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In reply refer to:
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February 27, 2019

Mr. Joshua Fife, Biology Team Lead
Arizona Department of Transportation
1611 W. Jackson Street.
Phoenix, Arizona 85007

Re. FHWA File # FA-017-B(224)T
ADOT File # 017 YV 287 H8544 01C
I-17 Verde River Bridge Scour Retrofit Section 7 Consultation Reinitiation

Dear Mr. Fife:

Thank you for your October 24, 2018, request to reinitiate consultation with the U.S. Fish and Wildlife Service (Service) in compliance with section 7 of the Endangered Species Act of 1973 (Act) as amended (16 U.S.C. 1531 *et seq*.). At issue are the potential effects of a proposed bridge construction project on the northbound and southbound bridges over the Verde River on Interstate 17 (I-17), in Yavapai County, Arizona. The project proponents are the Federal Highway Administration (FHWA) and Arizona Department of Transportation (ADOT). We received your reinitiation request via electronic mail (email) along with a revised biological evaluation (BE) for the project dated October 23, 2018. Section 7 consultation reinitiation is needed because a change in the project schedule will result in effects to listed species that we did not consider in the original consultation.

On February 14, 2018, we issued a biological and conference opinion (BO/CO) for this project that included our concurrences that the proposed action was not likely to adversely affect the endangered southwestern willow flycatcher (*Empidonax traillii extimus*) (flycatcher) or the threatened western yellow-billed cuckoo (*Coccyzus americanus*) (cuckoo) and its habitat. We based our concurrences on the fact that vegetation removal and construction activities were scheduled to occur from October 2018 to March 2019, outside the migration and breeding period for the flycatcher and cuckoo. However, selection of a construction contractor for the project has taken longer than expected and the construction start date has been changed to March 2019. This means that construction activities will be ongoing when flycatchers and cuckoos arrive in the action area in spring 2019, and will continue through most of the migration and breeding periods of both species. Accordingly, ADOT has changed its effects determination for the flycatcher and cuckoo to "may affect, and is likely to adversely affect," which requires formal consultation.

The change in schedule will not alter the scope of the project, its design elements, construction methods, or the amount of surface disturbances that will occur, nor does it alter our original consultation conclusions on adverse effects to designated flycatcher critical habitat or proposed cuckoo critical habitat (we concluded that the project would not destroy or adversely modify critical habitats of either species). The change in schedule also does not affect our original analysis or conclusions on other species (identified below) that were considered in the original consultation or their critical habitats.

This reinitiated biological opinion (BO) addresses solely the effects associated with the new timing of the project, and the effects of those construction activities on nesting and migrating flycatchers and cuckoos during the spring and summer of 2019.

CONSULTATION HISTORY

July 7, 2017	We received your request for formal and informal consultation and conference on the proposed action along with the BE for the project, dated June 19, 2017.
February 14, 2018	We sent a BO/CO addressing adverse effects to designated flycatcher critical habitat, proposed cuckoo critical habitat, the northern Mexican gartersnake (*Thamnophis eques megalops*) and its proposed critical habitat, and proposed critical habitat for the threatened narrow-headed gartersnake (*Thamnophis rufipunctatus*). The BO/CO also addressed effects to the razorback sucker (*Xyrauchen texanus*) and spikedace (*Meda fulgida*) and their designated critical habitats, and included our concurrences for the flycatcher, cuckoo, and narrow-headed gartersnake.
October 24, 2018	We received your consultation reinitiation request with your determination that the project "may affect, and is likely to adversely affect" the flycatcher and cuckoo due to a later start date and the resulting overlap of the project schedule with the flycatcher and cuckoo migration and breeding periods. We also received your revised BE with updated effects analyses for the flycatcher and cuckoo.
February 26, 2019	We sent you a draft of the final BO.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The following summary of the proposed action is from the original and revised BEs. Maps, photographs, and diagrams related to the action are included in the BEs and are incorporated herein by reference. We include two maps here to provide overviews of the action area (Figure 1) and construction footprint (Figure 2). We also provide an aerial photograph of the action area, dated April 17, 2018, for further reference (Figure 3).

In the revised BE and in this BO, the terms construction footprint and action area are used to provide spatial references. The *construction footprint* includes all areas within the affected environment where permanent and temporary surface disturbances will occur. For this project, the construction footprint will encompass approximately 6.2 acres (ac) of the Verde River and its floodplain where vegetation removal, access and staging, dewatering of the work area, and the scour retrofit will occur.

We use the term *action area* to describe all areas of the environment that may be affected by the project. The action area is the total area included in our effects analysis, and can be larger than the construction footprint; however, the term also has a statutory definition that we provide (see below).

The southbound I-17 bridge over the Verde River is a 525-foot (ft)-long seven-span bridge constructed in 1961. The 524-ft-long seven-span northbound bridge was constructed in 1979. Both bridges are supported by six piers. According to ADOT, the pier footings are exposed and show cracks on the abutments, pier walls, and pedestals due to scouring. Both bridges need to be stabilized to preserve their structural integrity.

Project Timing and Overview

The project will begin in early March 2019 and will be completed about six months later in July or August. The project will involve vegetation removal and surface disturbances within a 6.2-ac construction footprint that will include 0.6 ac of access road improvements, 0.7 ac to create a staging area, 3.5 ac for water diversions, and 1.4 ac for work around the piers.

The scour retrofit will require the following actions:

- Construction of temporary access roads;
- Staging and stockpiling of equipment and materials within the construction footprint outside the low-flow river channel;
- Creation of temporary dry work zones within the river bottom through construction of diversion channels in two phases;
- Construction of a temporary modular, portable, truss bridge across the Phase 2 bypass channel to allow vehicle and equipment access to both sides of the river;
- Construction of concrete armor protection around each of 12 piers for long-term stabilization;
- Restoring the river, temporary access roads, staging and stockpiling area, and diversion channels to pre-construction conditions following construction; and,
- Reseeding/replanting disturbed areas to replace vegetation removed during the project per a revegetation plan that ADOT has developed (described below).

Access and Staging

The Verde River floodplain and work areas at the I-17 bridges will be accessed from the east side of I-17 along local paved roads that connect to Roundup Road which parallels northbound I-17 and ends at the Verde River (Figures 1 and 2). At the end of Roundup Road, a truck/ORV trail breaks to the west, drops into the floodplain, and passes under both bridges to the west side

of the interstate. In reverse this route will also provide egress from the construction site. Outbound construction traffic east of the highway will have direct access to I-17 via a one-way temporary road that will parallel the highway shoulder and merge with I-17's northbound lanes. A temporary one-way road will also be constructed from southbound I-17 west of the highway to provide access to a 0.7-ac staging area directly west of the southbound bridge. Egress from the west side will occur along existing dirt roads that link to Rawhide Road, which parallels the west side of I-17.

Although unpaved portions of existing roads may need to be widened and graded to accommodate heavy equipment, temporary access roads will be built in areas with little ground cover, and access road improvements, overall, will have minor effects on riparian vegetation. About 0.6 ac of new ground disturbance will occur to provide access to work areas. The staging area will be placed in an area of open cobble and exposed soils with sparse vegetation. Some shrubs and no more than one or two trees will be removed from the staging area.

Water Diversions

Two earthen bypass channels will be constructed in phases to divert the river (Figures 1 and 2). The Phase 1 channel will divert the river at the southbound bridge abutment, exposing about half the piers of both bridges for retrofitting, and will rejoin the river approximately 700 ft east (downstream) of the northbound bridge (the channel's total length will be 900 ft). The Phase 2 bypass will begin 500 ft upstream of the southbound bridge, curve northeast towards the north bridge abutment, and rejoin the river channel under the northbound bridge (its total length will be 640 ft). Both channels will be 60 ft wide and will require 20-ft-wide berms on each side, for a total width of 100 ft.

The exact alignments of the bypasses will be determined after construction begins. To the extent possible, the bypasses will avoid dense patches of vegetation and large trees, and if possible they will be excavated on or in existing dry overflow channels—natural channels that disperse floodwaters—to take advantage of natural waterways. Approximately 3.5 ac of ground disturbances would occur for the two bypass channels (2.1 ac for the Phase 1 channel and 1.4 ac for the Phase 2 channel). The sequence of channel construction in phases, as described here, may be reversed when they are built, but doing so would not alter our effects analysis.

