaiensis*	BLMS
Pima Indian mallow	*Abutilon parishii*	BLMS
Sonora mud turtle	*Kinosternon sonoriense sonoriense*	BLMS
Sonora sucker	*Catostomus insignis*	BLMS
Sonoran Desert tortoise	*Gopherus morafkai*	BLMS
Spotted bat	*Euderma maculatum*	BLMS
Townsend's big-eared bat	*Corynorhinus (=Plecotus) townsendii*	BLMS

* Status Definitions:

USFWS Definitions

C = Candidate. Candidate species are those for which USFWS has sufficient information on biological vulnerability and threats to support proposals to list as endangered or threatened under the ESA. However, proposed rules have not yet been issued because such actions are precluded at present by other listing activity.

E = Endangered. Endangered species are those in imminent jeopardy of extinction. The ESA specifically prohibits the take of a species listed as endangered. Take is defined by the ESA as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to engage in any such conduct.

T = Threatened. Threatened species are those in imminent jeopardy of becoming endangered. The ESA prohibits the take of a species listed as threatened under Section 4d of the ESA. Take is defined by the ESA as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to engage in any such conduct.

BLM Definitions

BLMS = Bureau of Land Management Sensitive

3.5.2 Impacts from the No Action

DIRECT AND INDIRECT IMPACTS

No impacts to biological resources including vegetation, wildlife, and special status species would occur as a result of the No Action Alternative.

CUMULATIVE IMPACTS

Under the No Action Alternative, no additional impacts to biological resources including vegetation, wildlife, and special status species would occur.

3.5.3 Impacts from the Proposed Action

DIRECT AND INDIRECT IMPACTS

Vegetation

Construction of the Proposed Action would impact vegetation where vegetation would be removed in order to construct the new bridge. Vegetation impacts would occur within the 7.2 acres of the ROW.

Long-term, permanent impacts from the Proposed Action would include the construction of the bridge, resulting in the loss of 5.1 acres of vegetation.

Construction of the Proposed Action would not contribute to the spread of invasive species or noxious weeds with implementation of the following BMPs:

- Construction and maintenance equipment would be kept free of invasive species by washing the equipment prior to entering the construction site, prior to moving equipment from infested to non-infested areas of the project, and prior to departing the site.
- Any fill, seed, or mulch material brought in from off-site would be fee of invasive and non-native species seed.
- Equipment and tools used in routine maintenance should be cleaned when moving from an infested area to an uninfested area to prevent spread of weeds in the area.

Wildlife

Short-term impacts to wildlife, migratory birds, and special status species include removal or crushing of existing vegetation and compaction of soils from construction. Species could also be disturbed by construction noise and human activity. Approximately 5.1 acres would be permanently removed for the construction of the bridge, thereby permanently removing potential habitat.

Short- and long-term effects on migratory birds and their habitat would occur as a result of construction noise, human activity, and permanent removal of approximately 5.1 acres of vegetation. Impacts to SWFL and YBCU are discussed in the Special Status Species subsection below. Due to vegetation clearing restrictions between March 1 and October 1, pre-clearing nesting bird surveys should not be necessary. If any vegetation clearing were to occur during the bird breeding season (March–August), pre-clearing nesting bird surveys would be conducted to ensure avoidance of any occupied nests; however, incidental displacement is possible on a local scale.

Special Status Species

Special status species with the potential to occur on lands included in the Proposed Action were evaluated for possible impacts from the Proposed Action. Twenty-nine special status species were identified as likely to occur within the Proposed Action area. Potential Impacts are discussed below:

Southwestern willow flycatcher (*Empidonax traillii extimus*)

The southwestern willow flycatcher (SWFL) is federally listed as an endangered species with designated critical habitat (USFWS 2015). These birds breed only in dense riparian forests near surface water or continuously saturated soil (USFWS 2013e). Dominant plant species in lower elevation habitats in Arizona include Fremont cottonwood, willow (*Salix* spp.), saltcedar, boxelder (*Acer negundo*), ash (*Fraxinus* spp.), alder (*Alnus* spp.), and buttonbush (*Cephalanthus occidentalis*) (Sogge et al. 1997).

As of January 2013, a total of 1,227 stream miles have been designated critical habitat for this species. Designated Critical habitat includes Primary Constituent Elements (PCEs), which for SWFL are as follows: riparian habitat in a dynamic successional riverine environment (for nesting, foraging, migration, dispersal, and shelter) with trees and shrubs (e.g., willow species, box elder, tamarisk, Russian olive, cottonwood, etc.); dense riparian vegetation with thickets of trees and shrubs and with thickets; areas of dense riparian foliage; sites for nesting that contain a dense tree and/or shrub canopy; dense patches of riparian forests that are interspersed with small openings of open water or marsh, or shorter/sparser vegetation that creates a mosaic that is not uniformly dense; and a variety of insect prey populations found within or adjacent to riparian floodplains or moist environments (USFWS 2013a).

Primary threats to SWFL are the extensive loss, fragmentation, and alteration of riparian habitats due to urban growth and development, water diversion and impoundment, agricultural development, channelization of rivers and creeks, livestock grazing, and replacement of native riparian habitats with non-native plant species, such as saltcedar and Russian olive (*Elaeagnus angustifolia*).

The riparian vegetation in and around the project area contains suitable nesting, migratory and foraging habitat within the riparian vegetation. The project area contains 2.9 acres of designated critical habitat for the SWFL (USFWS 2013a) (see Figures 3, 4a, 4b).

Several named flycatcher sites occur within 0.5-mile upstream and downstream of the project area: GRN020, GRSN022, and portions of GRS020 and GRSN023. These areas have been surveyed almost every year since 1995. Available data show that over 17 years (1995–2013) of SWFL surveys in these areas, 8 years had negative results (no SWFLs detected), 6 years detected resident activity, and 2 years detected only migrant activity, with one year unknown (SWCA 2014). In 2013, three resident breeding territories with active nests were detected within the survey area (SWCA 2013). In 2014, surveys detected five probably territories adjacent to the project area: two downstream and three upstream. However, no nests were detected (WestLand Resources 2014). In 2015, surveys resulted in 11 detections of willow flycatchers, including at least two pair and up to four SWFL upstream and four SWFL downstream of the Kelvin Bridge (Westland Resources 2015).

Direct effects to SWFLs will include removal of suitable foraging, nesting, and migratory habitat, which could subsequently affect their habitat use and distribution and abundance in this area. The Proposed Action would remove approximately 1.2 acres (including 0.4 acre permanent and 0.8 acre temporary impact) of SWFL critical habitat. However, the vegetation clearing activities will occur outside of the time in which SWFLs are present in North America; thus, nest destruction and/or injury to a SWFL individual would not occur. Other direct effects that could occur include disturbances to any individuals that arrive to the area during construction. Although construction noise would be present, SWFLs are likely to avoid the area because of the noise and also because the habitat that they may have formerly used is now absent. If SWFLs do attempt to use the remaining vegetation for foraging, migration, or breeding, they may experience harassment from the noise and construction activities and subsequently effects to habitat use, distribution, and abundance in this area. Individual nesting pairs using traditional nesting sites near the project area may move nesting sites due to construction disturbance. However, they have used this area in the past, even though the ambient noise levels from the train and traffic are higher than the average construction noise throughout this project, and also the construction noise attenuates more rapidly than the ambient noise (SWCA 2015). Thus, SWFLs occurring upstream and downstream are unlikely to be affected by noise. SWFLs can likely habituate to noise since their calls have a wide range of frequency and data indicate that passerines with higher-frequency song ranges are less affected by noise (Goodwin and Shriver 2010). Further habitat fragmentation may cause an increase in the edge effect, which may increase the probability of cowbird nest parasitism on SWFL, reducing their nesting success.

Indirect effects to SWFL would include the period of time that the vegetation is regrowing (possibly up to 5 or 10 years) and, thus, unavailable for the SWFLs for migration, foraging, and/or breeding use and subsequently affecting their habitat use, distribution, and abundance in this area. Future activities related to bridge and road maintenance (e.g., channel clearing from flood events, repairs, weed control, etc.) may impact the SWFL as a result of this project due to noise or nearby activity.

In addition, designated critical habitat will be affected through removal with 0.4 acre of permanent loss. The PCEs within SWFL designated critical habitat that will be removed include riparian habitat in a dynamic riverine environment with trees and shrubs (including willow species, tamarisk, cottonwood), dense riparian vegetation with thickets, and sites for nesting that contain dense canopy. Additionally, another PCE that may be impacted from vegetation clearing is that this area may experiences a minor decrease in insect populations.

Because this project area is within 100 to 200 feet of a recently occupied SWFL site (GRS020, GRN020, and GRSN022), and because the project area contains suitable nesting, migratory and foraging habitat for the SWFL, as well as designated critical habitat and the associated PCEs, the Proposed Action may affect the SWFL and its designated critical habitat, and is likely to adversely affect the SWFL and its designated critical habitat. Approximately 1.2 acres of designated critical habitat will be removed, including 0.4 acre of permanent loss as part of this project, and SWFLs may be affected by the construction activities. Therefore, the Proposed Action may affect, and is likely to adversely affect, the SWFL and its critical habitat.

Yellow-billed cuckoo (*Coccyzus americanus*)

The yellow-billed cuckoo (YBCU) is a threatened species under the ESA. This species is also listed as Wildlife of Greatest Conservation Need in Arizona by the AGFD (AGFD 2013). In the western United States, this species is generally uncommon and occurs only at elevations lower than 6,600 feet above mean sea level (amsl), in riparian deciduous forests along creeks, rivers, and wetlands with cottonwood, willow, sycamore (*Platanus* sp.), ash, alder, saltcedar, and other trees (Corman and Magill 2000; USFWS 2013b). Also, Swarth (1914) and Phillips et al. (1964) reported YBCUs to be nesting in the dense mesquite bosques that historically occurred along the Santa Cruz River and its tributaries in the vicinity of Tucson. Dense understory foliage appears to be important for nest site selection, while cottonwood trees are important foraging areas (USFWS 2013b). In Arizona, this species occurs along creeks and rivers at low to mid-elevations, typically below about 5,800 feet amsl (Corman and Magill 2000).

Causes for western YBCU population declines are directly related to the loss, degradation, or fragmentation of riparian forest habitats. In Arizona, for example, approximately 95% of the riparian forest habitats that historically existed there has been lost, with losses being greatest at lower elevations (below 3,000 feet) along the lower Colorado River and its major tributaries. Rivers such as the Gila, Salt, Colorado, Little Colorado, and Bill Williams have been greatly affected by upstream dams, flow alterations, channel modification, and clearing of land for agriculture (USFWS 2013b). Altered flow regimes also change the character of riparian forest habitats. Areas along major river corridors that have reduced flow and water table levels often see replacement of native cottonwood–willow forests with dense forests of non-native saltcedar trees. Additionally, it has been well documented that major flood events can scour out and remove riparian forest habitats or cause them to die from being inundated with water for long periods of time (Rosenberg et al. 1991:27–28; USFWS 2013b).

The USFWS has proposed to designate approximately 546,335 acres of critical habitat in Arizona, California, Colorado, Idaho, Nevada, New Mexico, Texas, Utah, and Wyoming (USFWS 2014). PCEs in proposed critical habitat for western yellow-billed cuckoo are as follows: riparian woodlands (willow-cottonwood, mesquite thornforest, or a combination of these) in contiguous or nearly contiguous patches of at least 200 acres in extent and at least 325 feet wide, with at least one nesting grove (often willow dominated with average canopy closure of more than 70%), and a cooler, more humid environment than surrounding areas; adequate prey base, including a large insect fauna and treefrogs in breeding areas and post-breeding dispersal areas; and dynamic riverine processes, especially including river system having hydrologic processes that promote regular habitat regeneration (sediment movement, seedling germination, plant vigor and growth), which leads to patches of old and new riparian vegetation (USFWS 2014). Proposed critical habitat for YBCU is located within the project area (see Figure 3).

In surveys for YBCU in the project area, YBCU have been detected upstream of Kelvin Bridge from 0.5 to 2.8 miles away, and downstream from 1.7 to 2.5 miles away. No YBCU have been detected within the project area.

The riparian vegetation communities found within the project area are dominated by saltcedar, but does contain sparse (a few large and a few small) Fremont cottonwood and Goodding willow trees. Within the project area, riparian vegetation communities are not as described in the critical habitat PCE for YBCU because the vegetation within the project area is not dominated by willow-cottonwood riparian forests, and does not contain a willow-dominated nesting grove with above average canopy closure. Areas upstream and downstream where YBCUs were detected contain better suitable habitat with cottonwood and willow, which provide a canopy structure, which they prefer. The project area does contain 3.6 acres of proposed critical habitat for the YBCU.

Direct effects to YBCUs will include removal of 1.7 acres (including 0.6 acre permanent and 1.1 acres temporary impact) nesting, forging, and migratory habitat, which could subsequently affect their habitat use and distribution and abundance in this area. In addition, proposed critical habitat will be affected through removal, with 0.6 acre of permanent loss from the bridge piers. However, the vegetation clearing activities will occur outside of the time in which YBCUs are present in North America; thus, nest destruction and/or injury to a YBCU individual would not occur. Other direct effects that could occur include disturbances to any individuals that arrive to the area during construction, including disturbances to pairs nesting nearby. Although construction noise would be present, YBCUs are likely to avoid the area. Data indicate that YBCUs are more likely to avoid suitable habitat areas due to noise because they have a low-frequency call (Goodwin and Shriver 2010). Other areas upstream and downstream where YBCUs have been detected are unlikely to be affected by noise since the ambient noise levels from the train and traffic are higher than the average construction noise throughout this project, and also the construction noise attenuates more rapidly than the ambient noise (SWCA 2015).

