Arizona Department of Transportation

Environmental Planning Group

Biological Evaluation

South Mountain Transportation Corridor

NH-202-D(ADY)
202L MA 054 H5764 01L

July 2014
Submittal 4

Biological Evaluation

FOR

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Executive Summary

This Biological Evaluation addresses the anticipated impacts that the preferred alternative (or project) for the South Mountain Transportation Corridor (SMTC) would have on protected species. The preferred alternative is similarly analyzed as part of the Study Area encompassing all considered alternatives in the South Mountain Freeway environmental impact statement prepared by the Arizona Department of Transportation on behalf of the Federal Highway Administration. The approximately 22-mile-long proposed freeway project is located in Phoenix, Maricopa County, Arizona (Figure 1). The preferred alternative includes a corridor from Interstate 10 (I-10), south along an alignment between 57th and 63rd avenues, to the Gila River Indian Community (Community), and then southeast through the western end of Phoenix South Mountain Park and Preserve (SMPP) (Figure 2). The project then follows the Community border east along the Pecos Road alignment to the Pecos Road interchange with I-10 (Figure 3).

The project would include an eight-lane divided freeway through suburban, rural agricultural, and undeveloped land. The project would cross numerous ephemeral washes. It would also cross the Salt River with pier-supported bridges that span the 100-year floodplain. Four vegetation communities are represented within the footprint of the project limits: mixed/agriculture, Sonoran creosotebush scrub, Sonoran creosotebush-bursage scrub, and Sonoran paloverde mixed cacti/Sonoran creosote-bursage.

No critical habitat occurs within the project area. Four federally listed species and the federally protected bald and golden eagle have the potential to occur in the project area and were analyzed in detail.

Federally Listed or Protected Species with Potential to Occur within the Project Area

Common Name *Scientific Name*	Status	Summary
Yuma clapper rail *Rallus longirostris yumanensis*	Endangered	The proposed project will have no effect on the Yuma clapper rail or its habitat as: there are no documented occurrences of the species within 2.5 miles of the project area and no suitable habitat occurs for the species in or adjacent to the project area.
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	Proposed Threatened	The proposed project will have no effect on the yellow-billed cuckoo or its habitat as: there are no documented occurrences of the species within 2.5 miles of the project area, no suitable habitat occurs for the species in or adjacent to the project area, and only marginally suitable habitat occurs adjacent to the project area.
Sonoran desert tortoise *Gopherus morafkai*	Candidate	The proposed project may affect a small number of individual Sonoran desert tortoises. The potential for impacts will be reduced through the use of mitigation measures to avoid and minimize impacts and will be determined in coordination with the Arizona Game and Fish Department during the final design process.

Common Name *Scientific Name*	Status	Summary
Tucson shovel-nosed snake *Chionactis occipitalis klauberi*	Candidate	The proposed project may affect individual Tucson shovel-nosed snakes. The potential for impacts will be reduced through the use of mitigation measures to avoid and minimize impacts and will be determined in coordination with the Arizona Game and Fish Department during the final design process.
Bald eagle *Haliaeetus leucocephalus*	Bald and Golden Eagle Protection Act	The proposed project will not result in a "take" and will not affect bald eagles.
Golden eagle *Aquila chrysaetos*	Bald and Golden Eagle Protection Act	The proposed project will not result in a "take" and will not affect golden eagles.

The Arizona Game and Fish Department (AGFD) provided a list of wildlife species of concern and species of greatest conservation need that have the potential to occur within the SMTC Study Area. The species, their habitat association, and their potential to occur within the project area are summarized in the appendix.

Three potential wildlife linkage corridors identified by stakeholders for Maricopa County are present in the project area (Figure 4): (1) South Mountains, ultimately connecting to the Sierra Estrella, (2) Salt River, and (3) Gila River. Mitigation measures, such as crossing structures and general wildlife-friendly design guidelines, to maintain wildlife movement would be included in the design of the project based on coordination with AGFD, U.S. Fish and Wildlife Service (USFWS), and the Community's Department of Environmental Quality (DEQ) as the project design progresses.

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1. PROJECT LOCATION

The South Mountain Transportation Corridor (SMTC) is located in southern Phoenix, Maricopa County, Arizona (Figure 1). An environmental impact statement (EIS) associated with the SMTC project discusses four alternatives, with options, and a no-build alternative. This Biological Evaluation addresses only the preferred alternative in the Final EIS, referred to as the project, and addresses anticipated effects on protected species. The project includes an approximately 22-mile-long corridor from Interstate 10 (I-10), south along an alignment that varies between 57th and 63rd avenues, to the Gila River Indian Community (Community) and then southeast along the Community border through the western end of Phoenix South Mountain Park and Preserve (SMPP). The project then follows the Community border east along the Pecos Road alignment to the Pecos Road interchange with I-10.

The project area is located in the city of Phoenix and the communities of Estrella Village, Laveen Village, and Ahwatukee Foothills Village. Additionally, the project traverses land managed by the Bureau of Land Management and Arizona State Land Department (Figure 2).

The EIS evaluated an area encompassing over 156 square miles, identified as the Study Area, to address a wide range of alternative corridor locations. This Biological Evaluation analyzes only the preferred alternative identified in the Final EIS, which is approximately 3 square miles in surface area (Figures 2 and 3). In this document the term "project limits" is used to represent the construction footprint (area of disturbance) for the preferred alternative, while the term "project area" includes surrounding land outside of but adjacent to the project limits. The term "project vicinity" is used to denote a more expansive landscape context.

2. PROJECT DESCRIPTION

The Arizona Department of Transportation (ADOT) studied the project in southern Phoenix, Maricopa County, Arizona. The South Mountain Freeway corridor was adopted into the Maricopa Association of Governments (MAG) regional freeway system in 1985 as part of the *MAG Freeway/Expressway Plan* (MAG 1985), at which time it was placed on the state highway system by the State Transportation Board. In 1988, ADOT prepared a design concept report and a state-level environmental assessment for the project, identified at that time as the South Mountain Parkway (ADOT 1988a, 1988b). As presented then, the project would connect Interstate 10 (I-10) (Maricopa Freeway) south of Phoenix with I-10 (Papago Freeway) west of the city, following an east-to-west alignment along Pecos Road through the western tip of the SMPP, then north to I-10.

In 2001, to secure eligibility for federal funding for a proposed project within this corridor, ADOT and the Federal Highway Administration (FHWA) began preparation of an EIS in accordance with the National Environmental Policy Act. In November 2004, the MAG *Regional Transportation Plan* (2003) was placed before Maricopa County voters, who approved the sales tax funding the plan. The South Mountain Freeway was included in this plan.

Alternatives considered for the SMTC included past freeway proposals as well as transportation system management, transportation demand management, transit improvements, arterial street network improvements, and land use controls. A freeway facility was determined to best address the project purpose and need. The Draft EIS was submitted to the public on April 26, 2013.

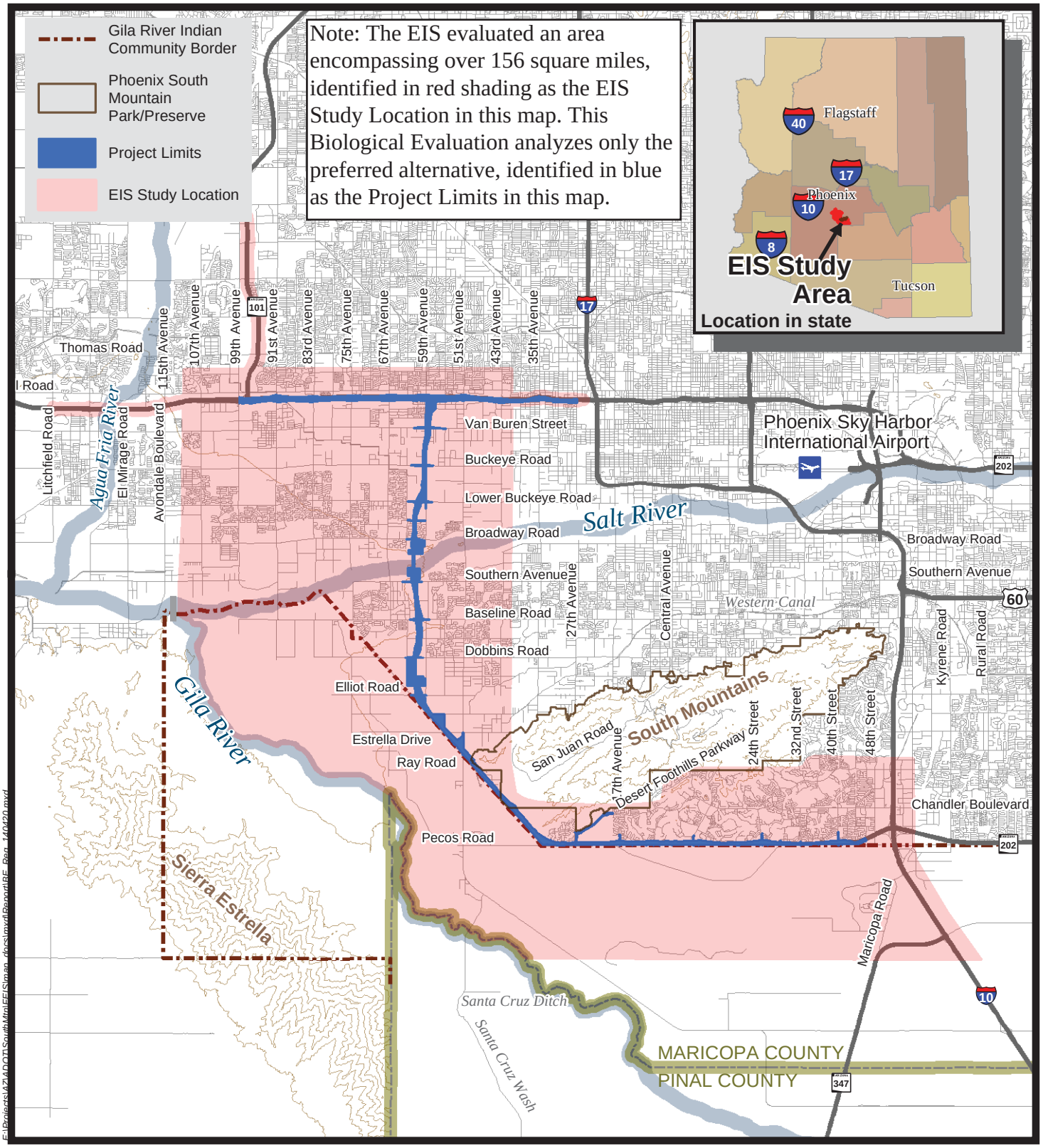

Figure 1

EIS Study Area and Project Limits

South Mountain Transportation Corridor
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ADOT Project Number: 202L MA 054 H5764 01L

The project described in this Biological Evaluation was selected as the preferred alternative, and this document has been prepared to address anticipated effects on federally listed species prior to issuance of the EIS Record of Decision.

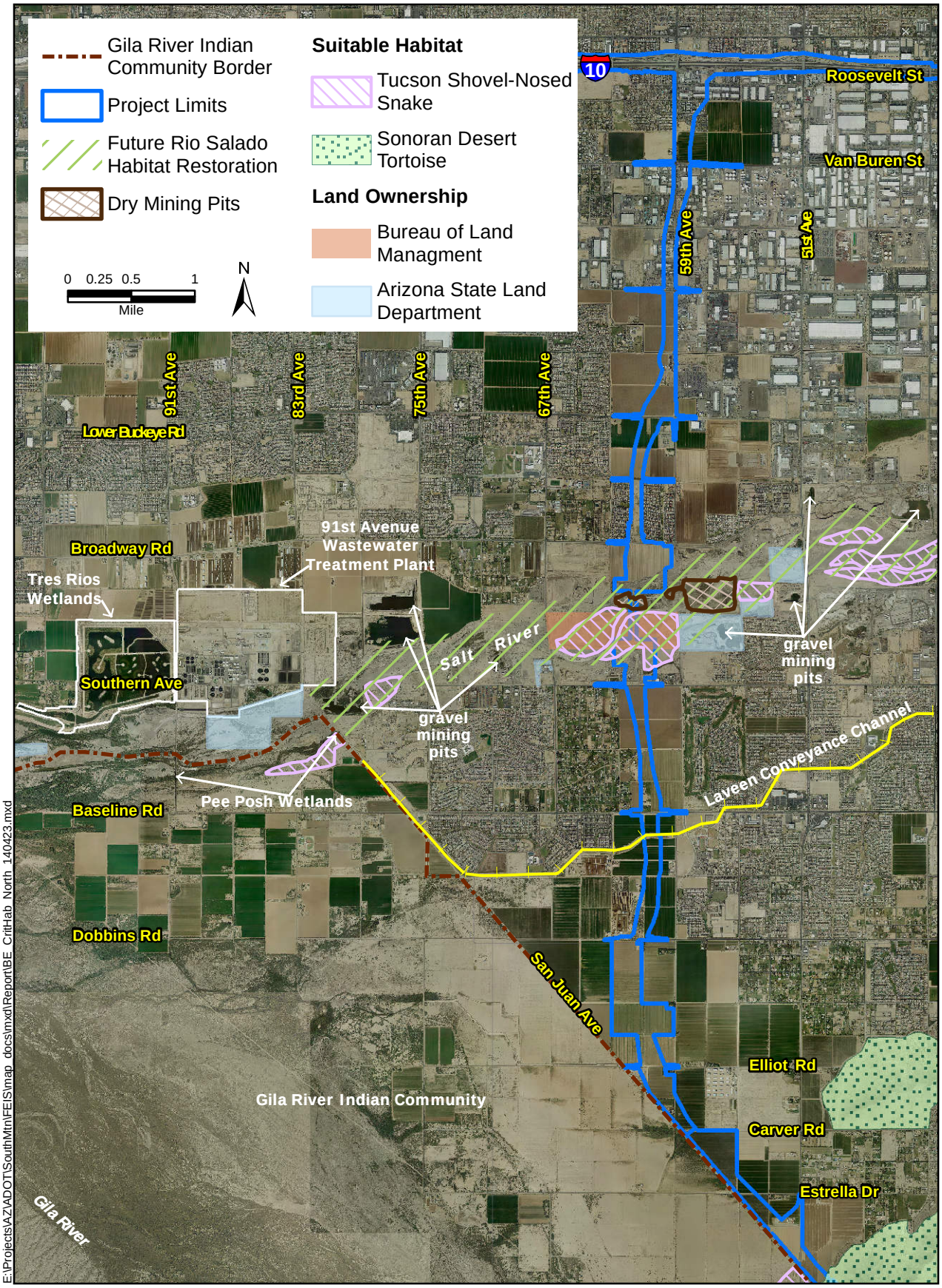
The project would include an eight-lane facility (four lanes in each direction) including six general purpose lanes and two high occupancy vehicle lanes. The project would be constructed along a new alignment through suburban, rural agricultural, and undeveloped land. Blasting would be conducted through the western end of the South Mountains. The project would result in ground disturbance of more than 1 acre of land; therefore, an Arizona Pollutant Discharge Elimination System General Construction permit from the Arizona Department of Environmental Quality would be required. This permit would include the development and implementation of a project-specific Stormwater Pollution Prevention Plan. The project would cross the Salt River and would affect 49 ephemeral washes on the western end of the South Mountains and along Pecos Road. The project would likely cause the loss of greater than 0.5 acre of waters of the United States at a single location (each crossing will be considered a separate and complete project); however, the specific Clean Water Act Section 404 permitting from the U.S. Army Corps of Engineers and Section 401 water quality certification from the Arizona Department of Environmental Quality will depend on the final designs.

The crossing of the Salt River, between Broadway Road and Southern Avenue, would be accomplished on two parallel bridges, one for each direction of traffic. The proposed bridges would be over 3,000 feet in length to span the 100-year floodplain. Each bridge would be approximately 87 feet in width with an approximately 63-foot-wide separation between them. Each bridge could have 26 spans that would likely be placed on 6- to 8-foot-diameter drilled shaft piers. Bridges based on this construction approach would potentially place 16 piers within the limits of waters of the United States, a permanent impact of 0.02 acre. An additional 80 piers could be placed within the 100-year floodplain of the Salt River, a permanent impact of 0.09 acre. To prevent a rise in the floodway elevation, the higher channel deposits in the Salt River channel below the bridges would be graded. Much of this area is part of two gravel mining operations. Vegetation in the Salt River is sparse at this location, but the project would involve disturbance/removal of approximately 60 acres of vegetation within the Salt River channel and floodplain.

The Rio Salado Oeste Ecosystem Restoration project, which would be built after the construction of this project, would reconfigure the Salt River channel at this location based on a restoration plan (Figure 2).

3. LOCATION DESCRIPTION

The project vicinity falls within the Sonoran Desert in the Basin and Range geologic province between an elevation of 950 feet above mean sea level (amsl) at the confluence of the Salt and Gila rivers and 2,400 feet amsl at the crest of the South Mountains (Chronic 2003) (Figures 2 and 3). The topography of the project area includes broad, flat, low-lying desert valleys between isolated mountains of relatively low relief (the South Mountains and the Sierra Estrella). Elevation within the project limits ranges between 970 feet and 1,375 feet amsl.



South Mountain Transportation Corridor
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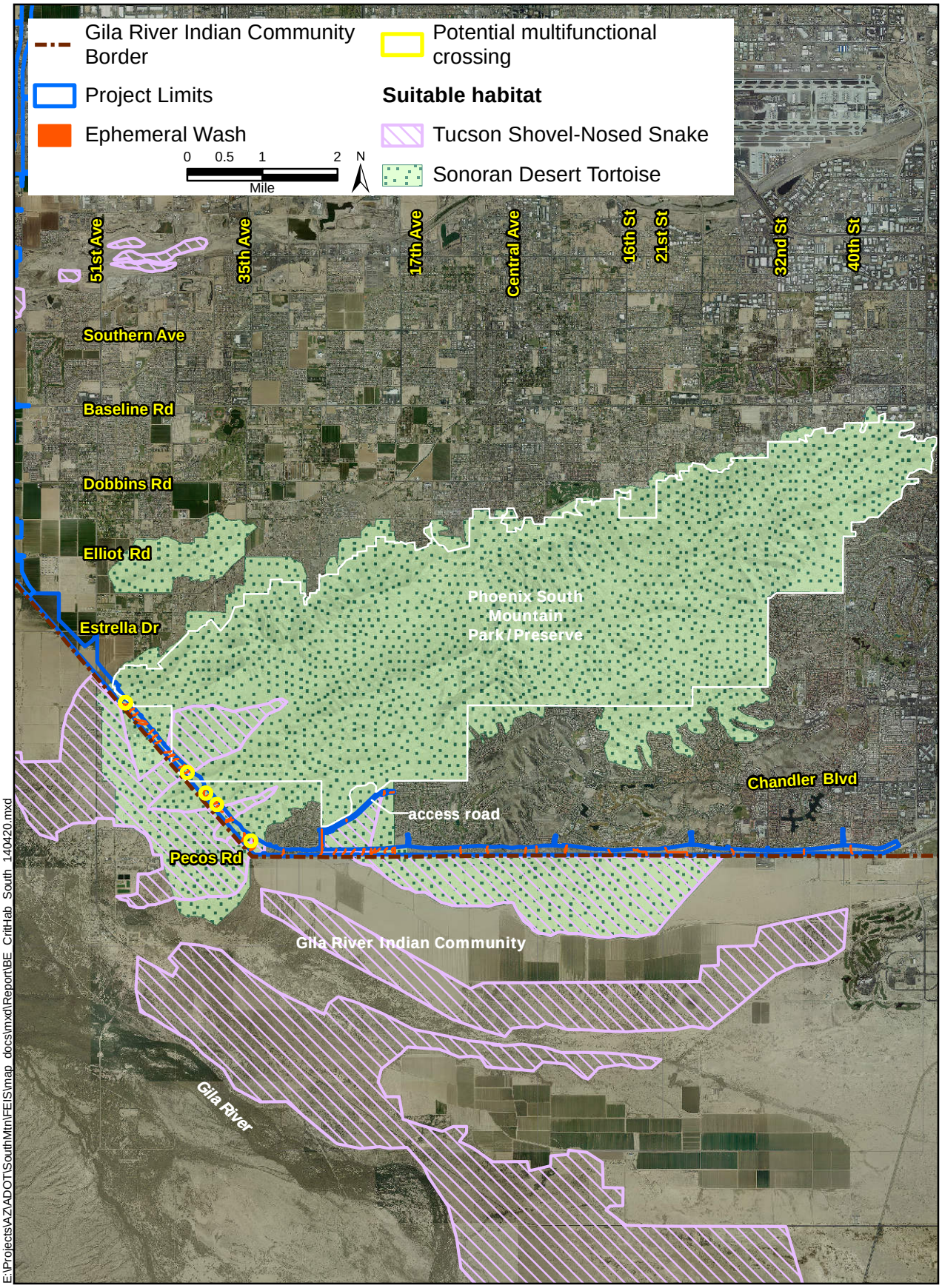
Figure 2

Northern Portion of Project Limits

Source: Suitable habitat modified from Arizona Game and Fish Department (AGFD). 2014. HabiMap Arizona. <habimap.org/habimap/> (accessed April 12, 2014).

Aerial photography date: July 2013



South Mountain Transportation Corridor
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Figure 3

Southern Portion of Project Limits

Source: Suitable habitat modified from Arizona Game and Fish Department (AGFD). 2014. HabiMap Arizona. <habimap.org/habimap/> (accessed April 12, 2014).

Aerial photography date: July 2013

Much of the project area outside of Community lands and SMPP has been disturbed by residential, commercial, and industrial development; mining for sand and gravel; and agricultural use. The western end of the South Mountains and portions of Community land adjacent to the project limits contain undeveloped desert spaces (Figures 2 and 3). However, the area between the South Mountains and the Sierra Estrella to the south has been altered as a result of agricultural use and construction of small commercial properties, roads, and houses.

The project area is located within several geologic formations consisting of sand and gravel in stream channels and sand, silt, and clay on floodplains. At the base of the South Mountains, metamorphic rocks are exposed, revealing sedimentary and volcanic rocks transformed into schist and gneiss (Chronic 2003; Kamilli and Richard 1998).

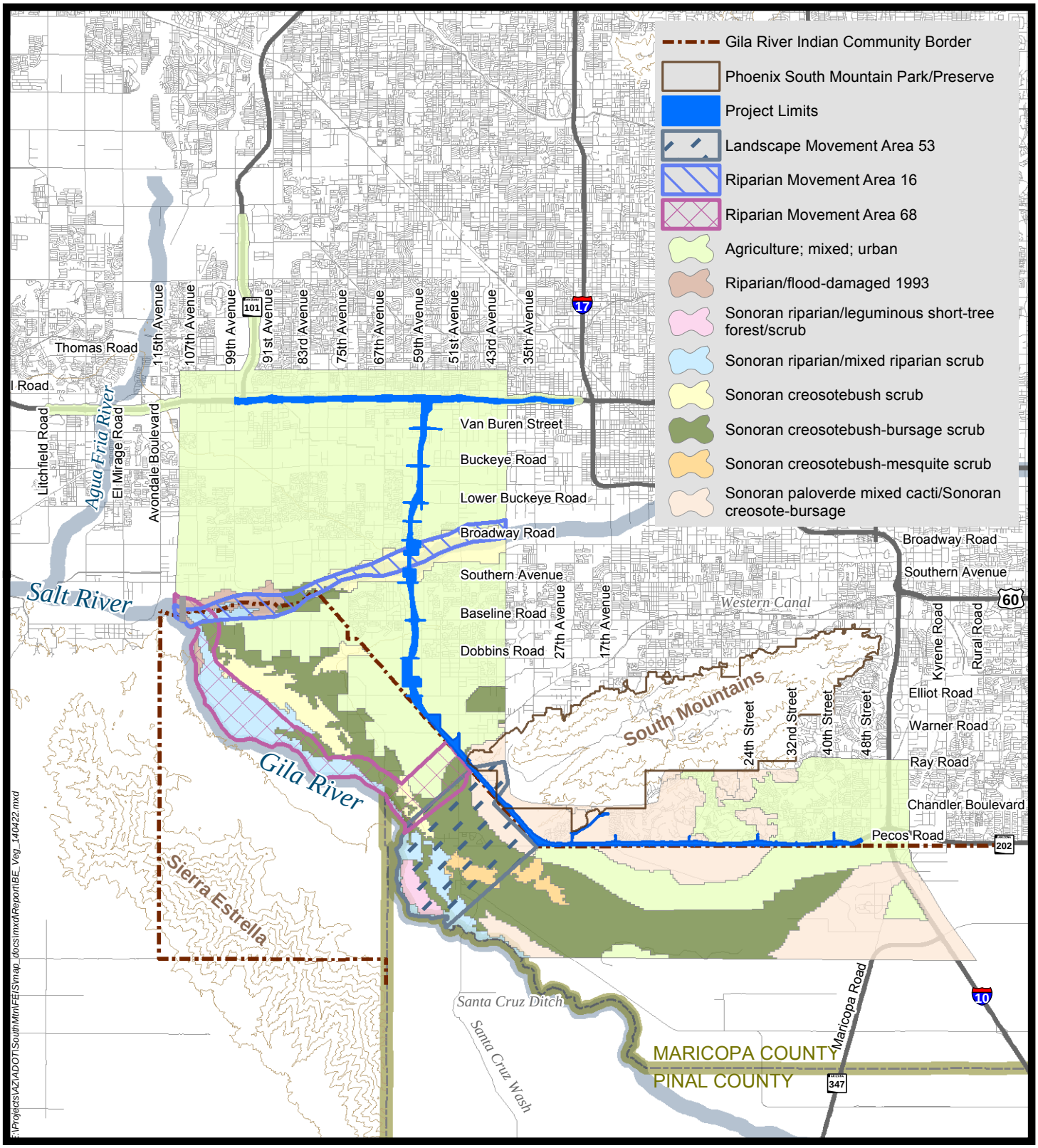
The project area includes vegetation of the Arizona Upland Sonoran Desertscrub and Lower Colorado River Sonoran Desertscrub biotic communities (Turner and Brown 1994). Much of the native habitat in the project area has been altered by past agricultural, commercial, industrial, and urban development, limiting the extent of natural Sonoran desertscrub biotic communities within the project area.

Vegetation community data from the Arizona GAP Analysis Program (Graham 1995) shows four vegetation communities represented within the footprint of the project limits: mixed/agriculture, Sonoran creosotebush scrub, Sonoran creosotebush-bursage scrub, and Sonoran paloverde mixed cacti/Sonoran creosote-bursage (Figure 4).

The mixed/agriculture community includes developed lands with industrial, commercial, and residential land uses as well as agricultural fields of irrigated corn, cotton, and alfalfa. Much of the agricultural land is rapidly being replaced by development and many of the agricultural fields along the project limits are bordered by commercial and residential development. Vegetation in this community within the project limits, not associated with agriculture, is a mix of native and nonnative species found in fallow fields, vacant properties, along canals and streets, and around homes. Native species that do occur in this community include mesquite (*Prosopis* spp.), paloverde (*Parkinsonia* spp.), creosotebush (*Larrea tridentata*), brittlebush (*Encelia farinosa*), desert broom (*Baccharis sarothroides*), and globe mallow (*Sphaeralcea* spp.). A majority of vegetation in the project limits in the northern portion of the project area is represented by the mixed/agriculture community.

The Sonoran creosotebush scrub community is found along gravelly and sandy flats and is typically dominated by creosotebush. This community is within and along the Salt River in the project area. Vegetation in this community within the project limits includes mesquite, blue paloverde (*Parkinsonia florida*), tamarisk (*Tamarix* sp.), desert broom, turpentine broom (*Thamnosma montana*), burrobush (*Ambrosia dumosa*), sweetbush (*Bebbia juncea*), common sunflower (*Helianthus annuus*), carelessweed (*Amaranthus palmeri*), and prickly Russian thistle (*Salsola tragus*).

The Sonoran creosotebush-bursage scrub community is typically found on rocky or gravelly flats and hills dominated by creosotebush and triangle bur ragweed (*Ambrosia deltoidea*). A small remnant of this community is in the project limits near the western edge of the South Mountains. Vegetation in this community within the project limits includes creosotebush, triangle bur ragweed, desert broom, and brittlebush.



0 1 2 3 Miles

N

Figure 4

Vegetation Communities and Wildlife Connectivity in Project Vicinity

South Mountain Transportation Corridor
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Sources: Graham, L. A. 1995. Arizona Natural Vegetation, as mapped for the Arizona GAP Analysis Program. Digital GIS File. School of Renewable Natural Resources,University of Arizona, Tucson; Arizona Wildlife Linkages Working Group. 2006. Arizona's Wildlife Linkages Assessment. <azdot.gov> (accessed April 5, 2014).

The Sonoran paloverde mixed cacti/Sonoran creosote-bursage community is distinguished by the presence of paloverde trees and various cacti and shrubs, along with creosotebush and triangle bur ragweed. This community is represented in the project limits along the western end of the South Mountains, within SMPP, and undeveloped areas along Pecos Road. Vegetation occurring in this community includes western honey mesquite (*Prosopis glandulosa*), foothills paloverde (*Parkinsonia microphylla*), ironwood (*Olneya tesota*), catclaw acacia (*Acacia greggii*), creosotebush, triangle bur ragweed, fourwing saltbush (*Atriplex canescens*), cattle saltbush (*Atriplex polycarpa*), desert broom, ocotillo (*Fouquieria splendens*), brittlebush, saguaro (*Carnegiea gigantea*), buckhorn cholla (*Cylindropuntia acanthocarpa*), hedgehog cactus (*Echinocereus* spp.), barrel cactus (*Ferocactus* spp.), and prickly pear (*Opuntia* spp.).