Scour Protection

After each water diversion has dried part of the river bed, concrete armor protection will be placed around each exposed pier. Each block of armor will extend approximately 2.5 ft below the bottom of the existing pier pile cap (cement pad over the piles upon which the pier sits) and extend 10 ft upstream and 10 ft downstream of the bridge, with buried cutoff walls 4.5 ft in height around the piers. Work under the bridge and in the riverbed will involve temporary disturbance to 1.4 ac of the floodplain and active (low-flow) channel, and 0.04 ac of permanent disturbance to the riverbed (160 square ft of concrete armor for each of 12 piers).

Conservation Measures

- An environmental awareness program about the flycatcher and cuckoo and the importance of protecting their habitats will be presented to on-site personnel prior to construction activities. Awareness training will also include information concerning the biology and distribution of the two species, legal status, measures to avoid impacts, and procedures to be implemented in case of encounters.
- Prior to any ground disturbing activities, an on-site biological monitor will be present to assist the ADOT contractor in demarcating riparian vegetation to be retained during vegetation clearing activities.
- To prevent direct effects to flycatchers and cuckoos (injuries or fatalities to adults, eggs, or young), vegetation clearing will be completed before April 15, 2019, outside the breeding period of both species.
- Large trees (>12 inches in diameter) and dense stands of vegetation will be avoided when possible.
- Trees that are removed will be cut to ground level, but when possible root masses will be left intact to help to stabilize soils and provide opportunities for regrowth through adventitious shoots (e.g., in the case of willows).
- The contractor shall clearly delineate the perimeter of the construction footprint with flagging or other appropriate markers to restrict heavy equipment use and other surface disturbing activities to areas within the construction footprint. The biological monitor will be present at all times during construction and will help to ensure that construction activities and equipment remain within designated limits.
- All disturbed stream channel and construction areas will be rehabilitated and returned to as near original condition as possible by 1) recontouring altered ground surfaces, including the main river channel, braided channels under the bridges, berms, diversion channels, the staging area, and access roads; 2) hydroseeding these areas with native plants; and 3) planting pole cuttings of native woody species in selected areas.

Revegetation Plan

ADOT developed a revegetation plan for this project (ADOT 2018a) that specifies when, where, and how revegetation activities will occur. Work to rehabilitate the construction site will begin before work on the bridge is fully completed, starting with the Phase 1 diversion channel. Berm removal, return of excavated material to the channel, recontouring, and hydroseeding with native grass, forb, and shrub species (ADOT 2018a, Figure 1) will occur immediately after the contractor restores flows to the main channel. The Phase 2 channel, staging area, work areas under the bridges, and access roads will be rehabilitated after piers have been re-amored and as construction activities wind down. ADOT will complete all recontouring and hydroseeding by August 2019.

Site rehabilitation will also include pole plantings of willow and cottonwood on the recontoured Phase 2 (upstream) bypass channel. Pole cuttings must be harvested and planted when trees are dormant (Hoag 2007), so the ADOT contractor will return to the construction site between November and February of the following winter to harvest and plant poles. Cuttings will be harvested from ADOT's ROW or another appropriate site if an adequate number of poles are not found in the ROW. A minimum of 20 and maximum of 40 poles will be planted at an

approximate ratio of three willows planted for each cottonwood. If an adequate number of cuttings is available, ADOT will plant some poles in clusters (≤3 poles per cluster). Pole size (diameter and length), planting depth, spacing between poles, and other details will follow guidelines in Hoag (2007). Pole plantings will not occur at the Phase 1 bypass channel because prior to demobilizing in July or August 2019, construction crews will remove the temporary bridge and rehabilitate and seed disturbed areas south of the river.

ADOT will monitor the survival of pole cuttings planted in the recontoured Phase 2 bypass channel for two years. Monitoring will occur once each year, in 2020 and 2021. ADOT will check all poles and assess their condition during the spring-summer growing season and report the results to the Service after each year of monitoring.

Action Area

The Service defines the action area as all areas to be affected directly or indirectly by the proposed action, and not merely the immediate area involved in the action (50 FR § 402.02). In delineating the action area, we evaluated the farthest reaching physical, chemical, and biotic effects of the action on the environment, focusing on, but not exclusive to, the I-17 crossing of the Verde River.

The action area for this project includes 1) all areas that will be subject to vegetation removal and other surface disturbances (the construction footprint); 2) all areas outside the construction footprint that may be affected by construction noise and disturbances; and 3) the 124-ac Camp Verde Riparian Preserve (CVRP) immediately downstream of the Verde River bridges where known flycatcher and cuckoo populations occur that may be affected by the project (Figure 1 and Figure3).

For our purposes in this BO, we defined the action area for noise effects as all areas within a 0.25-mile (mi) radius of the construction footprint. We base this distance on; 1) a Service analysis of construction noise levels as distance from the source increases (Ecoplan 2006); 2) standardized comparable measures of noise for various human activities, including highway construction work and highway traffic noise (FHWA 2004); and 3) information in the FHWA Construction Noise Handbook (FHWA 2006).

STATUS OF THE SPECIES

Southwestern Willow Flycatcher

The flycatcher was listed as endangered without critical habitat on February 27, 1995 (60 FR 10694). Critical habitat was designated on July 22, 1995 (62 CFR 39129) and was revised on January 2, 2013 (78 CFR 344). A recovery plan for the species was completed in 2002 (U.S. Fish and Wildlife Service [USFWS] 2002), and a 5-year review was done in 2014 (USFWS 2014). In 2017, a 12-month review (including an updated 5-year review), responding to a delisting petition, determined that no change was needed to the flycatcher's subspecies classification or its status as endangered (USFWS 2017).

The flycatcher is endangered primarily because land and water management actions associated with agriculture and urban development have reduced, degraded, altered, and eliminated much of its riparian habitats. Other threats include human recreation along rivers and streams, livestock grazing, predation, brood parasitism by brown-headed cowbirds (*Molothrus ater*), release and spread of the tamarisk-eating leaf beetle (*Diorhabda carinulata*), and wildfires that have become more frequent and destructive as a result of the drying of rivers, degrading of watersheds, increase in in ignition sources, and proliferation of exotic vegetation. Nestling predation and cowbird parasitism are the most common forms of direct mortality. Tamarisk often flourishes in areas where native trees are unable to grow due to water regulation and groundwater pumping; thus, loss of tamarisk without replacement by native trees will likely impact flycatchers wherever their range overlaps with the tamarisk leaf beetle. All existing threats are compounded by the risk of stochastic events because flycatcher habitats are fragmented and because populations occur at low numbers.

The southwestern willow flycatcher is one of four currently recognized subspecies of the willow flycatcher, a neotropical migrant and spring/summer resident of North America (Unitt 1987, Browning 1993). This subspecies breeds in the southwestern U.S. and winters in Mexico, Central America, and possibly northern South America (Phillips 1948, Stiles and Skutch 1989, Peterson 1990, Ridgely and Tudor 1994, Howell and Webb 1995).

This flycatcher is a riparian obligate and insectivore. Flycatchers are typically found along rivers, lakesides, and other wetlands with dense riparian habitat consisting of multi-layered tree canopies of varying sizes and age classes. Occupied flycatcher territories are usually located near or over surface water or saturated soils.

In Arizona, nesting flycatchers are found within two general areas: 1) monotypic native riparian or tamarisk (*Tamarix* spp.) habitats, and mixed native riparian and tamarisk habitats, along broad, flat floodplains below about 4,000 ft in elevation; and 2) willow (*Salix* spp.) thickets along streams typically occurring in broad, flat meadows above 7,000 ft. Historical egg/nest collections and species descriptions throughout its range describe the flycatcher's widespread use of willow for nesting (Phillips 1948, Phillips et al. 1964, Hubbard 1987, Unitt 1987); however, in Arizona and other states tamarisk is an important nest tree species for flycatchers.

Tamarisk is a non-native species, yet in 2001, 323 of the 404 known flycatcher nests in Arizona (80%) were in tamarisk (Smith et al. 2002). Tamarisk had been thought to represent poorer flycatcher habitat; however, comparison of reproductive performance, prey populations, and physiological condition of flycatchers breeding in native and exotic vegetation showed no differences (Durst 2004, Owen and Sogge 2002, Sogge et al. 2005, Sogge et al. 2008, USFWS 2002).

Flycatcher habitat is dynamic and can change rapidly (Finch and Stoleson 2000). Tamarisk and native willows, under good growing conditions, can develop from seed to nesting habitat in 3-5 years. Heavy flooding can eliminate habitat or reduce habitat quality in a day. Flycatcher use of habitat in different successional stages may also be dynamic. Over-mature or developing riparian vegetation not suitable for nest placement can be used for foraging and shelter by migrating, breeding, dispersing, or non-territorial flycatchers (McLeod et al. 2008, Cardinal and Paxton 2005).