Indirect effects to YBCUs would include the period of time that the vegetation is regrowing (possibly up to 5 or 10 years) and, thus, unavailable for the YBCUs for nesting, migration or foraging and subsequently affecting their habitat use, distribution, and abundance in this area. However, the revegetation plan specifies using native riparian species, such as cottonwood and willow trees. Thus, once the vegetation has recovered, the area could provide more optimal breeding habitat, therefore, a potential beneficial effect to the YBCU.

Because this project area contains suitable nesting, migratory and foraging habitat for the YBCU, the Proposed Action may affect, and is likely to adversely affect the YBCU. Approximately 1.7 acres of proposed critical habitat will be removed, including 0.6 acre of permanent loss as part of this project and YBCUs may be affected by the construction activities. In addition, the proposed project will not result in destruction or adverse modification of proposed critical habitat for YBCU.

Lesser long-nosed bat (Leptonycteris curasoae yerbabuenae)

The lesser long-nosed bat is federally listed as an endangered species. Habitat includes desert grasslands and desertscrub into the transition to oak-dominated communities. Lesser long-nosed bats feed primarily on the nectar of paniculate agaves and columnar cacti such as saguaros (AGFD 2013).

The primary threats to the lesser long-nosed bat are roost site loss or disturbance and impacts to forage availability. Other threats include roost disturbance and deterioration, border activities, recreation, vandalism, fire, mine closures, and forage availability (USFWS 2007).

The elevation of the project area is within the elevational range of lesser long-nosed bat but just outside of the general geographic range of this species (AGFD 2013). The project area does not contain agave plants (*Agave* spp.); however, a low density of saguaros is present. Therefore, the project area does contain suitable foraging habitat for the lesser long-nosed bat. The closest known roost used by this species is in the Picacho Mountains, at least 50 miles from the project area.

This project area does not contain suitable bat roosts and it contains very limited lesser long-nosed bat food resources. There are a few saguaro cacti within the project area, and one individual within the

disturbance area will be preserved in place during project construction. No saguaros will be disturbed, removed, or pruned for construction. These saguaros are very likely outside of the foraging range of lesser long-nosed bats that are present in Arizona at the time of saguaro blooming and fruiting. The lesser long-nosed bat is unlikely to occur in the project area; thus, the Proposed Action will have no effect to the lesser long-nosed bat and its habitat.

Ocelot (Leopardus pardalis)
The ocelot is listed as endangered under ESA (USFWS 1982). Rangewide, ocelots occur primarily within subtropical thorn forest, thornscrub, and dense, brushy thickets, or other dense vegetation with suitable amounts of prey. There are no documented occurrences of ocelots within 3 miles of the project area (AZHGIS 2014); however, in 2010 an adult male ocelot was found dead along SR 60 between Superior and Globe in Gila County, Arizona (AGFD 2013).

Ocelots in the project area could experience effects of habitat removal and noise that could alter their behavior (e.g., shift home range, movement patterns, and foraging areas) to avoid these anthropogenic disturbances. Noise from the Proposed Action could disturb ocelots, likely causing changes in dispersal, communication patterns, and hunting success; and increased stress response. The magnitude of impacts from noise is uncertain, but these impacts are expected to decrease as the distance from the construction increases. Effects on ocelots could also result from prey species experiencing the same effects as the ocelots, hence reducing prey availability and altering their predator-prey relationships. Changes to food sources could also result in changes in dispersal and hunting success.

Because this project area contains potentially suitable habitat for the ocelot, the proposed installation of the new Kelvin Bridge is likely to result in the disturbance of suitable ocelot habitat. However, only a small portion of that disturbance will likely occur in ocelot habitat (e.g., areas of high vegetative cover, undisturbed areas with high levels of vertebrate prey, and areas with low levels of human disturbance); thus, effects are considered insignificant and discountable. The Proposed Action may affect, but is not likely to adversely affect ocelot.

Loach minnow (*Tiaroga cobitis*)
The loach minnow is listed as endangered with critical habitat under the ESA; however, designated critical habitat does not occur in the project area. Suitable habitats for the loach minnow include rocky riffles of mainstream rivers and tributaries with moderate to swift velocities, cobble or gravel substrates, and filamentous algae. The nearest current population of the loach minnow is in Aravaipa Creek, approximately 25 to 30 miles upstream from the project area (AGFD 2013; USFWS 2013d).

The project area is outside of the known distribution range of this species, but is it has the potential to be occupied by fish from Aravaipa Creek via the San Pedro River. Although the habitat has attributes that make it suitable, this species is susceptible to predation by non-native species (AGFD 2013), and would likely not survive for long in the Gila River at this time, due to the presence of many crayfish and aggressive non-native fish species.

A SWPPP, including spill prevention, would be prepared for construction of the Proposed Action in compliance with the AZPDES requirements. Best management practices within the SWPPP would prevent or minimize the addition of silt and other materials from being discharged into the river with storm runoff that may degrade fish habitat. Based on the lack of presence of the species, and the implementation of BMPs, it was determined the Proposed Action may affect, but is not likely to adversely affect the loach minnow.

Roundtail chub (*Gila robusta*)
The roundtail chub is listed as a candidate species under the ESA. This species is found in cool to warm water, mid-elevation streams and rivers with pools adjacent to swifter riffles and runs. The project area is outside of the known distribution range of this species, but is it has the potential to be occupied by fish from Aravaipa Creek via the San Pedro River. Although the habitat has attributes that make it suitable, this species is susceptible to predation by non-native species (AGFD 2013), and would likely not survive for long in the Gila River at this time, due to the presence of many crayfish and aggressive non-native fish species.

A SWPPP, including spill prevention, would be prepared for construction of the Proposed Action in compliance with the AZPDES requirements. Best management practices within the SWPPP would prevent or minimize the addition of silt and other materials from being discharged into the river with storm runoff that may degrade fish habitat. Based on the lack of presence of the species, and the implementation of BMPs, it was determined the Proposed Action may affect, but is not likely to result in a trend toward federal listing or loss of viability.

Spikedace (Xyrauchen texanus)
The spikedace is listed as endangered with critical habitat under the ESA; however, designated critical habitat does not occur in the project area. This species occurs in moderate to large perennial streams with gravel cobble substrates and moderate to swift velocities. The nearest current location of the spikedace is in Aravaipa Creek, approximately 25 to 30 miles from the project area (AGFD 2013).

The project area is outside of the known distribution range of this species, but is it has the potential to be occupied by fish from Aravaipa Creek via the San Pedro River. Although the habitat has attributes that make it suitable, this species is susceptible to predation by non-native species (AGFD 2013), and would likely not survive for long in the Gila River at this time, due to the presence of many crayfish and aggressive non-native fish species.

A SWPPP, including spill prevention, would be prepared for construction of the Proposed Action in compliance with the AZPDES requirements. Best management practices within the SWPPP would prevent or minimize the addition of silt and other materials from being discharged into the river with storm runoff that may degrade fish habitat. Based on the lack of presence of the species, and the implementation of BMPs, it was determined the Proposed Action may affect, but is not likely to adversely affect the spikedace.

Allen's (Mexican) big-eared bat (*Idionycteris phyllotis*)
Allen's big-eared bat, a BLM sensitive species, is a medium-sized bat with large ears that is typically found in mountainous regions at higher elevations; roost sites include caves and mineshafts (AGFD 2013). Allen's big-eared bats are generally associated with ponderosa pine, pinyon-juniper woodland, and riparian areas with sycamores, cottonwoods, and willows, and they are typically netted near water (AGFD 2013). No roost sites occur within the project area. The project area is not located in mountainous regions and is outside of and just south of the known and predicted distribution of this species (AGFD 2013); further, this species is not known to occur within 3 miles of the project area (AZHGIS 2014). Even though water, cottonwoods, and willows do occur at the project area, it is highly unlikely that these bats will occur at the project area.

Because this project area contains potentially suitable habitat for the Allen's big-eared bat, the Proposed Action is likely to result in the disturbance of suitable Allen's big-eared bat foraging habitat, as well as individuals, if present, through noise during construction. The Proposed Action may affect individuals of the Allen's big-eared bat, but is not likely to result in a trend toward federal listing or loss of viability**.**

American peregrine falcon (*Falco peregrinus anatum*)
The American peregrine falcon is a BLM sensitive species. The species occurs over much of North America and in numerous counties within Arizona. Optimum nesting habitat is generally considered to be steep, sheer cliffs overlooking woodlands, riparian areas, or other areas that support an abundance of avian prey species. American peregrine falcons feed almost exclusively on birds.

The project area is within the known distribution of this species, and the project area does contain suitable hunting habitat for this species; however no nesting habitat occurs for this species within the project area. Further, there are no occurrence records for American peregrine falcons within 3 miles of the project area (AZHGIS 2014), and this species has not been observed in the project vicinity (eBird 2014). Because this project area contains potentially suitable hunting habitat for the American peregrine falcon, the Proposed Action is likely to result in the disturbance of suitable American peregrine falcon hunting habitat, as well as individuals, if present, through noise during construction. The Proposed Action may affect individuals of the American peregrine falcon, but is not likely to result in a trend toward federal listing or loss of viability.

Aravaipa sage (*Salvia amissa*)
Aravaipa sage is a perennial herb that grows on upper floodplain terraces in shady canyon bottoms near streams in understory of mature sycamore, ash, walnut (*Juglans* sp.), and mesquite near permanent water, from 1,500 to 5,000 feet amsl (AGFD 2013).

The project area is within the general geographical range, i.e., south-central Arizona; however, the project area is not within the known distributional range of this species. The project area only contains marginally suitable habitat for the species, and there are no known occurrences of this species within the vicinity of the project area. The closest known occurrences of this species are approximately 30 miles to the east in Aravaipa Canyon (AGFD 2013). Therefore, this species is unlikely to occur in the project area.
The Proposed Action will have no impact on the Aravaipa sage or its habitat.

Arizona myotis (Myotis lucifugus occultus)
This species is found near water in ponderosa pine and oak-pine woodlands habitat, and in desert areas with riparian forests or permanent water. The project area is within the known distribution of this species, and the project area does contain suitable habitat for this species. Additionally, there is one recorded location of this species in the vicinity of the project area, approximately 15 miles northeast of the project area (AGFD 2013). Because this project area contains potentially suitable habitat for the Arizona myotis, the Proposed Action is likely to impact suitable Arizona myotis habitat, as well as individuals, if present, through noise during construction. The Proposed Action may impact individuals of Arizona myotis, but is not likely to result in a trend toward federal listing or loss of viability.

Bald eagle (Haliaeetus leucocephalus)
Bald eagles inhabit coastal areas, estuaries, unfrozen inland waters, and some arid areas of the western interior and southwestern portion of the United States. They like areas with high water-to-land edge, and areas with unimpeded views including both horizontal and vertical aspects.

There is suitable hunting habitat for this species within the project area. Furthermore, the project area is within the known range of this species. The closest known currently active breeding area for bald eagles to the project area occurs approximately 30 miles from the site (McCarty et al. 2013).

Although this project area contains potentially suitable hunting habitat for the bald eagle, the Proposed Action will not affect its prey, i.e., fish in the river. Additionally, the construction-related disturbance may cause individual birds to avoid or leave the project site. Thus, any temporary impacts to the species from the construction disturbance would be insignificant and discountable. The Proposed Action may affect individual bald eagles, but is not likely to result in a trend toward federal listing or loss of viability. No ‘take’ of bald eagle is expected as a result of this project.

Cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*)
The cactus ferruginous pygmy-owl (CFPO) is a small owl that is found in in streamside cottonwoods and willows and adjacent mesquite bosques, usually with saguaros on nearby slopes. Although this project area is outside of the current known geographic range of the CFPO, the project area does contain a small patch of native riparian woodland habitat, a narrow strip of mesquite woodland, and saguaro cacti used for nesting and the project area is within the elevational range of the CFPO in Arizona. However, CFPOs have not been known to occupy saltcedar-dominated woodland, and the USFWS and AGFD typically do not recommend CFPO surveys within those areas.

Because this project area contains potentially suitable habitat for the CFPO, the Proposed Action is likely to result in the disturbance and removal of suitable CFPO habitat, i.e., trees. However, no saguaros, i.e., potential cavity nest site, will be removed. Thus, in the unlikely event that CFPOs are present during construction, noise may affect their activities. The Proposed Action may affect individuals of CFPO, but is not likely to result in a trend toward federal listing or loss of viability.

California leaf-nosed bat (*Macrotus californicus*)
The California leaf-nosed bat roosts in mines, rock shelters, and human-made structures. The project area is within the known distribution of this species, and the project area does contain suitable foraging habitat for this species. In addition, this species is known to occur within 3 miles of the project area

(AZHGIS 2014). Because this project area contains potentially suitable habitat for the California leaf-nosed bat, the Proposed Action is likely to result in the disturbance of suitable California leaf-nosed bat foraging habitat. The Proposed Action may impact individuals of California leaf-nosed bat, but is not likely to result in a trend toward federal listing or loss of viability.