Within the northern portion of the project, natural habitat in the project limits only occurs at the Salt River, with agricultural fields and development occupying the remainder of the project limits (Figure 2). The portion of the project limits within the South Mountains is undeveloped and the remainder includes the existing Pecos Road, agricultural fields, some housing development, and undeveloped segments (Figure 3). Much of the project limits have not been developed, in anticipation of the freeway construction; however, development has occurred up to the project limits with the exception of the Community lands that are mainly agricultural fields or undeveloped.

The project limits cross the Salt River, which is a Water of the United States, near the 61st Avenue alignment. The Salt River is the largest tributary to the Gila River, which is also a Water of the United States. The junction of the Salt and Gila rivers is west of the project area (Figure 1). Within the Phoenix metropolitan area, the Salt River has been highly disturbed as a result of diversion of stream flows and mining within the channel. Most of the commercial and industrial businesses near and within the Salt River are sand and gravel companies that extract materials from the riverbed. Much of the area surrounding the Salt River has been converted for agriculture, industrial, and residential land uses.

Several gravel mining pits located along the Salt River are located within and adjacent to the project limits (Figure 2). Many of these contain intercepted groundwater that persists depending on mining activities and drought conditions. A field investigation in the summer and fall of 2013 and aerial imagery showed that the mining pit within the Salt River project limits was essentially dry during the entire 2013 calendar year (Figure 2). Field investigations also occurred in 2003 and 2009. Historic aerials from 2003 show there was no water in the mining pond in the project limits and the mining activities were manipulating the river channel. Since that time, the mining activities have changed the configuration of the channel and water has entered the depressions in varying amounts and subsequently dried many times, with no consistent water levels. In 2010 water completely filled many of the mining ponds when much of the river channel was inundated. Since that time, the water levels have continuously lowered until the mining ponds dried up near the end of 2012, and have been dry since. Mining pits farther upstream and downstream continued to hold water in varying extents and levels. Little vegetation is present along the edges of the pits because the embankments are often steep and water levels fluctuate too greatly to allow hydrophytic vegetation to become established; therefore, jurisdictional wetlands, as defined in Section 404 of the Clean Water Act, do not exist within or adjacent to the project limits. Although vegetation densities may increase near mining pits that are able to remain undisturbed for longer periods of time, mining activities and changing water levels within this section of the Salt River prevent riparian communities from developing. This is unlike the

downstream areas such as the Pee Posh Wetlands, over 2 miles downstream, and the 91st Avenue Wastewater Treatment Plant's Tres Rios wetlands, approximately 4 miles downstream, that have formed or were constructed within the Salt River (Figure 2). Discharges from agricultural fields and urban runoff into the Pee Posh Wetlands and treated wastewater from the 91st Avenue treatment plant has allowed riparian plant communities and wetlands to thrive. The wetlands provide foraging and nesting sites for waterbirds and other wildlife species that require wetland habitat conditions. Wetlands and riparian plant communities are also located approximately 6 miles upstream from the project limits, within the Rio Salado Habitat Restoration Area. Vegetation within and adjacent to the Salt River within the project area is representative of the Sonoran creosote desertscrub plant community.

The Laveen Area Conveyance Channel, located south of Baseline Road, is another major drainage feature crossing the project limits (Figure 2). This approximately 160-foot-wide channel is a regional flood control facility constructed to convey 100-year floods within the Laveen area to the Salt River and also conveys regular nuisance flows from agricultural irrigation and urban runoff. This nuisance water provides regular water to support the Pee Posh Wetlands located within the Salt River on Community land approximately 2.5 miles downstream from the project limits (Figure 2). The channel and associated basins are grass-lined and the center low-flow channel is concrete lined. Agricultural fields and housing developments border the Laveen Area Conveyance Channel. The project would not disrupt flows within the Laveen Area Conveyance Channel and there is no connection between upstream construction and the potential loss of riparian and wetland plant and animal species, including fish species used as forage by nesting eagles, since the urban and agricultural runoff would continue to support the Pee Posh wetlands as long as water is conveyed within the Laveen Area Conveyance Channel.

Natural and human-altered ephemeral drainages flow south or southwest from the South Mountains (Figure 3) and eventually discharge to either the Gila River or to fallow agricultural fields on Community land. These natural drainages typically support xeroriparian vegetation, including paloverde, ironwood, mesquite, and invasive tamarisk. Many of the ephemeral drainages are Waters of the United States. Most of these drainages and adjacent land have been altered as a result of development and the construction of Pecos Road (Figure 3).

4. SPECIES IDENTIFICATION

The U.S. Fish and Wildlife Service (USFWS) list of federally protected species for Maricopa County, Arizona (accessed March 5, 2014), was reviewed by a qualified biologist (Kurt Watzek, HDR Engineering, Inc.) to determine the potential for these species and/or suitable habitat to occur in the project area. The county list identifies 17 federally protected species. Of these, 12 species are listed as threatened or endangered, 1 is proposed threatened, and 4 are candidate species.

Four of the 17 federally listed species have the potential to occur in the project area based on an evaluation of potential suitable habitat present. The bald eagle, which is federally protected under the Bald and Golden Eagle Protection Act, is known to occur in the project area. For these reasons, the following species will be analyzed in detail:

Common Name	Scientific Name	Federal Listing
Yuma clapper rail	*Rallus longirostris yumanensis*	Endangered
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	Proposed Threatened
Sonoran desert tortoise	*Gopherus agassizii*	Candidate
Tucson shovel-nosed snake	*Chionactis occipitalis klauberi*	Candidate
Bald eagle	*Haliaeetus leucocephalus*	Bald and Golden Eagle Protection Act
Golden eagle	*Aquila chrysaetos*	Bald and Golden Eagle Protection Act

No federally designated critical habitat occurs in the project area.

Species included in the USFWS list of protected species for Maricopa County but excluded from further evaluation are addressed in Table 1.

Table 1. Federally Listed Species for Maricopa County Excluded from Further Analysis for the Preferred Alternative and Reasons for Exclusion

Common Name *Scientific Name*	Status	Habitat Requirements	Exclusion Justification
Bird Species			
California least tern *Sterna antillarum browni*	Endangered	Bare or sparsely vegetated sand, sandbars, gravel pits, or exposed flats along shorelines of inland rivers, lakes, reservoirs, or drainage systems Elevation: <2,000 feet	No suitable habitat in the project area; most likely to occur as migrants; lack of adequate water features in project area to support nesting and feeding areas.
Mexican spotted owl *Strix occidentalis lucida*	Threatened	Canyons and dense forests Elevation: 4,100 to 9,000 feet	No suitable habitat in the project area; no canyons or dense forests.
Southwestern willow flycatcher *Empidonax traillii extimus*	Endangered	Riparian communities along rivers and streams with dense canopy cover Elevation: <8,500 feet	No suitable riparian habitat within project area.
Sprague's pipit *Anthus spragueii*	Candidate	Native grasslands with vegetation of intermediate height and lacking woody shrubs Elevation: <5,000 feet	No suitable habitat in the project area; not known to breed in Arizona; in Arizona found wintering mainly in the southeastern grasslands; only a few wintering individuals have been found in alfalfa fields near Phoenix (AGFD 2010a).

Common Name *Scientific Name*	Status	Habitat Requirements	Exclusion Justification
Plant Species			
Acuna cactus *Echinomastus erectocentrus* var. *acunensis*	Endangered	Well-drained knolls and gravel ridges in Palo Verde–Saguaro Association of the Arizona Upland subdivision of the Sonoran Desert Elevation: 1,198 to 3,773 feet	No suitable habitat in the project area; no well-drained knolls or gravel ridges in Palo Verde–Saguaro Association of the Arizona Upland subdivision of the Sonoran Desert in project area. [1]
Plant Species			
Arizona cliffrose *Purshia subintegra*	Endangered	Rolling, rocky, white limestone lakebed deposits Elevation: <4,000 feet	No suitable habitat in the project area; no limestone lakebed deposits.
Mammal Species			
lesser long-nosed bat *Leptonycteris curasoae yerbabuenae*	Endangered	Desert scrub habitat; roost in caves, abandoned mines, and unoccupied buildings at the base of mountains where agave and columnar cacti are present Elevation: 1,600 to 7,500 feet	No suitable habitat in the project area; only scattered landscaped areas with limited agaves and columnar cacti present.
Sonoran pronghorn *Antilocapra americana sonoriensis*	Endangered	Alluvial valleys with Sonoran creosotebush-bursage and Sonoran paloverde-mixed cacti/Sonoran creosotebush-bursage associations Elevation: 2,000 to 4,000 feet	Suitable habitat in the project area, but species will not be affected as area is close to urban development; species is not known to occur in the project vicinity.
Fish Species			
desert pupfish *Cyprinodon macularius*	Endangered	Shallow springs, small streams, and marshes Elevation: <4,000 feet	No suitable habitat in the project area; natural populations no longer found in Arizona; introduced populations in Graham, Yavapai, and Santa Cruz counties (AGFD 2001a).
Gila topminnow *Poeciliopsis occidentalis occidentalis*	Endangered	Small streams, springs, and cienegas with vegetated shallows Elevation: <4,500 feet	No suitable habitat in the project area; no longer found in the Salt River Basin (USFWS 1998).
razorback sucker *Xyrauchen texanus*	Endangered	Riverine and lacustrine areas, generally not in fast-moving water; may use backwaters Elevation: <6,000 feet	No suitable habitat in the project area; natural populations only in Lakes Mohave, Mead, and Havasu (AGFD 2002a).

[1] *Federal Register* 78(190):60608–60652, October 1, 2013. Endangered and Threatened Wildlife and Plants; Endangered Species Status for *Echinomastus erectocentrus* var. *acunensis* (Acun˜a Cactus) and *Pediocactus peeblesianus* var. *fickeiseniae* (Fickeisen Plains Cactus) Throughout Their Ranges; Final Rule

Common Name *Scientific Name*	Status	Habitat Requirements	Exclusion Justification
roundtail chub *Gila robusta*	Candidate	Cool to warm waters of rivers and streams; often occupy deepest pools and eddies of large streams Elevation: 1,000 to 7,500 feet	No suitable habitat occurs in the project area; populations in Salt River occur upstream, above dams (AGFD 2002b).
woundfin *Plagopterus argentissimus*	Endangered	Shallow, warm, turbid, and fast-flowing water Elevation: <4,500 feet	No suitable habitat in the project area; experimental nonessential populations reintroduced in portions of Gila River have not been successful (AGFD 2000).

Source: U.S. Fish and Wildlife Service (USFWS) list of threatened and endangered species in Maricopa County, <fws.gov/southwest/es/arizona/Documents/CountyLists/Maricopa.pdf>; species status confirmed using the USFWS Information, Planning, and Conservation System Web site <ecos.fws.gov/ipac>; accessed on July 29, 2014.

5. SPECIES EVALUATION

To assess the possible effects the proposed project may have on the federally listed species in the project area, historical species accounts, recent species accounts, and recent field survey data were reviewed. Field habitat assessments were conducted for each species based on the elements required to sustain the species. A summary of the ecology and biology and an evaluation of potential effects from the proposed project for each species are discussed in the following sections.

Yuma Clapper Rail

Yuma clapper rail (*Rallus longirostris yumanensis*) Family: Rallidae

The Yuma clapper rail, a marsh bird, was listed as endangered under legislation enacted in March 1967.[2] In 1983, a Recovery Plan was completed; however the recommendations are now outdated and a Draft Recovery Plan (First Revision) was released in 2010 (USFWS 2009). Critical habitat has not been designated for the species.

Life History Information

The Yuma clapper rail is a 14- to 16-inch-long marsh bird with a curved-down beak, a slate brown color above, and light cinnamon underparts and barred flanks. Typically, the Yuma clapper rail is a migratory species that appears in Arizona from February to mid-September (USFWS 2009). A small, remnant population of the Yuma clapper rail is known to winter along the lower reaches of the Colorado River (USFWS 2009), while the population along the Gila River near Phoenix may be more migratory as individuals have not been documented outside of the breeding season (Corman and Wise-Gervais 2005). This species was not known in Arizona prior to 1902, but it is suspected that habitation along many of the rivers occurred after dams created more favorable habitats. Currently, the Yuma clapper rail is found along the Lower

[2] *Federal Register*, 32(48), 4001, March 11, 1967. Office of the Secretary: Native Fish and Wildlife Endangered Species.

Colorado River system, from Lake Mead south to Mexico; on the Salt and Gila river system upstream to the confluence with the Verde River; at Picacho Reservoir; and at the confluence of Tonto Creek Basin and Roosevelt Lake (USFWS 2006).

In general, the Yuma clapper rail inhabits freshwater or brackish marshes and occurs along streams below 4,500 feet amsl. Shallow waters near uplands consisting of dense stands of cattails, sedges, bulrushes, and other wetland vegetation are preferred habitats (Haynes and Schuetze 1997; USFWS 2009). Habitat requirements include wet substructures such as mudflats, sandbars, or slough bottoms. Members of the species nest in riverine wetlands that were historically exposed to periodic flooding (Haynes and Schuetze 1997). Preferred nest sites occur in the transitional zone between marsh and uplands dominated by dense herbaceous or woody vegetation at least 15 inches in height. Nests are often located at the base of a shrub or on dry hummocks. In Arizona, studies determined that sites with high surface water coverage, low stem counts, and moderate water depth are used for foraging during nesting while sites with high stem counts/density and shallower water near shorelines were used for nesting (Conway 1990).

The Yuma clapper rail feeds primarily at low tide in marshes and along stream banks, especially during low flow regimes. Introduced crayfish have become a common food source (Haynes and Schuetze 1997). The Yuma clapper rail also feeds on fish, frogs, freshwater clams and shrimp, spiders, crickets, grasshoppers, water beetles, dragonflies, aquatic plant fruits and seeds, bird eggs, and crustaceans.

Monogamous Yuma clapper rail pairs typically breed once per season, establishing a nesting territory during the month of April. However, because the environmental conditions in Arizona provide for a Lower Colorado River population to reside year round, the Yuma clapper rail may breed and nest more than once per season. The resident Yuma clapper rail population can start establishing territories in late February and nest by mid-March. The breeding season can last until the end of July, with eggs hatching between April and July. Juveniles follow adults through the marsh within 48 hours of hatching and are independent of adults within 35 to 42 days after hatching (Eddleman and Conway 1998).

Threats to the species include destruction and modification of marsh/wetland habitat through river channelization, dredging, and flooding/drying of marshes; diversion of water sources; wildfires; toxic levels of heavy metals, primarily selenium (AGFD 2006a); and predation. Most incidents of natural mortality have been attributable to predation during post-breeding periods and in the winter (Tacha and Braun 1994) and likely result from an increase in wintering raptors, more movement by Yuma clapper rails as they seasonally alter their habitat, and changes in water levels that result in more open forage areas (Eddleman 1989).

Survey History

The Yuma clapper rail's current range in Arizona encompasses several major river drainages in central and southwestern Arizona, including the lower Salt and Gila rivers. Within the project area, breeding pairs have been documented from the 91st Avenue Wastewater Treatment Plant on the Salt River west to the confluence of the Salt and Gila rivers (Maricopa Audubon Society 2001). Yuma clapper rails continue to be detected in the project vicinity; however, there have been no recent detections near 83rd Avenue, and the Yuma clapper rail habitat downstream of the 91st Avenue Wastewater Treatment Plant has been altered by the Tres Rios project, which has diverted water away from the ponds. Surveys are not conducted downstream of 107th

Avenue because the habitat quality is poor and are not conducted upstream of 83rd Avenue because the area is too heavily disturbed by mining (Leslie Fitzpatrick, USFWS, personal communication to Kurt Watzek, HDR Engineering, Inc., on January 30, 2014). The most recent known Yuma clapper rail occurrences have been near 101st Avenue, over 5 miles from the project limits.

Habitat Evaluation and Suitability

Habitat requirements for the Yuma clapper rail include freshwater and brackish marsh habitat, with nests built in dense vegetation close to the water's edge. Constructed wetlands at the 91st Avenue Wastewater Treatment Plant and wetlands within the Salt River channel, created by the treatment plant discharges, provide marsh habitat for the Yuma clapper rail. Upstream from the 91st Avenue Wastewater Treatment Plant, several large artificial ponds have developed in the Salt River as a result of active gravel mining operations (Figure 2). Although these ponds provide some value as aquatic habitat for waterbirds, they lack the dense marshland vegetation required by Yuma clapper rails for foraging and nesting. No additional potential habitat for the Yuma clapper rail exists within the Salt River near the project limits. Furthermore, the future of these ponds is uncertain and would be expected to change with ongoing gravel mining operations.

Analysis and Determination of Effects

Direct and Indirect Effects

Direct effects such as noise and disturbance attributable to increased activity in the project area would be negligible because of an approximately 2.5-mile separation between the nearest potential Yuma clapper rail habitat and the project limits. There would be no other direct effects to the Yuma clapper rail or its habitat as a result of the proposed project.

Indirect effects of the proposed project may include increased development in the area after construction is complete; however, development is expected to continue within the project area with or without the proposed project.

Interrelated and Interdependent Actions

Over time, this project as proposed would cause crossroad interchanges to be constructed and intersecting roads to be improved to provide access to the SMTC. This could create additional disturbance to Yuma clapper rails near the Salt River; however, this would also depend on the rate and type of development in the area requiring access to the SMTC. This project, as proposed, has no interdependent actions that would affect the Yuma clapper rail or its habitat.

Cumulative Effects

Cumulative effects on the Yuma clapper rail resulting from continued development throughout the area may include noise impacts. Also, as development increases in the area, the water discharge from the 91st Avenue Wastewater Treatment Plant is expected to increase, potentially improving habitat conditions downstream for the Yuma clapper rail.

Determination

The proposed project will have no effect on the Yuma clapper rail or its habitat. This determination is based on the following rationale:

1. There are no documented occurrences of Yuma clapper rails within 2.5 miles of the project limits.
2. There is no suitable habitat for the Yuma clapper rail in the project area.

Yellow-Billed Cuckoo

Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) Family: Cuculidae

The yellow-billed cuckoo's western distinct population segment was listed as a proposed threatened species on October 3, 2013.[3] Yellow-billed cuckoos are currently protected under the Migratory Bird Treaty Act.

Life History Information

The yellow-billed cuckoo is a medium-sized bird roughly 12 inches in length. It has a slender, long-tailed profile, with grayish-brown plumage above and white below (USFWS 2001). They have rufous primaries and six spots of black and white located on their tail feathers. When perching, they are easily distinguished by their two inner toes, which point forward, and their two outer toes, which are reversed. The moderately long, curved bill has a black upper mandible and a yellow- to orange-yellow lower mandible.

The yellow-billed cuckoo historically bred throughout riparian systems of western North America. An accurate determination of the historic abundance of the Western yellow-billed cuckoo population has been difficult to ascertain because of the limited numbers of recorded observations and the secretive nature of the species (Hughes 1999). In Arizona, the yellow-billed cuckoo was historically widespread and described as locally common (Corman and Magill 2000). Populations are greatly reduced and continue to decline (AGFD 2002c). Major declines are likely attributable to loss and fragmentation of riparian habitat from inundation by reservoirs and flood control activities, conversion of suitable habitat to agricultural land and urban development, and the continued degradation and loss of breeding habitat (Laymon and Halterman 1987).

In Arizona and New Mexico, nesting activities for this neotropical migrant begin in mid- to late May, with breeding usually beginning in mid-June and ending in August (Hughes 1999). Eggs are pale bluish-green with clutches ranging from one to five eggs that are incubated for 9 to 11 days. The young fledge after 5 to 8 days, completing the nesting cycle in roughly 3 weeks (Ehrlich et al. 1988). Breeding habitat in Arizona includes large blocks of mature riparian communities consisting of dense cottonwood-willow groves and mesquite bosques. The yellow-billed cuckoo prefers habitat patches greater than 42 acres in size, with a minimum of 7.4 acres of closed canopy broad-leaf vegetation (Ehrlich et al. 1988). Yellow-billed cuckoo are much less common in sycamore/cottonwood habitat (46.2 percent occupancy), sycamore/alder/

[3] *Federal Register*, 78(248), 78321–78322, December 26, 2013. Endangered and Threatened Wildlife and Plants; Proposed Threatened Status for the Western Distinct Population Segment of the Yellow-billed Cuckoo (*Coccyzus americanus*).

willow/ash/walnut habitat (33.3 percent occupancy), and habitat consisting of 75 percent tamarisk cover (33.3 percent occupancy) (Corman and Magill 2000).

The yellow-billed cuckoo is easily distinguished by the "kowlp" vocalizations. Known calls of the species include "coos," usually followed by the "kowlp" notes, and variations of the "kowlp" call (Hughes 1999).

Survey History

Yellow-billed cuckoo numbers in 1999 were substantially less than previous estimates for Arizona as habitat has declined. In a statewide survey, 172 yellow-billed cuckoo pairs and 81 single birds were located in Arizona in 1999 (Corman and Magill 2000). While the survey did not cover the entire state, it did show that yellow-billed cuckoo numbers were down from previous surveys.[4] Within the project area, yellow-billed cuckoos are known to inhabit portions of the Salt and Gila rivers between 83rd and 115th avenues (Maricopa Audubon Society 2001). Surveys have not been conducted upstream of the 91st Avenue Wastewater Treatment Plant because cuckoo habitat is degraded (Susan Sferra, AGFD, personal communication to Kurt Watzek, HDR Engineering, Inc., on February 4, 2014). Based on available data, yellow-billed cuckoo numbers have decreased by 70 to 80 percent over the last 30 years.[5]

Habitat Evaluation and Suitability

Historically, the lower Salt River supported mature riparian woodlands that would have provided suitable habitat for the yellow-billed cuckoo. More recently, habitat alteration and disruption of water flow in the urban portion of the Salt River have resulted in the loss of suitable habitat for this species across most of the Phoenix metropolitan area. A few mature riparian trees are scattered throughout the riverbed in the project vicinity, but they do not provide the dense gallery forests suitable for yellow-billed cuckoo. Suitable habitat exists downstream from the 91st Avenue Wastewater Treatment Plant and the confluence of the Salt and Gila rivers. Within the Salt River channel, marginally suitable habitat occurs along a gravel mining pit more than 2.5 miles downstream of the project area, east of 83rd Avenue (Figure 2). Currently the trees include a mix of primarily tamarisk with some willow (*Salix* spp.) species in closed canopy blocks 2 to 4 acres in size. It is anticipated that, over time, tamarisk would dominate at the pit, making the habitat less attractive to the yellow-billed cuckoo, particularly since more suitable habitat exists 1 mile farther downstream. No suitable habitat for the yellow-billed cuckoo exists within the project limits.

Analysis and Determination of Effects

Direct and Indirect Effects

No areas with closed canopy broad-leaf vegetation over 5 acres occur within 2.5 miles of the project area. Because of the distance to marginally suitable habitat, and the absence of suitable

[4] *Federal Register*, 78(192), 61222–61665, October 3, 2013. Endangered and Threatened Wildlife and Plants; Proposed Threatened Status for the Western Distinct Population Segment of the Yellow-billed Cuckoo (*Coccyzus americanus*).
[5] *Federal Register*, 78(192), 61222–61665, October 3, 2013.

habitat within the project area, the proposed project will not directly affect the yellow-billed cuckoo or its habitat.

Direct effects such as noise and increased activity in the project area would be unlikely because of the 2.5-mile separation between the nearest suitable habitat and the project area. It is unlikely that cuckoos would inhabit the marginally suitable habitat that may occur closer to the project area because of the small size of the tree blocks and tree species composition.

Indirect effects of the proposed project may include increased development in the area after construction is complete; however, development is expected to continue within the project area with or without the proposed project.

Interrelated and Interdependent Actions

Over time, this project as proposed would cause crossroad interchanges to be constructed and intersecting roads to be improved to provide access to the SMTC. This could create additional disturbance to yellow-billed cuckoos near the Salt River; however, this would also depend on the rate and type of development in the area requiring access to the SMTC. This project, as proposed, has no interdependent actions that would affect the yellow-billed cuckoo.

Cumulative Effects

Cumulative effects on the yellow-billed cuckoo resulting from continued development throughout the area may include noise impacts. Also, as development increases in the area, the water discharge from the 91st Avenue Wastewater Treatment Plant is expected to increase, potentially improving habitat conditions downstream for the yellow-billed cuckoo.

Determination

The proposed project will have no effect on the yellow-billed cuckoo or its habitat. This determination is based on the following rationale:

1. There are no documented occurrences of yellow-billed cuckoos within 2.5 miles of the project limits.
2. There is no suitable habitat for the yellow-billed cuckoo in the project area.
3. Although marginally suitable habitat is in the project vicinity, there are no areas with closed canopy broad-leaf vegetation measuring over 5 acres within 2.5 miles. The closest marginal habitat occurs at a mining pit in the Salt River over 2.5 miles downstream.

Sonoran Desert Tortoise

Desert tortoise (*Gopherus morafkai*) Family: Testudinidae

The Sonoran population of desert tortoises was evaluated as a distinct population segment and was listed as a candidate species in December 2010.[6] This discussion describes populations located east and south of the Colorado River in Arizona.

[6] *Federal Register*, 75(239), 78094–78146, December 14, 2010. Endangered and Threatened Wildlife and Plants; 12-month Finding on a Petition to List the Sonoran Population of the Desert Tortoise as Endangered or Threatened.

Life History Information

The Sonoran desert tortoise has a brownish shell 8 to 15 inches in length, distinctly patterned with growth lines and a yellow plastron (AGFD 1996, 2010b). The forelimbs are flattened for digging and covered with distinct scales, and the hind limbs are stocky and stump-like. Males are distinguished from females by their elongated throat shields (gular projections), a concave plastron, larger size, and chin glands that are visible on each side of the lower jaw, becoming more visible during the breeding season (AGFD 1996, 2010b). The Sonoran desert tortoise is diurnal and most active during the summer monsoon and will hibernate during the cooler winter months. Temperature and precipitation appear to be important factors in anticipating tortoise activity levels.[7]

Within the United States, the Sonoran desert tortoise occurs exclusively in Arizona. The overall Sonoran population extends into Mexico—reaching as far south as the vicinity of Guaymas.[8] Suitable habitat for this species includes rocky, steep slopes and bajadas in areas of Sonoran paloverde-mixed cacti desertscrub; however, habitat with loose soil characterizes the highest-quality habitat. The ability to take shelter from the heat in summer and cold in winter is one of the most important factors for the desert tortoise and is the reason the presence of Sonoran desert tortoise populations in suitable habitat is closely related to the presence of available burrows or potential burrow sites. Most often, burrows are excavated below rocks and boulders. Although Sonoran desert tortoises establish a home range around their burrows, the tortoise has been documented making long-distance movements (up to 20 miles) between populations in adjacent mountain ranges (AGFD 2010b).[9]

Females lay one clutch of 1 to 12 eggs per year, although they may not produce a clutch every year. The eggs hatch in September and October, and the young disperse. Threats to this species include predation, illegal collection, loss of habitat attributable to development, degradation of habitat attributable to human activities, and nonnative plant species invasions (AGFD 2010b).

Survey History

Based on correspondence with Susan Schuetze with AGFD on June 24, 2011, observations of tortoises were documented within the project area on the southern side of the South Mountains in the 1990s. Darren Riedle, formerly with AGFD, indicated a 2004 survey of Phoenix Mountain Parks documented five Sonoran desert tortoises in SMPP (personal communication to Kris Gade, ADOT, on April 4, 2014).

Habitat Evaluation and Suitability

SMPP is an approximately 16,600-acre preserve encompassing the South Mountains. The project area includes Sonoran paloverde-mixed cacti desertscrub vegetation associated with the rocky, steep slopes of the South Mountains and their foothills. These areas provide suitable habitat for the Sonoran desert tortoise (AGFD 2014a; Figure 3); however, the habitat, roughly between 24th Street and 17th Avenue is isolated because of irrigation canals and cultivated fields on Community land to the south of the project limits and Pecos Road and residential developments

[7] *Federal Register*, 75(239), 78094–78146, December 14, 2010.
[8] *Federal Register*, 75(239), 78094–78146, December 14, 2010.
[9] *Federal Register*, 75(239), 78094–78146, December 14, 2010.

to the north. Along the western end of the South Mountains, an approximately 2-mile-long section of the project limits, between Pecos Road and 50th Avenue, provides suitable desert tortoise habitat, barrier free, and contiguous with SMPP (Figure 3). This area is characterized by alluvial fans and small canyons between a series of descending rocky ridges and slopes. This area is identified as Landscape Movement Area 53, and is contiguous to Riparian Movement Area 68 (Figure 4); it provides a movement corridor through the area (AGFD 2011a). The remainder of the project area is not suitable habitat for the Sonoran desert tortoise because land cultivation has removed desertscrub habitat and because of urban and suburban development. Washes, when unobstructed, may provide dispersal routes for desert tortoises, even in developed areas.

Analysis and Determination of Effects

Direct and Indirect Effects

The project would cross the foothills and bajadas on the western end of the South Mountains, potentially causing direct mortality to the Sonoran desert tortoise during construction and operation of the project. Construction may directly affect Sonoran desert tortoise individuals, their burrows and food sources, and/or cover habitat. If the project is constructed, suitable habitat between Chandler Boulevard and 17th Avenue would also be affected by an access road that would be built for a residential neighborhood that would otherwise be isolated from street access (Figure 3). Direct effects to desert tortoise from the access road construction would be similar to those for construction of the project. During roadway operation, direct effects would be related to vehicle strikes.