The riparian patches used by breeding flycatchers vary in size and shape. They may be relatively dense, linear, contiguous stands or irregularly-shaped mosaics of dense vegetation with open areas. Southwestern willow flycatchers nest in patches as small as 0.25 acre along the Rio Grande, and as large as 175 ac in the upper Gila River in New Mexico (USFWS 2002). More recently, Cardinal and Paxton (2005) found that home ranges of telemetered flycatchers at Roosevelt Lake, Arizona, varied from 0.37 to 890 ac (USFWS 2002). Mean patch size of breeding sites supporting 10 or more flycatcher territories was 62.2 ac, although aggregations of occupied patches within a breeding site may create a riparian mosaic as large as 494 ac or more (USFWS 2002). Flycatchers are generally not found nesting in confined floodplains where only a single narrow strip of riparian vegetation less than approximately 33 ft wide develops, although they may nest in such vegetation if it extends out from larger patches, and they may use vegetation of this type during migration (USFWS 2002).

Evidence gathered during multi-year studies of color-banded populations shows that although most southwestern willow flycatchers return to former breeding areas, flycatchers regularly move among sites within and between years (Netter et al. 1998, Kenwood and Paxton 2001, M. Whitfield unpubl. data). From 1997 through 2000, 66% to 78% of flycatchers known to have survived from one breeding season to the next returned to the same breeding site; conversely, 22% to 34% of returning birds moved to different sites (Luff et al. 2000). Both males and females move within and between sites, with males showing slightly greater site fidelity (Netter et al. 1998). Within-drainage movements are more common than between-drainage movements (Kenwood and Paxton 2001). Typical distances moved range from 1.2 to 18 mi; however, long-distance movements of up to 137 mi have been observed on the lower Colorado River and Virgin River (McKernan and Braden 2001). In some cases, willow flycatchers are faced with situations that force movement, such as when catastrophic habitat loss occurs from fire or flood. Several such cases have been documented, with some of the resident willow flycatchers moving to remaining habitat within the breeding site, some moving to other sites 1.2 to 16.8 mi away (Paxton et al. 1996, Owen and Sogge 1997), and others disappearing without being seen again.

Western Yellow-billed Cuckoo

The western yellow-billed cuckoo was listed as threatened on October 3, 2014 (79 FR 59992). Only the Western Distinct Population Segment (DPS), which is larger than its eastern counterpart, was listed. Critical habitat for the cuckoo was proposed on August 15, 2014 (79 FR 48548).

The primary threat to the western yellow-billed cuckoo is loss or fragmentation of high-quality riparian nesting habitat. Many factors have altered and eliminated cuckoo habitats, including water diversions, ground water pumping, stream channelization and stabilization, agricultural development, mining, livestock grazing, wildfires, establishment of nonnative vegetation, drought, defoliation of tamarisk by the introduced tamarisk leaf beetle, and prey scarcity due to pesticides (Ehrlich *et al*. 1992, Corman and Wise-Gervais 2005, 79 FR 48548, 79 FR 59992). Habitat fragmentation has led to the isolation of small populations and has increased their susceptibility to further declines and local extirpations due to all the factors discussed above and to stochastic factors such as weather, fluctuating prey populations, and climate change (Thompson 1961, McGill 1975, Wilcove et al. 1986).

Cuckoos in the DPS were formerly widespread and locally common in much of the western U.S., Canada, and Mexico (American Ornithologists' Union 1998, Hughes 1999). The largest remaining breeding areas are in southern and central California, Arizona, New Mexico, and northwestern Mexico (79 FR 59992). In Arizona, the species was a common resident chiefly in the lower Sonoran zones of southern, central, and western Arizona (Phillips et al. 1964). The cuckoo now nests primarily in the central and southern parts of the state.

Western populations of the cuckoo are most commonly found in large tracks of dense, multi-layered gallery forests consisting primarily of cottonwood (*Populus* spp), willow, and mesquite (*Prosopis* spp) (including mesquite bosques) along riparian corridors in otherwise arid areas (Laymon and Halterman 1989, Hughes 1999). The association of breeding with large tracts of suitable riparian habitat is likely related to home range size, although home ranges are flexible and territories may overlap in this weakly territorial species (Hughes 1999, Halterman 2009, Sechrist et al. 2013). Rangewide, individual home ranges during the breeding season average over 100 ac (Laymon and Halterman 1987, Laymon et al. 1997, Laymon and Williams 2002, Halterman 2009, Sechrist et al. 2009, McNeil et al. 2011, 2012, 2013, Sechrist et al. 2013). However, Laymon et al. (1993) reported an average cuckoo home range size of 42 ac, and home range estimates for radio-telemetered cuckoos in New Mexico varied from 12 to 697 ac (Sechrist et al. 2009). In New Mexico, the average maximum daily distance traveled was 2,795 ft, (0.52 mi) and the average maximum seasonal distance traveled was 4,790 ft (0.91 mi).

Extensive riparian forests may support the greatest density of breeding cuckoos, but other habitats are also important for recovery (USFWS 2015). In Arizona, cuckoos may use narrow bands of riparian woodland for nesting (Arizona Game and Fish Department [AGFD] 2015, Cornell Lab of Ornithology 2015) and even non-riparian habitats (e.g., Madrean evergreen woodlands in the mountain drainages of southeastern Arizona) (Brown 1994, Cornell Lab of Ornithology 2015, Corman and Magill 2000). Tamarisk may be a component of breeding habitat, but there is usually a native riparian tree component present (Gaines and Laymon 1984, Johnson et al. 2008, McNeil et al. 2013, Carstensen et al. 2015). Site-specific variation is likely a result of characteristics unique to each location (e.g., type and quality of habitat, patch configuration) (Hughes 1999, Halterman 2009, Sechrist et al. 2013). Habitat can be found in relatively contiguous stands of dense vegetation, in irregularly shaped mosaics of dense and open vegetation, and in patches that are narrow and linear or savannah-like.

Humid conditions created by surface and subsurface moisture and a multi-layered canopy appear to be important for successful hatching and rearing of young (Hamilton and Hamilton 1965, Gaines and Laymon 1984). Within the boundaries of the DPS, cuckoos occur from sea level to elevations up to 7,000 ft or more; however, the moist conditions that support riparian plant communities typically occur at lower elevations.

Cuckoo breeding habitat in much of the species' range is associated with perennial rivers and streams in regulated and unregulated flows (Poff et al. 1997). In southeastern Arizona, cuckoos are also found nesting along more arid ephemeral and intermittent drainages (Corman and Magill 2000, Corman and Wise-Gervais 2005, AGFD 2015, Cornell Lab of Ornithology 2015). Hydrologic conditions at cuckoo breeding sites can vary widely in a single year and among years, and due to these changes cuckoos may move from one area to another in the same season and from year to year.

Recent guidance on cuckoo habitat use (USFWS 2015) indicates that cuckoos are more flexible in their choice of foraging and migration stopover habitat than they are in selecting nesting habitat. Foraging areas can be less dense or more patchy than nesting areas, with lower levels of canopy cover (Carstensen et al. 2015, Sechrist et al. 2009, USFWS, unpubl. data). In Arizona, adjacent foraging habitat is usually more arid than nesting habitat. Habitat flexibility during migration may extend to monotypic tamarisk and shrubby habitats, hedgerows, coastal scrub, orchards, and semi-desert grasslands.

ENVIRONMENTAL BASELINE

The environmental baseline includes past and present impacts of all Federal, State, or private actions in the action area, the anticipated impacts of all proposed Federal actions in the action area that have undergone formal or early section 7 consultation, and the impact of State and private actions that are contemporaneous with the consultation process. The environmental baseline defines the current status of the species and its habitat in the action area to provide a platform to assess the effects of the action now under consultation.

Description of the Action Area

The River and Floodplain

The Verde River is the largest perennial tributary of the Salt River in central Arizona. It flows south from its origin above Sullivan Lake Dam near the Town of Paulden, bends east through the action area, then flows south to the Salt River east of Phoenix. Sullivan Lake has mostly filled in with sediment (Wirt 2005); thus, the river is free flowing until it reaches Horseshoe Reservoir, over 135 mi from its origin (Arizona Department of Water Resources [ADWR] 2017). The river includes three distinct regions: the upper, middle, and lower Verde watersheds. The action area is on the middle Verde River at the southern end of the Verde Valley. The middle Verde is a broad alluvial reach that includes the river's three main population centers: Clarkdale, Cottonwood, and Camp Verde (from north to south) (Springer and Haney 2008).