Cave myotis (*Myotis velifer*)
The cave myotis roosts in mines, caves, tunnels, mine shafts, and under bridges, and, at times, in buildings within a few miles of water. The project area is within the known distribution of this species, and the project area does contain suitable foraging and roosting habitat for this species. Additionally, the closest recorded location of this species in the vicinity of the project area is approximately 15 miles north of the project area (AGFD 2013). Because this project area contains potentially suitable habitat for the cave myotis, the Proposed Action is likely to result in the disturbance of suitable cave myotis habitat as well as individuals, if present, through noise during construction. The Proposed Action may impact individuals of cave myotis, but is not likely to result in a trend toward federal listing or loss of viability.

Desert purple martin (*Progne subis hesperia*)
The desert purple martin, a BLM listed sensitive species, is a small passerine bird that nests in cavities. In the Sonoran Desert, the species often uses cavities in saguaros for nesting. This species is not known to occur within 3 miles of the project area (AZHGIS 2014), though the project area is within the known distribution of this species. The nearest occurrence of this species is at Kearny Lake, approximately 5 miles southeast of the project area (eBird 2014). These birds are most commonly associated with saguaros which they use for nesting, and this project area contains few saguaros but none will be removed. Thus, this project area is likely only to be migratory habitat or foraging habitat for this species. Because this project area contains potentially suitable habitat for the desert purple martin, the Proposed Action is likely to result in the disturbance of suitable desert purple martin foraging habitat, as well as individuals, if present, through noise during construction. The Proposed Action may affect individuals of the desert purple martin but is not likely to result in a trend toward federal listing or loss of viability.

Desert sucker (*Catostomus clarki*)
The desert sucker, a BLM sensitive species, is found in rapids and flowing pools in streams and rivers of the Lower Colorado River downstream from the Grand Canyon and the Gila River drainage from 480 to 8,840 feet amsl (AGFD 2013). The desert sucker spawns in shallow riffles beginning in early spring and young occupy shallow areas on stream margins (Minckley and Marsh 2009). The project area is within the known distribution of this species, and the project area does contain suitable spawning, rearing and foraging habitat for this species. Additionally, there are known records of this species within the immediate vicinity of the project area (AGFD 2013). Like the longfin dace and Sonora sucker, the desert sucker is one of the few native fishes that can persist for long periods (decades) in the presence of non-native species.

Because this project area likely contains occupied habitat for the desert sucker, the Proposed Action is likely to result in minor, short-term disturbances to desert sucker and habitat, although the Gila River itself will not be altered. With a SWPPP and BMPs in place, it is anticipated that desert sucker population, as a whole, will be largely or completely unaffected. The proposed Kelvin Bridge project may affect individuals of the desert sucker and habitat, but is not likely to result in a trend toward federal listing or reduction in viability.

Gilded flicker (*Colaptes chrysoides*)
The gilded flicker, a BLM listed sensitive species, is a medium-sized bird that nests in cavities in saguaros. The project area is within the known distribution of this species, and the project area does contain suitable foraging and nesting habitat for this species. These birds are most commonly associated with saguaros which they use for nesting, and this project area contains few saguaros but none will be removed. Thus, this project area is likely only to be migratory habitat or foraging habitat for this species. Because this project area contains potentially suitable habitat for the gilded flicker, the Proposed Action is likely to impact suitable gilded flicker habitat, as well as individuals, if present, through noise during construction. The Proposed Action may impact individuals of gilded flicker, but is not likely to result in a trend toward federal listing or loss of viability.

Golden eagle (*Aquila chrysaetos*)
The golden eagle is a very large raptor found throughout Arizona. The species nests on rock ledges, cliffs, or in large trees (AGFD 2002). There is no suitable breeding habitat for this species within the project area; however, there is suitable hunting habitat for this species within the project area. The project area is within the known distribution range of this species. Because this project area contains potentially suitable foraging habitat for the golden eagle, the Proposed Action is likely to result in disturbance to suitable golden eagle foraging habitat. The Proposed Action may affect individuals of golden eagles, but is not likely to result in a trend toward federal listing or loss of viability. No 'take' of golden eagle is expected as a result of this project

Great Plains narrow-mouthed toad (*Gastrophryne olivacea*)
This species found in mesquite semidesert grassland to oak woodland, in the vicinity of streams, springs, and rain pools. They are more terrestrial than aquatic in habits. They can be found in deep, moist crevices or burrows, and under large flat rocks, dead wood, and other debris near water (AGFD 2013). There is suitable habitat for this species within the project area; however the project area is approximately 50 miles north of the known range for this species (AGFD 2013). Because this project area contains potentially suitable habitat for the Great Plains narrow-mouthed toad, the Proposed Action is likely to result in the disturbance of suitable Great Plains narrow-mouthed toad habitat, as well as individuals, if present, through noise during construction. The Proposed Action may affect individuals of the Great Plains narrow-mouthed toad, but is not likely to result in a trend toward federal listing or loss of viability.

Greater western mastiff bat (*Eumops perotis californicus*)
The greater western mastiff bat is a BLM sensitive species. This species is considered a year-round resident of Arizona, and is widespread in Arizona, occurring in lower and upper Sonoran desertscrub near cliffs, preferring the rugged rocky canyons with abundant crevices (AGFD 2013). The project area is within the known distribution of this species, and the project area does contain suitable foraging habitat for this species, though no suitable roosting habitat occurs in the project area. While this species is not known to occur within 3 miles of the project area, unidentified bat colonies do occur (AZHGIS 2014). Because this project area contains potentially suitable habitat for the greater western mastiff bat, the Proposed Action is likely to result in the disturbance of suitable greater western mastiff bat foraging habitat, as well as individuals, if present, through noise during construction. The Proposed Action may affect individuals of the greater western mastiff bat, but is not likely to result in a trend toward federal listing or loss of viability.

Longfin dace (Agosia chrysogaster)
The longfin dace is a BLM sensitive species (BLM 2010). This species occupies small streams in low desert to lower end conifer woodlands in Arizona, New Mexico, and Mexico at or below 4,900 feet amsl (AGFD 2013). This species typically occupies water less than 0.6 foot deep, and is highly susceptible to predation, particularly from non-native species (AGFD 2013). The project area is within the known distribution of this species, and the project area does contain suitable habitat for this species. In addition, this species is known to occur within 3 miles of the project area (AZHGIS 2014). This species is abundant and common in the Gila River main stem. It is likely to occur in the project area during the construction period. Unlike most other native fishes, longfin dace are often found in the presence of non-native species.

Because this project area is likely to contain occupied suitable habitat for the longfin dace during the span of the project, the Proposed Action is likely to result in minor, short-term disturbances to longfin dace and its habitat, although the Gila River itself will not be altered. With a SWPPP and BMPs in place, it is anticipated that the longfin dace population, as a whole, will be largely or completely unaffected. The Proposed Action may affect individuals of the longfin dace and habitat, but is not likely to result in a trend toward federal listing or measurable reduction in viability.

Lowland leopard frog (*Lithobates yavapaiensis*)
The Project area has suitable habitat for this species (AGFD 2013). However, the habitat is not biologically suitable due to non-native fish species that consume adults and tadpoles and the widespread occurrence of bullfrogs in the Gila River system. There is suitable habitat for this species within the project area, and the project area is within the known range for this species (AGFD 2013). This species is

very unlikely to occur in the Gila River including the project area. An individual has only the slimmest chance of occurring for a short time during the project. Because this project area contains potentially suitable habitat for the lowland leopard frog, the Proposed Action is likely to result in the disturbance of suitable lowland leopard frog habitat, as well as individuals, if present, through noise during construction.

Pima Indian mallow (*Abutilon parishii*)
This species is an herbaceous perennial that grows on rocky hillsides, cliff bases, canyon bottoms, and the lower side slopes and ledges of canyons among rocks and boulders. The project area is within the known distribution range of this species, and the project area does contain suitable habitat for this species. However, there are no known occurrences of this species in the vicinity of the project area (AZHGIS 2014). The Proposed Action will have no impact on the Pima Indian mallow or its habitat.

Sonora mud turtle (Kinosternon sonoriense sonoriense)
This species occurs in springs, creeks, ponds, and waterholes of intermittent streams at elevations from sea level to 6,000 feet amsl. In Arizona, this species occurs in the Gila River drainage of central and southeast Arizona; Quitobaquito Spring, Pima County; Laguna Dam area, Yuma County; and Big Sandy–Burro River drainages (AGFD 2013). The project area is within the known distribution range of this species, and the project area does contain suitable habitat for this species. However, there are no known occurrences of this species within the vicinity of the project area (AZHGIS 2014).

Because the project area contains potentially suitable habitat for the Sonora mud turtle, the Proposed Action may impact suitable Sonora mud turtle habitat, as well as individuals, if present, through noise during construction. The Proposed Action may affect individuals of Sonora mud turtle, but is not likely to result in a trend toward federal listing or loss of viability.

Sonora sucker (Catostomus insignis)
The Sonora sucker is a BLM sensitive species which occurs in warm-water rivers to trout streams in Arizona, New Mexico, and Mexico, typically preferring gravelly or rocky pools or deep, quiet waters (AGFD 2013). This sucker spawns in shallow riffles beginning in February and young occupy shallow areas on stream margins (Minckley and Marsh 2009).

The project area is within the known distribution of this species, and the project area does contain suitable spawning, rearing and foraging habitat for this species. In addition, this species is known to occur within 3 miles of the project area (AZHGIS 2014) and likely occurs at or near the project site. Sonora sucker is one of the few native fishes that can persist for long periods (decades) in the presence of non-native species.

Because this project area is likely to contain occupied habitat for the Sonora sucker, the Proposed Action is likely to result in minor, short-term disturbances to Sonora sucker and habitat, although the Gila River itself will not be altered. With a SWPPP and BMPs in place, it is anticipated that the Sonora sucker population, as a whole, will be largely or completely unaffected. The Proposed Action may affect individuals of the Sonora sucker and habitat, but is not likely to result in a trend toward federal listing or measurable reduction in viability.

Sonoran desert tortoise (*Gopherus morafkai*)
In October 2015 the USFWS determined that the Sonoran desert tortoise was not warranted for listing, and it was removed from the candidate species list. It is still considered a BLM sensitive species.
The Sonoran Desert tortoise primarily occurs on rocky slopes and bajadas of Mojave and Sonoran desertscrub. In the Lower Colorado River Valley subdivision, caliche caves in cut banks of washes are also used for shelter sites. Shelter sites are rarely found in shallow soils The Sonoran Desert tortoise forage includes annuals, grasses, herbaceous perennials, trees and shrubs, subshrubs/woody vines, and succulents (AGFD 2013). Threats to this species include habitat alteration, off-highway vehicle use, and collection. The project area is within the known current range of this species.

Potential habitat for Sonoran desert tortoise does occur at the project area. Sonoran desert tortoise may be found in the project vicinity, and would most likely be encountered in the upland areas of Sonoran desertscrub in the northern and southern extents of the project area. Tortoises may be encountered while

they are moving to and from other more suitable habitat areas in the project vicinity. It is unlikely that the Proposed Action will have any impact on the Sonoran Desert tortoise. If in the unlikely event that a Sonoran desert tortoise is encountered during project construction, the *Sonoran Desert Tortoises Encountered on Development Projects* will be followed (AZGFD 2007). A tortoise survey shall be performed prior to construction to assess whether or not the proposed action area is utilized by the species. The standard Mitigation Measures for Projects in Sonoran Desert Tortoise Habitat and the Sonoran Desert Tortoise Handling Procedures (BLM 2007) (see Appendix B) will be applied.

Spotted bat (Euderma maculatum)
The spotted bat is a medium-sized bat that utilizes desertscrub habitats up to ponderosa pine forest. The project area is within the known distribution of this species, and the project area does contain suitable foraging habitat for this species. However, no suitable roosting sites are located within the project area, and there are no recorded locations of this species in the vicinity of the project area (AZHGIS 2014). Because this project area contains potentially suitable foraging habitat for the spotted bat, the Proposed Action is likely to result in the disturbance of suitable spotted bat habitat as well as individuals, if present, through noise during construction. The Proposed Action may impact individuals of spotted bat, but is not likely to result in a trend toward federal listing or loss of viability.

Townsend's big-eared bat (*Corynorhinus* (=*Plecotus*) *townsendii*)
Townsend's big-eared bat is medium-sized bat species with very large ears. The species is found in desertscrub to coniferous forests and roosts in areas with open ceilings, including abandoned buildings, caves, and mines. The project area is within the known distribution of this species, and the project area does contain suitable foraging habitat for this species. In addition, this species is known to occur within 3 miles of the project area (AZHGIS 2014). Because this project area contains potentially suitable foraging habitat for the Townsend's big-eared bat, the Proposed Action is likely to result in the disturbance of suitable Townsend's big-eared bat foraging habitat, as well as individuals, if present, through noise during construction. The Proposed Action may affect individuals of the Townsend's big-eared bat, but is not likely to result in a trend toward federal listing or loss of viability.