Ground-disturbing activities associated with construction and maintenance of the roadway could cause indirect effects by providing opportunities for invasive species to replace removed native plants, resulting in degraded habitat for Sonoran desert tortoises. Construction and operation of the project would also cause indirect effects by fragmenting habitat as a result of the physical barrier for tortoise movement between the South Mountains and adjacent habitat, a condition that currently exists around most of the South Mountains because of urban development. This could result in reduced potential for dispersal and mating between adjacent populations, altering the flow of genetic material for the local and regional population. This could lead to isolation of individuals in the South Mountains, which could experience inbreeding, less genetic variation, and a smaller or dwindling population. Indirect effects may also include increased development on Community land in the project area after construction is complete, causing similar effects as the proposed project. However, development is expected to continue within the project area with or without the proposed project, with the exception of the segment crossing SMPP.

Effects on the desert tortoise would be minimized by limiting construction-related activities to the proposed right-of-way and by maintaining natural vegetation where feasible. To minimize the degradation of habitat resulting from construction activities, the contractor would be responsible for implementing standard measures during construction to prevent the introduction and spread of invasive species. Additionally, disturbed soils that would not be landscaped would be seeded using species native to the project area. If Sonoran desert tortoises were encountered during construction, the contractor would follow the current agency guidance regarding encounters with Sonoran desert tortoises. In the area where the project would intersect the southwestern portion of the South Mountains, the project design would incorporate opportunities for wildlife movement between the South Mountains and the Gila River basin. Opportunities for

incorporating desert tortoise-friendly designs to facilitate passage through smaller culverts also exist and would be included where the potential for desert tortoises is likely. Approximately 226 acres of suitable desert tortoise habitat would be lost during construction of the project. The overall loss of suitable habitat for the Sonoran desert tortoise would be small when compared with the immediately adjacent, contiguous suitable habitat that encompasses over 17,000 acres within the undeveloped South Mountains, associated valleys, and bajadas, a loss of less than 2 percent of the suitable habitat in the project area.

Summary

The proposed project may affect a small number of individual Sonoran desert tortoise. The potential for impacts will be reduced through the use of mitigation measures to avoid and minimize impacts. The actual measures will be determined with input from USFWS, AGFD, and the Community's DEQ during the final design process. The following are examples of measures likely to be included in the final project, but may require updating depending on the legal listing status of the Sonoran desert tortoise at that time:

1. The proposed project would be designed to protect and maintain opportunities for wildlife movement between the South Mountains, the Gila River, and the Sierra Estrella. These opportunities would be located in the area where the proposed project would intersect the southwestern portion of the South Mountains. Some drainage structures incorporated into the roadway plans would be designed to accommodate multifunctional crossings in appropriate locations that would allow limited use by the Community and also serve wildlife. These crossing structures and associated fences would be designed to reduce the incidence of vehicle-wildlife collisions and reduce the impact of the proposed project on wildlife connectivity between the South Mountains, the Gila River, and the Sierra Estrella. ADOT would coordinate with USFWS, AGFD, and the Community's DEQ during the design phase regarding the potential for locating and designing wildlife-sensitive roadway structures.
2. For drainage structures such as culverts located in potential wildlife movement corridors, wildlife friendly design would be considered during final design. ADOT would coordinate with USFWS, AGFD, and the Community's DEQ during the design phase regarding the potential for locating and designing wildlife-sensitive roadway structures.
3. Prior to construction, ADOT would arrange for surveys to be completed for the Sonoran desert tortoise, Tucson shovel-nosed snake, bats, and other species as determined by ADOT or FHWA to be necessary.
4. If any Sonoran desert tortoises are encountered during construction, the contractor would adhere to the most current agency guidance regarding encounters with Sonoran desert tortoises.
5. ADOT would provide the contractor's personnel training regarding procedures for interactions with sensitive species that may be encountered during construction.

Mitigation measures included in the Final EIS related to protection of biological resources, including the Sonoran desert tortoise, are listed in Section 7 of this report.

Tucson Shovel-nosed Snake

Tucson shovel-nosed snake (*Chionactis occipitalis klauberi*) Family: Colubridae

USFWS announced in a 12-month finding petition that scientific evidence supported listing the Tucson shovel-nosed snake as either threatened or endangered throughout its range. As a result of other higher-priority actions, the Tucson shovel-nosed snake was listed as a candidate species in March 2010.[10]

The Tucson shovel-nosed snake is a subspecies within the western shovel-nosed family of snakes. It is a small, quick snake approximately 10 to 17 inches in length, with a shovel-shaped snout and a lower inset jaw, and with red, white, and black coloring that mimics coral snakes (Mahrdt et al. 2001). The Tucson shovel-nosed snake has a dark head crescent; is creamy-white or yellow, with the ventral surface usually lighter in color; has more than 21 dark brown to black primary cross bands on the body; has 4 to 14 pale brown bands on the tail; and reddish secondary bands with dark pigment, making them look brown or almost black. The species is distinguished from other similar-looking gartersnake species by primary cross bands that do not encircle the body and narrow secondary bands (Mahrdt et al. 2001).

The petition to list the Tucson shovel-nosed snake addresses the "intergrade zone" between the Tucson shovel-nosed snake and the Colorado shovel-nosed snake. The intergrade zone is an area of overlap between the ranges of two sub-species where species possess the characteristics that are intermediate between the two sub species or characteristics of each.[11] Because the distribution and intergrade zone have not been established for shovel-nosed snake subspecies, the currently recognized distribution by Mahrdt et al. (2001) is used as the best available science and is included in the petition. The Tucson shovel-nosed snake distribution may be revised at a later date when additional genetic and scientific information is available.

Tucson shovel-nosed snakes are a valley floor species and are found in creosote bush and mesquite habitats (Rosen 2003). With their shovel-nosed snout, they are adapted to moving through sand and soft soils; however, the Tucson shovel-nosed snake is typically found in areas with sandy loam soils and sparse gravel and is associated with the lower Colorado Valley subdivision of the Sonoran Desert (Rosen 2003). They feed frequently and mainly on scorpions, beetle larvae, spiders, centipedes, ants, and buried moth pupae (Mattison 1989; Rosen et al. 1996; SDCP 2004), with scorpions making up a majority of the snake's diet (Glass 1972).

The Tucson shovel-nosed snake moves using a sideways swaying motion, known as sand swimming (SDCP 2004; Stebbins 1985) either on or below the surface of the sand. During the winter, the species hibernates in subsurface burrows approximately 3 inches below the ground surface (Shaw 1953). In the spring/summer months, the species is surface active, and its activity peaks in May and ends abruptly in late June (Rosen 2003). During its active period, the species is active in the morning and just before sunset, with an intense period of surface activity between 1900 hr and 2100 hr (Rosen 2003). In general, activity is primarily at air temperatures between 70 and 90 degrees Fahrenheit (°F) and when surface temperatures in the sun are between 75 and 115°F (Klauber 1951; Rorabaugh 2002). During the day, the Tucson shovel-nosed snake will rest under the sand surface below a creosote bush or under objects such as boards (SDCP 2004).

[10] *Federal Register*, 75(61), 16050–16065, March 31, 2010. Endangered and Threatened Wildlife and Plants; 12-month Finding on a Petition to List the Tucson Shovel-nosed Snake as Endangered or Threatened with Critical Habitat.

[11] *Federal Register*, 75(61), 16050–16065, March 31, 2010.

Little is known about the reproduction of the Tucson shovel-nosed snake because no species-specific reproductive studies have been conducted. Other species of western shovel-nosed snake are oviparous and lay clutches of two to nine eggs in the summer (Brennan and Holycross 2006; Goldberg 1997; SDCP 2004; Stebbins 1985), and it is likely that it is similar for this subspecies. The breeding period is believed to be in May and June (Goldberg 1997).

Historically within Arizona, the snake occurred in valleys in the Sonoran and Mohave deserts below 2,200 feet in elevation with sandy, loamy soils (Lowe 1964). This included Pima County in the Avra and Santa Cruz valleys (Rosen 2003) and western Pinal and a portion of eastern Maricopa counties (Klauber 1951). Currently, the majority of the current range of the species is believed to occur between the Tucson and Phoenix metropolitan areas, especially west of Tucson northward along the Avra Valley in Pima County and north into eastern Maricopa County. The elevation range of the species is restricted to 775 to 1,662 feet amsl (AGFD 2008a).

The range-wide decline of Tucson shovel-nosed snake has been documented since the mid-1970s (Rosen 2003) and resulted from urban and suburban sprawl and agricultural development (Rosen 2003). Once habitat has been altered, plowed, or compacted, it is unknown whether it can be recovered for the species (SDCP 2004). Other threats to the Tucson shovel-nosed snake include the use of off-road vehicles that can crush snakes buried in sand or compact soils (SDCP 2004), construction of roads that fragment habitat and cause snake mortality, and livestock grazing that compacts soils and alters vegetative cover (SDCP 2004). The Tucson shovel-nosed snake is also documented prey for other species, such as the Colorado desert sidewinder (*Crotalus cerastes laterorepens*), loggerhead shrike (*Lanius ludovicianus*), and great horned owl (*Bubo virginianus*) (Center for Biological Diversity 2004).

Survey History

The 2010 petition indicated that no systematic range-wide surveys have been conducted for the Tucson shovel-nosed snake (AGFD 2008a). Occupied habitat is thought to occur in southwestern Pinal County and northeastern Maricopa County, where the most recent records for the species occur.[12] AGFD's HabiMap tool[13] shows swaths of habitat for the Tucson shovel-nosed snake both within and adjacent to the project limits. Brian Wooldridge with USFWS indicated the project area occurs within suitable habitat for the Tucson shovel-nosed snake (personal communication to Kris Gade, ADOT, on April 7, 2014).

During the field visits, no Tucson shovel-nosed snakes were observed in the project area; however, no species-specific surveys were conducted, and the Tucson shovel-nosed snake is difficult to document without rigorous survey efforts (USFWS 2010).

Habitat Evaluation and Suitability

The Tucson shovel-nosed snake is typically found in creosote flats or undisturbed desertscrub (AGFD 2014a; Figures 2 and 3). Habitat no longer exists in areas where native vegetation has been converted to agriculture or suburban/urban development. However, recent information indicates that Tucson shovel-nosed snakes may use long-fallow agricultural lands where desert vegetation has begun to re-establish (Brian Wooldridge, USFWS, personal communication to

[12] *Federal Register*, 75(61), 16050–16065, March 31, 2010.
[13] http://www.habimap.org/habimap/

Kris Gade, ADOT, on April 7, 2014). Washes and the adjacent desertscrub may provide some habitat for the Tucson shovel-nosed snake. Habitat occurs in the area adjacent to the Salt River and within the project area in desertscrub habitat (Figure 3). Although this habitat is patchy in the Salt River, it does coincide with Riparian Movement Area 16 and with larger blocks of habitat along South Mountains that overlap with Landscape Movement Area 53. These areas are adjacent to the Gila River, identified as Riparian Movement Area 68 (Figure 4), and may provide a movement corridor through the area (AGFD 2011a).

Analysis and Determination of Effects

Direct and Indirect Effects

Construction of the proposed project has the potential to cause direct mortality from equipment and activities during construction and by vehicle traffic after project completion. Potential habitat and food sources would be removed, and displacement of individuals could occur as a result of constructing the project. The project area crosses the Salt River, pockets of desertscrub habitat, and areas adjacent to the South Mountains, potentially causing direct mortality during construction and operation of the freeway. Construction may affect the Tucson shovel-nosed snake by affecting individuals, food sources, and/or cover habitat. If the project is constructed, suitable habitat between Chandler Boulevard and 17th Avenue would also be affected by an access road that would be built for a residential neighborhood that would otherwise be isolated from street access (Figure 3). Direct effects to the Tucson shovel-nosed snake from the access road construction would be similar to those for construction of the project. During roadway operations, direct effects would be related to vehicle strikes.

Ground-disturbing activities associated with construction and maintenance of the roadway could cause indirect effects by providing opportunities for invasive species to replace removed native plants, resulting in degraded habitat for Tucson shovel-nosed snakes. Construction and operation of the project would also cause indirect effects by fragmenting habitat as a result of the physical barrier for snake movement between the South Mountains and adjacent habitat, a condition that currently exists around most of the South Mountains because of urban development. This could result in reduced potential for dispersal and mating between adjacent populations, altering the flow of genetic material for the local and regional population. This could lead to isolation of individuals in the South Mountains that could experience inbreeding, less genetic variation, and a smaller or dwindling population. Indirect effects may also include increased development on Community land in the project area after construction is complete, causing similar effects as the project. However, development is expected to continue within the project area with or without the proposed project, with the exception of the portion crossing SMPP.

Effects on the Tucson shovel-nosed snake would be minimized by limiting construction-related activities to the proposed right-of-way, maintaining natural vegetation where feasible, and working with USFWS, AGFD, and the Community's DEQ to develop mitigation such as preconstruction surveys, constructing funneling barriers, and designing culverts and underpasses with reptile-friendly designs to help prevent road mortality. To minimize the degradation of habitat resulting from construction activities, the contractor would be responsible for implementing standard measures during construction to prevent the introduction and spread of invasive species. Additionally, disturbed soils that would not be landscaped would be seeded using species native to the project area. Approximately 110 acres of suitable Tucson shovel-nosed snake habitat would be lost because of construction of the project. The overall loss of

suitable habitat for the Tucson shovel-nosed snake would be relatively small when compared with the approximately 17,000 acres of suitable habitat in the project area—less than 1 percent of habitat in the project area (Figures 2 and 3).

Summary

The proposed project may affect individual Tucson shovel-nosed snakes. The potential for impacts will be reduced through the use of mitigation measures to avoid and minimize impacts. The actual measures will be determined with input from USFWS, AGFD, and the Community's DEQ during the final design process. The following are examples of measures likely to be included in the final project, but may require updating depending on the legal listing status of the Tucson shovel-nosed snake at that time:

1. The proposed project would be designed to protect and maintain opportunities for wildlife movement between the South Mountains, the Gila River, and the Sierra Estrella. These opportunities would be located in the area where the proposed project would intersect the southwestern portion of the South Mountains. Some drainage structures incorporated into the roadway plans would be designed to accommodate multifunctional crossings in appropriate locations that would allow limited use by the Community and also serve wildlife. These crossing structures and associated fences would be designed to reduce the incidence of vehicle-wildlife collisions and reduce the impact of the proposed project on wildlife connectivity between the South Mountains, the Gila River, and the Sierra Estrella. ADOT would coordinate with USFWS, AGFD, and the Community's DEQ during the design phase regarding the potential for locating and designing wildlife-sensitive roadway structures.
2. For drainage structures such as culverts located in potential wildlife movement corridors, wildlife friendly design would be considered during final design. ADOT would coordinate with USFWS, AGFD, and the Community's DEQ during the design phase regarding the potential for locating and designing wildlife-sensitive roadway structures.
3. Prior to construction, ADOT would arrange for surveys to be completed for the Sonoran desert tortoise, Tucson shovel-nosed snake, bats and other species as determined by ADOT or FHWA to be necessary.
4. ADOT would provide the contractor's personnel training regarding procedures for interactions with sensitive species that may be encountered during construction.

Mitigation measures included in the Final EIS related to protection of biological resources, including the Tucson shovel-nosed snake, are listed in Section 7 of this report.

6. THE BALD AND GOLDEN EAGLE PROTECTION ACT

Bald eagle

The AGFD online environmental review tool was accessed on February 28, 2014 (AGFD 2014b), to obtain information regarding special status species occurrences in the project vicinity. The AGFD online environmental review tool indicated that the bald eagle – Sonoran Desert population (*Haliaeetus leucocephalus* pop. 3) is known to occur within 3 miles of the project limits.

The Sonoran Desert population of bald eagles was determined not to be a distinct population segment and, therefore, not a listable entity under the Endangered Species Act.[14] The Sonoran Desert population of the bald eagle was officially removed from the list on September 2, 2011, making the status for the desert bald eagles consistent with all other bald eagles that were removed from Endangered Species Act listing in June 2007. Federal protection for the bald eagle continues under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. The bald eagle is also a state wildlife species of concern. To guide protection for the bald eagle, the National Bald Eagle Management Guidelines (USFWS 2007) were developed to address human activities and their potential impacts on bald eagles. Although an activities' ultimate impact on eagles can vary depending on unique factors for the particular activity, geographic location, and individual eagles, the guidelines provide accepted practices, limits, and restrictions that are shown to maintain compliance with the laws affecting bald eagles.

Until 2010, nesting bald eagles had not been documented in the project vicinity; however, migrating bald eagles have occasionally occurred along the Salt River within 3 miles of the project limits (AGFD 2009). Bald eagles have been documented breeding in the East Valley prior to 2010, with a nest located approximately 18 miles east of the project limits near the State Route (SR) 101L and SR 202L interchange. In a telephone conversation with Kenneth Jacobson with AGFD on April 21, 2010, it was noted that a pair of eagles were observed successfully nesting near the confluence of the Salt and Gila rivers. The nest is located in the Pee Posh Wetlands on Community land. From 2010 to 2013, five young eagles successfully fledged, while two additional eaglets died as a result of a fire. The Pee Posh Wetlands were placed in a conservation easement through Community Council Resolution GR-129-10 to protect this important area.[15] The Pee Posh Wetlands is listed in the Southwestern Bald Eagle Management Committee's list of state-wide eagle breeding areas.

The Salt River within the project vicinity is located in a highly developed area surrounded by a mix of suburban, urban, and agricultural land uses. The exception is the Community, where development is not as intense and gravel mining has not altered the riverbed. The eagle nest in the Pee Posh Wetlands is located on the fringe of this intensive development and adjacent to the less developed land on the Community. Large trees for perching are absent along the Salt River near the project limits, but the Rio Salado Habitat Restoration farther upstream and the Tres Rios Ecosystem Restoration farther downstream provide suitable perching sites. Gravel mining pits in the project area that maintain water over a period of years provide foraging habitat; however, these pits become smaller during dry periods and competition with numerous other fish-eating birds such as herons, egrets, and cormorants can make these pits less productive habitat. Gravel pits with water occur approximately 0.5 mile upstream and approximately 1 mile downstream from the project area. A mining pit within the project limits was dry in 2013. The Pee Posh eagles' primary foraging areas are the sand and gravel pits east of their nest site along the Salt River and 75th Avenue road alignment,[16] approximately 2.5 miles from the project limits. The future of these ponds in active mining claims is uncertain and would be expected to change with ongoing gravel mining operations. Foraging habitat is present within the Salt River channel when

[14] *USFWS Bulletin*, September 2, 2011. Service Announces Bald Eagles Nesting in Sonoran Desert Area of Central Arizona Removed from the List of Endangered and Threatened Wildlife.
[15] Gila River Indian Community. 2013. Letter to South Mountain Study Team. Dated July 11, 2013.
[16] Gila River Indian Community. 2013. Letter to South Mountain Study Team. Dated July 11, 2013.

water is present; however, the Salt River channel is typically dry near the project limits. The absence of trees for perching and lack of water flows make the section of the Salt River within the project limits a low-quality habitat for bald eagle foraging.

Effects on breeding activity at the Pee Posh Wetlands nest site attributable to project construction noise and activity, or to traffic and noise after project completion, would be negligible because of the approximately 2.5-mile distance from the nest to the project limits, as well as the tolerance that these eagles have exhibited for an urban area. The successful nest (Southwestern Bald Eagle Management Committee 2012) near the SR 101L and SR 202L interchange is located within 2.5 miles of SR 101L and within 1 mile of SR 202L—two heavily traveled freeway segments. The 2007 National Bald Eagle Management Guidelines recommend a 660-foot buffer from road construction when there is no similar activity closer than 1 mile from a nest site and when the activity would be visible from the nest. The proposed project may cause bald eagles to alter their foraging activity because of the presence of a busy roadway corridor; however, the potential for foraging exists only if water is present and forage species are available. Since the potential for foraging habitat is uncertain in this portion of the Salt River from year to year and the same foraging opportunities would exist elsewhere along the Salt River when water is present, the effects on bald eagles are anticipated to be negligible. Additionally, the proposed project is not anticipated to affect the presence of forage species or the potential for forage species to occur and would not remove nesting habitat.

Sand and gravel mining will continue within the Salt River channel upstream from the 91st Avenue Wastewater Treatment Plant that is likely to both reduce and improve potential bald eagle foraging habitat. Habitat restoration projects and/or cessation of mining activities would likely improve foraging habitat in the project area. Cumulative effects on the bald eagle resulting from continued development throughout the vicinity may include noise impacts and alteration of potential foraging habitat. As development increases in the area, the water discharge from the 91st Avenue Wastewater Treatment Plant is expected to increase, potentially improving habitat conditions downstream for the bald eagle. Cessation of mining will also lead to improved bald eagle habitat.

Summary

The proposed project will not result in a "take" of bald eagles based on the following:

1. The proposed project will not eliminate foraging or nesting habitat.
2. There is a lack of quality habitat in the project area.
3. There will be no impacts on potential forage species.
4. The eagles in the project vicinity exhibit a tolerance for an urban area.
5. The approximately 2.5-mile distance to the nest site is far enough from the project limits to not disturb eagle breeding and nesting behavior.

Golden eagle

Although the golden eagle (*Aquila chrysaetos*) has the potential to occur in the project area for brief periods as a transient due to the species wide-ranging habit and large territory, suitable habitat to support the golden eagle does not exist in or adjacent to the project limits. The Bald and Golden Eagle Protection Act addresses the take of eagles as a result of direct disturbance to

individuals or their nests. The golden eagle does not inhabit the project area and only infrequently passes through the area. The proposed freeway would have no direct effect on the golden eagle or their nests.

Summary

The proposed project will not result in a "take" of golden eagles based on the following:

1. The proposed project will not eliminate foraging or nesting habitat.
2. There will be no impacts on potential forage species.

7. BIOLOGICAL RESOURCES MITIGATION MEASURES.

The following mitigation measures are included for the protection of all biological resources addressed in the Final EIS as well as in this Biological Evaluation and its appendices:

ADOT EPG, Roadside Development, and Design Responsibilities

- Protected native plants within the project limits would be affected by this project; therefore, the ADOT Roadside Development Section would determine whether Arizona Department of Agriculture notification would be needed. If notification were needed, the ADOT Roadside Development Section would send the notification at least 60 calendar days prior to the start of construction.
- The proposed project would be designed to protect and maintain opportunities for wildlife movement between the South Mountains, the Gila River, and the Sierra Estrella. These opportunities would be located in the area where the proposed project would intersect the southwestern portion of the South Mountains. Some drainage structures incorporated into the roadway plans would be designed to accommodate multifunctional crossings in appropriate locations that would allow limited use by the Community and also serve wildlife. These crossing structures and associated fences would be designed to reduce the incidence of vehicle-wildlife collisions and reduce the impact of the proposed project on wildlife connectivity between the South Mountains, the Gila River, and the Sierra Estrella. ADOT would coordinate with USFWS, AGFD, and the Community's DEQ during the design phase regarding the potential for locating and designing wildlife-sensitive roadway structures.
- For drainage structures such as culverts located in potential wildlife movement corridors, wildlife friendly design would be considered during final design. ADOT would coordinate with USFWS, AGFD, and the Community's DEQ during the design phase regarding the potential for locating and designing wildlife-sensitive roadway structures.
- All disturbed soils not paved that would not be landscaped or otherwise permanently stabilized by construction would be seeded using species native to the project vicinity.
- Prior to signing the EIS Record of Decision, the status of species and critical habitat proposed, listed, or designated under the Endangered Species Act would be reviewed. If new species have been proposed or listed following completion of the Biological Evaluation, an update to the Biological Evaluation would be prepared and any required consultation with the USFWS would be completed.

ADOT EPG, Roadside Development, and Design Responsibilities (continued)

- During final design of the project and within 90 days of approval to begin construction of each phase of the project, the status of species and critical habitat proposed, listed, or designated under the Endangered Species Act would be reviewed. If new species or critical habitat have been proposed, listed, or designated following completion of the Biological Evaluation, or if the potential effects on species or critical habitat from the project have changed from those described in the Biological Evaluation, an update to the Biological Evaluation would be prepared and any required consultation with the USFWS would be completed.
- Prior to construction, ADOT would arrange for surveys to be completed for the Sonoran desert tortoise, Tucson shovel-nosed snake, bats, and other species determined by ADOT or FHWA to be necessary.
- ADOT would provide the contractor's personnel training regarding procedures for interactions with sensitive species that may be encountered during construction.
- During the design phase, ADOT would coordinate with USFWS, AGFD, and the Community's DEQ and determine whether any additional species-specific mitigation measures would be required.
- During the design phase, ADOT would review and update biological requirements for the project, complete bird surveys as necessary, and develop mitigation measures to minimize potential impacts to birds protected under the Migratory Bird Treaty Act.

ADOT District and Contractor Responsibilities

- To prevent the introduction of invasive species seeds, the contractor would inspect all earthmoving and hauling equipment at the equipment storage facility and the equipment would be washed prior to entering the construction site.
- To prevent invasive species seeds from leaving the site, the contractor would inspect all construction equipment and remove all attached plant/vegetation and soil/mud debris prior to leaving the construction site.
- All disturbed soils not paved that would not be landscaped or otherwise permanently stabilized by construction would be seeded using species native to the project vicinity.
- Habitat impacts would be minimized by restricting construction activities to the minimum area necessary to perform the activities and by maintaining natural vegetation where possible.
- If any Sonoran desert tortoises were encountered during construction, the contractor would adhere to the most current agency guidance regarding encounters with Sonoran desert tortoises.
- The contractor shall adhere to the procedures for encounters with sensitive species that would include allowing the animal to leave of its own accord or contacting a trained person if the animal needed to be removed from the work area.

ADOT District and Contractor Responsibilities (continued)

- A biologist would be employed to complete a preconstruction survey for burrowing owls 96 hours prior to construction in all suitable habitat that will be disturbed. The biologist shall possess a burrowing owl survey protocol training certificate issued by AGFD. Upon completion of the survey, the survey results would be discussed with the ADOT biologist.
- If any burrowing owls are located in the work area, the contractor would immediately stop work at that location and notify the Engineer. The Engineer would contact the ADOT biologist to determine whether the owls could be avoided or must be relocated. The contractor would not work within 100 feet of any active burrow until the situation had been evaluated by the ADOT biologist. If the ADOT biologist determined that the owl must be relocated, a biologist holding a rehabilitation permit from the USFWS would relocate burrowing owls from the project area.
- If clearing, grubbing, or pruning of trees, shrubs, or cacti would occur between March 1 and August 31, a qualified biologist would conduct a bird nest search of all vegetation that would be cleared or pruned within 5 calendar days prior to vegetation clearing/pruning. If an active nest or nest cavity/hole were observed, the vegetation clearing/pruning would be delayed in the immediate vicinity until the nest is no longer active or a relocation permit would be obtained from USFWS by the contractor.

8. COORDINATION

Applicable land managing agencies were sent scoping letters requesting information for species concerns during the environmental clearance process. The following individuals were contacted:

- Mr. David L. Harlow, Field Supervisor of the USFWS Arizona Ecological Services Office in Phoenix, Arizona
- Ms. Sabra Schwartz, Coordinator of the AGFD Heritage Data Management System
- Ms. Ginger L. Ritter, Coordinator of the AGFD Heritage Data Management System

The following is a summary of the responses received as well as other responses during the process to update biological information during document development. The correspondences are included or available as noted on the cover sheet for Section VI of the appendix.

- The USFWS Arizona Ecological Services Office Field Supervisor, Mr. Harlow, replied on October 29, 2001, by letter, with the list of endangered, threatened, proposed, and candidate species and recommended protection of any riparian areas.
- The AGFD Heritage Data Management Coordinator, Ms. Schwartz, responded on January 18, 2002, with a letter and list of special-status species within 0.5 mile of the Study Area. Ms. Schwartz also indicted that there were no proposed or designated critical habitats in the vicinity of the Study Area.
- The AGFD Heritage Data Management Coordinator, Ms. Ritter, sent a letter and updated list of special-status species within 2 miles of the Study Area on October 25, 2004. Ms. Ritter also sent specific information regarding the Western burrowing owl.
- The AGFD Wildlife Manager Central Phoenix, Ms. Jontz, sent an email with initial comments related to the proposed wildlife crossings associated with the project. The email noted that due to expanding development in the area and lack of long-term corridors between

the South Mountains and Sierra Estrella, this project may not be the highest priority for wildlife crossings in the state.