Within the action area, the Verde River approaches I-17 and its southbound bridge from the west as one main channel (we will sometimes refer to this as the low-flow channel). Beneath the southbound bridge, the river slows, bends north, and breaks up into multiple small channels that flow around six of the 12 bridge piers, creating backwaters and pools. As the river passes the northbound bridge, it bends east and forms again into one main channel.

Immediately upstream of the bridges, and for about 1,000 ft, the Verde River flows next to an area of exposed soil, sand, cobble, and dry overflow channels extending 400 ft north and northeast of the river (Figure 2). Downstream of the bridges, the river flows southeast through the CVRP. From the northbound bridge, the CVRP extends 0.75 mi southeast across the floodplain, encompassing the river (which roughly borders the CVRP's north and east boundary), areas of open cobble, dry overflow channels, and about 85 ac of riparian woodlands (Figure 1).

The CVRP was established as a mitigation property by the Salt River Project (SRP), a public utility, and is managed by SRP to comply with the Roosevelt Lake Habitat Conservation Plan (HCP; SRP 2002), designed to offset the loss of riparian habitat and effects to listed species resulting from operation of the Roosevelt Dam on the Salt River after the dam was raised in 1996. Per provisions outlined in the HCP, and because of persistent trespass issues since 2002, perimeter fencing is now in place around much of the CVRP. As a result there is little public use of the area (SRP 2017).

In contrast to the CVRP, access to the floodplain west and upstream of the southbound bridge is unrestricted. Access is readily available via dirt and gravel roads that tie into paved municipal roads and nearby residential areas on both sides of I-17. The area is heavily disturbed and shows evidence of regular human activity, including trash, makeshift campsites, fire pits, graffiti on the bridge piers, foot trails, and truck and ORV tracks that crisscross the floodplain. A dirt road accessible to trucks and ORVs parallels the north bank of the river, often within 10 ft of the main channel.

Vegetation

The following overview of riparian habitat in the construction footprint and action area is based substantially on a recent vegetation survey (ADOT 2018b), and on information in SRP annual reports, personal communications from SRP staff, and ADOT's biological evaluations for the project.

ADOT's vegetation survey was conducted from April 4-6, 2018, as part of compliance requirements for a Clean Water Act Section 404 permit from the U.S. Army Corps of Engineers. The survey included an inventory of all trees with diameters ≥10 inches within an 8.2-ac survey area extending approximately 900 ft downstream and 600 ft upstream of the I-17 bridges (the approximate lengths of the Phase 1 and Phase 2 bypass channels). Vegetation work also included transect surveys designed to assess vegetative cover of 12 species of woody plants within the same 8.2-ac survey area. The survey area encompassed most of the 6.2-ac construction footprint.

Riparian vegetation in the action area consists primarily of mature (mid- to late-successional) gallery forests that occur upstream and downstream of I-17 in small and large patches. Galleries inside ADOT's survey area consist primarily of Fremont cottonwood *(Populus fremontii*) and Goodding's willow (*Salix gooddingii)* in almost equal numbers. These two species accounted for 129 of 132 trees measured during the tree inventory. Diameters of the 132 trees ranged from 10-60 inches, but nearly 75% were ≥12 inches in diameter.

Upstream of the bridges, a dense gallery of late-successional cottonwood and Goodding's willow occurs in bands 30 to 100 ft wide on both sides of the river's main channel. This gallery begins at the southbound bridge and continues upstream and out of the action area. The understory is composed of grasses, forbs, and small shrubs, but very few trees.

Narrowleaf willow (*Salix exigua*), a shrubform of the genus, and tamarisk were the most common woody species on survey transects, but were not found on any transects upstream of the

bridges. Tamarisk is present upstream of the bridges in the understory of scattered, large cottonwoods and willows approximately 500 ft north of the river and just west of I-17.

At the bridges, riparian vegetation occurs primarily as a discontinuous strip of cottonwood, Goodding's willow, and narrowleaf willow on the margins of the braided river channels. The ground surface adjacent to the river is mostly bare soil with a few scattered shrubs and small trees.

Vegetation downstream of the bridges, in the CVRP, is more diverse and includes stringers and small patches of mid-successional gallery forest separated by dry overflow channels. An area of open cobble occurs from the bridges downstream approximately 1,200 ft. Transect data from the ADOT survey indicate that early-successional narrowleaf willow and tamarisk occur at the edges of some of the gallery patches described above, and both species occur as a narrow, nearly continuous strip of vegetation along both sides of the river from the I-17 bridges to the CVRP's downstream boundary (personal communication from SRP biologist H. English, November 6, 2018).

A patch of gallery forest also occurs in the CVRP on a terrace north of the river; however, the most prominent feature of the CVRP is a mature cottonwood/willow gallery extending southeast across much of the CVRP to the property's southern boundary (Figure 3). Except for low ground cover of exotic weedy annuals and some tamarisk, this gallery lacks understory development. In particular, it lacks smaller size classes of willow and cottonwood that dominate the overstory. In recent years, the gallery on the north side of the river has declined and a large part of it is now open and devoid of trees (Figure 3). The larger gallery south of the river has also experienced tree mortality, but to a lesser extent (ADOT 2017).

In 2017 (and in previous years), SRP reported that new stands of Goodding's willow are becoming established along the river in the southern part of the CVRP (SRP 2017). The river slows along this reach resulting in pooling and marshy conditions, and a number of beaver dams also occur in the area, all of which have benefitted the development of streamside vegetation.

Status of the Flycatcher in the Action Area

Surveys for flycatchers were not done specifically for this project but SRP conducted call-playback protocol surveys (Sogge et al. 2010) throughout the CVRP in 2012, 2014, 2016, and 2018 (SRP 2012, 2014, 2016, 2018). Below we summarize the results of these surveys and include the distance in mi from each bird detected to the nearest point of the Phase 1 bypass channel (the only part of the construction footprint that extends into the CVRP). We used the ruler function in Google Earth to obtain distance measurements.

2012 SRP detected 5 flycatchers in 3 territories (2 pairs and an unpaired male). The lone male was 0.21 mi east of the Phase 1 bypass and the two pairs were in the southeast corner of the CVRP ≥0.5 mi from the bypass.

2014 SRP detected 10 flycatchers in 7 territories (3 pairs, one with a nest, and 4 unpaired males). Two of the lone males were 0.26 mi east and 0.37 mi southeast of the bypass. All other birds were ≥0.5 mi downstream of the bypass.

2016 SRP detected 10 flycatchers in 6 territories (4 pairs and 2 lone males). All detections occurred in the southeastern part of the CVRP ≥0.5 mi from the bypass.

2018 SRP detected 3 flycatchers in 2 territories (one pair and a lone male), and one migrant. The migrant was 0.40 mi from the bypass when detected. All other birds were ≥0.6 mi from the bypass.

To summarize, SRP detected 29 individual flycatchers in the CVRP during bi-annual protocol surveys. Most birds, including all 10 breeding pairs, were detected ≥0.50 mi downstream of the Phase 1 bypass channel, in the southeastern part of the property. In 2012 and 2014, 3 territories with lone males were detected within 0.4 mi of the bypass, and one was within about 0.25 mi. In 2018, a migrant was also observed about 0.4 mi from the channel. No flycatcher surveys were conducted upstream of the I-17 Bridges.

Status of the Cuckoo in the Action Area

SRP also conducted cuckoo call-playback surveys in the CVRP during the same years that flycatcher surveys occurred (SRP 2012, 2014, 2016, 2018).

Below we provide summaries of the SRP surveys expressed as the number of possible and probable breeding pairs found during each year that surveys occurred. In assessing the number of pairs present each year, we followed the most recent standardized survey protocol for cuckoos (Halterman et. al. 2015). The cuckoo survey protocol is designed primarily to establish presence or absence of the birds in areas surveyed; however, breeding can be confirmed or inferred by certain behaviors, by the timing of detections, and by the number of surveys during which detections occurred. A *possible breeding pair* is reported if one or more birds were heard or seen in the same general area during at least two of the required four surveys. A *probable breeding* pair is reported if; 1) birds were detected in an area during at least three of the four required surveys; or 2) a possible pair included at least one visual observation of a bird carrying a stick or food, two birds were observed traveling together, or two birds were heard exchanging vocalizations.