Acuna cactus (Echinomastus erectocentrus var. acunensis)
Acuna cactus occurs in disjunct populations across southern Arizona on well-drained gravel ridges and knolls on granite-derived soils. It grows in the Arizona Upland subdivision of the Sonoran desertscrub plant association at elevations between 1,198 and 2,789 feet amsl. While suitable habitat is present within the project area, several surveys for the species have been conducted and no individual species were found during any of those surveys. As part of the ROW stipulations, additional surveys shall be completed in the summer immediately preceding soil and vegetation disturbing activities.

CUMULATIVE IMPACTS

The project area would be maintained by Pinal County as an acquired right-of-way. The existing historical bridge would remain as part of the Arizona Trail; however, other than the proposed components of the Kelvin Bridge replacement project, Pinal County has no additional plans for activities within this right-of-way. Other activities within the project vicinity, combined with the expected effects from the proposed project, could cumulatively contribute to effects such as the degradation, loss, or fragmentation of habitat, increased disturbances to nesting individuals, increases in invasive species, decline of watershed conditions, or groundwater and surface water impacts. These activities may include: grazing activities, recreation (i.e., off road vehicle use, Christmas and Shores Recreations sites, Arizona National Scenic trail, and other recreation without a federal nexus), current and future development, nearby mining activities (i.e., Ray Mine, Ripsey Wash Tailing Storage Project, and other small scale mining operations), operation of the Coolidge Dam, other ROWs or infrastructure, and other various unregulated activities on non-federal land in or near the project area.

MITIGATION MEASURES AND RESIDUAL IMPACTS

A qualified biologist would monitor all ground-disturbing activities, as required in the mitigation measures in Section 2.7. If it is determined that unacceptable levels of resource damage are occurring outside of authorized activity, all work would stop at that location and the BLM would be notified. Prior to

construction, surveys for yellow-billed cuckoo, southwestern willow flycatcher, Acuna cactus, and desert tortoise would be conducted. The implementation of design features, ROW stipulations, and mitigation measures would minimize residual impacts to biological resources as a result of the Proposed Action. However, the measures cannot completely mitigate impacts to biological resources. Therefore, the Proposed Action would have long-term minor adverse residual impacts to biological resources.

3.6 Cultural Resources

3.6.1 Affected Environment

Cultural (and heritage) resources are defined as specific locations of human activity, occupation, or use identifiable through field inventory, historical documentation, or oral evidence. The term includes archaeological, historic, and architectural sites and structures, as well as places with traditional cultural or religious importance within a social or cultural group. The analysis area for cultural resources is identified and evaluated within a 1-mile radius surround the Project area.

In accordance with Section 106 of the NHPA, several archaeological records searches, resource surveys of the Area of Potential Effect (APE), and data recovery activities have occurred for the project since 2002. The archaeological records searches identified known cultural resources within a 1-mile radius of the APE. The resource surveys confirmed the results of the archaeological records searches within the APE as well as identified any previously unknown cultural resources.

SWCA Environmental Consultants surveyed 7.55 acres of the APE in 2002 (Lundin et al. 2003) and additional 3.6 acres in 2015 (SWCA 2015) that had not previously been subject to the 2002 cultural resource survey. These two surveys represent complete survey coverage of the current project footprint. The cultural resource surveys identified three archaeological sites located within the surveyed area—the Kelvin Bridge, AZ U:16:299(ASM), and AZ V:13:33(ASM).

The Kelvin Bridge was constructed in 1917 and was listed in the National Register of Historic Places (NRHP) in 1988. It is one of two remaining concrete bridges in Arizona that was constructed with Luten arches developed and patented by engineer Daniel Luten.

AZ U:16:299(ASM) is the historic Phoenix & Eastern mining branch line of the former Southern Pacific Railroad. It was originally constructed in 1903–1904 and 1910; it is still actively used and maintained. The line runs between Winkelman and Magma and includes the Ray Mine spur that runs north just outside of the project area (Lundin et al. 2003). The railroad is currently run by Copper Basin Railroad and serves the Ray Mine complex run by ASARCO (ASARCO 2015). The branch line crosses the project area just north of the Kelvin Bridge. AZ U:16:299(ASM) has been determined eligible for inclusion in the NRHP.

AZ V:13:33(ASM) is located on private land and consists of a prehistoric artifact scatter and the remnants of the historic community of Kelvin. The historic component consists of a 16-by-20-foot building foundation, a segment of fencing, and a historic artifact scatter located between the existing Florence-Kelvin Highway and the Ray Mine railroad spur. The prehistoric component of this site consists of prehistoric artifact scatters containing ceramic sherds and flaked stone attributed to the Hohokam culture and dating to A.D. 750–1450 (Lundin et al. 2003). The SHPO determined AZ V:13:33(ASM) eligible for inclusion in the NRHP under Criterion D for its potential to provide important information regarding the prehistoric and historic settlement of the area.

Because the Proposed Action would adversely affect AZ V:13:33(ASM), FHWA and ADOT developed a Memorandum of Agreement (MOA) with the SHPO to address the treatment of the site (Appendix E). The MOA was signed in 2004. As stipulated in the MOA, SWCA prepared the *A Phase I and Phase II Data Recovery Plan for the Portion of AZ V:13:33(ASM) within the Kelvin Bridge Replacement Area-of-Potential Effect, Pinal County, Arizona* (SWCA 2005). After the plan was approved by FHWA and ADOT, SWCA carried out the data recovery of AZ V:13:33(ASM) in 2009 to 2010. During the data recovery, 130 features were recorded within the project APE. A final data recovery report was drafted and approved in

2012, and presented the results in a report titled *Living Along the Gila River: Results of Archaeological Investigations at AZ V:13:33(ASM)* (SWCA 2012). The final data recovery report concluded that adverse effects to AZ V:13:33(ASM) were resolved as a result of the data recovery and the SHPO concurred with the conclusion in 2012.

The 2015 survey of the additional 3.6 acres not included in the original survey did not identify cultural resources that are eligible for inclusion in the NRHP.

3.6.2 Impacts from the No Action

DIRECT AND INDIRECT IMPACTS

Under the No Action Alternative the bridge would not be closed to motorized traffic that could potentially accelerate deterioration of the bridge. Therefore, the No Action Alternative would result in the direct and potentially adverse impact of continued wear on the historic Kelvin Bridge because it would continue to carry motorized traffic at present levels.

Because the bridge project would not be constructed under the No Action Alternative, no direct or indirect impacts to AZ U:16:299(ASM) would occur. The data recovery for site AZ V:13:33(ASM) resolved adverse effects to the site; therefore the No Action would not have a direct or indirect impact on AZ V:13:33(ASM).

CUMULATIVE IMPACTS

No reasonably foreseeable future actions would impact cultural resources within the project area; therefore the No Action Alternative would not have a cumulative impact to cultural resources.

3.6.3 Impacts from the Proposed Action

DIRECT AND INDIRECT IMPACTS

The Proposed Action will result in beneficial impacts of the historic bridge because the bridge would be closed to motorized traffic, thereby slowing the bridge's deterioration. The bridge will continue to be maintained by Pinal County after it is decommissioned and no longer part of the Florence-Kelvin Highway. The SHPO concurred in 2005 with the conclusion that the project would have "No Adverse Effect" on the historic bridge.

The Proposed Action will not impact AZ U:16:299(ASM), the historical alignment of the Magma-Winkelman branch of the Southern Pacific Railroad and current Copper Basin Railroad, because the new bridge will span the historic railroad aerially and will not alter any of the characteristics of location, function, or setting that contributes to the railroad's NRHP eligibility (ADOT 2004a).

AZ V:13:33(ASM), the ruins of the historic town of Kelvin and a prehistoric artifact scatter, is located on private land that would be acquired by Pinal County for a new ROW (ADOT 2004a). An MOA (ADOT 2004b) to address likely impacts to the site through data recovery was developed and implemented. Adverse effects to AZ V:13:33(ASM) have been resolved through data recovery (SWCA 2012).

CUMULATIVE IMPACTS

No other known reasonably foreseeable future actions would occur at or adjacent to the proposed project area or affect the identified cultural resources within the APE. Therefore, the proposed action would not have a cumulative impact on cultural resources

MITIGATION MEASURES AND RESIDUAL IMPACTS

To fulfill ROW Grant Stipulation #13, data recovery for site AZ V:13:33(ASM) has already been completed. A qualified archaeologist will monitor all ground-disturbing activities, as required in the ROW grant stipulations in Section 2.6. In the event of an unanticipated discovery of cultural material during project activities, all work would stop at that location until the find is evaluated by a professional archaeologist. The BLM Tucson Field Office would be notified, and work would not begin again in the

area until clearance is obtained. With the implementation of the ROW stipulations and mitigation measures, no residual impacts to cultural resources would be expected occur.

3.7 Socioeconomic Resources and Environmental Justice

3.7.1 Affected Environment

POPULATION DEMOGRAPHICS, INCOME, AND EMPLOYMENT

The analysis area for socioeconomics and environmental justice is the US Census Tract 23 in Pinal County, where the project area is located. Census data for Pinal County and the State of Arizona are also provided for comparison (Table 3-3). According to employment and income data from the U.S. Census Bureau (Census Bureau), in 2012 Pinal County had a population of 375,770. The median age was 35.3 years, and the majority (72%) of the population was white/Caucasian; this also includes those of Latino origin (28.5%). American Indians (5.6%) and persons of Asian origin (1.7%) made up most of the remainder. Median household income was $50,164, employment of those over 16 years of age was 47%, and approximately 10.6% of the population was below poverty level (Census Bureau 2014).

Table 3-3. Arizona Population, Income, and Employment Data

Location	Total Population (2010)	Minority Population (% non-white)	Families Below Poverty Level (%)	Unemployment (%)	Disabled Population (%)	Elderly Population (%)
State of Arizona*	6,392,017	15.4	16.2	5.5	Data not available	13.6
Pinal County*	375,770	27.6	10.6	6.0	Data not available	13.9
Pinal County Census Tract 23**	2,951	51.2	20.8	18.8	Data not available	22

Sources: *Census Bureau 2012; **Census Bureau 2010-2014 American Community Survey

Environmental Justice

Title IV of the Civil Rights Act of 1964 and related statutes ensure that individuals are not excluded from participation in, denied the **benefit** of, or subjected to discrimination under any program or activity receiving federal assistance on the basis of race, color, national origin, age, sex, or disability. Executive Order 12898 on Environmental Justice directs that programs, policies, and activities not have a disproportionately high and adverse human health and environmental effect on minority and low-income populations.

The communities of Kelvin and Riverside are located just north and east of the proposed bridged project, respectively. Because these communities are unincorporated, census data specific to the communities are not available. However, census data are available for Census Tract 23, Pinal County, Arizona, within which the Kelvin and Riverside are located. According to the U.S. Census Bureau's 2010–2014 5-Year Community Survey data for 2014, approximately 51% of the population within the census tract is a minority population and approximately 21% of the population within the census tract is living below the poverty level (U.S. Census 2013). Therefore, the proposed project is within a demographic area that has populations protected by Executive Order 12898 on Environmental Justice.

Quality of Life

Increased growth in Pinal County over the past several decades has been a significant driving force in the current social and economic setting of the area. Although current population and development in the immediate vicinity of the proposed action is relatively sparse, Pinal County does provide dispersed recreation opportunities such as hiking, hunting, sightseeing, rock collecting, and OHV use (BLM 1988). The area that includes the proposed action is largely undeveloped and undisturbed desert. The

undeveloped nature of the project area defines the quality of life and nature of the analysis area, which is quiet, non-commercial, and rural in character. The ASARCO Ray Mine is the primary employer for this area and the mining operation, including the tailings, can be seen and heard in the distance to the north of the project area.

3.7.2 Impacts from the No Action

DIRECT AND INDIRECT IMPACTS

Under the No Action Alternative, the ROW grant amendment would not be approved, and no construction would take place. Thus, the new bridge would not be constructed, residents and travelers would continue to use the existing one-way bridge and the at-grade railroad crossing, and the existing bridge would not transition to a non-motorized use bridge and become part of the ANST system.

There would be no impacts to environmental justice communities.

CUMULATIVE IMPACTS

No other known reasonably foreseeable future actions would occur at or adjacent to the proposed project area. Therefore, the No Action Alternative would not have a cumulative impact on socioeconomic resources and environmental justice.

3.7.3 Impacts from the Proposed Action

DIRECT AND INDIRECT IMPACTS

Impacts to social and economic conditions from the Proposed Action would be beneficial, major, and long term, because constructing a new bridge would benefit current nearby residents and travelers on the Florence-Kelvin Highway by providing a safer two-way bridge crossing over the Gila River and removing the at-grade railroad crossing (see Section 3.8 below for more on transportation). The Proposed Action would also enhance public health and safety and improve emergency service response by removing the risk of potential delays at the bridge and railroad crossing. Quality of life impacts would be beneficial and long term as well due to the conversion of the existing bridge to a non-motorized use bridge that is part of the Arizona National Scenic Trail system.

There would be no impacts to environmental justice communities.

CUMULATIVE IMPACTS

No other known reasonably foreseeable future actions would occur at or adjacent to the proposed project area. Therefore, the Proposed Action would not have a cumulative impact on socioeconomic resources and environmental justice.