- Kenneth Jacobson, AGFD Bald Eagle Management Coordinator, was contacted by phone on April 21, 2010, regarding bald eagles in the project vicinity and confirmed that an eagle was successfully nesting near the confluence of the Salt and Gila rivers.
- Ms. Schwartz, AGFD Heritage Data Management Program Coordinator, was contacted by e-mail on June 17, 2011, regarding species occurrences in the project vicinity, including the Sonoran desert tortoise. Sue Schuetze, AGFD Habitat Branch, Heritage Data Management System Data Manager, replied by e-mail on June 24, 2011, indicating that surveys documented the occurrence of many of the species many years ago but, without recent surveys, it is not known whether they are currently present.Bureau of Land Management (BLM) Realty acknowledged by letter on July 9, 2013, the project's crossing of the Salt River across BLM property and the involvement with the Rio Salado Oeste project.
- The Community Governor, Gregory Mendoza, sent a letter dated July 11, 2013, with comments on the Draft EIS and biological resources.
- The U.S. Environmental Protection Agency sent a letter dated July 23, 2013, with comments on the Draft EIS.
- The AGFD Habitat Branch Chief, Joyce Francis, sent a letter dated July 24, 2013, with comments on the Draft EIS and biological resources. AGFD in this letter requested additional analysis of species of greatest conservation need (SGCN) and habitat connectivity. This discussion is included in Appendices I and IV.
- The AGFD online environmental review tool was accessed on February 28, 2014, by Kurt Watzek, consultant biologist, to update information on special status species occurrences in the project area.
- Darren Riedle, consultant wildlife biologist, provided e-mail information to Kris Gade, PhD, ADOT Biologist, on April 4, 2014, regarding Sonoran desert tortoise surveys conducted in the mountains of the greater Phoenix area in 2004. Five tortoises were found in the South Mountains.
- Brian Wooldridge, USFWS Fish and Wildlife Biologist, provided an e-mail to Kris Gade, PhD, on April 7, 2014, indicating that "it would be hard to say that Tucson shovel-nosed snakes aren't in suitable habitat within your project limits."
- On May 14, 2014, the Biological Evaluation was submitted to USFWS for technical assistance and the Community for comment. A courtesy copy was also sent to AGFD.
- The USFWS Field Supervisor, Steven L. Spangle, sent a letter on June 10, 2014 in response to the Biological Evaluation. The USFWS provided technical assistance for addressing the Tucson shovel-nosed snake, Sonoran desert tortoise, and eagles and migratory birds. Mitigation measures were revised or clarified in response to the USFWS input.
- The Community sent a letter dated July 18, 2014, with comments on the Biological Evaluation related to the interests of the Community, cultural significance of wildlife to the Community, and a request for continued consultation with the Community. In response to the comments, the section titled *Culturally Sensitive Species* was added to the appendix, the scope of analysis of the BE (only the preferred alternative) in comparison to the EIS (larger Study Area) was emphasized in the text and figures, information was added to clarify the distance from the project limits to wetland areas in the project vicinity and that the project

will not disrupt water flows in the Laveen Area Conveyance Channel, additional details and a finding for the golden eagle were added to section 6, and additional clarification was added to the mitigation measures and description of wildlife connectivity.

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10. ADDITIONAL INFORMATION

Field notes, data sheets, and photographs are in the project file at the offices of HDR Engineering, Inc., and the ADOT Environmental Planning Group.

11. SIGNATURE

Prepared by: _____ Date: 7/31/2014
Kurt Watzek
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Approved by: _____ Date: 7/31/2014
Scott Stapp
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APPENDIX

I. Culturally Sensitive Species

Below is a list of animals which are culturally significant to the Community. This list was provided in the comments on the BE received from the Community on July 18, 2014; the comment letter is attached in the appendix of correspondence.

Table A-1. Community Identified Species

Species	O'dham Name	Cultural Significance[1]	BE Analysis Reference / Summary
Eagle (golden and bald)	*ba'ag*	The eagle is the most revered bird in Akimel O'Odham culture and identified in oral history and creation story.	No take, see Section 6. The Bald and Golden Eagle Protection Act, page 25
Yellow-billed cuckoo	*kadgam*	The yellow-billed cuckoo is mentioned in Akimel O'Odham oral history.	No effect, see Section 5. Species Evaluation, page 14
Bats (all species)	*nanakmel*	The bat holds a significance position in O'Odham culture and is identified in the Akimel O'Odham song culture.	Several bat species may be present within the project area. Impacts to bats could result from removal of forage plant species and removal of trees and rock crevices used for roosting habitat. Surveys for bats would be conducted prior to construction activities and construction personnel would receive training to minimize impacts to bats (see Section 7. Biological Resources Mitigation Measures, beginning on page 27). Bridges constructed for the project may provide roosting habitat for some species and freeway lights may attract insects that will in turn attract some bat species. Minimal impacts on bats are anticipated.
Burrowing owl	*kokoho*	The Akimel O'Odham identify the burrowing owl in oral history and ceremonial dance.	Burrows would be protected or owls relocated, see Appendix section IV. Migratory Bird Treaty Act, page A-10
Great horned owl	*chukuḍ*	The great horned owl is identified in Akimel O'Odham oral history.	Nests will be protected from harm during breeding season or birds would be relocated, see Appendix section IV. Migratory Bird Treaty Act, page A-10
Common raven	*havañ*	The raven is identified in Akimel O'Odham oral history and in the creation story.	Nests will be protected from harm during breeding season or birds would be relocated, see Appendix section IV. Migratory Bird Treaty Act, page A-10
Swallows (all species)	*giidval*	The swallow holds a revered place in the Akimel O'Odham song culture and oral history.	Nests will be protected from harm during breeding season or birds would be relocated, see Appendix section IV. Migratory Bird Treaty Act, page A-10

Species	O'dham Name	Cultural Significance[1]	BE Analysis Reference / Summary
Say's phoebe	*hevel moos*	Hevel moos is "Wind's grandchild." Referred to in the song culture.	Nests will be protected from harm during breeding season or birds would be relocated, see Appendix section IV. Migratory Bird Treaty Act, page A-10
Rock wren	*vavas*	Rock Wren referred to in O'Odham song culture.	Nests will be protected from harm during breeding season or birds would be relocated, see Appendix section IV. Migratory Bird Treaty Act, page A-10
Belted kingfisher	*ba'ivchul*	Kingfisher identified in Akimel O'Odham oral history and song culture.	Unlikely to occur, see Table A-2, page A-3; Nests will be protected from harm during breeding season or birds would be relocated, see Appendix section IV. Migratory Bird Treaty Act, page A-10
Rattlesnake	*koi'i*	Identified in Akimel O'Odham oral history and creation story.	Many species of rattlesnakes will occur throughout the project area, but are most likely to occur in the undeveloped areas near SMPP. Construction personnel would receive training on procedures for encounters with sensitive species that would include allowing the animal to leave of its own accord or contacting a trained person if the animal needed to be removed from the work area (see Section 7. Biological Resources Mitigation Measures, beginning on page 27). Impacts on rattlesnakes could include unintentional direct mortality from machinery and removal of shelter and denning habitat. Due to the training to be provided to construction personnel for encounters with sensitive species impacts to rattlesnakes would be minimized as much as possible.
Coyote	*ban*	The coyote identified in Akimel O'Odham oral history. Identified as one of the 4 primordial beings and in clan name.	Likely present in areas adjacent to the preferred alternative and likely to pass through the project limits periodically. Wildlife connectivity measures including multifunctional crossing structure and wildlife exclusion fencing would minimize impacts to coyotes from the project (refer to Appendix section V. Habitat Connectivity, page A-11), as would training for construction personnel for encounters with sensitive species (see Section 7. Biological Resources Mitigation Measures, beginning on page 27)

[1]Rea, A.M. 1998, *Folk Mammalogy of the Northern Pimans*, The University of Arizona Press, Tucson. ; Rea, A.M. 2007, *Wings in the Desert: A folk Ornithology of the Northern Pimas*, The University of Arizona Press, Tucson.

II. State Sensitive Species

As part of the environmental review process, a letter describing the project was sent to AGFD in January 2002 and October 2004 to inform the agency of the project and to solicit comments. The letter requested any specific concerns, suggestions, or recommendations the agency may have

related to the project as well as a list of sensitive species that may occur within the project area. AGFD sent two response letters, dated January 18, 2002, and October 25, 2004, which included a list of potential species that may occur within the project vicinity. The agency did not include any species-specific concerns related to this project, but did offer recommendations to minimize impacts on wildlife and habitat. In 2013, AGFD reviewed the Draft EIS and provided comments (letter dated July 24, 2013) that included a request for analysis of SGCN. The list of SGCN is addressed in Table A-2.

The AGFD online environmental review tool was accessed on February 28, 2014, to obtain information regarding special status species occurrences in the project vicinity. The AGFD online environmental review tool included a list of special status species known to occur within 3 miles of the project vicinity. The online environmental tool receipts, with search IDs 20140228022620 and 20140228022622, are attached. State sensitive species reported on the online environmental review tool include the least bittern (*Ixobrychus exilis*), Sonoran desert tortoise (*Gopherus morafkai*), and the bald eagle – Sonoran Desert population (*Haliaeetus leucocephalus* pop. 3). The Sonoran desert tortoise and bald eagle are analyzed in the main body of the Biological Evaluation. The Western burrowing owl (*Athene cunicularia hypugaea*), a Bureau of Land Management sensitive species, was also listed; it is discussed in Appendix Section IV in reference to the Migratory Bird Treaty Act.

Least bittern

Least bittern habitat includes freshwater and brackish marshes, with a combination of tall/dense aquatic or semiaquatic vegetation and open water (AGFD 2004a). Nests are built on platforms 15 to 76 cm above the water in dense vegetation by bending down live and dead stalks and adding stems and sticks on top. Nests are typically located less than 10 m from open water (AGFD 2004a). They generally feed on small fish and insects, but will also consume snakes, leeches, slugs, crayfish, small mammals, and vegetative matter (AGFD 2004a). The online environmental review tool results showed the least bittern as occurring within 3 miles of the project limits. Least bittern habitat within the project area is potentially found along the Salt River and ponds where open water and dense vegetation occurs. The closest suitable bittern habitat occurs approximately 2.5 miles from the project limits. Because there is a lack of suitable habitat for this species within the project limits, the proposed project is not anticipated to affect the least bittern.

AGFD provided a list of SGCN that have the potential to occur within the EIS Study Area. Table A-2 lists wildlife of special concern (WSC) and SGCN. The table includes their habitat association and their potential to occur within the project limits and project area. Species that were included on the AGFD SGCN list and that were also listed on the USFWS federally protected species list were addressed in the main body of the Biological Evaluation and not included below. Mitigation measures to protect nesting migratory birds apply to all bird species in this table (see Section IV, Migratory Bird Treaty Act, page A-11).

Table A-2. Wildlife of Special Concern in Arizona and Species of Greatest Conservation Need and Their Potential to Occur within the Project Limits for the Preferred Alternative

Common Name *Scientific Name*	Status[a]	Habitat Requirements	Occurrence: Known, Likely, Unlikely
Birds			
Abert's towhee *Melozone aberti*	SGCN Tier 1b	Arroyos in desert thickets; associated with cottonwood, willow, and mesquite, although it is also found around farms, orchards, and urban areas (Audubon 2014a) Elevation range: <4,000 feet (Rosenberg et al. 1991)	Known
American bittern *Botaurus lentiginosus*	SGCN Tier 1b, WSC	Marshlands and very wet meadows, along rivers, lakes, and ponds where marshy habitat is well-developed; nest in upland cover surrounding a wetland basin Elevation range: <7,000 feet (AGFD 2001b)	Unlikely
American peregrine falcon *Falco peregrinus anatum*	SGCN Tier 1a	Steep, sheer rock cliffs for nesting and a large foraging area with abundant avian prey species; suitable nesting sites on rock cliffs have heights of 200 to 300 feet Elevation range: <9,000 feet (AGFD 2002d)	Unlikely
Arizona Bell's vireo *Vireo bellii arizonae*	SGCN Tier 1b	Mesquites, desert willows, moist thickets, streamsides, and forest edges (Arizona Sonora Desert Museum 2014) Elevation range: <3,500 feet (AGFD 2002e)	Unlikely
Bald eagle *Haliaeetus leucocephalus*	SGCN Tier 1a	Large trees or cliffs near rivers and lakes with open water and adequate food supply Elevation range: Varies (AGFD 2002f)	Known, see pages 24 - 26
Belted kingfisher *Megaceryle alcyon*	WSC	Rivers, ponds, lakes, and streams with adjacent perch sites; nests in burrows along embankments Elevation range: 1,840–8,400 feet (AGFD 2007)	Unlikely
Black-bellied whistling duck *Dendrocygna autumnalis*	WSC	Ponds, rivers, stock tanks, and marshes; nests in tree cavities, dense thickets, and on the ground near water Elevation range: 985–4,200 feet (AGFD 2002g)	Unlikely
Cactus ferruginous pygmy-owl *Glaucidium brasilianum cactorum*	WSC	Prefers mature cottonwood and willow galleries, mesquite bosques, and Sonoran desertscrub habitat Elevation range: 1,300–4,000 feet (AGFD 2001c)	Unlikely
Common black hawk *Buteogallus anthracinus*	WSC	Dependent on mature, relatively undisturbed riparian habitat supported by a permanent flowing stream Elevation range: 1,750–7,080 feet (AGFD 2005)	Unlikely

Common Name *Scientific Name*	Status[a]	Habitat Requirements	Occurrence: Known, Likely, Unlikely
Birds (continued)			
Ferruginous hawk *Buteo regalis*	SGCN Tier 1b	Open scrublands and woodlands, grasslands, and semidesert grassland; avoids high elevation, forest interior, and narrow canyons; breeds in northern Arizona Elevation range: 3,500–6,000 feet (AGFD 2013)	Unlikely
Gila woodpecker *Melanerpes uropygialis*	SGCN Tier 1b	Permanent Sonora desert dweller and found in all of its habitat (Arizona Sonora Desert Museum 2008a) Elevation range: <4,000 feet (Bent 1939)	Known
Gilded flicker *Colaptes chrysoides*	SGCN Tier 1b	Strongly associated with, but not completely restricted to, giant cactus forests of southwestern deserts (Moore 1995) Elevation range: <3,000 feet (BirdLife International 2014a)	Likely
Golden eagle *Aguila chrysaetos*	SGCN Tier 1b	Open country, in prairies, arctic and alpine tundra, open wooded country and barren areas, especially in hilly or mountainous regions; nests on rock ledges, cliffs, or in large trees; found in mountainous areas and are virtually vacant after breeding in some desert areas (AGFD 2002h) Elevation range: 4,000–10,000 feet (AGFD 2002h)	Known (transient), see page 26
Great egret *Ardea alba*	WSC	Marshes, streams, lakes, rivers, ponds, fields, and meadows Elevation range: <1,500 feet (AGFD 2002i)	Known
Least bittern *Ixobrychus exilis*	WSC	Dense cattail/bulrush marshes interspersed with open water Elevation range: 850–1,500 feet (AGFD 2004a)	Unlikely, see page A-3
Le Conte's thrasher *Toxostoma lecontei*	SGCN Tier 1b	Desertscrub, creosote flats, mesquite, tall riparian brush (The Cornell Lab of Ornithology 2014a) Elevation range: <3,800 feet (BirdLife International 2014b)	Likely
Lincoln's sparrow *Melospiza lincolnii*	SGCN Tier 1b	Winters in areas with dense vegetation and overgrown fields (Phillips and Comus 2000) Elevation range: n/a	Known
Mississippi kite *Ictinia mississippiensis*	WSC	Tall woodlands, prairies, semiarid rangelands, shelterbelts, wooded areas bordering lakes and streams, mesquite bosques, and lowland and floodplain forests; breeds in riparian deciduous forests that border desertscrub upland habitats Elevation range: 1,400–3,040 feet (AGFD 2003a)	Unlikely
Osprey *Pandion haliaetus*	WSC	Dense cattail/bulrush marshes interspersed with open water Elevation range: 850–1,500 feet (AGFD 2004b)	Likely

Common Name *Scientific Name*	Status[a]	Habitat Requirements	Occurrence: Known, Likely, Unlikely
Birds (continued)			
Pacific wren *Troglodytes pacificus*	SGCN Tier 1b	Dense tangles and thickets in coniferous and mixed forests (Audubon 2014b) Elevation range: n/a	Unlikely
Savannah sparrow *Passerculus sandwichensis rufofuscus*	SGCN Tier 1b	Variety of open habitats, marshes, and grasslands (AGFD 2002j) Elevation range: 2,800–7,500 feet	Likely
Snowy egret *Egretta thula*	WSC	Tall woodlands, prairies, semiarid rangelands, shelterbelts, wooded areas bordering lakes and streams, mesquite bosques, and lowland/floodplain forests; breeds in riparian deciduous forests that border desertscrub upland habitats Elevation range: 1,400–3,040 feet (AGFD 2003b)	Known
Western burrowing owl *Athene cunicularia hypugaea*	Tier 1b	Variety of habitat such as well-drained grasslands, deserts, prairies, and agricultural land; sometimes found near vacant lots and golf courses Elevation range: 650–6,140 feet (AGFD 2001d)	Known, specific mitigation measures for protection are shown beginning on page A-10
Western snowy plover *Charadrius alexandrines nivosus*	WSC	Near water bodies containing fish in a variety of habitats; typically nests in conifer trees along rivers or lakes Elevation range: 800–8,300 feet (AGFD 2002k)	Likely
Wood duck *Aix sponsa*	SGCN Tier 1b	Wooded, freshwater habitats with an abundance of cover (AGFD 2010c) Elevation range: 2,150–5,150 feet	Unlikely
Yellow warbler *Dendroica petechia*	SGCN Tier 1b	Open habitats, marshes, grasslands, meadow, tundra, bogs, and cultivated grassy areas; may occupy Sonoran Desertscrub and farm fields (The Cornell Lab of Ornithology 2014b) Elevation range: 2,800–7,500 feet (AGFD 2002l)	Likely
Amphibians			
Great Plains narrow-mouthed toad *Gastrophryne olivacea*	WSC	Mesquite semidesert grassland to oak woodland near streams, springs, or rain pools Elevation range: <4,700 feet (AGFD 2003c)	Unlikely
Lowland burrowing treefrog *Pternohyla fodiens*	WSC	Mesquite grasslands associated with large washes Elevation range: <4,900 feet (AGFD 2003d)	Unlikely
Lowland leopard frog *Lithobates yavapaiensis*	SGCN Tier 1a	Natural and human-made aquatic systems with relatively permanent water Elevation range: <8,200 feet (AGFD 2006b)	Likely

Common Name *Scientific Name*	Status[a]	Habitat Requirements	Occurrence: Known, Likely, Unlikely
Amphibians (continued)			
Sonoran Desert toad *Bufo alvarius*	SGCN Tier 1b	Sonoran Desertscrub, semidesert grasslands, oak, and occasionally pine-oak woodlands; found from valley bottoms well into lower-elevation hills and mountains Elevation range: <5,800 feet (Brennan and Holycross 2006)	Likely
Mammals			
American beaver *Castor canadensis*	SGCN Tier 1b	Once nearly extirpated from Arizona, through introductions and natural colonization, species occurs in several permanent streams, large river stretches, shallow lakes, and even a few dirt-lined canals (AGFD 2014c) Elevation range: varies	Unlikely
Antelope jackrabbit *Lepus alleni*	SGCN Tier 1b	Drier areas of the desert, including creosote bush flats, mesquite grassland, and cactus plains; open places with sparse grasses (Rosenblum 2008) Elevation range: <4,900 feet (Rosenblum 2008)	Likely
Arizona myotis *Myotis occultus*	SGCN Tier 1b	Found along permanent water or in riparian forest in some desert areas (AGFD 2003e) Elevation range: most common between 6,000 and 9,000 feet, but records exist between 150 and 3,500 feet (AGFD 2003e)	Unlikely
Arizona pocket mouse *Perognathus amplus*	SGCN Tier 1b	Occurs in sandy desertscub with sparse vegetation (Lazaroff 1998) Elevation range: n/a	Likely
Banner-tailed kangaroo rat *Dipodomys spectabilis*	SGCN Tier 1b	Occurs in open desertscrub, creosote flats, and areas with well-developed grasslands and scattered shrubs (Findley et al. 1975; Lazaroff 1998) Elevation range: n/a	Likely
California leaf-nosed bat *Macrotus californicus*	SGCN Tier 1b	Sonoran desertscrub; roosts in mines, caves, and rock shelters Elevation range: <4,000 feet (AGFD 2001e)	Likely
Cave myotis *Myotis velifer*	SGCN Tier 1b	Desertscrub of creosote, brittlebush, palo verde, and cacti; roosts in caves, tunnels, mine shafts, under bridges, and sometimes in buildings within a few miles of water Elevation range: 300–5,000 feet (AGFD 2002m)	Likely
Greater western mastiff bat *Eumops perotis californicus*	SGCN Tier 1b	Lower and upper Sonoran Desertscrub near cliffs, preferring rugged rocky canyons with abundant crevices Elevation range: 240–8,475 feet (AGFD 2002n)	Likely

Common Name *Scientific Name*	Status[a]	Habitat Requirements	Occurrence: Known, Likely, Unlikely
Mammals (continued)			
Harris's antelope squirrel *Ammospermophilus harrisii*	SGCN Tier 1b	Rocky habitats of the desert containing shrubs and cactus (Arizona-Sonora Desert Museum 2008b) Elevation range: <1,350 feet (Best et al. 1990)	Likely
Jaguar *Panthera onca*	SGCN Tier 1a	Closely associated with rivers and cienegas occurring in desertscrub to pine/oak woodlands (AGFD 2004c) Elevation range: most recently found between 5,200 and 5,700 feet (AGFD 2004c)	Unlikely
Kit fox *Vulpes macrotis*	1b	Desertscrub, chaparral, and grasslands; saltbrush and sagebrush communities; may occur in agricultural areas and urban environments; prefer areas with loose soils for digging dens (Patton 2008) Elevation range: 1,300–6,200 feet (Patton 2008)	Likely
Mexican free-tailed bat *Tadarida brasiliensis*	SGCN Tier 1b	A lowland species that sometimes ranges into highlands, in desertscrub, coniferous forests, and coniferous woodlands; roosts in caves, mines, crevices in bridges, parking garages, and buildings Elevation range: <9,200 feet (AGFD 2004d)	Likely
Pale Townsend's big-eared bat *Corynorhinus townsendii pallescens*	SGCN Tier 1b	Caves and mines from desertscrub up to woodlands and coniferous forests; night roosts may often be in abandoned buildings Elevation range: 550–7,520 feet (AGFD 2003f)	Likely
Pocketed free-tailed bat *Nyctinomops femorosaccus*	SGCN Tier 1b	Desertscrub and arid lowland habitats; roosts in crevices high on cliff faces in rugged canyons, large and small water tanks, creek pools, and along rivers, washes, and ephemeral pools Elevation range: 190–7,520 feet (AGFD 2011b)	Likely
Spotted bat *Euderma maculatum*	SGCN Tier 1b	Dry, rough desertscrub, sometimes ponderosa pine forest, high desert, and riparian habitats; may roost in crevices in cliff faces Elevation range: 110–8,670 feet (AGFD 2003g)	Likely
Western red bat *Lasiurus blossevillii*	SGCN Tier 1b	Riparian and wooded areas; roosts in tree foliage Elevation range: 1,900–7,200 feet (AGFD 2003h)	Likely
Western yellow bat *Lasiurus xanthinus*	SGCN Tier 1b	Urban areas with palm trees and low- to mid-elevation riparian habitats with broad leaf trees; roosts in leaf skirts of palm trees Elevation range: <6,000 feet (AGFD 2003i)	Likely
Yuma myotis *Myotis yumanensis*	SGCN Tier 1b	Riparian, desertscrub, moist woodlands and forests, cliffs, and rocky walls near water Elevation range: 180–4,940 feet (AGFD 2011c)	Likely

Common Name *Scientific Name*	Status[a]	Habitat Requirements	Occurrence: Known, Likely, Unlikely
Reptiles			
Arizona skink *Eumeces gilberti arizonensis*	WSC	Mesquite riparian drainages to oak and pine woodlands with rocks, logs, and leaf litter near streams Elevation range: 1,865–1,970 feet (AGFD 2003i)	Likely
Gila monster *Heloderma suspectum*	SGCN Tier 1a	Sonoran Desert, undulating rocky foothills, bajadas, and canyons; less frequent or absent on open sandy plains Elevation range: <5,000 feet (AGFD 2002o)	Likely
Goode's horned lizard *Phrynosoma goodei*	SGCN Tier 1b	Flat, open areas with sandy or loamy soil; less frequently encountered on rocky bajadas and foothills Elevation range: <2,000 feet (Brennan and Holycross 2006)	Unlikely
Northern Mexican gartersnake *Thamnophis eques megalops*	WSC	Desert grassland with dense vegetation around cienegas, streams, and stock tanks Elevation range: 3,000–8,500 feet (AGFD 2001f)	Unlikely
Regal horned lizard *Phrynosoma solare*	SGCN Tier 1b	Valleys, rocky bajadas, and low foothills, relatively level areas with low shrubs, and open, sunny patches Elevation range: 900–4,500 feet (Brennan and Holycross 2006)	Likely
Saddled leaf-nosed snake *Phyllorhynchus browni*	SGCN Tier 1b	Found above flats in foothills and on moderate bajadas Elevation range: 1,000–3,000 feet (Brennan and Holycross 2006)	Unlikely
Sonora mud turtle *Kinosternon sonoriense*	SGCN Tier 1b	Occurs in most of southeastern Arizona and sub Mogollon Rim central Arizona. It is found in the Salt and Gila rivers and their tributaries (Brennan and Holycross 2006) Elevation range: <6,500 feet	Likely
Sonoran coralsnake *Micruroides euryxanthus*	SGCN Tier 1b	Above flats in or near rocky or gravelly drainages, mesquite-lined washes, and canyons; abundant in rocky Arizona upland desert and bajadas Elevation range: <6,000 feet (AGFD 2008b)	Likely
Sonoran whipsnake *Masticophis bilineatus*	SGCN Tier 1b	Found above flats on mountain slopes and canyons, in foothills, along ridges, and on steep rocky bajadas Elevation range: 1,000–7,000 feet (Brennan and Holycross 2006)	Likely
Tiger rattlesnake *Crotalus tigris*	SGCN Tier 1b	Rocky slopes or washes in rocky mountains and foothills; occasionally found in desert flatlands, rarely stray more than a mile from foothills, mountains, or rocky habitat Elevation range: 1,000–5,000 feet (Brennan and Holycross 2006)	Likely

Common Name *Scientific Name*	Status[a]	Habitat Requirements	Occurrence: Known, Likely, Unlikely
Reptiles (continued)			
Variable sandsnake *Chilomeniscus stramineus*	SGCN Tier 1b	Above the flats in or near drainages and canyons with loose gravel or sand substrates Elevation range: 200–3,000 feet (Brennan and Holycross 2006)	Likely
Fish			
Little Colorado sucker *Catostomus latipinnis*	WSC	Small to medium rivers and impoundments mostly in pools with abundant cover but also found in riffles Elevation range: 2,200–7,350 feet (AGFD 2001g)	Unlikely

[a] **SGCN Tier 1a**: Species ranked as vulnerable and federally listed as endangered, threatened, or candidate under the Endangered Species Act; is covered under a signed conservation agreement CCA or a signed conservation agreement with assurances CCAA; recently removed from Endangered Species Act and currently requires post-delisting monitoring; or closed season species (i.e., no take permitted) as identified in Arizona Game and Fish Commission Orders 40, 41, 42 or 43.

SGCN Tier 1b: Species ranked as vulnerable, and does not fall into any of the Tier 1a categories.

WSC: Species whose occurrence in Arizona is or may be in jeopardy, or with known or perceived threats or population declines.

III. Protected Native Plants

The project area outside of Community land was reviewed for the presence of native plants protected under the Arizona Native Plant Act (Arizona Revised Statutes §3-901 et seq.) by a qualified biologist, Andrea Love, in July 2003. A qualified biologist, Kurt Watzek, performed a follow-up visit of the project area in October 2009.

Table A-3. Protected Native Plants Observed as Occurring within the Project Area

Genus	Species	Common Name
Carnegiea	*gigantea*	saguaro
Castela	*emoryi*	crucifixion thorn
Echinocereus	sp.	hedgehog cactus
Ferocactus	sp.	barrel cactus
Mammillaria	*grahamii*	Graham's nipple cactus
Olneya	*tesota*	desert ironwood
Cylindropuntia	*acanthocarpa*	buckhorn cholla
Parkinsonia	*florida*	blue paloverde
Parkinsonia	*microphylla*	foothill paloverde
Prosopis	*velutina*	velvet mesquite

These plants and others likely to occur are subject to protection under the Arizona Native Plant Act; therefore, the following mitigation measure applies and is included in the overall mitigation measures for the project:

- Protected native plants within the project limits will be affected by this project; therefore, the ADOT Roadside Development Section will determine if Arizona Department of Agriculture notification is needed. If notification is needed, the ADOT Roadside Development Section will send the notification at least 60 calendar days prior to the start of construction.

IV. Migratory Bird Treaty Act

The project area was reviewed for migratory birds and suitable habitat. The proximity of water and habitat indicates the likelihood of migratory bird use in the project area. A variety of migratory birds would be expected to occur within the project limits and the project area. Seasonal avoidance measures would be implemented and, if necessary, relocation permits would be requested from the USFWS Migratory Bird Treaty Act Regional Office in Albuquerque, New Mexico.

The Sonoran desertscrub and agricultural communities throughout the project area would provide suitable habitat for burrowing owls (*Athene cunicularia hypugaea*). Surveys within suitable burrowing owl habitat are recommended prior to construction of the project.