2012 SRP detected 9 cuckoos. Four detections (1 per survey) were in the northwestern one-half of the CVRP but were widely dispersed. We classified these detections as a possible breeding pair. The northernmost detection was 0.08 mi south of the Phase 1 bypass channel; the southernmost detection was 0.21 mi from the bypass.

We inferred a probable breeding pair near the southern end of the CVRP property where 5 detections occurred, 3 of them tightly clustered and from 3 different surveys. The center of this cluster was 0.52 mi southeast of the bypass.

2014 SRP detected 6 cuckoos. A possible breeding pair (1 bird seen, 1 heard in July and 1 seen in August) was documented in an isolated patch of gallery forest 0.10 mi south of the bypass.

A second possible breeding pair (at least 1 bird heard during 2 surveys) was documented near the CVRP's southern border 0.52 mi from the bypass.

2016 SRP detected 20 cuckoos. A probable breeding pair occurred in the northwestern half of the CVRP where a cluster of 13 detections were reported, including at least 1 and up to 9 detections during each of four surveys. The center of this cluster was 0.25 mi southeast of the bypass, and 1 detection was 0.09 mi from the bypass in the same patch of gallery forest where a possible pair occurred in 2014.

A more dispersed cluster of 7 detections occurred in the southeastern one-third of the CVRP, including 1 to 3 detections during each of 4 surveys. These data point to a second probable breeding pair in the CVRP in 2016. The center of this cluster was 0.51 mi from the bypass.

2018 SRP detected 4 cuckoos. Three detections, one during each of 3 surveys, were loosely clustered near the CVRP's southern boundary and represent a probable breeding pair. The center of the cluster was 0.40 mi south of the bypass. The nearest (northernmost) detection occurred 0.22 mi south of the bypass.

To summarize, SRP detected 39 cuckoos in the CVRP during bi-annual protocol surveys, including 3 possible and 4 probable breeding pairs. Two pairs were detected in 2012, 2014, and 2016, and one pair and one migrant were found in 2018. In years with 2 pairs, one pair occupied roughly the northwestern one-half of the CVRP, and the second pair occupied the southeastern half. In the northwestern part of the CVRP, detections were centered 0.15 to 0.25 mi south or southeast of the Phase 1 bypass, but birds were detected as near as 0.08 and 0.09 mi of the channel. Detections in the southeastern areas of the CVRP usually were >0.50 mi from the bypass channel. No cuckoo surveys were conducted upstream of the I-17 Bridges.

Flycatcher and Cuckoo Habitat in the Action Area

Flycatcher Habitat in the CVRP

Flycatchers detected in the CVRP exclusively used riparian vegetation near the river. All flycatchers were within 0.1 mi and most were within 100 ft of the river when detected, and nearly all detections occurred in early-successional willow and tamarisk downstream of the proposed Phase 1 bypass channel.

Much of the streamside vegetation on the south side of the river, from I-17 downstream to the southeastern portion of the CVRP, is confined to a narrow strip adjacent to a large open cobble area that extends hundreds of ft across the floodplain to the south and west (Figure 3). This strip of vegetation is currently suitable for flycatcher territory establishment and as foraging and migration stopover habitat. Three flycatcher territories established by lone males were detected along this stretch during protocol surveys.

All other flycatcher detections, including 10 nesting pairs/territories, occurred in the most southeastern part of the CVRP in an area removed from open cobble further upstream. The river slows and has developed pools, backwaters, and marshes in this section, and unlike streamside

vegetation further upstream, the riparian zone in this part of the CVRP is wider and extends further away from the river. This is the area where SRP has reported new stands of willow since 2014 (SRP 2014, 2016, 2017). Overall, the continuity, abundance, and quality of riparian habitat in the southeastern CVRP is higher than in any other part of the action area.

Cuckoo Habitat in the CVRP

Cuckoos detected in the CVRP occurred exclusively in gallery forests. The birds used isolated stringers and small gallery patches in areas just downstream of the Verde River bridges, and SRP found them throughout the extensive cottonwood/willow gallery that dominates much of the CVRP.

Flycatcher and Cuckoo Habitat Upstream of I-17

Flycatcher and cuckoo surveys have not occurred at the Verde River bridges or in the action area upstream of the CVRP. However, strips of dense gallery forest along both sides of the upstream river channel are suitable as foraging and migration stopover habitat, and in the case of the cuckoo may be suitable for breeding. This gallery does not differ substantially, except in extent, from the large and small gallery patches in the CVRP, where cuckoos have been documented as recently as 2018. Vegetation on the margins of the braided river channels under the bridges are also suitable as migration and foraging habitat for both species. Although the gallery is directly adjacent to the Verde River's main channel, it lacks a dense, well developed understory and is only marginal suitable as flycatcher breeding habitat. In addition, public use of a truck/ORV trail on the north side of the river, between the river and the gallery, has likely limited the development of streamside vegetation.

Flycatcher and Cuckoo Surveys Outside the Action Area

Protocol flycatcher and cuckoo surveys occurred in 2016 and 2018 in a small parcel of U.S. Forest Service (USFS) land surrounded by tribal and private lands ≥1.5 mi upstream of the Verde River bridges (personal communication from USFS biologist J. Agyagos, November 1, 2018).

In 2016, surveyors detected a lone male flycatcher territory during three of five protocol surveys conducted from mid-May to mid-July (the detections occurred in June and July). All three detections were 1.5 to 1.7 mi from the bridges. No flycatchers were detected in 2018 during five protocol surveys completed that year.

Three to five cuckoo detections occurred during each of four protocol surveys conducted in 2016. USFS biologists interpreted those detections as two pairs and a single bird. In 2018, one to three cuckoo detections occurred during each survey, but biologists did not specify the number of pairs.

Factors Affecting the Species in the Action Area

The presence of cottonwood/willow-dominated woodlands in the action area is a result of the Verde River's perennial flows and natural flood regime (the river is unregulated throughout most of it length) (Haney et al. 2008, Chapter 3). Natural flood cycles are a primary factor in the

establishment of cottonwood/willow galleries and maintaining elevated groundwater for these galleries (Haney et al. 2008, Chapter 4). Fremont cottonwood and Goodding's willow are obligate phreatophytes, meaning that they depend on groundwater or water in the overlying capillary fringe as their primary water source. Both species are relatively shallow-rooted and drought-intolerant. These trees have fine roots that are concentrated in the capillary fringe, just above the water table. As a result they are sensitive to fluctuating water table depths.

Before the era of dam building, water diversions, and ground water pumping, habitats occupied by flycatchers and cuckoos in the Southwest depended on natural flood cycles to generate the riparian woodlands and galleries used for nesting, and to recycle old habitats as they grew out of suitability. Periodic flooding allowed the movement and deposition of moist sediments needed for seedling germination and growth, and perennial flows helped to maintain streamside habitats and the moist conditions that attracted riparian birds.

As streams, rivers, and aquifers in the Southwest have been impounded, diverted, pumped, and in general dewatered, plant species compositions on southwestern floodplains have shifted from wetland pioneer trees (*Populus, Salix*) to more drought-tolerant species, such as nonnative tamarisk. Tamarisk is a deep-rooted facultative phreatophyte that uses groundwater when available but also thrives on sites with deep and fluctuating water tables. For these reasons, tamarisk has flourished below dams on regulated rivers and in river reaches with intermittent flows and depressed groundwater levels.

Because there are no large storage dams on the upper and middle Verde River, the flood and high-flow regime of this river has been minimally altered at a local level by human intervention. However, human uses have altered parts of the Verde River. Perennial flow in the Verde River historically began about five mi upstream from the present beginning of continuous flow, and the low-flow regime (base flow) has been altered by surface water diversions and by groundwater pumping in the Verde Valley. Portions of the middle Verde have occasionally gone dry below major agricultural diversions during seasonally dry periods (Stromberg et al. 2007). Overall, however, the effects of consumptive water use on the upper and middle Verde River have not been severe enough to eliminate perennial flows in the action area.

A number of factors, including the lack of recruitment of cottonwood and willow in the action area's gallery forests, the decline of overstory cottonwoods and willow in the CVRP, and the presence of tamarisk on the floodplain, suggest that habitat conditions in the action area are changing. The lack of recruitment in the action area's galleries could be explained by the magnitude and frequency of flooding since the galleries were established. For example, the lack of cottonwood and willow in the understory of the streamside gallery north of I-17 may be the result of scouring floods that removed small trees after they were established, and this may have occurred more than once in the life of this gallery forest. At the other extreme, the lack of small size classes in the terrace gallery north of the river in the CVRP, which is >20 ft above the low-flow channel, could indicate that floods of enough magnitude to wet that terrace have not occurred since the gallery was established.