MITIGATION MEASURES AND RESIDUAL IMPACTS

As required in the ROW grant stipulations, Pinal County will notify nearby residences and businesses prior to construction. Access to the Florence-Kelvin Highway and all adjacent roads and properties would remain open during construction. Therefore, no residual adverse impacts to Socioeconomic Resources and Environmental Justice would occur as a result of the Proposed Action.

3.8 Transportation

3.8.1 Affected Environment

Access to the proposed project area is via the Florence-Kelvin highway, which generally runs east and west between Florence, Arizona, and State Route 77. The Florence-Kelvin highway's current bridge over the Gila River is a single-lane bridge that requires traffic to stop and wait for opposing traffic to clear the bridge before proceeding on the bridge. The Florence-Kelvin highway crosses the Gila River, traverses

through the unincorporated community of Kelvin, and terminates at the State Route 77 immediately north of the community. East Riverside Road, a two-lane dirt road, intersects the Florence-Kelvin Highway south of the bridge and provides access to residences east of the proposed project area.

3.8.2 Impacts from the No Action

DIRECT AND INDIRECT IMPACTS

The No Action alternative would have long-term minor adverse impacts to transportation because traffic along the Florence-Kelvin Highway would continue to have to wait for opposing traffic to clear the bridge before crossing. In addition, traffic would continue to cross the railroad at an at-grade crossing and occasionally be required to wait for trains. The improved traffic safety conditions from the new two-way bridge and separated grade crossing of the railroad would not occur under the No Action Alternative.

CUMULATIVE IMPACTS

No other known reasonably foreseeable future actions would occur at or adjacent to the proposed project area. Therefore, the No Action Alternative would not have a cumulative impact on transportation resources.

3.8.3 Impacts from the Proposed Action

DIRECT AND INDIRECT IMPACTS

The Florence-Kelvin Highway would continue to provide access to Kelvin, adjacent roads, and residences during construction. The existing one-lane bridge would remain open during construction, therefore no delays in traffic would result from bridge construction. Traffic flow would be improved after the completion of the project because vehicles would no longer be required to wait for opposing traffic on the bridge. In addition, the new bridge would span the railroad, further improving traffic flow and safety over existing conditions. Transportation connectivity within the analysis area would be improved since the new Kelvin Bridge would provide a more convenient travel route, which would be a beneficial, long-term impact.

The Proposed Action would not result in an increase in traffic on any roads. Therefore, the Proposed Action would not result in impacts to travel management.

CUMULATIVE IMPACTS

No other known reasonably foreseeable future actions would occur at or adjacent to the proposed project area. Therefore, the Proposed Alternative would not have a cumulative impact on transportation resources.

MITIGATION MEASURES AND RESIDUAL IMPACTS

Access to the Florence-Kelvin Highway and all adjacent roads and properties would remain open during construction. Therefore, no residual adverse impacts to transportation would occur as a result of the Proposed Action.

3.9 Recreation

3.9.1 Affected Environment

The existing Florence-Kelvin Highway's bridge is a segment of the Arizona National Scenic Trail that is used by trail users to cross the Gila River. The Arizona Trail is an 820-mile, non-motorized trail that traverses Arizona from Mexico to Utah. The Arizona Trail is intended to be a primitive, long-distance trail that highlights the state's topographic, biologic, historic and cultural diversity. The Florence-Kelvin highway bridge is the southern terminus of the Gila River Canyons Passage section and is popular for use by mountain bikers, day hikers, and equestrians. After the bridge, the trail follows the southern side of the Gila River for many miles before continuing south towards the Arizona-Mexico border. Motorized use of the trail (with the exception of the Florence-Kelvin highway bridge) is prohibited.

No other special recreation management areas exist within the proposed project area.

3.9.2 Impacts from the No Action

DIRECT AND INDIRECT IMPACTS

The No Action Alternative would have a long-term minor adverse impact to recreation because the existing bridge would not transition to a non-motorized use bridge only. The existing bridge would remain part of the ANST system, but trail users would continue to share the bridge with motorized traffic.

CUMULATIVE IMPACTS

No reasonably foreseeable future actions would impact recreation within the project area; therefore the No Action Alternative would not have a cumulative impact to recreation.

3.9.3 Impacts from the Proposed Action

DIRECT AND INDIRECT IMPACTS

The Proposed Action would have long-term moderate beneficial impacts to recreation because the existing bridge would be designated for non-motorized use only, support trail connectivity, and remain part of the ANST. Trail users crossing the river would no longer share the bridge with motorized traffic on the Florence-Kelvin Highway. The trailhead on the southern side of the bridge would be improved to keep motorized vehicles off of the trail by placing large boulders at the trailhead. Pedestrian access across the Florence-Kelvin Highway would be provided on the southern side of the bridge by an underpass that leads to the ANST trailhead.

CUMULATIVE IMPACTS

No reasonably foreseeable future actions would impact recreation within the project area; therefore the Proposed Action would not have a cumulative impact to recreation.

MITIGATION MEASURES AND RESIDUAL IMPACTS

The project's design feature to convert the existing bridge to a non-motorized use only bridge and improving access to the ANST would have a long-term beneficial impact on recreation in the project area. Therefore, no residual adverse impacts to recreation would result from the Proposed Action.

3.10 Visual Resources

3.10.1 Affected Environment

The project area is located at the Gila River- a perennial river at this location lined with dense riparian vegetation. Developed land within the project area consists of the existing alignment of the Florence-Kelvin Highway, the existing bridge, the Union Pacific railroad, and a road maintenance staging area north of the bridge on the west side of the Florence-Kelvin Highway. The surrounding area is predominantly natural/undisturbed, but sparse development such as houses can be seen within 1 mile of the project area. The ASARCO Ray Mine's tailings facilities are visible to the north of the project area. Beyond the ASARCO Ray Mine, the surrounding background is predominantly natural/undisturbed desert mountains that are characteristic of the Gila River canyons area.

The Phoenix RMP does not include Visual Resource Inventory (VRI) classes or Visual Resource Management (VRM) objectives. There are no BLM or other visual resource requirements for the analysis area.

3.10.2 Impacts from the No Action

DIRECT AND INDIRECT IMPACTS

The No Action Alternative would not impact visual resources.

CUMULATIVE IMPACTS

No cumulative impacts would occur to visual resources as a result of the No Action Alternative.

3.10.3 Impacts from the Proposed Action

DIRECT AND INDIRECT IMPACTS

The Proposed Action would result in an alteration of the existing landscape on 7.1 acres. In the short term, construction of the Proposed Action would cause dust to be emitted from earthmoving activities, construction vehicles and equipment, and construction worker vehicles, and from areas within the construction zone that have been disturbed or where excavation material is stockpiled. Fugitive dust, if emitted in sufficient quantities and if adverse weather conditions persist, would have minor impacts and would degrade existing views in the short term. Disturbed areas would contrast with adjacent undisturbed and vegetated areas.

The Proposed Action, once constructed, would add a new bridge over the Gila River that is approximately 30 feet higher than the existing bridge. The new bridge and bridge approaches would be visible to observers on the Florence-Kelvin Highway, to trail users on the ANST, and from adjacent land. The new bridge would be generally consistent with the existing characteristics of the area because of the existing Florence-Kelvin Highway and Kelvin Bridge over the Gila River. The new bridge and bridge approaches would attract attention and be seen, but would not dominate the view of the casual observer any more than is currently experienced. Over time, the bridge would be less prominent as revegetation efforts help to restore land disturbed during construction. Therefore, long-term minor adverse impacts to visual resources would occur as a result of the Proposed Action.

Because the Phoenix RMP currently does not classify VRM for BLM lands within the Phoenix RMP planning area, the Proposed Action would not be in conflict with BLM VRM classifications.

CUMULATIVE IMPACTS

No reasonably foreseeable future actions would impact visual resources; therefore, the Proposed Action would not have cumulative impacts to visual resources.

MITIGATION MEASURES AND RESIDUAL IMPACTS

Design features, ROW grant stipulations, and mitigation measures require that all disturbed areas are revegetated to reduce impacts to visual resources, amongst other mitigation purposes. However, revegetation would not fully reduce the long-term minor adverse impact to visual resources created by the new bridge and bridge approaches. Therefore, the Proposed Action would have long-term adverse minor residual impacts to the visual character of the surrounding area.

4 SUPPORTING INFORMATION

4.1 Tribes, Individuals, Organizations, or Agencies Consulted

CEQ regulations implementing NEPA require that federal agencies provide meaningful opportunities for the public and stakeholders to provide input and identify their concerns with regard to the NEPA process. Federal laws, such as the ESA, CWA, and the NHPA, mandate public involvement and consultation with agencies or federally recognized tribal governments. Table 4-1 identifies the persons and agencies were contacted or consulted during preparation of this EA.

Table 4-1. Summary of Consultation and Coordination

Federal
U.S. Fish and Wildlife Service: *Ongoing*
State
Arizona Game and Fish Department: *Ongoing*
State Historic Preservation Office: *Consultation for additional 3.6 acres survey and cultural resource report sent on December 2, 2015; SHPO concurrence of No Historic Properties Affected received on December 9, 2015*
Tribal
Gila River Indian Community: *Consultation for additional 3.6 acres survey and cultural resource report sent on November 10, 2015; THPO concurrence of No Historic Properties Affected received on December 21, 2015*
Hopi Tribe: *Consultation for additional 3.6 acres survey and report sent on December 2, 2015; THPO concurrence of No Historic Properties Affected received on December 7, 2015*

4.2 List of Preparers

The Draft EA was written by a team composed of BLM and third-party contractor personnel. Under direction of the BLM, the consulting team prepared the description of the Proposed Action, collected data for the analysis, assessed potential effects of the Proposed Action, No Action Alternative, and Alternative 1, and prepared other chapters with additional comments and critiques from the BLM and Pinal County. The BLM has approved the content of this Draft EA. Table 4-2 identifies the agencies and individuals involved with the preparation and review of this Draft EA.

Table 4-2. List of Preparers

Entity		Responsibility	Title
Bureau of Land Management			
Warren	Melissa	Authorized Officer	Field Office Manager
Dunlavey	Linda	Project Management, Lands and Realty	Project Manager
Radke	Marcia	Wildlife	Wildlife Biologist
Simms	Jeffrey	Fish	Fishery Biologist
Mendoza	Francisco	Recreation, Travel Management, Visual Resources	Outdoor Recreation Manager
Lomeli	Ben	Soils, Water, and Air Resources	Hydrologist
Markstein	Amy	NEPA Adequacy	NEPA Coordinator

Table 4-2. List of Preparers (Continued)

Entity		Responsibility	Title
Arizona Department of Transportation			
Konomi	Marinela	Environmental Planner	Environmental Planner
White	Justin	Biologist	Biologist
Davidson	Jeff	Engineer	Project Manager
Pinal County Public Works Department			
Ortiz	Joe	Pinal County Project Manager	Engineer
SWCA Environmental Consultants			
Bellavia	Cara	Office Director	Senior NEPA Planner
Gladding	Eleanor	Project Management	Project Manager
Rigg	Jonathan	EA Author	NEPA Planner
Tremblay	Adrienne	Cultural and Heritage Resources, Tribal Concerns	Senior Archaeologist
Addy	Jenny	Biological Resources	Environmental Planner
Bell	Shari	Document Formatting	Formatter
Orcutt-Gachiri	Heidi	Technical Editing	Technical Editor
Query	Chris	Maps and Figures	GIS/CADD Specialist

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APPENDIX A.
2012 FONSI

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
TUCSON FIELD OFFICE
FINDING OF NO SIGNIFICANT IMPACT

Kelvin Bridge Replacement Project
Environmental Assessment DOI-BLM-AZ-G020-2011-0005 EA

BACKGROUND

Tierra Right of way prepared an Environmental Assessment (EA) for the Bureau of Land Management (BLM) which analyzed the effects of construction of a new vehicular bridge along the Florence-Kelvin Highway at the Gila River crossing south of the community of Kelvin, Arizona. The EA considered the proposed action, removal and replacement of the old bridge, and the no action alternative. The EA and Finding of No Significant Impact (FONSI) will be made available for a 30-day public review on the Arizona NEPA site and the public room of the BLM Tucson Field office.

RATIONALE FOR FINDING

I have reviewed the Evironmental Assessment DOI-BLM-AZ-G020-2011-0005 EA for the replacement of Kelvin bridge dated July 7, 2011 and revised August 24, 2012 and considered the project specifications, design features and proposed mitigation, including the explanation and resolution of any potentially significant environmental impacts. I have determined that the proposed action with the mitigation measures listed below will not have any significant impacts on the human environment and that an EIS is not required. I have determined that the proposed action is in conformance with the Phoenix Resource Management Plan (RMP) approved in Record of Decision dated December 1998.

Context

The Proposed Action would occur near Kelvin, Arizona which is covered by the Phoenix RMP. The proposed action is to build the new vehicular bridge and maintain the old bridge for pedestrian use. In order to accomplish this the following mitigation measure will be followed:

1. The holder of Right of Way No. AZA-35391 agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. 9601, et seq., or the Resource Conservation and Recovery Act of 1976, 42 U.S.C. 6901, et seq.) on the right of way, unless the release is wholly unrelated to the right of way holder's activity on the right of way. This agreement applies without regard to whether a release is caused by the holder, its agent, or an unrelated third party.