The following mitigation measures apply for burrowing owls and birds protected by the Migratory Bird Treaty Act and are included in the overall mitigation measures for the project:

ADOT District and Contractor Responsibilities

- A biologist would be employed to complete a preconstruction survey for burrowing owls 96 hours prior to construction in all suitable habitat that will be disturbed. The biologist shall possess a burrowing owl survey protocol training certificate issued by AGFD. Upon completion of the survey, the survey results would be discussed with the ADOT biologist.
- If any burrowing owls are located in the work area, the contractor would immediately stop work at that location and notify the Engineer. The Engineer would contact the ADOT biologist to determine whether the owls could be avoided or must be relocated. The contractor would not work within 100 feet of any active burrow until the situation had been evaluated by the ADOT biologist. If the ADOT biologist determined that the owl must be relocated, a biologist holding a rehabilitation permit from USFWS would relocate burrowing owls from the project area.
- If clearing, grubbing, or pruning of trees, shrubs, or cacti would occur between March 1 and August 31, a qualified biologist would conduct a bird nest search of all vegetation that would be cleared or pruned within 5 calendar days prior to vegetation clearing/pruning. If an active nest or nest cavity/hole were observed, the vegetation clearing/pruning would be delayed in the immediate vicinity until the nest is no longer active or a relocation permit would be obtained from USFWS by the contractor.

V. Wildlife Connectivity

The project could increase habitat fragmentation as a result of the physical barrier for wildlife movement between the South Mountains and adjacent habitat, a condition that currently exists

around most of the South Mountains because of urban development. This could result in reduced potential for some species dispersal and mating between populations, altering the flow of genetic material. This could lead to population isolation in the South Mountains that could lead to inbreeding, less genetic variation, and a smaller or dwindling population for some species.

The project area was reviewed for wildlife connectivity and suitable movement corridors. Three potential wildlife linkage corridors exist in the project area, as identified in *Arizona's Wildlife Linkages Assessment* (Arizona Wildlife Linkages Working Group 2006) and the *Maricopa County Wildlife Connectivity Assessment: Report on Stakeholder Input* (AGFD 2011a). These include: (1) Landscape Movement Area 53 connecting the Sierra Estrella and South Mountains; (2) Riparian Movement Area 16 along the Salt River; and (3) Riparian Movement Area 68 connecting the Sierra Estrella and South Mountains along the Gila River to the Salt River (Figure 4). Riparian Movement Area 68 along the Gila River is located within the Community and is not crossed by the project. To maintain wildlife movement to and from the South Mountains and along the Salt River, crossing structures would be included in the project design. Connectivity for the Sonoran desert tortoise and Tucson shovel-nosed snake is discussed beginning on page 17 and 20, respectively

The connectivity assessment report (AGFD 2011a) identifies mule deer, javelina, coyote, various amphibians, and mountain lions as potentially using the South Mountains to Sierra Estrella connection (Landscape Movement Area 53) and beaver, muskrat, waterfowl leopard frogs, bobcat, coyote, javelina, migratory birds, and various other amphibians and reptiles as potentially using the Salt River to Gila River connection (Riparian Movement Area 68) (Figure 4).

To reduce impacts on habitat connectivity and access to SMPP, multifunctional crossings are planned in the portion of the project at the western end of the South Mountains (Figure 3). These multifunctional crossings generally coincide with major washes (Figure 3), with some providing direct access to SMPP. Some of the multifunctional crossings would be designed with input from USFWS, AGFD and the Community's DEQ to accommodate movement of wildlife as well as limited use by the Community. Other crossing locations such as smaller drainages or species specific locations, as appropriate throughout the project, would be considered for wildlife friendly designs. Crossings with recreation as a primary purpose would serve as access for hiking, equestrian, Community, and bicycling use and would incidentally serve wildlife.

Human and wildlife use of the proposed multifunctional crossings are not expected to result in a significant degree of incompatibility. In Arizona, research by the AGFD along SR 260 found highly compatible use of a dual-use (multifunctional) underpass that linked the communities of Christopher Creek and Hunter Creek. This particular underpass exhibited some of the most diverse and substantial wildlife use of the underpasses monitored in the long-term project. Along SR 77, a Wildlife Technical Advisory Committee closely scrutinized this issue for the two planned wildlife passages that will be built within a similar urban-influenced landscape in and adjacent to Oro Valley. The Wildlife Technical Advisory Committee evaluated all available information and determined that the temporal patterns of human (daytime) versus wildlife (crepuscular and nocturnal) use are not expected to result in a significant degree of incompatibility. Furthermore, such dual-use, multifunctional structures situated within urban influenced landscapes, in this instance adjacent to SMPP with its extensive trail network, offer effective and efficient use of limited taxpayer funds.

The following mitigation measures apply for wildlife connectivity and are included in the overall mitigation measures for the project:

ADOT EPG, Roadside Development, and Design Responsibilities

- The proposed project would be designed to protect and maintain opportunities for wildlife movement between the South Mountains, the Gila River, and the Sierra Estrella. These opportunities would be located in the area where the proposed project would intersect the southwestern portion of the South Mountains. Some drainage structures incorporated into the roadway plans would be designed to accommodate multifunctional crossings in appropriate locations that would allow limited use by the Community and also serve wildlife. These crossing structures and associated fences would be designed to reduce the incidence of vehicle-wildlife collisions and reduce the impact of the proposed project on wildlife connectivity between the South Mountains, the Gila River, and the Sierra Estrella. ADOT would coordinate with USFWS, AGFD, and the Community's DEQ during the design phase regarding the potential for locating and designing wildlife-sensitive roadway structures.
- For drainage structures such as culverts located in potential wildlife movement corridors, wildlife friendly design would be considered during final design. ADOT would coordinate with USFWS, AGFD, and the Community's DEQ during the design phase regarding the potential for locating and designing wildlife-sensitive roadway structures.
- Prior to construction, ADOT would arrange for surveys to be completed for the Sonoran desert tortoise, Tucson shovel-nosed snake, bats and other species as determined by ADOT or FHWA to be necessary.

ADOT District and Contractor Responsibilities

- The contractor shall adhere to the procedures for encounters with sensitive species that would include allowing the animal to leave of its own accord or contacting a trained person if the animal needed to be removed from the work area.

VI. Invasive Species

A noxious and invasive plant species inventory was not conducted for the project; however, noxious and invasive plant species that were noted during field visits to the Study Area during the National Environmental Policy Act process include: tamarisk (*Tamarix* sp.), dodder (*Cuscuta* sp.), oleander (*Nerium oleander*), common purslane (*Portulaca oleracea*), and prickly Russian thistle (*Salsola tragus*). During the design process and before construction of the project, a survey of the project limits would be undertaken to identify noxious and invasive plant species. Noxious and invasive plant species identified would be controlled as directed by the ADOT Roadside Development Section. This project would incorporate the following standard measures to prevent the introduction and spread of invasive species and are included in the overall mitigation measures for the project:

ADOT EPG, Roadside Development, and Design Responsibilities

- All disturbed soils not paved that would not be landscaped or otherwise permanently stabilized by construction would be seeded using species native to the project vicinity.

ADOT District and Contractor Responsibilities

- To prevent the introduction of invasive species seeds, the contractor would inspect all earthmoving and hauling equipment at the equipment storage facility, and the equipment would be washed prior to entering the construction site.
- To prevent invasive species seeds from leaving the site, the contractor would inspect all construction equipment and remove all attached plant/vegetation and soil/mud debris prior to leaving the construction site.
- All disturbed soils not paved that would not be landscaped or otherwise permanently stabilized by construction would be seeded using species native to the project vicinity.

VII. Scoping Responses and Coordination

Note: Letters from the Community Governor, U.S. Environmental Protection Agency, and AGFD addressing comments on the Draft EIS are available upon request from the ADOT Environmental Planning Group (602-712-7767).

Attached (also included in appendix to Final EIS):

- USFWS Arizona Ecological Services Office Field Supervisor letter, Mr. Harlow, October 29, 2001
- AGFD Heritage Data Management Coordinator letter, Ms. Schwartz, January 18, 2002
- AGFD Heritage Data Management Coordinator letter, Ms. Ritter, October 25, 2004
- AGFD Wildlife Manager Central Phoenix email, Ms. Jontz, March 31, 2006
- AGFD Bald Eagle Management Coordinator phone record, Kenneth Jacobson, April 21, 2010
- AGFD Heritage Data Management Program Coordinator email to Sabra Schwartz, June 17, 2011, and Heritage Data Management System Data Manager e-mail, Sue Schuetze, June 24, 2011
- BLM Realty concurrence, July 9, 2013
- AGFD online environmental review tool receipts, accessed February 28, 2014
- Darren Riedle, consultant wildlife biologist e-mail to Kris Gade, PhD, ADOT Biologist, April 4, 2014
- Brian Wooldridge, USFWS Fish and Wildlife Biologist e-mail to Kris Gade, PhD, April 7, 2014
- AGFD comment letter on Draft EIS (see FEIS, Volume III)
- Community comment letter on Draft EIS (see FEIS, Volume III)
- USFWS Field Supervisor letter, Steven L. Spangle, June 10, 2014
- Letter from the Community providing comments on the BE via the law office of Akin Gump, July 18, 2014.
- The USFWS Information, Planning, and Conservation System (IPAC) was accessed on July 29, 2014. The results for the project limits

United States Department of the Interior
FISH AND WILDLIFE SERVICE
Arizona Ecological Services Field Office
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951
Telephone: (602) 242-0210 Fax: (602) 242-2513

In Reply Refer To:

AESO/SE
2-21-02-I-005

October 29, 2001

Mary Viparina, P.E.
Project Manager
HDR Engineering, Inc.
2141 East Highland Avenue Ste. 250
Phoenix, Arizona 85016

RE: Biltmore Medical Mall Located at 2222 East Highland, Phoenix, Arizona

Dear Ms. Viparina,

This letter responds to your October 3, 2001, request for an inventory of threatened or endangered species, or those that are proposed to be listed as such under the Endangered Species Act of 1973, as amended (Act), which may potentially occur in your project area (Maricopa County). The enclosed list may include candidate species as well. We hope the enclosed county list of species will be helpful. In future communications regarding this project, please refer to consultation number 2-21-02-I-005.

The enclosed list of the endangered, threatened, proposed, and candidate species includes all those potentially occurring anywhere in the county, or counties, where your project occurs. Please note that your project area may not necessarily include all or any of these species. The information provided includes general descriptions, habitat requirements, and other information for each species on the list. Also on the enclosed list is the Code of Federal Regulations (CFR) citation for each list and is available at most public libraries. This information should assist you in determining which species may or may not occur within your project area. Site-specific surveys could also be helpful and may be needed to verify the presence or absence of a species or its habitat as required for the evaluation of proposed project-related impacts.
Endangered and threatened species are protected by Federal law and must be considered prior to project development. If the action agency determines that listed species or critical habitat may be adversely affected by a federally funded, permitted, or authorized activity, the action agency must request formal consultation with the Service. If the action agency determines that the planned action may jeopardize a proposed species or destroy or adversely modify proposed critical habitat, the action agency must enter into a section 7 conference with the Service. Candidate species are those which are being considered for addition to the list of threatened or endangered species. Candidate species are those for which there is sufficient information to support a proposal for listing. Although candidate species have no legal protection under the Act, we recommend that they be considered in the planning process in the event that they become listed or proposed for listing prior to project completion.

If any proposed action occurs in or near areas with trees and shrubs growing along watercourses, known as riparian habitat, the Service recommends the protection of these areas. Riparian areas are critical to biological community diversity and provide linear corridors important to migratory species. In addition, if the project will result in the deposition of dredged or fill materials into waterways or excavation in waterways, we recommend you contact the Army Corps of Engineers which regulates these activities under Section 404 of the Clean Water Act.

The State of Arizona protects some plant and animal species not protected by Federal law. We recommend you contact the Arizona Game and Fish Department and the Arizona Department of Agriculture for State-listed or sensitive species in your project area.

The Service appreciates your efforts to identify and avoid impacts to listed and sensitive species in your project area. If we may be of further assistance, please feel free to contact Tom Gatz (x240).

Sincerely,

David L. Harlow
Field Supervisor

Enclosure

cc: John Kennedy, Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ
Governor, Gila River Indian Community, Sacaton, AZ (Attn: Biologist)

W:\Cathy Gordon\species list letters\South Mtn. Corridor Team HDR Engineering.wpd:cgg

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: MARICOPA

10/11/2001

1) LISTED

TOTAL= 14

NAME: ARIZONA AGAVE *AGAVE ARIZONICA*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: No CFR: 49 FR 21055, 05-18-1984

DESCRIPTION: HAS ATTRACTIVE ROSETTES OF BRIGHT GREEN LEAVES WITH DARK MAHOGANY MARGINS. FLOWER: BORNE ON SUB-UMBELLATE INFLORESCENCES.

ELEVATION RANGE: 3000-6000 FT.

COUNTIES: GILA, YAVAPAI, MARICOPA

HABITAT: TRANSITION ZONE BETWEEN OAK-JUNIPER WOODLAND & MOUNTAIN MAHOGANY-OAK SCRUB

SCATTERED CLONES IN NEW RIVER MOUNTAINS AND SIERRA ANCHA. USUALLY FOUND ON STEEP, ROCKY-SLOPES. POSSIBLY MAZATAL MOUNTAINS. SHOULD BE LOOKED FOR WHEREVER THE RANGES OF Agave toumeyana var. bella AND Agave chrystantha OVERLAP.

NAME: ARIZONA CLIFFROSE *PURSHIA SUBINTEGRA*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 49 FR 22326 5-29-84

DESCRIPTION: EVERGREEN SHRUB OF THE ROSE FAMILY (ROSEACEAE). BARK PALE SHREDDY. YOUNG TWIGS WITH DENSE HAIRS. LEAVES 1-5 LOBES AND EDGES CURL DOWNWARD (REVOLUTE). FLOWERS: 5 WHITE OR YELLOW PETALS <0.5 INCH LONG.

ELEVATION RANGE: <4000 FT.

COUNTIES: GRAHAM YAVAPAI MARICOPA MOHAVE

HABITAT: CHARACTERISTIC WHITE SOILS OF TERTIARY LIMESTONE LAKEBED DEPOSITS.

WHITE SOILS OF TERITIARY LIMESTONE LAKEBED DEPOSITS CAN BE SEEN FROM A DISTANCE.

NAME: ARIZONA HEDGEHOG CACTUS *ECHINOCEREUS TRIGLOCHIDIATUS ARIZONICUS*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: No CFR: 44 FR 61556,10-15-1979

DESCRIPTION: DARK GREEN CYLINDROID 2.5-12 INCHES TALL, 2-10 INCHES IN DIAMETER, SINGLE OR IN CLUSTERS. 1-3 GRAY OR PINKISH CENTRAL SPINES LARGEST DEFLEXED AND 5-11 SHORTER RADIAL SPINES. FLOWER: BRILLIANT RED, SIDE OF STEM IN APRIL- MAY

ELEVATION RANGE: 3700-5200 FT.

COUNTIES: MARICOPA, GILA, PINAL

HABITAT: ECOTONE BETWEEN INTERIOR CHAPPARAL AND MADREAN EVERGREEN WOODLAND

OPEN SLOPES, IN NARROW CRACKS BETWEEN BOULDERS, AND IN UNDERSTORY OF SHRUBS. THIS VARIETY IS BELIEVED TO INTERGRADE AT THE EDGES OF ITS DISTRIBUTION WITH VARIETIES MELANCANTHUS AND NEOMEXICANUS CAUSING SOME CONFUSION IN IDENTIFICATION.

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: **MARICOPA**

10/11/2001

NAME: **LESSER LONG-NOSED BAT** *LEPTONYCTERIS CURASOAE YERBABUENAE*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 53 FR 38456, 09-30-88

DESCRIPTION: ELONGATED MUZZLE, SMALL LEAF NOSE, AND LONG TONGUE. YELLOWISH BROWN OR GRAY ABOVE AND CINNAMON BROWN BELOW. TAIL MINUTE AND APPEARS TO BE LACKING. EASILY DISTURBED.

ELEVATION RANGE: <6000 FT.

COUNTIES: COCHISE, GILA, GRAHAM, GREENLEE, MARICOPA, PIMA, PINAL, SANTA CRUZ, YAVAPAI

HABITAT: DESERT SCRUB HABITAT WITH AGAVE AND COLUNMNAR CACTI PRESENT AS FOOD PLANTS

DAY ROOSTS IN CAVES AND ABANDONED TUNNELS. FORAGES AT NIGHT ON NECTAR, POLLEN, AND FRUIT OF PANICULATE AGAVES AND COLUMNAR CACTI. THIS SPECIES IS MIGRATORY AND IS PRESENT IN ARIZONA , USUALLY FROM APRIL TO SEPTMBER AND SOUTH OF THE BORDER THE REMAINDER OF THE YEAR.

NAME: **SONORAN PRONGHORN** *ANTILOCAPRA AMERICANA SONORIENSIS*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 32 FR 4001, 03-11-67

DESCRIPTION: BUFF ON BACK AND WHITE BELOW, HOOFED WITH SLIGHTLY CURVED BLACK HORNS HAVING A SINGLE PRONG. SMALLEST AND PALEST OF THE PRONGHORN SUBSPECIES.

ELEVATION RANGE: 2000-4000 FT.

COUNTIES: PIMA, YUMA, MARICOPA

HABITAT: BROAD, INTERMOUNTAIN ALLUVIAL VALLEYS WITH CREOSOTE-BURSAGE & PALO VERDE-MIXED CACTI ASSOCIATIONS

TYPICALLY, BAJADAS ARE USED AS FAWNING AREAS AND SANDY DUNE AREAS PROVIDE FOOD SEASONALLY. HISTORIC RANGE WAS PROBABLY LARGER THAN EXISTS TODAY. THIS SUBSPECIES ALSO OCCURS IN MEXICO.

NAME: **DESERT PUPFISH** *CYPRINODON MACULARIUS*

STATUS: ENDANGERED CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 51 FR 10842, 03-31-1986

DESCRIPTION: SMALL (2 INCHES) SMOOTHLY ROUNDED BODY SHAPE WITH NARROW VERTICAL BARS ON THE SIDES. BREEDING MALES BLUE ON HEAD AND SIDES WITH YELLOW ON TAIL. FEMALES & JUVENILES TAN TO OLIVE COLORED BACK AND SILVERY SIDES.

ELEVATION RANGE: <5000 FT.

COUNTIES: LA PAZ, PIMA, GRAHAM, MARICOPA, PINAL, YAVAPAI, SANTA CRUZ

HABITAT: SHALLOW SPRINGS, SMALL STREAMS, AND MARSHES. TOLERATES SALINE & WARM WATER

CRITICAL HABITAT INCLUDES QUITOBAQUITO SPRING, PIMA COUNTY, PORTIONS OF SAN FELIPE CREEK, CARRIZO WASH, AND FISH CREEK WASH, IMPERIAL COUNTY, CALIFORNIA. TWO SUBSPECIES ARE RECOGNIZED: DESERT PUPFISH (C. m. macularis) AND QUITOBAQUITO PUPFISH (C. m. eremus).

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: **MARICOPA**

10/11/2001

NAME: **GILA TOPMINNOW** *POECILIOPSIS OCCIDENTALIS OCCIDENTALIS*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 32 FR 4001, 03-11-1967

DESCRIPTION: SMALL (2 INCHES), GUPPY-LIKE, LIVE BEARING, LACKS DARK SPOTS ON ITS FINS. BREEDING MALES ARE JET BLACK WITH YELLOW FINS.

ELEVATION RANGE: <4500 FT.

COUNTIES: GILA, PINAL, GRAHAM, YAVAPAI, SANTA CRUZ, PIMA, MARICOPA, LA PAZ

HABITAT: SMALL STREAMS, SPRINGS, AND CIENEGAS VEGETATED SHALLOWS

SPECIES HISTORICALLY OCCURRED IN BACKWATERS OF LARGE RIVERS BUT IS CURRENTLY ISOLATED TO SMALL STREAMS AND SPRINGS

NAME: **RAZORBACK SUCKER** *XYRAUCHEN TEXANUS*

STATUS: ENDANGERED CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 56 FR 54957 10-23-1991; 59 FR 13374, 03-21-1994

DESCRIPTION: LARGE (UP TO 3 FEET AND UP TO 6 POUNDS) LONG, HIGH SHARP-EDGED KEEL-LIKE HUMP BEHIND THE HEAD. HEAD FLATTENED ON TOP. OLIVE-BROWN ABOVE TO YELLOWISH BELOW.

ELEVATION RANGE: <6000 FT.

COUNTIES: GREENLEE, MOHAVE, PINAL, YAVAPAI, YUMA, LA PAZ, MARICOPA (REFUGIA), GILA, COCONINO, GRAHAM

HABITAT: RIVERINE & LACUSTRINE AREAS, GENERALLY NOT IN FAST MOVING WATER AND MAY USE BACKWATERS

SPECIES IS ALSO FOUND IN HORSESHOE RESERVOIR (MARICOPA COUNTY).CRITICAL HABITAT INCLUDES THE 100-YEAR FLOODPLAIN OF THE RIVER THROUGH GRAND CANYON FROM CONFLUENCE WITH PARIA RIVER TO HOOVER DAM; HOOVER DAM TO DAVIS DAM; PARKER DAM TO IMPERIAL DAM. ALSO GILA RIVER FROM AZ/NM BORDER TO COOLIDGE DAM; AND SALT RIVER FROM HWY 60/SR 77 BRIDGE TO ROOSEVELT DAM; VERDE RIVER FROM FS BOUNDARY TO HORSESHOE LAKE.

NAME: **BALD EAGLE** *HALIAEETUS LEUCOCEPHALUS*

STATUS: THREATENED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 60 FR 35999, 07-12-95

DESCRIPTION: LARGE, ADULTS HAVE WHITE HEAD AND TAIL. HEIGHT 28 - 38"; WINGSPAN 66 - 96". 1-4 YRS DARK WITH VARYING DEGREES OF MOTTLED BROWN PLUMAGE. FEET BARE OF FEATHERS.

ELEVATION RANGE: VARIES FT.

COUNTIES: YUMA, LA PAZ, MOHAVE, YAVAPAI, MARICOPA, PINAL, COCONINO, NAVAJO, APACHE, SANTA CRUZ, PIMA, GILA, GRAHAM, COCHISE

HABITAT: LARGE TREES OR CLIFFS NEAR WATER (RESERVOIRS, RIVERS AND STREAMS) WITH ABUNDANT PREY

SOME BIRDS ARE NESTING RESIDENTS WHILE A LARGER NUMBER WINTERS ALONG RIVERS AND RESERVOIRS. AN ESTIMATED 200 TO 300 BIRDS WINTER IN ARIZONA. ONCE ENDANGERED (32 FR 4001, 03-11-1967; 43 FR 6233, 02-14-78) BECAUSE OF REPRODUCTIVE FAILURES FROM PESTICIDE POISONING AND LOSS OF HABITAT, THIS SPECIES WAS DOWN LISTED TO THREATENED ON AUGUST 11, 1995. ILLEGAL SHOOTING, DISTURBANCE, LOSS OF HABITAT CONTINUES TO BE A PROBLEM. SPECIES HAS BEEN PROPOSED FOR DELISTING (64 FR 36454) BUT STILL RECEIVES FULL PROTECTION UNDER ESA.

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: **MARICOPA**

10/11/2001

NAME: **BROWN PELICAN** *PELECANUS OCCIDENTALIS CALIFORNICUS*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 35 FR 16047, 10-13-70; 35 FR 18320, 12-02-70

DESCRIPTION: LARGE DARK GRAY-BROWN WATER BIRD WITH A POUCH UNDERNEATH LONG BILL AND WEBBED FEET. ADULTS HAVE A WHITE HEAD AND NECK, BROWNISH BLACK BREAST, AND SILVER GRAY UPPER PARTS.

ELEVATION RANGE: VARIES FT.

COUNTIES: APACHE, COCHISE, COCONINO, GILA, GRAHAM, GREENLEE LA PAZ, MARICOPA, MOHAVE, NAVAJO, PIMA, PINAL, SANTA CRUZ, YAVAPAI, YUMA

HABITAT: COASTAL LAND AND ISLANDS; ARIZONA LAKES AND RIVERS

SUBSPECIES IS FOUND ON PACIFIC COAST AND IS ENDANGERED DUE TO PESTICIDES. IT IS AN UNCOMMON TRANSIENT IN ARIZONA ON MANY ARIZONA LAKES AND RIVERS. INDIVIDUALS WANDER UP FROM MEXICO IN SUMMER AND FALL. NO BREEDING RECORDS IN ARIZONA.

NAME: **CACTUS FERRUGINOUS PYGMY-OWL** *GLAUCIDIUM BRASILIANUM CACTORUM*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: No CFR: 62 FR 10730, 3-10-97

DESCRIPTION: SMALL (APPROX. 7"), DIURNAL OWL REDDISH BROWN OVERALL WITH CREAM-COLORED BELLY STREAKED WITH REDDISH BROWN. SOME INDIVIDUALS ARE GRAYISH BROWN

ELEVATION RANGE: <4000 FT.

COUNTIES: MARICOPA, YUMA, SANTA CRUZ, GRAHAM, GREENLEE, PIMA, PINAL, GILA, COCHISE

HABITAT: MATURE COTTONWOOD/WILLOW, MESQUITE BOSQUES, AND SONORAN DESERTSCRUB

RANGE LIMIT IN ARIZONA IS FROM NEW RIVER (NORTH) TO GILA BOX (EAST) TO CABEZA PRIETA MOUNTAINS (WEST). ONLY A FEW DOCUMENTED SITES WHERE THIS SPECIES PERSISTS ARE KNOWN, ADDITIONAL SURVEYS ARE NEEDED. CRITICAL HABITAT WAS VACATED BY THE U.S. DISTRICT COURT FOR THE DISTRICT OF ARIZONA (9/19/01).

NAME: **MEXICAN SPOTTED OWL** *STRIX OCCIDENTALIS LUCIDA*

STATUS: THREATENED CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 56 FR 14678, 04-11-91; 66 FR 8530, 2/1/01

DESCRIPTION: MEDIUM SIZED WITH DARK EYES AND NO EAR TUFTS. BROWNISH AND HEAVILY SPOTTED WITH WHITE OR BEIGE.

ELEVATION RANGE: 4100-9000 FT.

COUNTIES: MOHAVE, COCONINO, NAVAJO, APACHE, YAVAPAI, GRAHAM, GREENLEE, COCHISE, SANTA CRUZ, PIMA, PINAL, GILA, MARICOPA

HABITAT: NESTS IN CANYONS AND DENSE FORESTS WITH MULTI-LAYERED FOLIAGE STRUCTURE

GENERALLY NESTS IN OLDER FORESTS OF MIXED CONIFER OR PONDERSA PINE/GAMBEL OAK TYPE, IN CANYONS, AND USE VARIETY OF HABITATS FOR FORAGING. SITES WITH COOL MICROCLIMATES APPEAR TO BE OF IMPORTANCE OR ARE PREFERED. CRITICAL HABITAT WAS REMOVED IN 1998 BUT RE-PROPOSED IN JULY 2000 AND FINALIZED IN FEB 2001 FOR APACHE, COCHISE, COCONINO, GRAHAM, MOHAVE, PIMA COUNTIES; ALSO IN NEW MEXICO, UTAH, AND COLORADO.

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: **MARICOPA**

10/11/2001

NAME: **SOUTHWESTERN WILLOW FLYCATCHER** *EMPIDONAX TRAILLII EXTIMUS*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: No CFR: 60 FR 10694, 02-27-95

DESCRIPTION: SMALL PASSERINE (ABOUT 6") GRAYISH-GREEN BACK AND WINGS, WHITISH THROAT, LIGHT OLIVE-GRAY BREAST AND PALE YELLOWISH BELLY. TWO WINGBARS VISIBLE. EYE-RING FAINT OR ABSENT.

ELEVATION RANGE: <8500 FT.

COUNTIES: YAVAPAI, GILA, MARICOPA, MOHAVE, COCONINO, NAVAJO, APACHE, PINAL, LA PAZ, GREENLEE, GRAHAM, YUMA, PIMA, COCHISE, SANTA CRUZ

HABITAT: COTTONWOOD/WILLOW & TAMARISK VEGETATION COMMUNITIES ALONG RIVERS & STREAMS

MIGRATORY RIPARIAN OBLIGATE SPECIES THAT OCCUPIES BREEDING HABITAT FROM LATE APRIL TO SEPTEMBER. DISTRIBUTION WITHIN ITS RANGE IS RESTRICTED TO RIPARIAN CORRIDORS. DIFFICULT TO DISTINGUISH FROM OTHER MEMBERS OF THE EMPIDONAX COMPLEX BY SIGHT ALONE. TRAINING SEMINAR REQUIRED FOR THOSE CONDUCTING FLYCATCHER SURVEYS. CRITICAL HABITAT WAS SET ASIDE BY THE 10TH CIRCUIT COURT OF APPEALS (5/17/01).

NAME: **YUMA CLAPPER RAIL** *RALLUS LONGIROSTRIS YUMANENSIS*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 32 FR 4001, 03-11-67; 48 FR 34182, 07-27-83

DESCRIPTION: WATER BIRD WITH LONG LEGS AND SHORT TAIL. LONG SLENDER DECURVED BILL. MOTTLED BROWN ON GRAY ON ITS RUMP. FLANKS AND UNDERSIDES ARE DARK GRAY WITH NARROW VERTICAL STRIPES PRODUCING A BARRING EFFECT.

ELEVATION RANGE: <4500 FT.

COUNTIES: YUMA, LA PAZ, MARICOPA, PINAL, MOHAVE

HABITAT: FRESH WATER AND BRACKISH MARSHES

SPECIES IS ASSOCIATED WITH DENSE EMERGENT RIPARIAN VEGETATION. REQUIRES WET SUBSTRATE (MUDFLAT, SANDBAR) WITH DENSE HERBACEOUS OR WOODY VEGETATION FOR NESTING AND FORAGING. CHANNELIZATION AND MARSH DEVELOPMENT ARE PRIMARY SOURCES OF HABITAT LOSS.