Groundwater availability could explain the decline of overstory cottonwood and willows in the CVRP, especially in the terrace gallery north of the river, mentioned above. This terrace is high enough off the low-flow channel to show the effects of groundwater decline earlier than galleries

in or near the low-flow channel. Tamarisk in the understory of the large gallery that dominates the CVRP, and early signs of decline in the overstory of that gallery, suggest that groundwater levels at that location are also falling. We have seen that obligate phreatophytes like Fremont cottonwood and Goodding's willow are highly sensitive to changes in groundwater levels, and both species have relatively shallow root systems; thus, their ability to track declining groundwater levels is limited.

In addition to the dynamics of overall stream flow, drought, floods, and water availability in the action area, alteration of the floodplain to accommodate development has also likely had an impact on riparian habitat development and persistence. Bank alteration has likely constricted the Verde River at the I-17 Bridges, consolidating river flow into a narrower channel. The result of this has likely affected habitat quality/persistence/abundance due to changes in sediment deposition, water distribution, aquifer recharge, and flood impacts.

The overall outlook for Verde River flows and groundwater recharge in its aquifers is difficult to predict. On one hand, groundwater recharge in a natural river system is as variable and dynamic as surface flows, and the dynamic nature of natural river systems involves complex interactions involving many variables. On the other hand, there is evidence to suggest that the Verde River's natural hydrograph is at risk. Reductions in water availability on the Verde River have already occurred due to water diversions and groundwater pumping for human use, and population growth and increased water demand in the Verde watershed, both of which are a near certainty, can only exacerbate the problem in the future. Expectations of a warmer, drier climate in the Southwest with drought conditions becoming the climate norm due to climate change further dims the outlook for the Verde River (Haney et al. 2008, Chapter 2; Arizona State Climate Office 2019).

Previous Section 7 Consultations

<u>I-17 Verde River Bridge</u> - 2018 (02EAAZ00-2016-F-0244)

On February 14, 2018, we completed a BO/CO for the I-17 Verde River bridges for FHWA/ADOT that addressed effects to the flycatcher, razorback sucker, spikedace (and designated critical habitat), and the cuckoo, northern Mexican and narrow-headed gartersnake (and proposed critical habitat). We evaluated and concluded that adverse effects are likely to occur for razorback sucker and spikedace and their designated critical habitats; northern Mexican and narrow-headed gartersnake and proposed critical habitat; flycatcher designated critical habitat and proposed cuckoo critical habitat. We concurred with "not likely to adversely effect" determinations for the flycatcher and cuckoo and its habitat.

The February 14, 2018, BO/CO evaluated a proposed action occurring during the flycatcher and cuckoo non-breeding season; however the timing of the project is changing and now will occur during these birds' breeding season. Effects to these two birds from the new timing of the project is the subject of this consultation reinitiation. The change in project timing does not alter our February 14, 2018, evaluation to the flycatcher and cuckoo's habitat and its designated critical habitat and proposed critical habitat, respectfully. We also maintain our original conclusion about these birds habitat after evaluating additional information clarifying the extent of expected vegetation removal (ADOT 2018b). As a result, we will not be addressing habitat

impacts to these two species in this reinitiated consultation. The change in project timing also does not alter our evaluation for razorback sucker, spikedace, northern Mexican and narrow-headed gartersnakes, or their designated and proposed critical habitats, and we will also not be addressing these species in this reinitiated consultation.

Roosevelt Lake Habitat Conservation Plan - 2003 (2-21-03-F-0003)

This HCP and subsequent BO led to SRP's acquisition of the Camp Verde Riparian Preserve in 2004. The property was acquired primarily to serve as a mitigation site for breeding flycatchers and cuckoos.

Emergency Flood Repair I-17 Verde River Bridge - 1995 (22410-1995-I-0325)

Following the 1995 winter Verde River flood, FHWA and ADOT implemented an emergency bank repair project to protect the I-17 Verde River bridges.

Environmental Protection Agency National Pollution Discharge Elimination System Permit For Homestead Project At Camp Verde - 2001 (22410-2001-F-0148)

We evaluated the effects of a proposed housing development (Homestead Project) between the I-17 Verde River bridges and Beaver Creek along the south side of the Verde River. This project was never implemented. Currently, the Town of Camp Verde is planning a park development south of the river (see discussion below).

EFFECTS OF THE ACTION

Effects of the action refer to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated and interdependent with that action, which will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur.

Construction Effects During the Breeding Season

Baseline conditions in the construction footprint have not prevented flycatchers and cuckoos from breeding and using nearly all suitable habitats in the CVRP in recent years. However, construction activities will increase noise and human activity levels above baseline conditions during the 2019 flycatcher and cuckoo breeding period that we anticipate will adversely affect normal breeding behavior.

The baseline condition is represented by the relatively constant noise and activity associated with traffic on I-17, combined with the noise and visual presence of ORVs and other recreational activities on the floodplain upstream of I-17. In spite of baseline disturbance levels, flycatchers and cuckoos have been documented in the CVRP every year that SRP conducted protocol surveys. For example, four pairs of flycatchers were documented in the southern part of the

CVRP in 2016, and territorial male flycatchers were detected within 0.25 mi of the proposed Phase 1 bypass channel in 2012 and 2014. A possible or probable breeding pair of cuckoos has been recorded in the CVRP every year that surveys occurred, and 2 pairs were reported during 3 of 4 survey years. In 2014, one of these pairs was recorded just 0.10 mi from the construction footprint.

During the project, construction related traffic, heavy equipment operations, use of power tools (e.g., jackhammers) and other powered equipment, and the activities of numerous on-site personnel will add to baseline disturbance levels to breeding flycatchers and cuckoos almost daily for six months.

We anticipate there will be no effects causing fatality or physical injury to adult flycatchers or cuckoos from the new proposed action. It is expected that no construction or human activity will contact or attract adult bird species causing physical injury or fatality.

Within the earlier defined 0.25 mi radius around the construction footprint, we anticipate that noise and the visual effects of heightened activity resulting from bridge construction, combined with baseline disturbance levels, will disrupt normal flycatcher and cuckoo breeding behavior and may displace some breeding pairs. We anticipate that flycatchers and cuckoos attempting to breed in the action area will likely avoid the construction footprint and areas immediately upstream and downstream of the project site. Given that a pair of cuckoos has been documented in the northern part of the CVRP during three of four protocol surveys, at a minimum the project may displace one pair of cuckoos. In addition, adjacent breeding pairs, including flycatchers from further downstream, may avoid noise-affected areas when foraging. If displaced breeders cannot find alternate unoccupied sites to nest, or if normal behaviors such as foraging, incubation, nest attendance, or provisioning of young by adjacent pairs are disrupted, project effects may include an overall decrease in nesting attempts, success, and productivity for both species in the CVRP.

Flycatcher and cuckoo surveys have not occurred in the action area upstream of I-17, but our vegetation analysis suggests that the late-successional gallery along the river in this area represents suitable cuckoo breeding habitat. We cannot assume that breeding by either species has not occurred in the action area upstream of I-17 in the past; however, we note that the baseline for disturbance upstream of I-17 is higher than it is downstream because recreational use of the floodplain only occurs in upstream areas. It is possible that flycatchers and cuckoos already avoid this part of the floodplain when they arrive in the spring and establish breeding areas. It is also possible that both species have avoided the bridges in the past because of traffic noise and other disturbances. We note that no flycatcher or cuckoo detections from 2012 to 2018, out of a combined 69 detections, were found within 0.10 mi (about 500 ft) of the northbound bridge. In any case, given the combined effects of highway noise, public use of the floodplain west of the bridges, and construction-related disturbance, flycatchers and cuckoos probably will not attempt to breed in the construction footprint in 2019.

Given that all construction activities and most rehabilitation efforts will end by August 2019, and cottonwood and willow pole plantings will occur before the 2020 breeding period, all project effects to breeding flycatchers and cuckoos will be limited to the 2019 breeding period.

We anticipate any construction-related disturbance effects to migrating flycatchers and cuckoos in 2019 will be localized, temporary, and therefore, insignificant. We expect that any migrating flycatcher or cuckoo behavior alteration will be limited and temporary and they will be able to use adjacent habitat nearby.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the action area. Future federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Effects of future actions that are reasonably certain to occur in the action area include 1) all actions that increase water demand in the Verde River basin; and 2) planned development of recreation facilities and opportunities for recreation along the Verde River.