2. The holder shall fully indemnify, or hold harmless, the United States for any liability, damage, or claims arising in connection with the holder's use and occupancy of the right of way.

3. The holder shall maintain the right of way in a safe, useable condition, as directed by the authorized officer and a regular maintenance program shall be maintained.

4. The Copper Basin Railway and local residents will be notified of the construction prior to the start of construction.

5. If any species listed as threatened or endangered under the Endangered Species Act is encountered during construction activities, all work will cease and telephone notification of the discovery will immediately be made to USFWS. Construction activity may resume only after the authorized officer has issued a continuance.

6. In accordance with the Arizona Pollutant Discharge Elimination System (AZPDES), Pinal County will develop a Storm Water Pollution Prevention Plan (SWPPP) and will submit the SWPPP and a Notice of Intent (NOI) to ADEQ to obtain a General Construction Permit. The SWPPP wil linclude BMPs that ensure construction will not adversely impact soils and/or water quality in the Proposed Action area.

7. Pinal County will coordinate with ACOE, as required, to obtain NWP 14 authorization for temporary construction disturbance within the OHWM of the Gila River. The amount of disturbance within the OHWM will be restricted to the minimum required and in no case exceeding60 m_2 (640 $feet_2$), to accommodate a single access path 2.4 m (8 feet) wide and 16.5 m (54 feet) longbeginning at the OHWM fence to place one (1) temporary construction structural support. The temporary support disturbance footprint shall not exceed 2.4 m (8 feet) in width or 7.3 m (24 feet) in length. All requirements and stipulations in NWP 14 will be followed, including restoration of the temporarily disturbed area within the Gila River OHWM to pre-construction or better condition following construction.

8. Prior to construction, the three wetland areas within the Proposed Action area, as delineated by SWCA, and the OHWMs of the Gila River will be fenced with 1.5 m (5 foot) high chain-link and orange construction fencing. The enclosed wetlands are to remain undisturbed, and the disturbance within the OHWM is to only occur to the extent described above.

9. All construction equipment shall be maintained in good working condition in order to minimize impacts to air quality in the Proposed Action area from exhaust emissions.

10. Fugitive dust emissions shall be minimized in the Proposed Action area during construction by regular water application.

11. In order to avoid any potential impacts to breeding or dispersing SWFL, no construction activities are to occur between April 1 and September 30.

12. A Desert Tortoise survey shall be performed prior to construction to assess whether or not the Proposed Action area is utilized by this species.

13. Following construction of the Proposed Action, all disturbed riparian areas are to be revegetated, as described below in the Vegetation mitigation measures. Revegetated areas shall be monitored at least twice a year, in April and September, for a period of two years following construction to ensure that revegetation efforts are successful and that the areas restored are free of invasive species.

14. Prior to construction, orange construction fencing 1.5 m (5 feet) in height shall be placed 6.1 m (20 feet) beyond and parallel to the edges of the new bridge to delineate the eastern and western bridge construction access limits within SWFL critical habitat.

15. Prior to construction, an inventory of native plants will be performed in all areas where native vegetation will be disturbed in order to determine the location and number of plants that may be destroyed or removed. Results of the inventory will be compiled in a report for submittal to BLM for their approval prior to construction.

16. Pinal County and/or their subcontractors shall closely monitor the Proposed Action area during construction to ensure that impacts to vegetation are minimized. Clearing of SWFL critical habitat required for construction access will be limited to no more than 6.1 m (20 feet) beyond the edge of the new bridge, as delineated by the placement of construction fencing described above. No vegetation shall be trimmed, removed, or otherwise disturbed within the OHWM of the Gila River, except as that described above in Soils and Water.

17. All disturbed areas outside of critical habitat that are not otherwise permanently stabilized will be seeded after construction is complete with species native to the Proposed Action area.

18. All areas of temporarily disturbed SWFL critical habitat shall be restored following construction, including those areas underneath the new bridge, with native riparian plant species such as Fremont Cottonwood *(Populus fremontii)*, Goodding Willow *(Salix gooddingii)*, and Velvet Ash *(Fraxinus velutina)*. Trees planted shall be of varying heights in order to produce a layered vegetation effect. Native understory plant species such as Seepwillow *(Baccharis glutinosa)* and Burrobrush *(Hymenoclea monogyra)* shall also be planted.

19. Data recovery at AZ V:13:33(ASM) shall be completed prior to construction.

20. An archaeological monitor shall be present during project implementation activities. Should any archaeological resources or vertebrate fossils be discovered during construction, all surface-disturbing activities in the area of discovery shall cease. The archaeological monitor will evaluate the discovery and provide recommendations to the Authorized Officer. Surface-disturbing activities shall not resume until permission is obtained from the Authorized Officer.

21. After construction of the Proposed Action, Pinal County will continue to maintain the historic Kelvin Bridge in perpetuity. A letter to this effect can be found in Appendix C of the EA.

22. If previously unidentified cultural resources are identified during construction of the new

bridge, work will cease at that location, and the ADOT District Environmental Coordinator will be notified. The applicant will arrange for proper treatment of these resources. A treatment plan shall be approved by the Arizona SHPO if the discovery is on non-BLM land, and by the Arizona SHPO and BLM if the discovery is on BLM land.

23. Any archaeological or historic artifacts or remains or vertebrate fossils discovered during operations shall be left intact and undisturbed; all work in the area shall stop immediately; and the Assistant Field Manager for Planning and Monitoring shall be notified immediately. Commencement of operations shall be allowed upon clearance by the Assistant Field Manager.

24. An additional cultural and paleontological resource survey may be required in the event the project location is changed or additional surface disturbing operations are added to the project after the initial survey. Any such survey would have to be completed prior to commencement of operations.

25. If in connection with operations under this authorization, any human remains, funerary objects, sacred objects or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (NAGPRA) (L. 101–601; Stat. 3048; 25 U.S.C. 3001) are discovered, the permittee shall stop operations in the immediate area of the discovery, protect the remains and objects, and immediately notify the Assistant Field Manager for Planning and Monitoring of the discovery. T he permittee shall continue to protect the immediate area of the discovery until notified by the Assistant Field Manager that operations may resume.

26. With regard to portions of the current project area that cross lands administered by Pinal County, the client and all subcontractors are reminded that, in accordance with §41-844 of the Arizona Revised Statutes, the person supervising any survey, excavation, construction, or like activity on lands administered by the State of Arizona or any of its administrative subdivisions (i.e., counties or municipalities) is required, upon incidentally encountering cultural deposits more than 50 years old, to halt all work on the undertaking and immediately notify the Director of the Arizona State Museum (ASM) of the finding, so that a consultation process can be initiated and an appropriate course of treatment decided upon. Work in the area is not to resume until authorization is received from the Director.

27. With regard to portions of the project area that lie on privately owned land, the client and all subcontractors are reminded that, in accordance with §41-865 of the Arizona Revised Statutes, should buried human remains or funerary goods be encountered incidentally on private lands during any ground-disturbing activities associated with the current project or any follow-up work done at any time in the future, all such work must immediately be halted in the vicinity of the finding and the Director of the ASM must immediately be informed, so that a consultation process can be initiated and an appropriate course of treatment decided upon. Under the statute, the Director must make an initial response to such a notification within 10 working days; there is, however, no specified limit on the length of time that work may be delayed in order to deal with the finding in an appropriate manner. In any case, work is not to resume until authorization is received from the Director of the ASM. Should the Director fail to respond to the notification within the ten-day window provided in the statute, it can be assumed that authorization to resume work has been given.

28. The historic Kelvin Bridge shall be made a part of the Arizona Trail to be used as a pedestrian crossing over the Gila River.

29. Project plans shall be submitted to SHPO for review and comment and will comply with the Secretary of Interior's Standards for the Treatment of Historic Properties in order to ensure no adverse impacts occur to the visual context of the existing Kelvin Bridge.

30. A Spill Prevention Control and Countermeasures (SPCC) plan addressing the storage, handling, and release of fuels and lubricants on-site shall be followed during construction. The SPCC plan shall be in accordance with all Federal and state laws regarding the use of fuels and lubricants.

31. A Waste Management Plan (WMP) addressing the safe handling, storage, transportation, and disposal of solid waste, hazardous materials, or other waste used in the Proposed Action area shall be followed during construction. The WMP shall be in accordance with all applicable Federal and state laws regarding waste materials.

32. All solid waste, such as residential-type garbage, shall be removed from the Proposed Action area on a daily basis.

33. Pinal County and/or their contractor shall be held responsible if noxious weeds become establishedwithin the project area. Weed control shall be required in areas where noxious weeds exist, which include the floodplain of the Gila River, roadsides, and adjacent areas affected by the establishment of weeds due to the Proposed Action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

34. All vehicles and equipment brought in from outside the project area shall be power-washed, including the undercarriage, prior to entering the right of way and before moving vehicles onto any other public lands, in order to prevent the introduction and spread of noxious weeds and invasive species.

35. If suspected hazardous materials are encountered during construction or a spill occurs due to an unforeseen circumstance such as an equipment malfunction, Pinal County and/or their contractor will notify the BLM. In the event of a hazardous materials spill, Pinal County and/or their contractor will take appropriate measures to remove the contaminated soil and properly dispose of the contaminated soil at a certified hazardous materials disposal facility.

36. A qualified biological monitor will be on site monitoring construction activites over and within the wetted channel. A biological report will be sent to BLM on a weekly basis. The monitor shall report and none compliance to the BLM within 24 hours.

Intensity

I have considered the potential intensity/severity of the impacts anticipated from the Kelvin Bridge replacement decision relative to each of the ten areas suggested for consideration.

1. ***Impacts that may be both beneficial and adverse.*** The EA considered both potential beneficial and adverse effects. None of the effects are beyond the range of effects analyzed in the Phoenix RMP.

2. ***The degree to which the proposed action affects public health and safety.*** No aspect of the Proposed Action would have an adverse effect on public health and safety. The proposed action would improve public health and safety while traveling Florence-Kelvin Highway.

3. ***Unique characteristics of the geographic area such as proximity of historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.*** A cultural resource site has had a treatment plan completed in 2009 and the investigation resolved any adverse effects. There are no parks, prime farmlands, or wild and scenic rivers in the planning area. No Area of Critical Environmental Concern (ACEC) is within the planning area.

4. ***The degree to which the effects on the quality of the human environment are likely to be highly controversial.*** The effects of actions planned under the Proposed Action are within the scope of the BLM's rules and regulations as pertaining to issuance of a right-of-way grant. No unique or appreciable scientific controversy has been identified regarding the effects of the Proposed Action. The Public comments received during the EA process have been positive. No comments identifying concerns or controversy over the project were received.

5. ***The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.*** The analysis has not shown that there would be any unique or unknown risks to the human environment not previously considered and analyzed in the Phoenix RMP.

6. ***The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.*** This project is consistent with other actions identified in the Phoenix RMP. This action neither establishes a precedent nor represents a decision in principle about future actions.

7. ***Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.*** The presence of the new bridge will add to the impacts of the visual resources. The removal of SWFL critical habitat by the project will add to the adverse impacts to the species. The affects were analyzed in the EA and the impacts are acceptable with the use of mitigations.

8. ***The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historic resources.*** The old Kelvin bridge was listed in the National Register of Historic Places in 1988. With construction of the new bridge there will be a favorable impact on the old bridge by removal of vehicular traffic. Public comment was in favor of the preservation of the old bridge.

9. ***The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.*** The proposed action would have a moderateraly adverse impact on local and regional vegetation and wildlife including migratory birds. The affects were analyzed in the EA and the impacts are acceptable with the use of mitigations.

10. ***Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.*** The Proposed Action does not threaten to violate

any law. The Proposed Action is in compliance with the Phoenix RMP, which provides direction for the protection of the environment on public lands.

FINDING OF NO SIGNIFICANT IMPACT

On the basis of the information contained in the DOI-BLM-AZ-G020-2011-0005 EA, and all other information available to me, it is my determination that the proposed action would not significantly affect the quality of the human environment and that preparation of an Environmental Impact Statement (EIS) is not required.

Brian B. Bellew — 10/29/12

Brian B. Bellew
Field Manager

Date

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
TUCSON FIELD OFFICE

DECISION RECORD

Kelvin Bridge Replacement Project
Environmental Assessment DOI-BLM-AZ-G020-2011-0005 EA

BACKGROUND

Tierra Right of Way prepared an Environmental Assessment (EA) DOI-BLM-AZ-G020-2011-0005 EA for the replacement of Kelvin bridge dated July 7, 2011 and revised August 24, 2012, for the Bureau of Land Management (BLM). The EA analyzed the effects of construction of a new vehicular bridge along the Florence-Kelvin Highway at the Gila River crossing south of the community of Kelvin, Arizona. The EA considered three alternatives; the proposed action, removal and replacement of the old bridge, and the no action alternative.

DECISION

I have reviewed the Environmental Assessment (EA) and have made a Finding of No Significant Impact (FONSI) for the Kelvin Bridge Replacement project. The proposed action is in conformance Phoenix Resource Management Plan (RMP) approved in Record of Decision dated December 1998. Based on that review and all information available to me, it is my decision to select the proposed action to construct a replacement bridge and leaving the existing bridge for pedestrian use. I approve the proposed action alternative with all design features and the attached mitigation measures described in the FONSI.