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: **MARICOPA**

10/11/2001

3) CANDIDATE

TOTAL= 1

NAME: **YELLOW-BILLED CUCKOO** *COCCYZUS AMERICANUS*

STATUS: CANDIDATE CRITICAL HAB No RECOVERY PLAN: No CFR: 66 FR 38611; 07-25-01

DESCRIPTION: MEDIUM-SIZED BIRD WITH A SLENDER, LONG-TAILED PROFILE, SLIGHTLY DOWN-CURVED BILL, WHICH IS BLUE-BLACK WITH YELLOW ON THE LOWER HALF OF THE BILL. PLUMAGE IS GRAYISH-BROWN ABOVE AND WHITE BELOW, WITH RUFOUS PRIMARY FLIGHT FEATHERS. ELEVATION RANGE: <6,500 FT.

COUNTIES: APACHE, COCHISE, COCONINO, GILA, GRAHAM, GREENLEE, LA PAZ, MARICOPA, MOHAVE, NAVAJO, PIMA, PINAL, SANTA CRUZ, YAVAPAI, YUMA

HABITAT: LARGE BLOCKS OF RIPARIAN WOODLANDS (COTTONWOOD, WILLOW, OR TAMARISK GALLERIES)

SPECIES WAS FOUND WARRANTED, BUT PRECLUDED FOR LISTING AS A DISTINCT VERTEBRATE POPULATION SEGMENT IN THE WESTERN U.S. ON JULY 25, 2001. THIS FINDING INDICATES THAT THE SERVICE HAS SUFFICIENT INFORMATION TO LIST THE BIRD, BUT OTHER, HIGHER PRIORITY LISTING ACTIONS PREVENT THE SERVICE FROM ADDRESSING THE LISTING OF THE CUCKOO AT THIS TIME.

THE STATE OF ARIZONA
GAME AND FISH DEPARTMENT
2221 WEST GREENWAY ROAD, PHOENIX, AZ 85023-4399
(602) 942-3000 • WWW.AZGFD.COM

January 18, 2002

Ms. Fiona Goodson
HDR
2141 E. Highland Ave.
Suite 250
Phoenix, AZ 85016-4736

Re: Special Status Species Information for **Township 2 North, Range 1 East, Sections 33-36; Township 2 North, Range 2 East Sections 31-34; Township 1 North, Range 1 East, Sections 1-36; Township 1 North, Range 2 East Sections 3-10, 15-22, 27-34; Township 1 South, Range 1 East Sections 1, 12; Township 1 South, Range 2 East Sections 17, 18, 20, 27, 28, 34, and 35; Township 1 South, Range 3 East, Sections 31-36; Township 1 South, Range 4 East Sections 31-33, ADOT South Mountain Corridor Study.**

Dear Ms. Goodson:

The Arizona Game and Fish Department (Department) has reviewed your request, dated January 10, 2002, regarding special status species information associated with the above-referenced project area. The Department's Heritage Data Management System (HDMS) has been accessed and current records show that the special status species listed on the attachment have been documented as occurring in the project area. In addition, this project does not occur in the vicinity of any proposed or designated Critical Habitats.

The Department's HDMS data are not intended to include potential distribution of special status species. Arizona is large and diverse with plants, animals, and environmental conditions that are ever changing. Consequently, many areas may contain species that biologists do not know about or species previously noted in a particular area may no longer occur there. Not all of Arizona has been surveyed for special status species, and surveys that have been conducted have varied greatly in scope and intensity.

Making available this information does not substitute for the Department's review of project proposals, and should not decrease our opportunities to review and evaluate new project proposals and sites. The Department is also concerned about other resource values, such as other wildlife, including game species, and wildlife-related recreation.

The Department would appreciate the opportunity to provide an evaluation of impacts to wildlife or wildlife habitats associated with project activities occurring in the subject area, when specific details become available.

If you have any questions regarding the attached species list, please contact me at (602) 789-3618. General status information and county distribution lists for special status species are also available on our web site at: http://www.azgfd.com/frames/fishwild/hdms_site/Home.htm.

Sincerely,

Sabra S. Schwartz
Heritage Data Management System, Coordinator

SSS:ss

Attachment

cc: Bob Broscheid, Project Evaluation Program Supervisor
Russ Haughey, Habitat Program Manager, Region VI

AGFD #1-11-02(03)

Special Status Species within .5 Miles of T2N,R1E Sec 33-36; T2N,R2E Sec 31-34; T1N,R1E Sec 1-36; T1N,R2E Sec 3-10, 15-22, 27-34; T1S,R1E Sec 1, 12; T1S,R2E Sec 17, 18, 20, 27, 28, 34, 35; T1S,R3E Sec 31-36; T1S,R4E Sec 31-33

Arizona Game and Fish Department, Heritage Data Management System

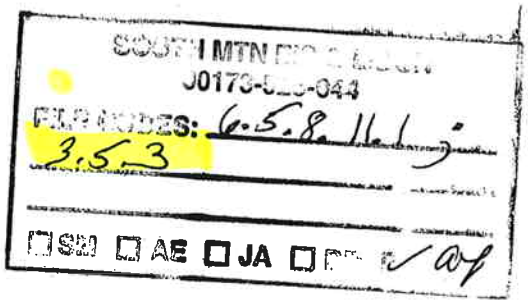
January 18, 2002

Scientific Name	Common Name	ESA	USFS	BLM	WSCA	NPL
ATHENE CUNICULARIA HYPUGAEA	WESTERN BURROWING OWL	SC		S		
COCCYZUS AMERICANUS	YELLOW-BILLED CUCKOO	C	S		WC	
DENDROCYGNA AUTUMNALIS	BLACK-BELLIED WHISTLING-DUCK				WC	
GOPHERUS AGASSIZII (SONORAN POPULATION)	SONORAN DESERT TORTOISE	SC			WC	

No Critical Habitats in project area. AGFD #01-11-02(03), ADOT South Mountain Corridor Study.

THE STATE OF ARIZONA
GAME AND FISH DEPARTMENT
2221 WEST GREENWAY ROAD, PHOENIX, AZ 85023-4399
(602) 942-3000 • AZGFD.COM

October 25, 2004



Ms. Andrea Love
HDR Engineering, Inc.
3200 E. Camelback Rd.
Suite 350
Phoenix, AZ 85018

Re: Special Status Species Information for **Township 2 North, Range 1 East, Section 33-36; Township 2 North, Range 2 East, Section 31-34; Township 1 North, Range 1 East, Section 1-36; Township 1 North, Range 2 East, Section 3-10, 15-22, and 27-34; Township 1 South, Range 1 East, Section 1 and 12; Township 1 South, Range 2 East, Section 17, 18, 20, 27, 28, 34, and 35; Township 1 South, Range 3 East, Section 31-36; Township 1 South, Range 4 East, Section 31-33: Proposed Freeway Connection.**

Dear Ms. Love:

The Arizona Game and Fish Department (Department) has reviewed your request, dated October 6, 2004, regarding special status species information associated with the above-referenced project area. The Department's Heritage Data Management System (HDMS) has been accessed and current records show that the special status species listed on the attachment have been documented as occurring in the project vicinity (2-mile buffer). In addition this project does not occur in the vicinity of any Designated or Proposed Critical Habitats.

The Department's HDMS data are not intended to include potential distribution of special status species. Arizona is large and diverse with plants, animals, and environmental conditions that are ever changing. Consequently, many areas may contain species that biologists do not know about or species previously noted in a particular area may no longer occur there. Not all of Arizona has been surveyed for special status species, and surveys that have been conducted have varied greatly in scope and intensity.

Making available this information does not substitute for the Department's review of project proposals, and should not decrease our opportunities to review and evaluate new project proposals and sites. The Department is also concerned about other resource values, such as other wildlife, including game species, and wildlife-related recreation. The Department would appreciate the opportunity to provide an evaluation of impacts to wildlife or wildlife habitats associated with project activities occurring in the subject area, when specific details become available.

If you have any questions regarding this letter, please contact me at (602) 789-3619. General status information, county and watershed distribution lists and abstracts for some special status species are also available on our web site at http://www.azgfd.com/hdms.

Sincerely,

Ginger Ritter

Ginger L. Ritter
Heritage Data Management System, Data Specialist

SSS:glr

Attachment

cc: Rebecca Davidson, Project Evaluation Program Supervisor
Russ Haughey, Habitat Program Manager, Region VI

AGFD #10-21-04 (01)

Special Status Species within 2 Miles of T2N, R1E Sec. 33-36; T2N, R2E Sec. 31-34; T1N, R1E Sec. 1-36; T1N, R2E Sec. 3-10, 15-22, & 27-34; T1S, R1E Sec. 1 & 12; T1S, R2E Sec. 17, 18, 20, 27, 28, 34, & 35; T1S, R3E, Sec. 31-36; T1S, R4E Sec. 31-33

NAME	COMMON NAME	ESA	BLM	USFS	STATE
Athene cunicularia hypugaea	Western Burrowing Owl	SC	S		
Coccyzus americanus occidentalis	Western Yellow-billed Cuckoo	C		S	WSC
Dendrocygna autumnalis	Black-bellied Whistling-duck				WSC
Gopherus agassizii (Sonoran Population)	Sonoran Desert Tortoise	SC			WSC
Ixobrychus exilis	Least Bittern				WSC
Lasiurus blossevillii	Western Red Bat				WSC
Rallus longirostris yumanensis	Yuma Clapper Rail	LE			WSC

No Critical Habitats in project area. AGFD # 10-21-04(01). Proposed Freeway Connection.

Arizona Game and Fish Department, Heritage Data Management System, October 25, 2004.

STATUS DEFINITIONS

ARIZONA GAME AND FISH DEPARTMENT (AGFD)
HERITAGE DATA MANAGEMENT SYSTEM (HDMS)

FEDERAL US STATUS

ESA **Endangered Species Act** (1973 as amended)
US Department of Interior, Fish and Wildlife Service (http://arizonaes.fws.gov)

Listed

- **LE** Listed Endangered: imminent jeopardy of extinction.
- **LT** Listed Threatened: imminent jeopardy of becoming Endangered.
- **XN** Experimental Nonessential population.

Proposed for Listing

- **PE** Proposed Endangered.
- **PT** Proposed Threatened.

Candidate (Notice of Review: 1999)

- **C** Candidate. Species for which USFWS has sufficient information on biological vulnerability and threats to support proposals to list as Endangered or Threatened under ESA. However, proposed rules have not yet been issued because such actions are precluded at present by other listing activity.
- **SC** Species of Concern. The terms "Species of Concern" or "Species at Risk" should be considered as terms-of-art that describe the entire realm of taxa whose conservation status may be of concern to the US Fish and Wildlife Service, but neither term has official status (currently all former C2 species).

Critical Habitat (check with state or regional USFWS office for location details)

- **Y** Yes: Critical Habitat has been designated.
- **P** Proposed: Critical Habitat has been proposed.

[**\N** No Status: certain populations of this taxon do not have designated status (check with state or regional USFWS office for details about which populations have designated status)**]**.

USFS **US Forest Service** (1999 Animals, 1999 Plants: corrected 2000)
US Department of Agriculture, Forest Service, Region 3 (http://www.fs.fed.us/r3/)

- **S** Sensitive: those taxa occurring on National Forests in Arizona which are considered sensitive by the Regional Forester.

BLM **US Bureau of Land Management** (2000 Animals, 2000 Plants)
US Department of Interior, Bureau of Land Management, Arizona State Office (http://azwww.az.blm.gov)

- **S** Sensitive: those taxa occurring on BLM Field Office Lands in Arizona which are considered sensitive by the Arizona State Office.
- **P** Population: only those populations of Banded Gila monster (*Heloderma suspectum cinctum*) that occur north and west of the Colorado River, are considered sensitive by the Arizona State Office.

STATE STATUS

STATE:

Plants - NPL Arizona Native Plant Law (1999)
Arizona Department of Agriculture (http://agriculture.state.az.us/PSD/nativeplants.htm)

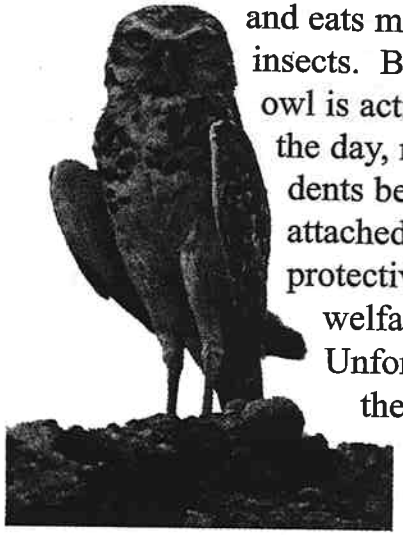
- **HS** Highly Safeguarded: no collection allowed.
- **SR** Salvage Restricted: collection only with permit.
- **ER** Export Restricted: transport out of State prohibited.
- **SA** Salvage Assessed: permits required to remove live trees.
- **HR** Harvest Restricted: permits required to remove plant by-products.

Wildlife - WSCA Wildlife of Special Concern in Arizona (in prep)
Arizona Game and Fish Department (http://www.azgfd.com)

- **WSC** Wildlife of Special Concern in Arizona. Species whose occurrence in Arizona is or may be in jeopardy, or with known or perceived threats or population declines, as described by the Arizona Game and Fish Department's listing of Wildlife of Special Concern in Arizona (WSCA, in prep). Species indicated on printouts as WSC are currently the same as those in **Threatened Native Wildlife in Arizona** (1988).

The Burrowing Owl Project

The Burrowing Owl is a beneficial raptor that lives in underground burrows and eats mice and insects. Because the owl is active during the day, nearby residents become very attached to them and protective of their welfare.



Unfortunately, in the past, heavy equipment has been used to prepare a site while the owls were still living there, in many cases killing the adult owls and burying baby owls in the nest. No one would deliberately chop down a tree with an eagle on a nest, yet that is what is happening to the Burrowing Owl. Because this bird lives underground, it is not immediately apparent that there are protected birds in danger. Moving the birds out of the way is very inexpensive compared to a project delay. A licensed specialist, such as Wild At Heart in Cave Creek, Arizona, can remove the owls and relocate them to an area that won't be developed.

For More Information

- To report the location of a Burrowing Owl burrow that lies in the path of development, or to request help in removing an owl, contact:

  Bob Fox
  Wild At Heart
  31840 North 45th Street
  Cave Creek, Arizona 85331
  (480) 595-5047

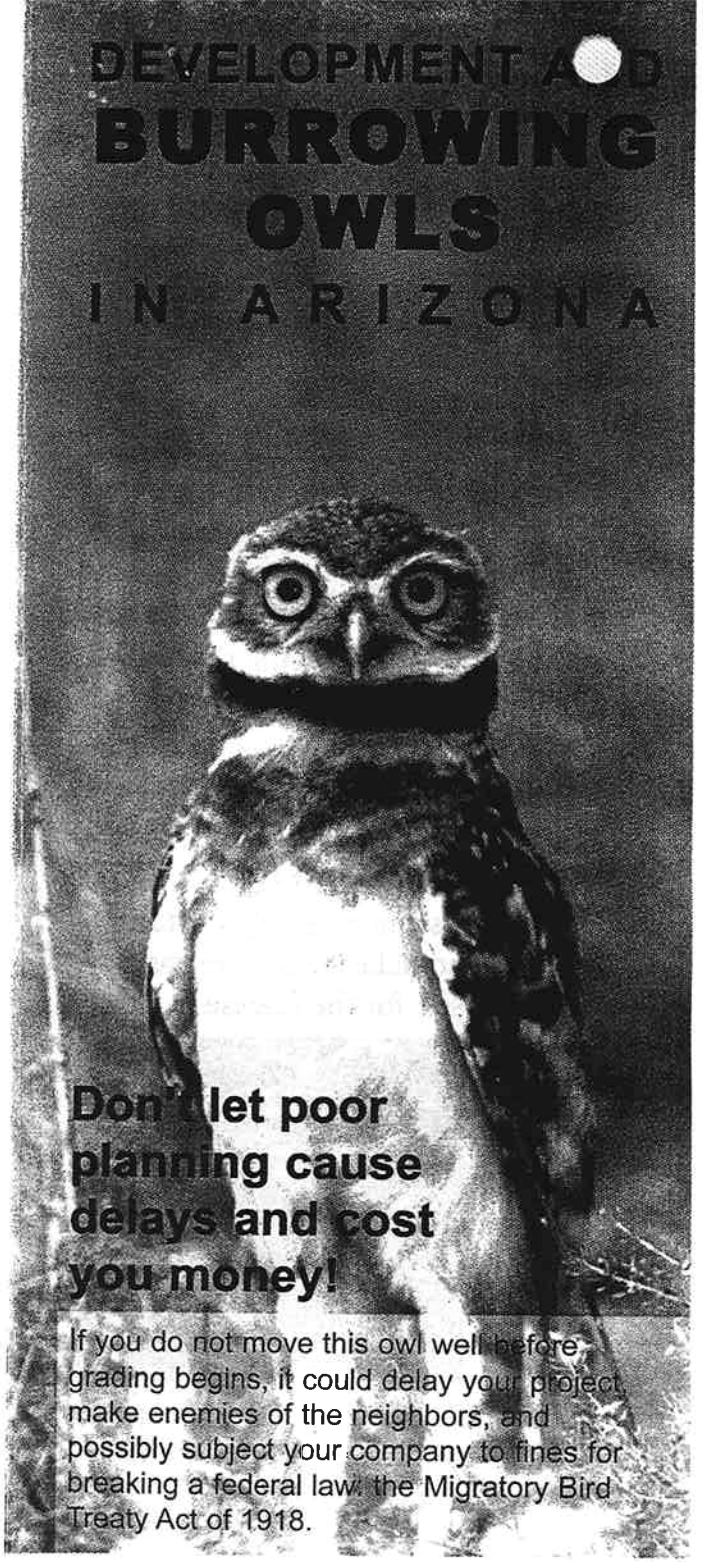
- To request help in finding or evaluating a site for artificial burrows, contact:

  Greg Clark
  Burrowing Owl Project
  650 South 79th Street
  Chandler, Arizona 85226
  (480) 961-4047

- Visit the Burrowing Owl Project web site at http://mirror-pole.com for details about owl removal, relocation and burrow installation locations.

- For more information about Arizona Partners in Flight contact:

  Jennifer Martin
  Arizona Partners in Flight
  Arizona Game and Fish Dept.
  2221 W. Greenway Road
  Phoenix, Arizona 85023-4399
  (602) 789-3576
  jmartin@gf.state.az.us



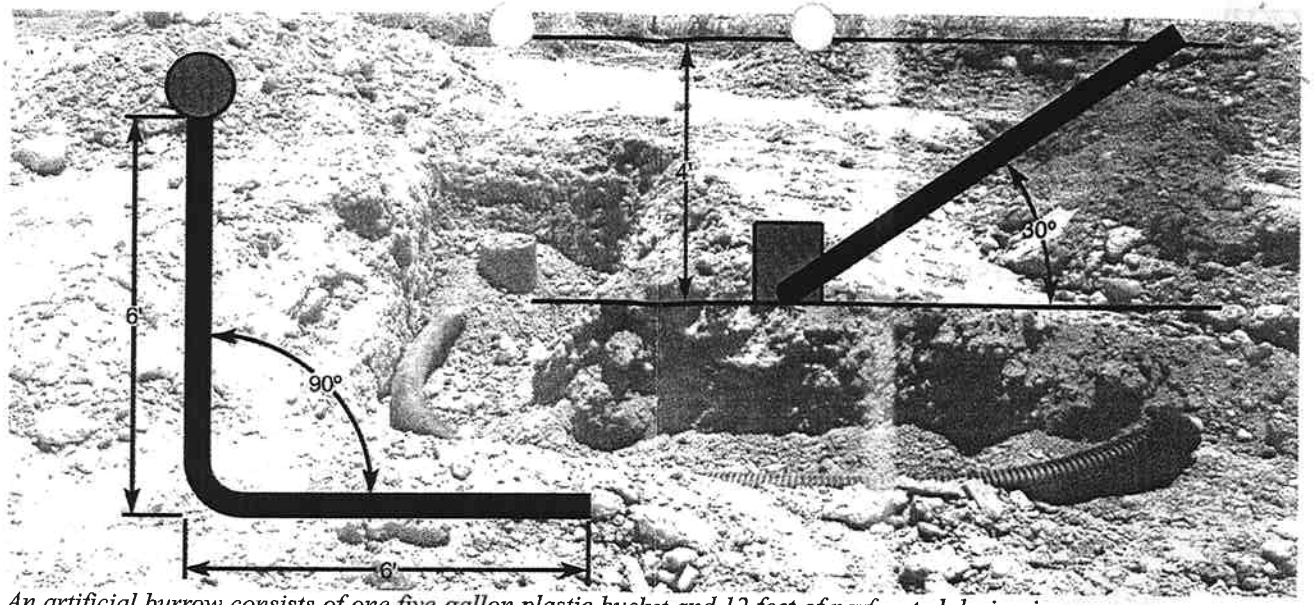
Where Are the Owls Found?

It is possible to find Burrowing Owls anywhere in Arizona where the land is flat and open. The most likely locations are near agricultural fields where the burrows are found in dirt canal banks

and culvert pipes. Burrowing Owls are also found in undisturbed desert and grassland areas where the vegetation is sparse and there are very few big trees.

What is Relocation?

Burrowing Owls can be safely captured by an expert and held for later release. Typically, the site for the release is designated within or near the development, and artificial burrows are installed in advance of capture. The cost of materials for a burrow is only $10, and digging the hole for installation is quick and easy with a backhoe.



An artificial burrow consists of one five-gallon plastic bucket and 12 feet of perforated drain pipe.

Be Part of the Solution

Burrowing Owls are a valuable addition to a development. Wholly beneficial, they catch insects, such as scorpions, and rodents that most people would rather not have around. In addition, the owls can be an important educational resource for schools and children.

The builder provided a backhoe and operator to excavate the hole for an artificial burrow.

ASU students digging a hole for an artificial burrow.

Partners in Flight

Partners in Flight
is an international cooperative program of agencies, organizations, and individuals committed to conserving our neotropical migratory and native land birds.
Arizona Partners in Flight
(APIF) is a subgroup of this international program. Its goal is to maintain healthy populations of Arizona's birds and their habitats.

This brochure was created as part of the Partners in Flight Conservation Initiative. Through improved habitat management and environmental awareness, Partners in Flight strives to reverse the declining numbers of many North American bird species and to work toward keeping common birds common.

Schippers, Susanna

From: Moroge, Michael E.
Sent: Friday, March 31, 2006 11:28 AM
To: Allen, Jack
Cc: Watzek, Kurt
Subject: FW: South Mountain Parkway

Follow Up Flag: Follow up
Flag Status: Flagged

See AGFD comments below!

-----Original Message-----
From: Alicia Jontz [mailto:AJontz@gf.state.az.us]
Sent: Friday, March 31, 2006 11:19 AM
To: Moroge, Michael E.
Cc: Russ Haughey; Pat Crouch; Ray Schweinsburg; Kelly Wolff
Subject: South Mountain Parkway

Michael,

On February 17, 2006, Arizona Game and Fish Department biologists met with Phoenix Parks and Recreation Department at South Mountain to evaluate the proposed route for the continuation of Loop 202, the alternative routes and the proposed wildlife crossings. The Department is strongly committed to maintaining connectivity between wildlife habitats within Arizona. Connectivity should be maintained between South Mountain Park and the Estrella Mountains if possible. In the review of the proposed freeway construction and site visit several challenges to maintaining connectivity between the mountain ranges were noted.

In order for any wildlife crossings to be successful, it is essential that undeveloped wildlife corridors be established and maintained between South Mountain Park and the Estrella Mountains. The majority of the land falling between the two mountain ranges belongs to the Gila River Indian Community. This land is currently sparsely developed; however, while on site, we observed areas that appear to be prepared for development. GRIC would need to be involved in this process and agree to establish corridors across their land. Since reservations are essentially a sovereign nation and many tribes face economic challenges, it may be extremely difficult to develop a relationship with the GRIC at this late juncture and have them set aside lands that they may otherwise develop to the benefit of their economy and tribal members. Surface streets, such as 51st Avenue, may also prove to be barriers to successful wildlife movement as traffic increases. If wildlife corridors are established it may be necessary to place crossings on surface streets lying between the two mountain ranges.

While reviewing the proposed freeway design, we noted that at final buildout, the new freeway is scheduled to be a solid roadway including both lanes of travel and HOV lanes, without a break in the median. A freeway of this size would require lengthy wildlife underpasses or tunnels. Research has shown that many species will not use these large crossings, due to reduced visibility inside the crossing and the inability to see the other side of the crossing. A preferred alternative would be to separate the two lanes of travel, at crossings, allowing for a break in the median and natural light to penetrate the wildlife crossing. The wildlife crossings would then be built at two shorter crossings, which wildlife will more readily use. If this is not possible, the use of artificial lighting inside the crossing may be sufficient.

Currently, the new freeway is proposed to be a ground level freeway with several small wildlife crossings such as box culverts and a few larger crossings. Coyotes, javelina, bobcats, foxes desert tortoises, snakes, gila monsters, chuckwalls

are known to occur within South Mountain Park. Both historically and recently, there have been several credible, but unconfirmed sightings of Mountain Lions within South Mountain Park. Mule deer have not be documented in South Mountain Park for some time and are believed to be extirpated from the area; however, it is possible they still occur in small numbers. The smaller box culvert type crossings will work for many of the smaller wildlife species; however, larger crossings such a raised bridge, provide a more effective crossing for all wildlife species. Natural stream beds or washes may be appropriate places to locate the bridges. With either type of crossing it is essential that the bottom of the crossing be a natural substrate, not the bottom of a concrete box or metal tube, and that fencing is used to encourage use of the crossing.

In the plans for the proposed wildlife crossings, a multiple use crossing was outlined that would allow for both wildlife crossing and human recreation such as hiking and horseback riding. We would strongly discourage this type of design for a wildlife crossing. While some human traffic is unavoidable, managing for high use human recreation would discourage wildlife from using the area, making the crossing ineffective for wildlife movements.

Several routes are proposed to connect the 202 to I-10 in the west valley. In order to maintain the quality and integrity of our riparian systems, the 75th Avenue alternative would be preferable to the 91st Avenue alternative.

The Department appreciates the effort and consideration put into this project by ADOT and other participating parties. Wildlife crossings on roadways in Arizona are relatively new and previously concessions were not made for wildlife. In this instance all involved parties may need to consider that due to expanding development in the Phoenix metropolitan area and the lack of long term sustainable corridors between South Mountain and the Estrella Mountains across GRIC land, this project may not be the highest priority for wildlife crossings in the state. While some wildlife crossings may be appropriate, large expenditures of state funds may not be appropriate in this case. Any wildlife that migrates from the Estrella Mountains into South Mountain park will find themselves landlocked by development and may end up in the urban area causing conflicts with human populations. If all barriers to movement can be overcome, a comprehensive study of species occurrence and density within South Mountain Park would be useful to determine the types of crossings that should be build, species use of crossings once built, and long term population dynamics pre and post freeway construction.

Alicia Jontz
Wildlife Manager Central Phoenix
623-556-1158

Telephone Conversation Record

HDR

Project: South Mountain | Project No. 59220

Time | Date: 4/21/10

Call to: Kenneth Jacobson 623-236-7575 (AGFD) Phone No. | Call from: Kurt Wutzke Phone No.

Discussion, Agreement and/or Action

Called to ask Ken about the bald eagle nest that Greg Beatty told me had been found along the Salt and Gila river area. Greg had said I should talk with Ken to get more information and I mentioned this to Ken. Greg Beatty is with the USFWS.

Ken confirmed that the nest was within 2 miles of the Salt River and approx. 79th Ave area. I gave him information about the nearest project alternative and asked how close it was to the alternative. He would not say but when I asked if it was within one mile, he said it could be. Ken said the nest was in a Cottonwood tree and the male eagle was a banded 4 year old and the AGFD figured the female was about the same age. They believed that more than one egg hatched but only one young eagle left the nest and was branching.

cc:

Sent: Friday, June 17, 2011 4:49 PM
To: Sabra Schwartz
Subject: need updated species info for BE

Hello Sabra,

As I indicated on the phone I should have just gone to you first!

I am trying to update and finalize a BE for a project and want to make sure that the species information in regard to statements related to likelihood for occurring in the project area, is the most recent. Not all of these species showed up in the review tool but there is habitat for the fish species for example. The references that may be outdate that I am concerned with date from 1998 to 2002, which may still be valid but I need to check. The species I have not been able to get more recent information on include the desert pupfish, Gila topminnow, roundtail chub, yellow-billed cuckoo, and desert tortoise. For the fish species and cuckoo the area in question is the Salt River roughly between 43rd Avenue and 108th Avenue and for the desert tortoise, the Gila River Indian Community northern border area from roughly 48th Street to 51st Avenue south of South Mountain.

I also noticed that the bald eagle (Sonoran pop.) is no longer on the Maricopa county species list. Is there some movement in the courts?