Water Demand

The Verde River currently maintains flow characteristics necessary for the creation and maintenance of flycatcher and cuckoo breeding habitat in the action area, especially in the CVRP. However, the river's ability to maintain these conditions over the long-term is not assured. For example, groundwater storage in the upper Verde River watershed has declined due to groundwater pumping and stream flow diversions for agricultural, municipal, and industrial developments (Wirt 2006). In addition, populations of cities and towns within the Verde Valley have more than doubled in the last 20 years, and current trends indicate that populations will double again in the next 20 years (72 FR 10810). Thus, continued reduced base flows and potential loss of perennial conditions, as a result of increasing water demand in the Verde River basin, represents a threat to flycatchers and cuckoos over the long-term.

Recreation

Within the construction footprint and action area, lands are owned or administered by SRP, the Town of Camp Verde, and private individuals. In addition, I-17 is centered on ADOT's 300-ft-wide ROW, and ADOT also holds easements and covenants up to 1,000 ft west and east of I-17 (Figure 2). Land uses in the construction footprint and action area are primarily recreation (upstream of the Verde River bridges) and habitat conservation (downstream of the bridges in the CVRP).

SRP manages the CVRP for riparian values and restricts public access and other land uses. Public access to the Verde River has not been regulated elsewhere in the action area, however, and regulating that use and at the same time conserving riparian habitats will depend on current and ongoing planning efforts as described below.

Since 2014, the Town of Camp Verde has been developing the *Verde River Recreation Master Plan*, in cooperation with SRP, USFS, and Arizona State Parks, to identify priorities for developing and improving recreational facilities in Camp Verde. At present, three facilities are in various stages of planning and implementation, two of which will affect listed species on the

Verde River: Homestead Park and Parson's River Front Preserve. Homestead Park will be on the south side of the river downstream of the CVRP but is still in the planning stage. SRP is working with city officials to mitigate the potential for increased trespass in the CVRP as a result of increasing public use of the river adjacent to the park. Parson's River Front Preserve is currently being developed on the ground and will significantly affect public use of the Verde River immediately upstream of the Verde River bridges on the north side of the river. The objective is to end all motorized use of the floodplain and restrict public use to foot traffic on the floodplain and to designated trails along the river. During late summer 2017, Camp Verde moved forwarded with designating and signing the new 30-ac Parson's Preserve. Camp Verde will provide a parking area but access by motorized vehicles will be restricted by bouldering the access point to the floodplain at the south end of Roundup Road and barricading other access points. Overall, the new preserve will have beneficial effects to flycatcher and cuckoo habitats at and upstream of the bridges. Riparian habitat is this area should begin to recover from past truck and ORV use. On the other hand, foot traffic during the spring and summer may disturb nesting and migrating flycatchers and cuckoos, and resolving these issues should be part of the overall planning effort.

CONCLUSIONS

After reviewing the current status of the southwestern willow flycatcher and western yellow-billed cuckoo, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the proposed action, associated with revised project timing, is not likely to jeopardize the continued existence of the flycatcher or cuckoo. We base this conclusion on the following reasons:

- No direct effects from construction or noise-related activities are anticipated to result in death or injury to adult flycatchers and cuckoos.
- Bridge construction will be ongoing when flycatchers and cuckoos arrive in the action area in the spring and will continue through much of the breeding period. Harassment from construction activities resulting in loss of flycatcher and cuckoo nesting attempts, success, and productivity is expected be limited to the 2019 breeding season.
- Migrating flycatchers and cuckoos behavior may be temporarily altered by construction activities, but they will have abundant foraging and sheltering habitat available nearby; therefore any effects to migrants will be insignificant.
- Temporary disturbance and harassment resulting from the proposed action is expected to not affect the long-term persistence of flycatchers and cuckoos in the action area or the area's ability to support flycatcher and cuckoo populations over the long-term.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulations pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is further defined (50 CFR § 17.3) to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. "Harass" is defined (50 CFR § 17.3) as intentional or negligent actions that create the likelihood of injury to

listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. "Incidental take" is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

AMOUNT OR EXTENT OF TAKE

Southwestern Willow Flycatcher

The Service anticipates incidental take of southwestern willow flycatchers as a result of this proposed action. The incidental take is expected to occur during the 2019 breeding season in the form of harassment, causing displacement, reduced productivity, and possibly reduced survivorship as a result of noise and increased activity from construction activities. Because the flycatcher territory abundance is variable from one season to the next, we are unable to anticipate exactly how many territories will be affected. Therefore, we anticipate that all flycatcher territories and their associated breeding attempts (including eggs and nestlings) within a 0.25 mi radius of the project footprint will be incidentally taken, and estimate, based upon all flycatcher survey results in recent years, that incidental take may range from 1 to 5 territories. Because we anticipate all flycatcher territories and breeding attempts within this radius will be incidentally taken due to harassment, the extent of incidental take cannot be exceeded.

Western Yellow-billed Cuckoo

The Service anticipates incidental take of western yellow-billed cuckoos as a result of the proposed action. The incidental take is expected to occur during the 2019 breeding season in the form of harassment, causing displacement, reduced productivity, and possibly reduced survivorship as a result of noise and increased activity levels during construction. Because cuckoo territory abundance can be variable from one season to the next, we are unable to anticipate exactly how many territories will be affected. Therefore, we anticipate that all cuckoo territories and their associated breeding attempts (including eggs and nestlings) within a 0.25 mi radius of the project footprint will be incidentally taken, and estimate, based upon all survey results in recent years, and typical territory size, this may be 1 or 2 territories. Because we anticipate all cuckoo territories and breeding attempts within this radius will be incidentally taken due to harassment, the extent of incidental take cannot be exceeded.

EFFECT OF THE TAKE

In this biological opinion, the Sevice determines that this level of anticipated take is not likely to result in jeopardy to either species for the reasons stated in the Conclusions section. Although the proposed action may adversely affect the southwestern willow flycatcher and western yellow-billed cuckoo in the short-term from harassment, the proposed action is not expected to result in the permanent loss of either species in the action area.

REASONABLE AND PRUDENT MEASURES AND TERMS AND CONDITIONS

Because the conservation measures identified in the proposed action include all reasonable and prudent measures needed to reduce and minimize incidental take, no additional measures are required. In the fall of 2020 and 2021, ADOT will provide a monitoring report to the Service assessing the survival of cottonwood and willow pole plantings in the gallery forest upstream of the I-17 Verde River bridges.

Disposition of Dead or Injured Listed Species

Upon locating a dead or injured listed species, initial notification must be made to the U.S. Fish and Wildlife Service, Office of Law Enforcement, (Resident Agent in Charge), 4901 Paseo del Norte NE, Suite D, Albuquerque, New Mexico, 87113, telephone: 505/248-7889, within three working days of its finding. Written notification (by email or regular mail) must be made within five calendar days and include the date, time, and location of the animal, a photograph if possible, and any other pertinent information. The notification shall be sent to the Office of Law Enforcement, with a copy to this office. Care must be taken in handling sick or injured animals, to ensure effective treatment and care, and in handling dead specimens to preserve the biological material in the best possible state.

CONSERVATION RECOMMENDATIONS

Section 7(a)(l) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. We recommend that ADOT and FHWA assist with recovery efforts for the southwestern willow flycatcher and the western yellow-billed cuckoo.

2. We recommend that ADOT consider all possibilities for promoting survival of pole cuttings that are planted in the floodplain during site restoration efforts.

3. We recommend that ADOT and FHWA collaborate with the Town of Camp Verde, SRP, The Service, the USFS Camp Verde Ranger District, and local private landowners to reduce public access into ADOT's ROW, easements, and covenants through removal of roads, road closures, installation of fences, gates, or other obstructions, and appropriate signing. Regulating public use in the construction footprint and action area will protect pole plantings and areas reseeded during site restoration, and will promote natural regrowth of riparian habitat within the Verde River floodplain.

4. We recommend that ADOT and FHWA conduct pre-construction species surveys to determine the distribution and abundance of listed species within action areas to better understand and assess the effects of their action.

REINITIATION NOTICE

This concludes formal consultation on the action(s) outlined in your consultation request. As provided in 50 FR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

The Service appreciates efforts by the FHWA and ADOT to identify and minimize effects to listed species from this project. We encourage you to coordinate the review of this project with AGFD. We also appreciate your ongoing coordination during implementation of this program. In keeping with our trust responsibilities to American Indian Tribes, we are providing copies of this biological and conference opinion to the Bureau of Indian Affairs and are notifying affected Tribes.