ALTERNATIVES

In addition to the proposed action, the EA considered one alternative (Replacement of existing bridge) and the no action alternative. The alternative action would mean the removal of a National Historic site, this alternative was rejected because of the historical signifigance. Under the no action alternative, the existing bridge would continue to be used for vehicular use and continue deteriorating and could pose a risk to the public.

RATIONALE FOR SELECTION

The proposed action is specifically provided for in the Phoenix RMP. The environmental assessment analyzed the potential impacts to the environment and the public should the application be approved. A FONSI has been signed; therefore there are no significant impacts to the environment that would require an environmental impact statement. By selecting the proposed action, the Tucson Field Office is implementing this portion of the Phoenix RMP.

The Proposed Action Alternative would most effectively meet the purpose of the project. Construction of a new bridge would elevates the wear and tear on the existing bridge.

No Action Alternative: No action would be taken to reduce further destruction of an historical site.

CONSULTATION AND COORDINATION

Public Scoping and Review

In October 2010, letters were sent to Copper Basin Railway, Bureau of Reclamation, Bureau of Indian Affairs , Pinal County, and Arizona Department of Transportation all are in support of the project. Formal consulation was done with FWS, AZGFD and SHPO mitigations will be make the project feasiable. Meetings have been held by Pinal County and. no opposition has been indicated.

IMPLEMENTATION

Project will be implemented upon receipt of the right-of-way grant. Impacts to resources will be mitigated as noted in the FONSI and the EA.

ADMINISTRATIVE REVIEW OPPORTUNITIES

This decision may be protested or appealed under the procedures outlined in BLM Handbook 8720-1 Chapter IV (8) and 43 CFR Part 4 and the enclosed Form 1842-1.

Brian B. Bellew
Field Manager
Tucson Field Office

10/29/12
Date

APPENDIX B.
DESERT TORTOISE HANDLING GUIDELINES

GUIDELINES FOR HANDLING SONORAN DESERT TORTOISES ENCOUNTERED ON DEVELOPMENT PROJECTS

Arizona Game and Fish Department
Revised September 22, 2014

The Arizona Game and Fish Department (Department) has developed the following guidelines to reduce potential impacts to desert tortoises, and to promote the continued existence of tortoises throughout the state. These guidelines apply to short-term and/or small-scale projects, depending on the number of affected tortoises and specific type of project.

The Sonoran desert tortoise occurs south and east of the Colorado River. Tortoises encountered in the open should be moved out of harm's way to adjacent appropriate habitat. If an occupied burrow is determined to be in jeopardy of destruction, the tortoise should be relocated to the nearest appropriate alternate burrow or other appropriate shelter, as determined by a qualified biologist. Tortoises should be moved less than 48 hours in advance of the habitat disturbance so they do not return to the area in the interim. Tortoises should be moved quickly, kept in an upright position parallel to the ground at all times, and placed in the shade. Separate disposable gloves should be worn for each tortoise handled to avoid potential transfer of disease between tortoises. Tortoises must not be moved if the ambient air temperature exceeds 40° Celsius (105° Fahrenheit) unless an alternate burrow is available or the tortoise is in imminent danger.

A tortoise may be moved up to one-half mile, but no further than necessary from its original location. If a release site or alternate burrow is unavailable within this distance, and ambient air temperature exceeds 40° Celsius (105° Fahrenheit), contact the Department for guidance. Tortoises salvaged from projects which result in substantial permanent habitat loss (e.g. housing and highway projects), or those requiring removal during long-term (longer than one week) construction projects, may be placed in the Department's tortoise adoption program. *Managers of projects likely to affect desert tortoises should obtain a scientific collecting license from the Department to facilitate handling or temporary possession of tortoises.* Likewise, if large numbers of tortoises (>5) are expected to be displaced by a project, the project manager should contact the Department for guidance and/or assistance.

Please keep in mind the following points:

- Use the Department's Environmental On-Line Review Tool Department during the planning stages of any project that may affect desert tortoise habitat.

- Unless specifically authorized by the Department, or as noted above, project personnel should avoid disturbing any tortoise.

- Take is prohibited by state law.

- These guidelines do not apply to Mojave desert tortoises (north and west of the Colorado River). Mojave desert tortoises are listed as threatened under the Endangered Species Act, administered by the U.S. Fish and Wildlife Service.

- These guidelines are subject to revision at the discretion of the Department.

APPENDIX C.
2006 PINAL COUNTY MAINTENANCE LETTER FOR ORIGINAL KELVIN BRIDGE

Pinal County
Development Services
Department of Public Works

P.O. Box 727
31 North Pinal Street, Bldg F
Florence, Arizona 85232

ENGINEERING ☐ TRANSPORTATION ☐ FLOOD CONTROL ☐ RECYCLING-SOLID WASTE ☐ EMERGENCY MANAGEMENT

January 12, 2006

Kae Neustadt, ADOT – Historic Preservation Team Leader
1221 S. 2nd Ave.
Tucson, AZ 85713

RE: Pinal County commitment to maintenance of the existing Kelvin Bridge

Dear Ms. Neustadt:

It has come to our attention there maybe a concern on the maintenance of the existing Kelvin Bridge. It is understood the concern arises from the proposed new bridge to be built in the nearby vicinity of the old existing bridge, which would therefore have the possibility to neglect the maintenance of the old bridge.

This letter should be considered as notification, that after the completion of the proposed new bridge, Pinal County intends to continue maintenance of the existing old bridge. Pinal County has no intentions of abandoning the old existing bridge. Pinal County currently and will continue to have the old existing bridge be part of the National Bridge Inspection Program. The program is administered by the Arizona Department of Transportation – Intermodal Transportation Division which does inspection reports every two years on numerous structures in Pinal County. These inspections help Pinal County monitor the physical conditions of our structures.

Another concept that is to be considered is the proximity of the old existing bridge to the Arizona Trail. Pinal County anticipates the old existing bridge becoming a part of the Arizona Trail as a pedestrian bridge.

If you have any questions regarding this letter, please do not hesitate to contact this office.

Sincerely,

Gregory Stanley, P.E.
County Engineer/Director

Sincerely,

Joe R. Ortiz
District 1 Project Engineer/Manager

Cc: Adrian Rodriquez, ADOT – Environmental Planner
I:\ENG\DESIGN SECTION\District 1\Projects\Kelvin Bridge Replacement 2507 BR-PPN-0(169)A\Correspondence\Maintenance Existing Kelvin Bridge.doc

APPENDIX D.
ACOE CORRESPONDENCE LETTER

From: Markstein, Amy
To: Marinela Konomi
Cc: Linda Dunlavey; Karen Simms
Subject: Re: FW: [EXTERNAL] Kelvin Bridge (UNCLASSIFIED)
Date: Friday, June 26, 2015 2:55:43 PM
Attachments: image001.jpg

Thank you!

Amy Markstein
Planning & Environmental Specialist
BLM--Tucson Field Office
3201 E. Universal Way
Tucson, AZ 85756
amarkstein@blm.gov
520-258-7231

On Fri, Jun 26, 2015 at 2:51 PM, Marinela Konomi <MKonomi@azdot.gov> wrote:

> Hello Amy,
>
> I forwarded the Corps e-mail to Marcia and attached it to your email.
>
> Below here is the full attachment.
>
> Thanks,
>
> **Marinela P. Konomi**
>
> **Environmental Project Manager**
>
> **ADOT, Environmental Planning Group**
>
> 1611 W. Jackson St., MD EM02
>
> Phoenix, Az 85007
>
> 602- 712-4232
>
> www.azdot.gov

From: Marinela Konomi
Sent: Friday, June 26, 2015 1:49 PM
To: mradke@blm.gov
Cc: Julia Manfredi
Subject: FW: [EXTERNAL] Kelvin Bridge (UNCLASSIFIED)

Hello Marcia,

Please see Corps reply on Section 404 permit requirements for the Kelvin Bridge project.

Feel free to contact Julia or I if you have any questions. Thank you.

Marinela P. Konomi

Environmental Project Manager

ADOT, Environmental Planning Group

1611 W. Jackson St., MD EM02

Phoenix, Az 85007

602- 712-4232

www.azdot.gov

From: Tucker, Kathleen A SPL [mailto:Kathleen.A.Tucker@usace.army.mil]
Sent: Friday, June 26, 2015 10:57 AM
To: Marinela Konomi
Cc: Julia Manfredi; Tucker, Kathleen A SPL
Subject: RE: [EXTERNAL] Kelvin Bridge (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

So to clarify, if the construction plans and mitigation is followed and no discharge of dredge or fill material goes into the jurisdictional waters and/or wetlands either temporarily or permanently then **a Section 404 permit is not required**.

Let me know if there is anything else.

Thanks.

Assist us in better serving you!

You are invited to complete our customer survey, located at the following

link: http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey

Kathleen A. Tucker, ADOT Projects

Phone: 602.230.6956 Cell: 602.526.0183

"A person's a person, no matter how small." -- Dr. Seuss

From: Marinela Konomi

Sent: Thursday, April 30, 2015 10:55 AM

To: 'Tucker, Kathleen A SPL'

Cc: Julia Manfredi; mradke@blm.gov

Subject: RE: [EXTERNAL] Kelvin Bridge (UNCLASSIFIED)

Hello Kathleen,

On March 16, 2015 a copy of the draft 95% construction plans for Kelvin Bridge project was sent to you. The current plans show no work on the WOUS.

Can you confirm for BLM that the previous determination of no CWA permit for the project is still valid?

Please note that Pinal County was advised that the Corps based their determination on CWA requirements for the project on the previously agreed conditions that all the project activities will avoid the wetlands and a temporary bridge will be build spanning over the WOUS to facilitate the equipment movement.

Let me know if you need additional information.

Thanks,

Marinela P. Konomi

Environmental Project Manager

APPENDIX E.
SHPO/PINAL COUNTY MOA

MEMORANDUM OF AGREEMENT
AMONG
FEDERAL HIGHWAY ADMINISTRATION
ARIZONA STATE HISTORIC PRESERVATION OFFICE
ARIZONA DEPARTMENT OF TRANSPORTATION
THE GILA RIVER INDIAN COMMUNITY
THE BUREAU OF LAND MANAGEMENT
PINAL COUNTY
AND
ARIZONA STATE MUSEUM

REGARDING DATA RECOVERY AT ARCHAEOLOGICAL SITE AZ V:13:33 (ASM)
KELVIN BRIDGE REPLACEMENT
PROJECT NO. BR-PPN-0(169)A
TRACS NO. 0000 PN PPN SB410 01C
PINAL COUNTY, ARIZONA

WHEREAS, the Federal Highway Administration (FHWA) proposes to replace the Kelvin Bridge (#8441), a federally-funded project in Pinal County, Arizona (hereafter referred to as "the Project"); and

WHEREAS, the area of potential effect for the project has not yet been defined, but will be chosen from two alternatives, one upstream and the other downstream of the current Kelvin Bridge, northwest of Kearney, Pinal County; and

WHEREAS, project construction will occur on land owned by the Arizona Department of Transportation (ADOT), land owned by Pinal County, and ADOT easement across public land administered by the Bureau of Land Management (BLM); and

WHEREAS, the proposed project may have an adverse effect upon AZ V:13:33 (ASM), an archaeological site which is eligible for listing on the National Register of Historic Places and may possibly have effects to unidentified subsurface archaeological resources; and

WHEREAS, ADOT, acting as agent for FHWA has participated in consultation and has been invited to be a signatory to this Memorandum of Agreement (Agreement); and

WHEREAS, the FHWA has consulted with the Arizona State Historic Preservation Office (SHPO), the Arizona State Museum (ASM), Pinal County, the BLM, the Hopi Tribe, the Gila River Indian Community, and the Advisory Council on Historic Preservation (the Council) in accordance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations (36 CFR §800.6(b)(2)) to resolve the possible adverse effects of the Project on historic properties; and

WHEREAS, SHPO is authorized to enter into this agreement in order to fulfill its role of advising and assisting Federal agencies in carrying out their Section 106 responsibilities under the following federal statutes: Sections 101 and 106 of the National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470f, and pursuant to 36 CFR Part 800, regulations implementing Section 106, at 800.2 (c)(1)(i) and 800.6(b); and

WHEREAS, SHPO is authorized to advise and assist federal and state agencies in carrying out their historic preservation responsibilities and cooperate with these agencies under A.R.S. §41-511.04(d)(4); and

WHEREAS, the Indian Tribes that may attach religious or cultural importance to affected properties have been consulted [pursuant to 36 CFR § 800.2 (c)(2)(ii)(A-F)], and the Hopi Tribe and the Gila River Indian Community have been invited to be a concurring party in the Agreement; and

WHEREAS, in their role as lead federal agency, FHWA has consulted with SHPO pursuant to 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470f) as revised in 2000; and

WHEREAS, by their signature all parties agree that the regulations specified in the ADOT document, "ADOT Standard Specifications for Road and Bridge Construction" (Section 104.12, 2000) will account for the cultural resources in potential material sources used in project construction; and

WHEREAS, an agreement regarding the treatment and disposition of Human Remains, Associated Funerary Objects, Sacred Objects, and Objects of Cultural Patrimony would be developed for the Arizona State Museum (ASM) for state and private land, pursuant to A.R.S. §41-844 and 41-865; and

WHEREAS, an agreement regarding the treatment and disposition of Graves and Human Skeletal Material would follow the Archaeological Resource Protection Act (ARPA) of 1979, Section 4.3.b and 4.c, for federal land; and

WHEREAS, Human Remains, Associated Funerary Objects, and Objects of Cultural Patrimony recovered on federal land will be treated in accordance with the Native American Graves and Protection Repatriation Act (NAGPRA); and

WHEREAS, the data recovery necessitated by the Project and located on state land must be permitted by the Arizona State Museum pursuant to A.R.S. § 41-842, and

WHEREAS, data recovery necessitated by the Project on federal land must be permitted through a BLM and ARPA permit; and

NOW, THEREFORE, all parties agree that upon FHWA's decision to proceed with the Project, FHWA shall ensure that the following stipulations are implemented in order to take into account the effects of the Project on historic properties, and that these stipulations shall govern the Project and all of its parts until this MOA expires or is terminated.