The On-line Environmental Review Tool results were not as recent as I had recollected! Not sure where that time went but the receipt search ID numbers are:
20101029013551
20091031010488
20091031010489
20091031010490
20091031010491
20091031010492
20091031010493

Thanks for your assistance.
Kurt

Kurt Watzek

HDR ONE COMPANY | ***Many Solutions***
3200 East Camelback Road, Suite 350 | Phoenix, Arizona | 85018-2311
Main: 602.522.7700 | Direct: 602.522.4327 | Fax: 602.522.7707 | Email: kurt.watzek@hdrinc.com

From: Sue Schuetze
To: Watzek, Kurt
Subject: FW: need updated species info for BE
Date: Friday, June 24, 2011 2:56:58 PM

Hi Kurt,

Taking a look at the species in questioned, no new information was found after 2002, but that does not mean they are not there if surveys have not been done. Some of the area in question out west is near some of our properties along the Salt River, so they may well be there, especially the Yellow-billed Cuckoo. I have last observed dates for west of 108th ave of 2002 and also a couple of observations east of there also last observed in 2002. If you haven't checked already, you may want to go online and check out the Arizona Bird Photo Identification website which our ornithologist apart of (Part of the Arizona Bird Committee). The url is http://www.azfo.org/gallery/1main/photos_recent.html. This is not an all inclusive site, citizen birders along with other more experienced birders will send in their photos for ID, and you may get an answer for this area that we do not have. I will check with Troy when he is back in the office though.

I had little luck with the fish. There were no locations in and around the stretch of river you defined. Same for the Gila Topminnow, accept for being in a few school refugia ponds throughout the valley back in 2002 (if they are still there). There were several observations of Gila Chub in the Arizona Canal between 19th and 67th avenues between 1992-1994, but that is it.

As for Desert tortoise, there are a couple of observations on the north and south side of the South Mountains (not surprising) dating from the 1990s, and several observations on the NW border area of the Gila River Indian Community, but they were from the 1980s. Again, with the Indian Community land not surveyed itself, they could well be on their property. There are a couple of 1970s occurrences on their property but much further south, and probably before tribal restrictions on surveying tribal lands became more stringent. I will check with our fish heads and tortoise biologist and see what they know and get back to you asap.

Have a good weekend.

Sue

Susan M. Schuetze
Habitat Branch, HDMS Data Manager
Arizona Game and Fish Department
5000 W. Carefree Hwy
Phoenix, AZ 85086
(623) 236-7616
sschuetze@azgfd.gov

From: Watzek, Kurt [mailto:Kurt.Watzek@hdrinc.com]

U.S. Department of Transportation
Federal Highway Administration

ARIZONA DIVISION

4000 North Central Avenue
Suite 1500
Phoenix, Arizona 85012-3500
Phone: (602) 379-3646
Fax: (602) 382-8998
http://www.fhwa.dot.gov/azdiv/index.htm

July 2, 2013

In Reply Refer To:
NH-202-D(ADY)
HOP-AZ

NH-202-D(ADY)
TRACS No. 202L MA 054 H5764 01L
South Mountain Freeway (Loop 202)
Request for Rio Salado Oeste status concurrence

Mr. Jim Andersen, Realty Specialist
Bureau of Land Management
21605 West 4th Avenue
Phoenix, Arizona 85027

Dear Mr. Andersen:

This letter summarizes the current information the South Mountain Freeway study team has compiled regarding the Rio Salado Oeste (RSO) project as it relates to the W59 Alternative of the *South Mountain Freeway (Loop 202), Interstate 10 (Papago Freeway) to Interstate 10 (Maricopa Freeway), Draft Environmental Impact Statement and Section 4(f) Evaluation.* It should be noted that most of the coordination between the Bureau of Land Management (BLM), City of Phoenix, and the U.S. Army Corps of Engineers (USACE) regarding RSO was in relation to the W55 Alternative. In 2009, the W55 Alternative was shifted to 59th Avenue and was renamed the W59 Alternative. The location of the Salt River/RSO crossing has not changed.

The W59 Alternative would cross the Salt River through the eastern half of a 192-acre BLM parcel. The City of Phoenix has a lease on this parcel under provisions of the Recreation and Public Purposes Act (Lease A-31292). The leased land would be included in the proposed RSO project, which is cosponsored by USACE. Although the lease does not include a reference to the proposed freeway, BLM and the City of Phoenix, in an August 2005 letter, indicated they would work together to amend the lease to show the proposed freeway passing through the parcel if the W55 Alternative was identified as the selected alternative in the environmental impact statement (EIS) and Record of Decision.

In July 2010, the City of Phoenix and USACE completed the *Rio Salado Oeste Conceptual Design Documentation Report*. This report incorporates the location of the proposed South Mountain Freeway as it passes through RSO (see enclosure). According to USACE, the RSO project lacks funding to proceed. As a result, the proposed construction of the South Mountain Freeway in this area would precede RSO. Although traffic noise could affect some species, any wildlife that would inhabit the area after habitat improvements would experience the freeway as

an existing condition and become habituated to traffic noise. The City of Phoenix and USACE view the South Mountain Freeway crossing as an opportunity to use stormwater runoff from the proposed freeway to "irrigate" the river habitat. The study team will continue to consult with BLM, USACE, and the City of Phoenix to coordinate design efforts to minimize impacts on the proposed uses of this land.

If this summary is accurate and reflects the most currently available information, please sign the concurrence line below. If you or others in your organization have additional information, please provide it to the Federal Highway Administration by July 14, 2013, so that it can be incorporated into the Final EIS. If you have any questions, please contact Rebecca Yedlin, FHWA Environmental Coordinator, at (620) 382-8979 or Rebecca.Yedlin@dot.gov.

Thank you for your time and assistance.

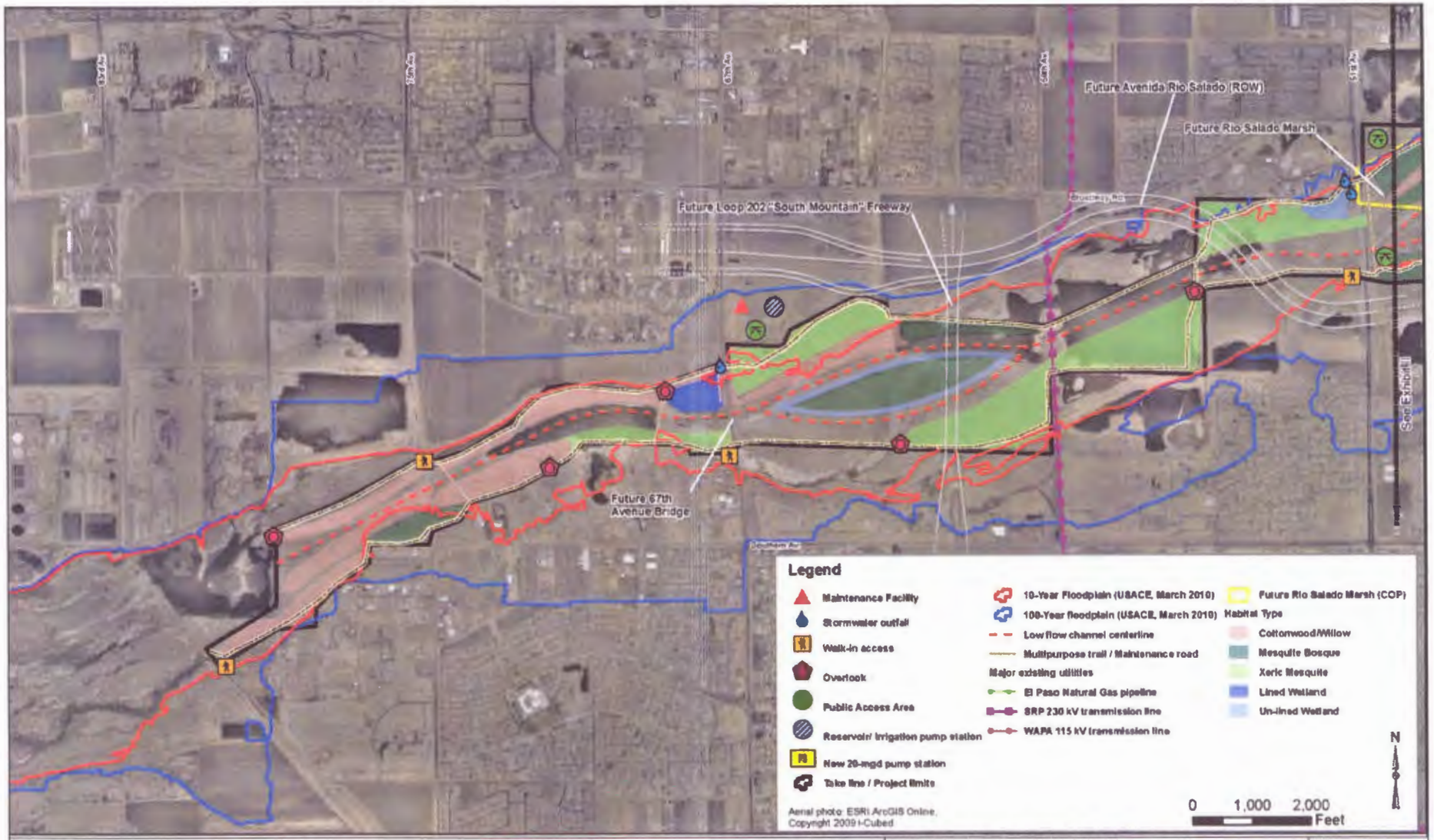
Sincerely,

for Karla S. Petty
Division Administrator

Signature for Bureau of Land Management Concurrence (BLM-Wildlife) — Date 07/09/2013
NH-202-D(ADY)

Enclosure

cc:
Karen Williams, City of Phoenix, 200 West Washington Street, 12th Floor, Phoenix, AZ 85003
Brian Kenny, U.S. Army Corps of Engineers, 3636 North Central Avenue, Phoenix, AZ 85012
Ben Spargo, HDR Engineering, Inc. , 3200 E. Camelback Rd., Suite 350, Phoenix, AZ 85018
Scott Stapp, HDR Engineering, Inc. , 3200 E. Camelback Rd., Suite 350, Phoenix, AZ 85018



HDR CDM A JOINT VENTURE

City of Phoenix

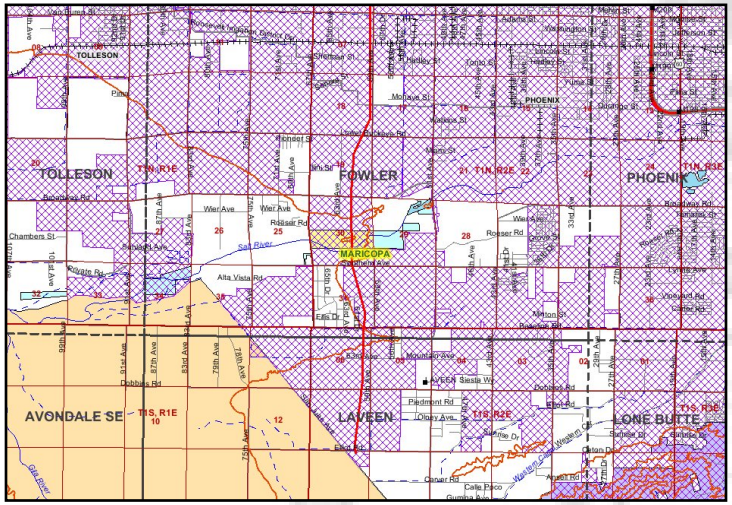
RIO SALADO OESTE CDDR
PROJECT FEATURES MAP
1 OF 2

DATE 7/1/10

EXHIBIT 1

Arizona's On-line Environmental Review Tool
Search ID: 20140228022620
Project Name: SM W55 v3
Date: 2/28/2014 3:23:25 PM

Project Location



Project Name: SM W55 v3
Submitted By: Kurt Watzek
On behalf of: ADOT
Project Search ID: 20140228022620
Date: 2/28/2014 3:23:19 PM
Project Category: Transportation & Infrastructure,Road construction (including staging areas),Realignment/ new roads
Project Coordinates (UTM Zone 12-NAD 83): 389260.161, 3697542.360 meter
Project Length: 11867.631 meter
County: MARICOPA
USGS 7.5 Minute Quadrangle ID: 1343
Quadrangle Name: LAVEEN
Project locality is currently being scoped

The Department appreciates the opportunity to provide in-depth comments and project review when additional information or environmental documentation becomes available.

Special Status Species Occurrences/Critical Habitat/Tribal Lands within 3 miles of Project Vicinity:

Name	Common Name	FWS	USFS	BLM	State
Athene cunicularia hypugaea	Western Burrowing Owl	SC	S	S	
Gila River Indian Reservation	Gila River Indian Reservation				
Haliaeetus leucocephalus pop. 3	Bald Eagle - Sonoran Desert Population	SC,BGA	S	S	WSC
Ixobrychus exilis	Least Bittern				WSC

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 APPLICATION INITIALS: _____

Please review the entire receipt for project type recommendations and/or species or location information and retain a copy for future reference. If any of the information you provided did not accurately reflect this project, or if project plans change, another review should be conducted, as this determination may not be valid.

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2. These recommendations have been made by the Department, under authority of Arizona Revised Statutes Title 5 (Amusements and Sports), 17 (Game and Fish), and 28 (Transportation). These recommendations are preliminary in scope, designed to provide early considerations for all species of wildlife, pertinent to the project type you entered.
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The U.S. Fish and Wildlife Service (USFWS) has regulatory authority over all federally listed species under the ESA. Contact USFWS Ecological Services Offices: http://arizonaes.fws.gov/.

Phoenix Main Office
2321 W. Royal Palm Road, Suite 103
Phoenix, AZ 85021
Phone 602-242-0210
Fax 602-242-2513

Tucson Sub-Office
201 North Bonita, Suite 141
Tucson, AZ 85745
Phone 520-670-6144
Fax 520-670-6154

Flagstaff Sub-Office
323 N. Leroux Street, Suite 101
Flagstaff, AZ 86001
Phone 928-226-0614
Fax 928-226-1099

Disclaimer:

1. This is a preliminary environmental screening tool. It is not a substitute for the potential knowledge gained by having a biologist conduct a field survey of the project area.
2. The Department's Heritage Data Management System (HDMS) data is not intended to include potential distribution of special status species. Arizona is large and diverse with plants, animals, and environmental conditions that are ever changing. Consequently, many areas may contain species that biologists do not know about or species previously noted in a particular area may no longer occur there.
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Arizona Game and Fish Department Mission

To conserve, enhance, and restore Arizona's diverse wildlife resources and habitats through aggressive protection and

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management programs, and to provide wildlife resources and safe watercraft and off-highway vehicle recreation for the enjoyment, appreciation, and use by present and future generations.

Project Category: Transportation & Infrastructure,Road construction (including staging areas),Realignment/ new roads

Project Type Recommendations:

All degraded and disturbed lands should be restored to their natural state. Vegetation restoration projects (including treatments of invasive or exotic species) should have a completed site-evaluation plan (identifying environmental conditions necessary to re-establish native vegetation), a revegetation plan (species, density, method of establishment), a short and long-term monitoring plan, including adaptive management guidelines to address needs for replacement vegetation.

Based on the project type entered; coordination with Arizona Department of Environmental Quality may be required (http://www.azdeq.gov/).

Based on the project type entered; coordination with County Flood Control districts may be required.

Based on the project type entered; coordination with State Historic Preservation Office may be required http://azstateparks.com/SHPO/index.html

Based on the project type entered; coordination with U.S. Army Corps of Engineers may be required (http://www.spl.usace.army.mil/regulatory/phonedir.html)

During planning and construction, minimize potential introduction or spread of exotic invasive species. Invasive species can be plants, animals (exotic snails), and other organisms (e.g. microbes), which may cause alteration to ecological functions or compete with or prey upon native species and can cause social impacts (e.g. livestock forage reduction, increase wildfire risk). The terms noxious weed or invasive plants are often used interchangeably. Precautions should be taken to wash all equipment utilized in the project activities before and after project activities to reduce the spread of invasive species. Arizona has noxious weed regulations (Arizona Revised Statutes, Rules R3-4-244 and R3-4-245). See Arizona Department of Agriculture website for restricted plants http://www.azda.gov/PSD/quarantine5.htm. Additionally, the U.S. Department of Agriculture has information regarding pest and invasive plant control methods including: pesticide, herbicide, biological control agents, and mechanical control: http://www.usda.gov/wps/portal/usdahome. The Department regulates the importation, purchasing, and transportation of wildlife and fish (Restricted Live Wildlife), please refer to the hunting regulations for further information http://www.azgfd.gov/h_f/hunting_rules.shtml.

During the planning stages of your project, please consider the local or regional needs of wildlife in regards to movement, connectivity, and access to habitat needs. Loss of this permeability prevents wildlife from accessing resources, finding mates, reduces gene flow, prevents wildlife from re-colonizing areas where local extirpations may have occurred, and ultimately prevents wildlife from contributing to ecosystem functions, such as pollination, seed dispersal, control of prey numbers, and resistance to invasive species. In many cases, streams and washes provide natural movement corridors for wildlife and should be maintained in their natural state. Uplands also support a large diversity of species, and should be contained within important

wildlife movement corridors. In addition, maintaining biodiversity and ecosystem functions can be facilitated through improving designs of structures, fences, roadways, and culverts to promote passage for a variety of wildlife.

Hydrological considerations: design culverts to minimize impacts to channel geometry, or design channel geometry (low flow, overbank, floodplains) and substrates to carry expected discharge using local drainages of appropriate size as templates. Aquatic wildlife considerations: reduce/minimize barriers to migration of amphibians or fish (e.g. eliminate falls). Terrestrial wildlife: washes and stream corridors often provide important corridors for movement. Overall culvert width, height, and length should be optimized for movement of the greatest number and diversity of species expected to utilize the passage. Culvert designs should consider moisture, light, and noise, while providing clear views at both ends to maximize utilization. For many species, fencing is an important design feature that can be utilized with culverts to funnel wildlife into these areas and minimize the potential for roadway collisions. Guidelines for culvert designs to facilitate wildlife passage can be found at http://www.azgfd.gov/hgis/guidelines.aspx.

Minimization and mitigation of impacts to wildlife and fish species due to changes in water quality, quantity, chemistry, temperature, and alteration to flow regimes (timing, magnitude, duration, and frequency of floods) should be evaluated. Minimize impacts to springs, in-stream flow, and consider irrigation improvements to decrease water use. If dredging is a project component, consider timing of the project in order to minimize impacts to spawning fish and other aquatic species (including spawning seasons), and to reduce spread of exotic invasive species. We recommend early direct coordination with Project Evaluation Program for projects that could impact water resources, wetlands, streams, springs, and/or riparian habitats.

Planning: consider impacts of lighting intensity on mammals and birds and develop measures or alternatives that can be taken to increase human safety while minimizing potential impacts to wildlife. Conduct wildlife surveys to determine species within project area, and evaluate proposed activities based on species biology and natural history to determine if artificial lighting may disrupt behavior patterns or habitat use.

Preconstruction - Consider design structures and construction plans that minimize impacts to channel geometry (i.e. width/depth ratio, sinuosity, allow overflow channels) to avoid alteration of hydrological function. Identify whether wildlife species use the structure for roosting or nesting during anticipated construction period. Plan the timing of construction/maintenance to minimize impacts to wildlife species. In addition to the species list generated by the Arizona's On-line Environmental Review Tool, the Department recommends that surveys be conducted at the bridge and in the vicinity of the bridge to identify additional or currently undocumented bat, bird, or aquatic species in the project area. To minimize impacts to birds and bats, as well as aquatic species, consider conducting maintenance and construction activities outside the breeding/maternity season (breeding seasons for birds and bats usually occur spring - summer). Examining the crevices for the presence of bats prior to pouring new paving materials. When bats are present, the top of the crevices should be sealed to prevent material from dripping or falling through the cracks and potentially onto bats. If bats are present, maintenance and construction (including paving and milling) activities should be conducted during nighttime hours, if possible, when the fewest number of bats will be roosting. Consider incorporating roosting habitat for bats into bridge designs. Minimize impacts to the vegetation community. A revegetation plan should be developed to replace impacted communities. Unavoidable impacts to vegetation should be mitigated on-site whenever possible. During construction: Erosion control structures and drainage features should be used to prevent introduction of sediment laden runoff into the waterway. Minimize instream construction activity. If culverts are planned, mitigate impacts to wildlife and fish movement. Guidelines for bridge designs to facilitate wildlife passage can be found at http://www.azgfd.gov/hgis/guidelines.aspx.

 APPLICATION INITIALS: _____

Recommendations will be dependant upon goals of the fence project and the wildlife species expected to be impacted by the project. General guidelines for ensuring wildlife-friendly fences include: barbless wire on the top and bottom with the maximum fence height 42”, minimum height for bottom 16”. Modifications to this design may be considered for fencing anticipated to be routinely encountered by elk, bighorn sheep or pronghorn (e.g., Pronghorn fencing would require 18” minimum height on the bottom). Please refer to the Department's Fencing Guidelines located at http://www.azgfd.gov/hgis/guidelines.aspx.

The Department recommends that wildlife surveys are conducted to determine if noise-sensitive species occur within the project area. Avoidance or minimization measures could include conducting project activities outside of breeding seasons.

The Department requests further coordination to provide project/species specific recommendations, please contact Project Evaluation Program directly.

Trenches should be covered or back-filled as soon as possible. Incorporate escape ramps in ditches or fencing along the perimeter to deter small mammals and herptefauna (snakes, lizards, tortoise) from entering ditches.

Project Location and/or Species recommendations:

Tribal Lands are within the vicinity of your project area (refer to page 1 of the receipt) and may require further coordination. Please contact:
Gila River Indian Community
P.O. Box 97
Sacaton, AZ 85247
Phone: 520-562-6000
Fax: 520-562-6010

Heritage Data Management System records indicate that one or more listed, proposed, or candidate species or Critical Habitat (Designated or Proposed) have been documented in the vicinity of your project (refer to page 1 of the receipt). Please contact:
Ecological Services Office
US Fish and Wildlife Service
2321 W. Royal Palm Rd.
Phoenix, AZ 85021-4951
Phone: 602-242-0210
Fax: 602-242-2513

Heritage Data Management System records indicate that western burrowing owls have been documented within the vicinity of your project area (refer to the species list on page 1 of the receipt). Please review the relocation procedures recommended for burrowing owls found on the Environmental Review Home Page: http://mirror-pole.com/burr_owl/bur_owl1.htm.

Recommendations Disclaimer:

1. Potential impacts to fish and wildlife resources may be minimized or avoided by the recommendations generated from information submitted for your proposed project.
2. These recommendations are proposed actions or guidelines to be considered during **preliminary project development**.
3. Additional site specific recommendations may be proposed during further NEPA/ESA analysis or through coordination with affected agencies.
4. Making this information directly available does not substitute for the Department’s review of project proposals, and should not decrease our opportunity to review and evaluate additional project information and/or new project proposals.
5. The Department is interested in the conservation of all fish and

wildlife resources, including those Special Status Species listed on this receipt, and those that may have not been documented within the project vicinity as well as other game and nongame wildlife.
6. **Further coordination requires the submittal of this initialed and signed Environmental Review Receipt with a cover letter and project plans or documentation that includes project narrative, acreage to be impacted, how construction or project activity(s) are to be accomplished, and project locality information (including site map).**
7. Upon receiving information by AZGFD, please allow 30 days for completion of project reviews. Mail requests to:

Project Evaluation Program, Habitat Branch
Arizona Game and Fish Department
5000 West Carefree Highway
Phoenix, Arizona 85086-5000
Phone Number: (623) 236-7600
Fax Number: (623) 236-7366

Terms of Use

By using this site, you acknowledge that you have read and understand the terms of use. Department staff may revise these terms periodically. If you continue to use our website after we post changes to these terms, it will mean that you accept such changes. If at any time you do not wish to accept the Terms, you may choose not to use the website.

1. This Environmental Review and project planning website was developed and intended for the purpose of screening projects for potential impacts on resources of special concern. By indicating your agreement to the terms of use for this website, you warrant that you will not use this website for any other purpose.
2. Unauthorized attempts to upload information or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act .
3. The Department reserves the right at any time, without notice, to enhance, modify, alter, or suspend the website and to terminate or restrict your access to the website.
4. This Environmental Review is based on the project study area that was entered. The review must be redone if the project study area, location, or the type of project changes. If additional information becomes available, this review may need to be reconsidered.
5. A signed and initialed copy of the Environmental Review Receipt indicates that the entire receipt has been read by the signer of the Environmental Review Receipt.

Security:

The Environmental Review and project planning web application operates on a complex State computer system. This system is monitored to ensure proper operation, to verify the functioning of applicable security features, and for other like purposes. Anyone using this system expressly consents to such monitoring and is advised that if such monitoring reveals possible evidence of criminal activity, system personnel may provide the evidence of such monitoring to law enforcement officials. Unauthorized attempts to upload or change information; to defeat or circumvent security measures; or to utilize this system for other than its intended purposes are prohibited.

This website maintains a record of each environmental review search result as well as all contact information. This information is maintained for internal tracking purposes. Information collected in this application will not be shared outside of the purposes of the Department.

If the Environmental Review Receipt and supporting material are not mailed to the Department or other appropriate agencies within six (6) months of the Project Review Receipt date, the receipt is considered to be null and void, and a new review must be initiated.

 APPLICATION INITIALS: _____

Print this Environmental Review Receipt using your Internet browser's print function and keep it for your records. Signature of this receipt indicates the signer has read and understands the information provided.

Signature:_____

Date: _____

Proposed Date of Implementation: _____

Please provide point of contact information regarding this Environmental Review.

Application or organization responsible for project implementation

Agency/organization:_____

Contact Name: _____

Address: _____

City, State, Zip: _____

Phone: _____

E-mail: _____

Person Conducting Search (if not applicant)

Agency/organization:_____

Contact Name: _____

Address: _____

City, State, Zip: _____

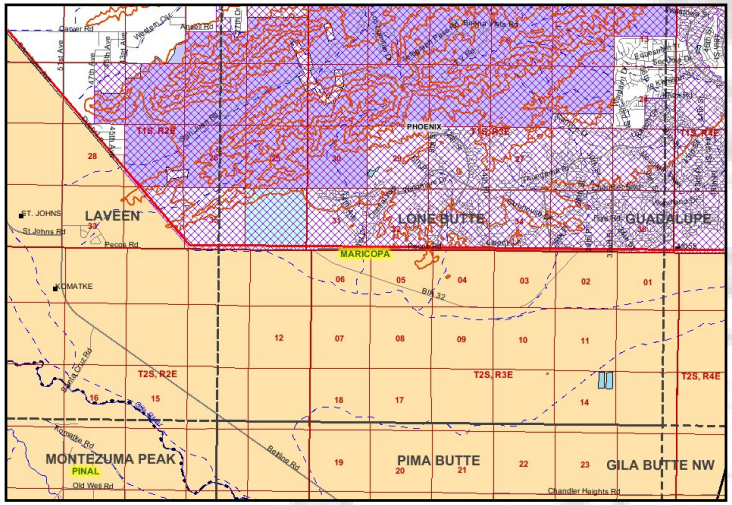
Phone: _____

E-mail: _____

 APPLICATION INITIALS: _____

Arizona's On-line Environmental Review Tool
Search ID: 20140228022622
Project Name: SM E1 v3
Date: 2/28/2014 4:53:55 PM

Project Location



Project Name: SM E1 v3
Submitted By: Kurt Watzek
On behalf of: ADOT
Project Search ID: 20140228022622
Date: 2/28/2014 4:53:49 PM
Project Category: Transportation & Infrastructure,Road construction (including staging areas),Realignment/ new roads
Project Coordinates (UTM Zone 12-NAD 83): 397559.841, 3685979.607 meter
Project Length: 21345.335 meter
County: MARICOPA
USGS 7.5 Minute Quadrangle ID: 1343
Quadrangle Name: LAVEEN
Project locality is currently being scoped

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Gila River Indian Reservation	Gila River Indian Reservation				
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Fax 520-670-6154

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323 N. Leroux Street, Suite 101
Flagstaff, AZ 86001
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Minimization and mitigation of impacts to wildlife and fish species due to changes in water quality, quantity, chemistry, temperature, and alteration to flow regimes (timing, magnitude, duration, and frequency of floods) should be evaluated. Minimize impacts to springs, in-stream flow, and consider irrigation improvements to decrease water use. If dredging is a project component, consider timing of the project in order to minimize impacts to spawning fish and other aquatic species (including spawning seasons), and to reduce spread of exotic invasive species. We recommend early direct coordination with Project Evaluation Program for projects that could impact water resources, wetlands, streams, springs, and/or riparian habitats.

Planning: consider impacts of lighting intensity on mammals and birds and develop measures or alternatives that can be taken to increase human safety while minimizing potential impacts to wildlife. Conduct wildlife surveys to determine species within project area, and evaluate proposed activities based on species biology and natural history to determine if artificial lighting may disrupt behavior patterns or habitat use.

Preconstruction - Consider design structures and construction plans that minimize impacts to channel geometry (i.e. width/depth ratio, sinuosity, allow overflow channels) to avoid alteration of hydrological function. Identify whether wildlife species use the structure for roosting or nesting during anticipated construction period. Plan the timing of construction/maintenance to minimize impacts to wildlife species. In addition to the species list generated by the Arizona's On-line Environmental Review Tool, the Department recommends that surveys be conducted at the bridge and in the vicinity of the bridge to identify additional or currently undocumented bat, bird, or aquatic species in the project area. To minimize impacts to birds and bats, as well as aquatic species, consider conducting maintenance and construction activities outside the breeding/maternity season (breeding seasons for birds and bats usually occur spring - summer). Examining the crevices for the presence of bats prior to pouring new paving materials. When bats are present, the top of the crevices should be sealed to prevent material from dripping or falling through the cracks and potentially onto bats. If bats are present, maintenance and construction (including paving and milling) activities should be conducted during nighttime hours, if possible, when the fewest number of bats will be roosting. Consider incorporating roosting habitat for bats into bridge designs. Minimize impacts to the vegetation community. A revegetation plan should be developed to replace impacted communities. Unavoidable impacts to vegetation should be mitigated on-site whenever possible. During construction: Erosion control structures and drainage features should be used to prevent introduction of sediment laden runoff into the waterway. Minimize instream construction activity. If culverts are planned, mitigate impacts to wildlife and fish movement. Guidelines for bridge designs to facilitate wildlife passage can be found at http://www.azgfd.gov/hgis/guidelines.aspx.