For further information please contact Robert Lehman (602) 889-5950. In all future correspondence on this project, please refer to consultation number 02EAAZ00-2016-F-0244 R1.

Sincerely,

Greg Beatty for

Jeffrey A. Humphrey
Field Supervisor

cc: (electronic)

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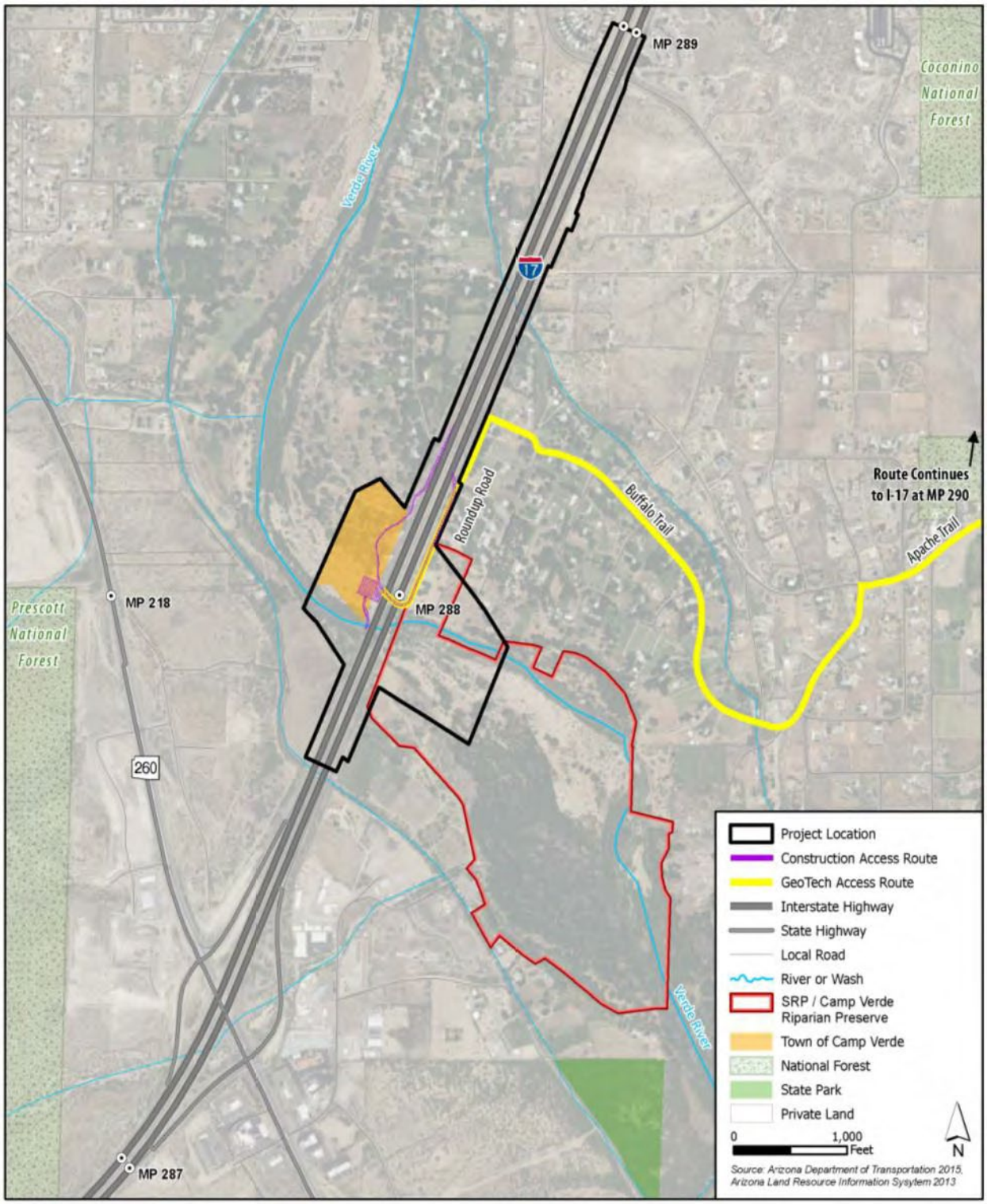

Figure 1. Vicinity map for the I-17 Verde River bridge project showing the Salt River Project's Camp Verde Riparian Preserve. The map is taken from the biological evaluation submitted on July 7, 2017, with ADOT's original consultation request. The areas bounded in red and black approximate the action area as defined above (see page 3, pages 5-6).

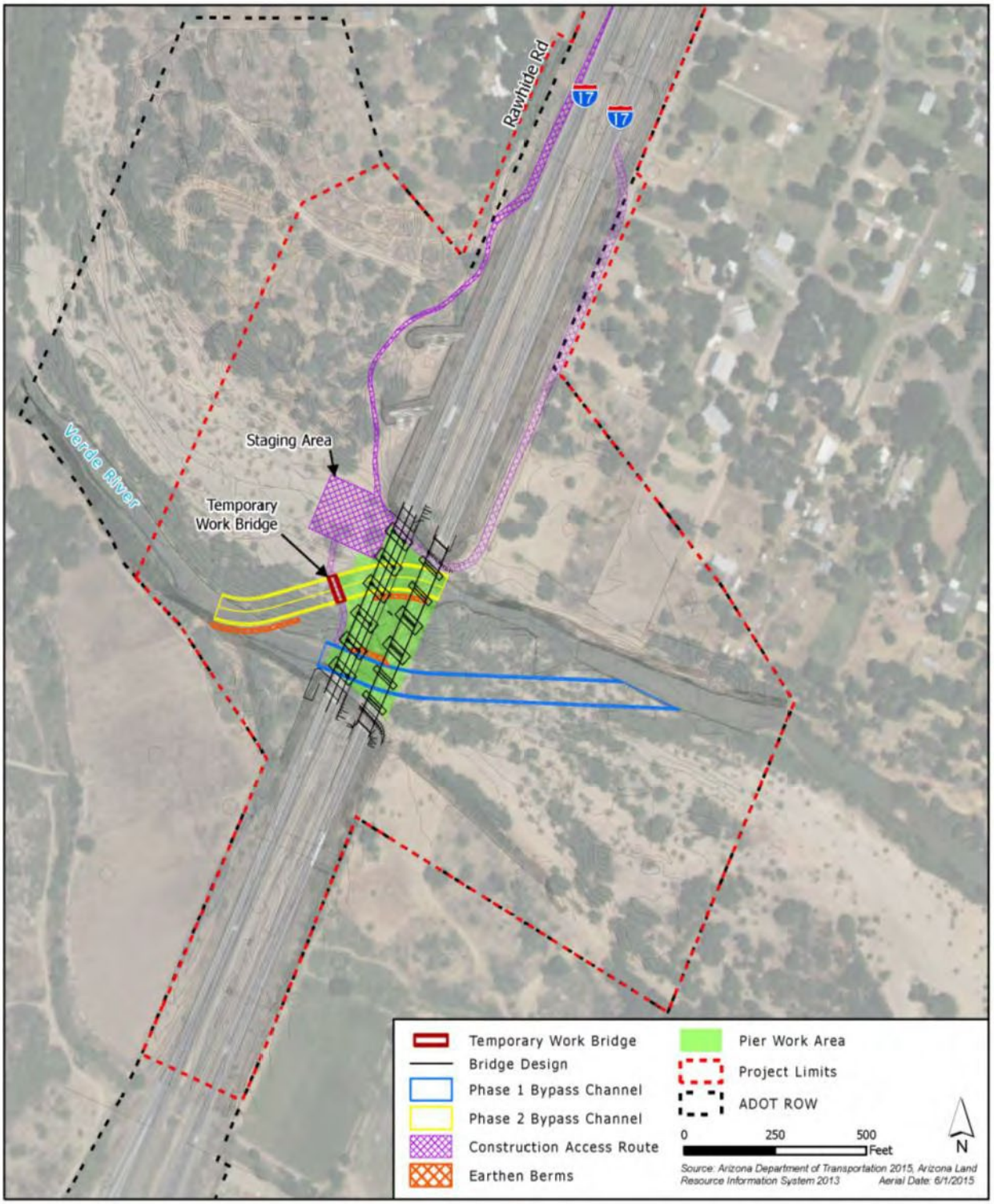

Figure 2. Access routes, staging area, temporary work bridge, water diversion channels, and pier locations for the I-17 Verde River bridges scour retrofit project. These areas represent the 6.2-ac construction footprint defined above (see pages 2-3).

Figure 3. Google Earth image of the action area, dated 17 April 2018.