Stipulations
FHWA will ensure that the following measures are carried out.

1) Development of a Data Recovery Work Plan

The data recovery plan will be submitted by ADOT, on behalf of FHWA, to all parties to this Agreement for 30 calendar days' review. The data recovery plan will be consistent with the Secretary of the Interior's Standards and Guidelines for Archaeological Documentation (48 FR 44734-37). Unless any signatory or concurring party objects to the data recovery plan within 30 calendar days after receipt of the plan, FHWA shall ensure that it is implemented prior to construction.

2) The Data Recovery Work Plan (the Work Plan) will specify:

a) The properties or portions of properties where data recovery is to be carried out. Also, it will specify any property or portion of property that would be destroyed or altered without treatment;

b) The results of previous research relevant to the project, the research questions to be addressed through data recovery, with an explanation of their relevance and importance;

c) The field and laboratory analysis methods to be used, with an explanation of their relevance to the research questions;

d) The methods to be used in analysis, data management, and dissemination of data to the professional community and the public, including a proposed schedule for project tasks, including a schedule for the submission of draft and final reports to consulting parties;

e) The proposed disposition and curation of recovered materials and records in accordance with 36 CFR 79, A.R.S. §41-844 and ARPA (Sections 4.b.3 and 4.c);

f) Procedures for monitoring, evaluating and treating discoveries of unexpected or newly identified properties during construction of the project, including consultation with other parties;

g) A protocol for the treatment of human remains, in the event that such remains are discovered, describing methods and procedures for the recovery, analysis, treatment, and disposition of Human Remains, Associated Funerary Objects, Sacred Objects, and Objects of Cultural Patrimony. This protocol will reflect concerns and/or conditions identified as a result of consultations among parties to this Agreement.

3) Review and Comment on the Data Recovery Work Plan

a) Upon receipt of a draft of the Work Plan, ADOT, on behalf of FHWA, will review and subsequently submit such documents concurrently to all consulting parties for review. All consulting parties will have 30 calendar days from receipt to review and provide comments to ADOT. All comments shall be in writing with copies provided to the other consulting parties. Lack of response within this review period will be taken as concurrence with the plan.

b) If revisions to the Work Plans are made all consulting parties have 20 calendar days from receipt to review the revisions and provide comments to ADOT. Lack of response within this review period will be taken as concurrence with the plan or report.

c) Once the Data Recovery Plan is determined adequate by all parties (with SHPO concurrence), FHWA shall issue authorization to proceed with the implementation of the Plan, subject to obtaining all necessary permits.

d) Final drafts of the Data Recovery Plan will be provided to all consulting parties.

4) Review and Comment on Preliminary Report of Findings

a) Upon completion of fieldwork, the institution, firm, or consultant responsible for the work will prepare and submit a brief Preliminary Report of Findings.

b) Upon receipt of a draft of the Work Plans, ADOT, on behalf of FHWA, will review and subsequently submit such documents concurrently to all consulting parties for review. All consulting parties will have 30 calendar days from receipt to review and provide comments to ADOT. All comments shall be in writing with copies provided to the other consulting parties. Lack of response within this review period will be taken as concurrence with the plan.

c) If revisions to the Preliminary Report of Findings are made, all consulting parties have 20 calendar days from receipt to review the revisions and provide comments to ADOT. Lack of response within this review period will be taken as concurrence with the plan or report.

d) Once the Preliminary Report of Findings has been accepted as a final document, ADOT, on behalf of FHWA, will notify appropriate project participants that construction may proceed.

5) Review and Comment on Data Recovery Report

a) Within 180 days of completion of data recovery, a report will be prepared incorporating all appropriate data analyses and interpretations, and the report will be submitted to signatories and concurring parties who will be provided with 30 calendar days to review and comment upon the data report.

b) Upon receipt of the data recovery report, ADOT, on behalf of FHWA, will review and subsequently submit such documents concurrently to all consulting parties for review. All consulting parties will have 30 calendar days from receipt to review and provide comments to ADOT. All comments shall be in writing with copies provided to the other consulting parties. Lack of response within this review period will be taken as concurrence with the plan.

c) If revisions to the data recovery report are made, all consulting parties have 20 calendar days from receipt to review the revisions and provide comments to ADOT. Lack of response within this review period will be taken as concurrence with the plan or report.

5) Standards for Data Recovery

All historic preservation work carried out pursuant to this Agreement shall be carried out by or under the supervision of a person, or persons, meeting at a minimum the Secretary of the Interior's Professional Qualifications Standards (48 FR 44738-44739).

6) Curation.

All materials and records resulting from the data recovery program conducted within the Project area shall be curated in accordance with either ASM or ARPA.

a) For materials and records located on state or private land, curation shall take place in accordance with standards outlined in A.R.S. § 41-844, and guidelines generated by ASM. The repository for materials either will be ASM or one located in Pinal County that meets those standards and guidelines. Materials subject to repatriation under A.R.S. § 41-844 and A.R.S. § 41-865 shall be maintained in accordance with the burial agreement.

b) Archaeological Resources, excavated or removed from federal land, will be preserved by a suitable university, museum, or other scientific or educational institution (ARPA, Section 4.b.3). Objects collected on BLM lands will be stored at a BLM repository, to be identified. Resources having religious or cultural importance shall be maintained in accordance with the burial agreement until any specified analyses, as determined following the consultation with the appropriate Indian tribes and individuals, are complete and the resources are returned.

7) Additional Inventory Survey

ADOT, on behalf of FHWA, in consultation with all parties to this agreement shall ensure that new inventory surveys of additional rights-of-way and temporary construction easements will include determinations of eligibility that are made in accordance with 36 CFR § 800.4 for all historic properties, including any added staging or use areas. Should any party to this Agreement disagree with FHWA regarding eligibility, the SHPO shall be consulted and resolution sought within 20 calendar days. If the FHWA and SHPO disagree on eligibility, FHWA shall request a formal determination from the Arizona Historical Advisory Committee and/or the Advisory Council on Historic Preservation.

8) Objection by a Signatory or Concurring Party

Should any signatory or concurring party to this Agreement object within 30 days to any plan or report provided for review or to any aspect of this undertaking related to historic preservation issues, FHWA shall consult with the objecting party to resolve the objection. If the objection cannot be resolved, FHWA shall request further comments of the Council with reference only to the subject of the dispute; the FHWA's responsibility to carry out all actions under this Agreement that are not the subject of the dispute will remain unchanged.

9) Discoveries

If potential historic or prehistoric archaeological materials or properties or human remains are discovered after construction begins, the person in charge of the construction shall require construction to immediately cease within the area of the discovery, take steps to protect the discovery, and promptly report the discovery to the ADOT Historic Preservation Specialist, representing FHWA. The ADOT Historic Preservation Specialist, representing FHWA shall notify and consult with appropriate agencies.

a) If the discovery appears to involve Human Remains or Remains as defined in ASM rules implementing A.R.S. § 41-844 and 41-865, the Director of ASM shall be notified. In consultation with the Director, ADOT, on behalf of FHWA, and the person in charge of construction shall ensure that the discovery is treated according to the burial agreement.

b) If the discovery is graves or Human Remains as defined in ARPA Section 3.1, and is located on federal land, the Federal Land Manager (the BLM) shall also be informed. In consultation with the BLM and ADOT, the person in charge of construction shall immediately take steps to secure and maintain preservation of the discovery. The BLM and ADOT shall ensure that the discovery is treated according to the burial agreement.

c) If Remains are not involved, and the discovery is located on state land, ADOT, on behalf of FHWA, shall notify ASM as required under A.R.S. § 41-844. ADOT, on behalf of FHWA in consultation with the Director and SHPO, if appropriate, shall determine if the Plan previously approved by ASM according to Stipulation 2 is appropriate to the nature of the discovery. If appropriate, the Plan shall be

implemented by ADOT, on behalf of FHWA. If the Plan is not appropriate to the discovery, FHWA shall ensure that an alternate plan for the resolution of adverse effect is developed and circulated to the consulting parties, who will have 48 hours to review and comment upon the alternate plan. FHWA shall consider the resulting comments, and shall implement the alternate plan once a project specific permit has been issued.

d) If Remains are not involved and the discovery is located on private land, ADOT, on behalf of FHWA, shall evaluate the discovery, and SHPO shall be notified as appropriate. The ADOT Historic Preservation Specialist, on behalf of FHWA, shall determine if the plan previously approved according to Stipulation 2 is appropriate to the nature of the discovery. If appropriate, the Plan shall be implemented by ADOT, on behalf of FHWA. If the Plan is not appropriate to the discovery, FHWA shall ensure that an alternate plan for the resolution of adverse effect is developed and circulated to the consulting parties, who will have 48 hours to review and comment upon the alternate plan. FHWA shall consider the resulting comments, and shall implement the alternate plan once a project specific permit has been issued.

e) If the discovery is located on federal land, ADOT, on behalf of FHWA, shall determine if the discovery classifies as an "archaeological resource" as defined in Section 3.1 of ARPA, and contact the BLM as appropriate.

10) Amendments

This Agreement may be amended by the signatories pursuant to 36 CFR § 800.6(c)(7). FHWA shall file any amendments with the Council and provide notice to the concurring parties.

11) Termination

Any signatory may terminate the Agreement by providing 30 day written notification to the other signatories. During this 30 day period, the signatories may consult to seek agreement on amendments or other actions that would avoid termination pursuant to 36 CFR § 800.6 (b). If the parties cannot agree on actions to resolve disagreements, FHWA will comply with 36 CFR § 800.7(a).

12) Fulfillment of Terms

In the event the FHWA or ADOT cannot carry out the terms of this agreement, the FHWA will comply with 36 CFR § 800.3 through 800.6.

13) Annual Meeting

There shall be an annual meeting among FHWA, SHPO, and ADOT to review the effectiveness and application of this agreement, to be held on or near the anniversary date of the execution of this agreement.

This agreement shall be null and void if its terms are not carried out within ten (10) years from the date of its execution, unless the signatories agree in writing to an extension for carrying out its terms.

Execution of this Agreement by the signatories and its subsequent filing with the Council is evidence that the Federal Highway Administration has afforded the Advisory Council on Historic Preservation an opportunity to comment on the Kelvin Bridge Replacement Project and its effects on historic properties, and that the Federal Highway Administration has taken into account the effects of the undertaking on historic properties.

SIGNATORIES

FEDERAL HIGHWAY ADMINISTRATION
By _____ Date 11/26/04
Title Environmental Program Manager

ARIZONA STATE HISTORIC PRESERVATION OFFICER
By _____ Date _____
Title _____

INVITED SIGNATORIES
ARIZONA DEPARTMENT OF TRANSPORTATION
By _____ Date 10-28-04
Title Environmental & Enhancement Group Manager

PINAL COUNTY
By _____
Title _____ Date _____

BUREAU OF LAND MANAGEMENT
By _____ Date _____
Title _____

CONCURRING PARTIES

ARIZONA STATE MUSEUM
By _____ Date _____
Title _____

GILA RIVER INDIAN COMMUNITY
By Mary V. Thomas Date 12-16-04
Title Lt. Governor

This agreement shall be null and void if its terms are not carried out within ten (10) years from the date of its execution, unless the signatories agree in writing to an extension for carrying out its terms.

Execution of this Agreement by the signatories and its subsequent filing with the Council is evidence that the Federal Highway Administration has afforded the Advisory Council on Historic Preservation an opportunity to comment on the Kelvin Bridge Replacement Project and its effects on historic properties, and that the Federal Highway Administration has taken into account the effects of the undertaking on historic properties.

SIGNATORIES

FEDERAL HIGHWAY ADMINISTRATION
By _____ Date 11/26/04
Title Environmental Program Manager

ARIZONA STATE HISTORIC PRESERVATION OFFICER
By _____ Date _____
Title _____

INVITED SIGNATORIES
ARIZONA DEPARTMENT OF TRANSPORTATION
By _____ Date 10-28-04
Title Environmental & Enhancement Group Manager

PINAL COUNTY
By _____
Title _____ Date _____

BUREAU OF LAND MANAGEMENT
By _____ Date _____
Title _____

CONCURRING PARTIES

ARIZONA STATE MUSEUM
By _____ Date 12/7/04
Title Associate Curator of Archaeology

GILA RIVER INDIAN COMMUNITY
By _____ Date _____
Title _____