 APPLICATION INITIALS: _____

Recommendations will be dependant upon goals of the fence project and the wildlife species expected to be impacted by the project. General guidelines for ensuring wildlife-friendly fences include: barbless wire on the top and bottom with the maximum fence height 42”, minimum height for bottom 16”. Modifications to this design may be considered for fencing anticipated to be routinely encountered by elk, bighorn sheep or pronghorn (e.g., Pronghorn fencing would require 18” minimum height on the bottom). Please refer to the Department's Fencing Guidelines located at http://www.azgfd.gov/hgis/guidelines.aspx.

The Department recommends that wildlife surveys are conducted to determine if noise-sensitive species occur within the project area. Avoidance or minimization measures could include conducting project activities outside of breeding seasons.

The Department requests further coordination to provide project/species specific recommendations, please contact Project Evaluation Program directly.

Trenches should be covered or back-filled as soon as possible. Incorporate escape ramps in ditches or fencing along the perimeter to deter small mammals and herptefauna (snakes, lizards, tortoise) from entering ditches.

Project Location and/or Species recommendations:

Tribal Lands are within the vicinity of your project area (refer to page 1 of the receipt) and may require further coordination. Please contact:
Gila River Indian Community
P.O. Box 97
Sacaton, AZ 85247
Phone: 520-562-6000
Fax: 520-562-6010

Heritage Data Management System records indicate that one or more listed, proposed, or candidate species or Critical Habitat (Designated or Proposed) have been documented in the vicinity of your project (refer to page 1 of the receipt). Please contact:
Ecological Services Office
US Fish and Wildlife Service
2321 W. Royal Palm Rd.
Phoenix, AZ 85021-4951
Phone: 602-242-0210
Fax: 602-242-2513

Heritage Data Management System records indicate that western burrowing owls have been documented within the vicinity of your project area (refer to the species list on page 1 of the receipt). Please review the relocation procedures recommended for burrowing owls found on the Environmental Review Home Page: http://mirror-pole.com/burr_owl/bur_owl1.htm.

Recommendations Disclaimer:

1. Potential impacts to fish and wildlife resources may be minimized or avoided by the recommendations generated from information submitted for your proposed project.
2. These recommendations are proposed actions or guidelines to be considered during **preliminary project development**.
3. Additional site specific recommendations may be proposed during further NEPA/ESA analysis or through coordination with affected agencies.
4. Making this information directly available does not substitute for the Department’s review of project proposals, and should not decrease our opportunity to review and evaluate additional project information and/or new project proposals.
5. The Department is interested in the conservation of all fish and

wildlife resources, including those Special Status Species listed on this receipt, and those that may have not been documented within the project vicinity as well as other game and nongame wildlife.
6. **Further coordination requires the submittal of this initialed and signed Environmental Review Receipt with a cover letter and project plans or documentation that includes project narrative, acreage to be impacted, how construction or project activity(s) are to be accomplished, and project locality information (including site map).**
7. Upon receiving information by AZGFD, please allow 30 days for completion of project reviews. Mail requests to:

Project Evaluation Program, Habitat Branch
Arizona Game and Fish Department
5000 West Carefree Highway
Phoenix, Arizona 85086-5000
Phone Number: (623) 236-7600
Fax Number: (623) 236-7366

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2. Unauthorized attempts to upload information or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act .
3. The Department reserves the right at any time, without notice, to enhance, modify, alter, or suspend the website and to terminate or restrict your access to the website.
4. This Environmental Review is based on the project study area that was entered. The review must be redone if the project study area, location, or the type of project changes. If additional information becomes available, this review may need to be reconsidered.
5. A signed and initialed copy of the Environmental Review Receipt indicates that the entire receipt has been read by the signer of the Environmental Review Receipt.

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This website maintains a record of each environmental review search result as well as all contact information. This information is maintained for internal tracking purposes. Information collected in this application will not be shared outside of the purposes of the Department.

If the Environmental Review Receipt and supporting material are not mailed to the Department or other appropriate agencies within six (6) months of the Project Review Receipt date, the receipt is considered to be null and void, and a new review must be initiated.

 APPLICATION INITIALS: _____

Print this Environmental Review Receipt using your Internet browser's print function and keep it for your records. Signature of this receipt indicates the signer has read and understands the information provided.

Signature:_____

Date: _____

Proposed Date of Implementation: _____

Please provide point of contact information regarding this Environmental Review.

Application or organization responsible for project implementation

Agency/organization:_____

Contact Name: _____

Address: _____

City, State, Zip: _____

Phone: _____

E-mail: _____

Person Conducting Search (if not applicant)

Agency/organization:_____

Contact Name: _____

Address: _____

City, State, Zip: _____

Phone: _____

E-mail: _____

 APPLICATION INITIALS: _____

Kristin Gade

From: Daren Riedle [driedle@epgaz.com]
Sent: Friday, April 04, 2014 3:02 PM
To: Kristin Gade
Subject: South Mountain Tortoise Surveys
Attachments: Jones 2008 SDT and URTD thesis.pdf; Phx_TorotiseSummary_05.pdf; Riedle_Tortoise.docx

Kris,

Great chatting with you this afternoon. Attached is Cristina Jones thesis, which focuses more on disease but the Phoenix stuff will start to show up around page 59. I did do some digging and found an old research summary from our 2004 survey work that maybe more useful to you. It is much shorter and provides number of tortoises for each park. Give me a call anytime with tortoise questions, we are glad to help on our end. I have a long history with Sonoran Desert Tortoises and have become particularly interested in the urban tortoise ecology. I hope you don't mind, but I went ahead and stuck a short summary of my tortoise background on here. I also just learned that EPG has an on-call contract with ADOT as well.

Again, good talking to you and let me know if I can be of help in the future. Any excuse to get out and do tortoise work ;)
Daren

Daren Riedle | Senior Wildlife Biologist | **epg** 4141 N. 32nd Street Ste. 102, Phoenix, AZ 85018 | O: 602 956 4370 x1047 C: 806 676 6747 | driedle@epgaz.com | epgaz.com

There are concerns that populations of desert tortoises may be disappearing from mountains in the Greater Phoenix area as development continues to encroach upon tortoise habitat and that upper respiratory tract disease (URTD) may be affecting tortoises there. The purpose of this study is to determine the distribution of tortoises in Maricopa County and Phoenix Mountain Parks in the Greater Phoenix area and the presence of URTD in those tortoises and captive tortoises within the Phoenix metropolitan area. We surveyed likely desert tortoise habitat within 10 Maricopa County and 5 Phoenix Mountain Parks between July - October 2004 for tortoises and tortoise sign (carcasses, scat, burrows). Thorough physical exams were conducted on tortoises. To determine the presence of URTD in desert tortoises, we used enzyme-linked immunosorbent assay (ELISA) to detect antibodies indicating previous exposure to *M. agassizii*, and polymerase chain reaction (PCR) to detect *Mycoplasma* itself, indicating a current infection. We found 77 desert tortoises in our surveys, 1-16 in the 12 parks where we found tortoise sign, and no tortoises or sign in 3 parks. Blood and nasal flush samples were collected from 72 free-ranging tortoises, and 50 captive desert tortoises within metropolitan Phoenix. Nine free-ranging tortoises in four parks tested ELISA-positive for *Mycoplasma* antibodies (12.5% of total sampled), compared to 15 captive desert tortoises (30%). Two captive tortoises tested PCR-positive for a current *M. agassizii* infection; one was also ELISA-positive. The numbers of tortoises observed per search effort and the low frequencies of URTD occurrence in wild and captive tortoises in and near Phoenix are both substantially lower than for tortoises in the Tucson area. Surveys need to be conducted in wetter years to get better measures of tortoise population sizes, distribution of URTD, and potential viability of those populations.

Results

Tortoise Searches

We found desert tortoises in all of the Maricopa County Parks surveyed that surround metropolitan Phoenix, and in one City of Phoenix Mountain Park within Phoenix. We found a total of 77 desert tortoises in our surveys of 15 parks in the Greater Phoenix Area (Figure 1). We found 1-16 desert tortoises in 12 parks (10 Maricopa County Parks, 2 City of Phoenix Mountain Parks) where we found tortoise sign, and no tortoises or sign in 3 Phoenix Mountain Parks (Camelback Mountain Park (CMP), North Mountain Park (NMP), and Piestewa Peak (PP)).

Sex ratios in the parks were highly variable, ranging from 0:1 to 2.5:1 (male:female) (Figure 1), with a sex ratio of 26:41 for all the Phoenix area sites. Nine (11.7%) of the desert tortoises we found in eight of the parks were juveniles ($\leq$ 180mm MCL); two of those were hatchlings with umbilical scars still visible. We found additional evidence of reproduction (egg shells, nests and hatchling carcasses) in five parks (Cave Creek (CCRP), Estrella Mountain (EMRP), McDowell Mountain (MMRP), and White Tank Mountain Regional Parks (WTMRP); and South Mountain Park (SMP)).

The number of search hours per desert tortoise found by experienced tortoise searchers varied greatly between the parks, ranging from 2.5-94 hours per tortoise (Figure 2).

Health Exam Results

In general, desert tortoises encountered on surveys appeared healthy; with only two of the 77 desert tortoise presenting any clinical signs of URTD; one at Dreamy Draw Area (DDA) was wheezing, and one at CCRP had damp nares with cloudy discharge. Three female tortoises (one each at Buckeye Hills (BHRP), EMRP, and SMP) were emaciated and weak. Though the tortoise found at DDA was wheezing, it had the highest mass to MCL ratio (15.5g/1mm) of any tortoise encountered.

ELISA results varied by location with 9 (12.5%) free-ranging and 15 (30%) captive tortoises testing positive for exposure to *M. agassizii*. ELISA positive tortoises were found in four Maricopa County Parks and six of 18 residences in Metropolitan Phoenix (Figure 3).

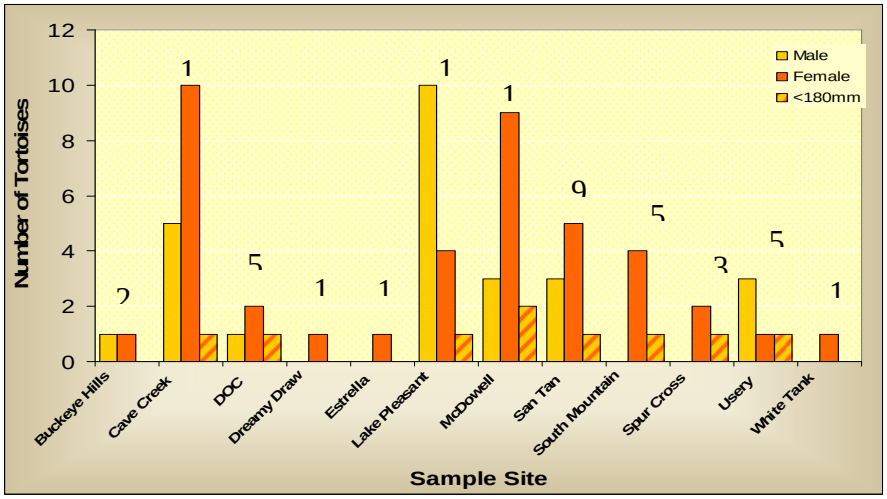


Figure 1. Number of tortoises male, female and <180 mm MCL desert tortoises found at ten Maricopa County Parks and two Phoenix Mountain Parks between July-October 2004.

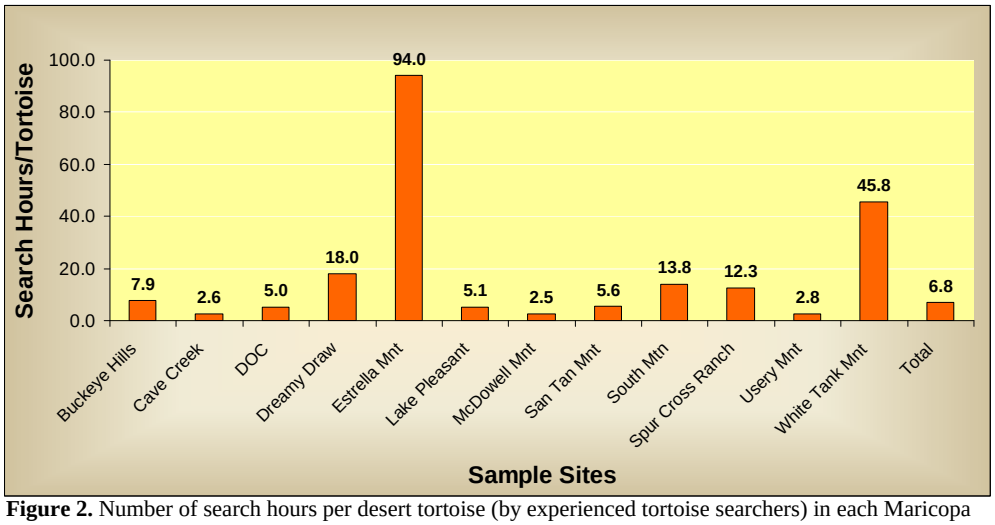


Figure 2. Number of search hours per desert tortoise (by experienced tortoise searchers) in each Maricopa County and City of Phoenix Mountain Park.

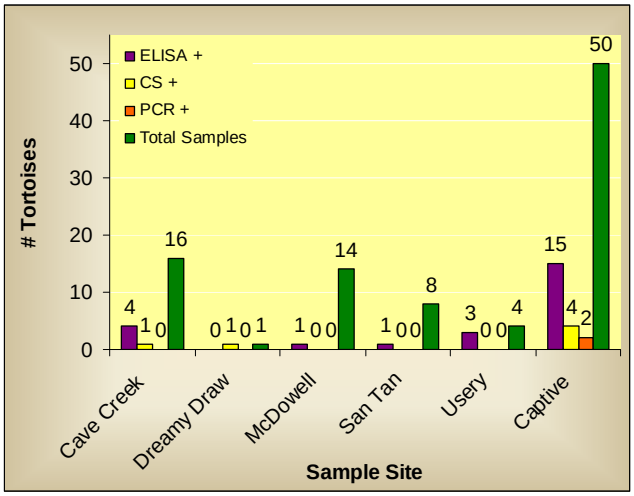


Figure 3. Number of ELISA, clinical sign, and PCR-positive free-ranging and captive tortoises in Greater Phoenix, Arizona.

From:	Wooldridge, Brian
To:	Kristin Gade
Cc:	Marit Alanen
Subject:	Re: South Mountain project and Tucson shovel-nosed snake
Date:	Monday, April 07, 2014 3:54:19 PM

Kris-

After looking at the map and knowing some of the habitat in that area, it would be hard to say that Tucson shovel-nosed snakes aren't in suitable habitat within your project limits.

I'm copying our species lead, Marit Alanen, so she can be in the loop. Let me know if I can be of further help.

Brian

On Mon, Apr 7, 2014 at 3:44 PM, Kristin Gade <KGade@azdot.gov> wrote:

> Hi Brian!
>
> Thanks for the conversation just now, it was very helpful. Here is a map of the project area for the South Mountain project - please let me know if Tucson shovel-nosed snakes have been reported in or near the area or if we would likely expect them to occur there.
>
> Thanks!
>
> Kris
>
> Kris Gade
> 602-292-0301
> kgade@azdot.gov
>
> ---
>
>
> .

--
Brian J. Wooldridge
Fish and Wildlife Biologist
U.S. Fish & Wildlife Service
Arizona Ecological Services Office
Southwest Forest Science Complex
2500 South Pine Knoll Drive

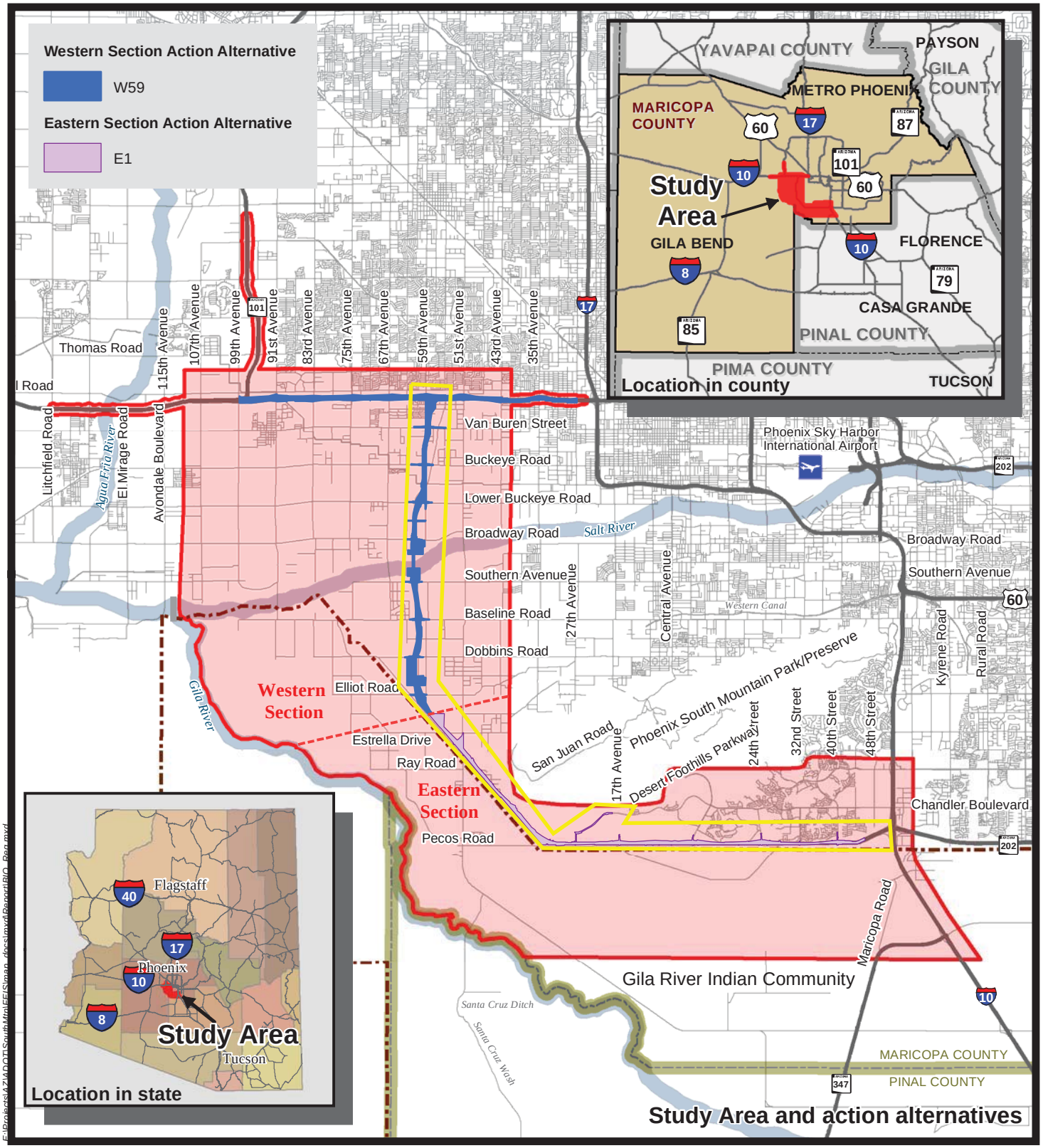


Figure 1

Study Area and Action Alternatives

N

Brian - I added the outline in yellow - that is the general area we are evaluating in the BE. The pink study area is for the EIS, which considered additional alternatives. Could you let me know if TSS has been found in or near or might be expected to occur in the yellow outlined area? Thanks! Kris

South Mountain Transportation Corridor
Federal-aid Project Number: NH-202-D(ADY)
ADOT Project Number: 202L MA 054 H5764 01L

United States Department of the Interior

U.S. Fish and Wildlife Service
Arizona Ecological Services Office
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951
Telephone: (602) 242-0210 Fax: (602) 242-2513

In reply refer to:
AESO/SE
02EAAZ00-2013-TA-0365
02EAAZ00-2010-CPA-0056

June 10, 2014

Karla S. Petty, Division Administrator
Federal Highway Administration
Arizona Division
4000 North Central Avenue, Suite 1500
Phoenix, Arizona 85012-3500

From: Field Supervisor

Subject: South Mountain Transportation Corridor, City of Phoenix, Maricopa County, Arizona (ADOT Project No. 202L MA 054 H5764 01L)

Thank you for your correspondence requesting technical assistance from the U.S. Fish and Wildlife Service (FWS) in accordance with section 7 of the Endangered Species Act (Act) of 1973 (16 U.S.C 1531-1544), as amended. Your correspondence was dated May 14, 2014, and was received in this office on May 20, 2014. Your letter and Biological Evaluation (BE) described the proposed South Mountain Transportation Corridor project to take place in the City of Phoenix, Maricopa County, Arizona. This technical assistance is provided based on the information given in the BE. The Federal Highway Administration (FHWA) concluded that the proposed construction would have no effect on the Yuma clapper rail (*Rallus longirostris yumanensis*), and the Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*). You also concluded the proposed action may impact the Tucson shovel-nosed snake (*Chionactis occipitalis klauberi*) and Sonoran Desert tortoise (*Gopherus morafkai*), both of which are candidates for listing under the Act, and requested our technical assistance. Please note that "no effect" determinations by Federal action agencies do not require concurrence or further comments from the FWS.

The proposed project includes the construction of an eight-lane divided freeway. The freeway would run through suburban, rural-agricultural, and undeveloped land, and cross over 49 ephemeral washes and the Salt River. In the area where it crosses the Salt River, the freeway would include a pier-supported bridge that would span the 100-year floodplain. Blasting would occur through the western end of South Mountain, resulting in ground disturbance of more than one acre of land. This project has been a part of the *Maricopa Association of Governments (MAG) Freeway/Expressway Plan* since 1985 when it was placed on the state highway system by the State Transportation Board. The corridor would connect Interstate 10 (I-10) (Maricopa Freeway) which is south of Phoenix, with

I-10 (Papago Freeway) which is west of the city. A more complete description of the proposed action can be found in the South Mountain Freeway Draft Environmental Impact Statement (DEIS).

Given the information provided in the letter and the nature of the project, we provide the following technical assistance for the Tucson shovel-nosed snake and Sonoran desert tortoise. If plans for this project change, or if new information becomes available on the distribution or abundance of a listed species in the area, this technical assistance and the need for section 7 consultation may need to be reconsidered.

Tucson shovel-nosed snake
The proposed project site is within the range of the Tucson shovel-nosed snake. The snake is more likely to be most active in April and May. If a construction action that may harm the snake (i.e., surface disturbance such as grading) could be performed during cool and cold weather months, this timing would help to minimize effects. For revegetation, we recommend using native shrubs, grasses and forbs that have a high value to rodents (which provide burrows for the snake) as well as insect and arachnid production (which provide food for the snake). Roads are a significant source of mortality for snakes because roads retain heat that snakes use for thermoregulation; therefore, we recommend that you refer to the Arizona Department of Transportation's Wildlife Funneling document (http://www.azdot.gov/docs/default-source/planning/wildlife_funnel_fencing_summary.pdf?sfvrsn=2) where funnel fencing for reptiles is described. Wildlife crossing are planned to be integrated into the construction, and we recommend that relevant funnel fencing techniques be incorporated in the design of these crossings.

Sonoran desert tortoise
We understand that your proposed project occurs within the distribution of the Sonoran desert tortoise. The corridor area is located within suitable habitat for the tortoise; therefore it is likely that the tortoise may occur in the action area. We recommend coordination with the Arizona Game and Fish Department, and incorporation of their *Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects* (http://www.azgfd.gov/hgis/pdfs/Tortoisehandlingguidelines.pdf) into the proposed project. Surveying the ROW, prior to construction, for burrows, and avoidance of those sites is suggested. Minimization measures to reduce the invasion of potential nonnative plant species are also recommended.

Eagles and Migratory Birds
We encourage you to be aware of compliance with the Bald and Golden Eagle Protection Act (Eagle Act) and also the Migratory Bird Treaty Act (MBTA) when planning and implementing your project. Due to their wide-ranging wintering and foraging behavior, both eagle species could briefly occur within your project area. For information on protections under the Eagle Act, please refer to the regulatory definition of the term "disturb" (72 FR 31132) published in the Federal Register on June 5, 2007, and FWS's National Bald Eagle Management Guidelines (72 FR 31156) http://www.fws.gov/MississippiES/pdf/Eagle%20Guidelines.pdf. Additional information regarding eagles is available at: http://www.fws.gov/migratorybirds/BaldAndGoldenEagleMangaement.htm. Also, information specific to Arizona bald eagle conservation and recommended measures can be retrieved at: http://swbemc.org/pdf/NGTR173%20BaldEagleConservationAgreement.pdf.

Karla Petty, Division Administrator

Burrowing owls (*Athene cunicularia*) are another species known to occur along roadways, and are also protected under the MBTA. The Burrowing Owl Project Clearance Guidance for Landowners, a document put together by the Arizona Burrowing Owl Working Group, can be found at http://www.azgfd.gov/pdfs/w_c/owl/burrowingowlclearanceprotocol.pdf. For more information regarding the MBTA and permitting process, please visit the following web site: http://www.fws.gov/migratorybirds/mbpermits.html.

We recommend that you evaluate the project area to determine if surveys for eagles or owls are needed. If these birds are present, we encourage you to implement the guidelines and protocols described above for both eagles and owls.

For a more in-depth report of potentially protected species in the project area we recommend a review of the Arizona Game and Fish Department's Environmental Review On-Line Tool, found at http://www.azgfd.gov/hgis/.

In keeping with our trust responsibilities to American Indian Tribes, by copy of this memorandum, we will notify the Ak-Chin, Gila River Indian, Pascua Yaqui, Hopi, and Salt River Pima-Maricopa Indian Communities which may be affected by this proposed action and encourage you to invite the Bureau of Indian Affairs to participate in the review of your proposed action. We also encourage you to coordinate the review of this project with the Arizona Game and Fish Department.

Thank you again for your efforts to conserve endangered species. Please refer to consultation number 02EAAZ00-2013-TA-0365 for any further correspondence on this project. If you require further assistance or if you have any questions, contact Nichole Engelmann (ext. 237) or Mike Martinez (ext. 224).

Sincerely,

Brenda A Smith

for Field Supervisor
Steven L. Spangle

cc (electronic):
Ron Tipton, Bureau of Land Management, Lower Sonoran Field Office, Phoenix, AZ Regional Supervisor, Arizona Game and Fish Department, Phoenix, AZ
Branch Chief, Environmental Quality Services, Western Regional Office, Bureau of Indian Affairs, Phoenix, AZ
Manager Cultural Resources, Ak-Chin Indian Community, Maricopa, AZ
Tribal Historic Preservation Officer, Gila River Indian Community, Sacaton, AZ
Natural Resources Department, Hopi Tribe, Kykotsmovi, AZ
Land Department, Pascua Yaqui Tribe, Tucson, AZ
Cultural Resources Department, Salt River Pima-Maricopa Indian Community, Scottsdale, AZ

Karla Petty, Division Administrator

Assistant Field Supervisor, Fish and Wildlife Service, Flagstaff, AZ
Assistant Field Supervisor, Fish and Wildlife Service, Tucson, AZ
Biologists, Fish and Wildlife Service, Flagstaff, Phoenix, Tucson, AZ
(Attn: M. Alanen, J. Servoss, G. Beatty, B. Wooldridge, K. Robertson, J. Nystedt)

W:\Nichole Engelmann\Brendas signature\South Mountain Transportation Corridor June2014 Final.docx:cgg

Akin Gump
STRAUSS HAUER & FELD LLP

IAN A. SHAVITZ
+1 202.887.4590/fax: +1 202.887.4288
ishavitz@akingump.com

July 18, 2014

Karla S. Petty
Division Administrator
U.S. Department of Transportation
4000 North Central Avenue
Suite 1500
Phoenix, AZ 85012-3500

Re: South Mountain Transportation Corridor (NH-202-D(ADY) HOP-AZ)
Gila River Indian Community Comments- Biological Evaluation

Dear Ms. Petty:

Attached please find the comments of the Gila River Indian Community on the South Mountain Transportation Corridor Biological Evaluation. The Community appreciates the opportunity to provide these comments.

Please feel free to contact me if you have any questions.

Thank You,

Ian Shavitz

cc: Javier Ramos, Esq.

COMMENTS OF THE GILA RIVER INDIAN COMMUNITY ON THE SOUTH MOUNTAIN TRANSPORTATION CORRIDOR BIOLOGICAL EVALUATION

July 18, 2014

The Gila River Indian Community (Community) submits its comments on the Biological Evaluation (BE) for the proposed South Mountain Transportation Corridor (Project). Given the unique interests of the Community – a sovereign Indian Nation that attributes significant cultural importance to wildlife and whose Reservation is located immediately adjacent to the Project – the Community's comments address protected species, but also focus more broadly on general wildlife impacts.

I. The Significant Interests of the Community

The Community is a Federally-recognized Indian Nation located south of Phoenix, Arizona, with Reservation lands encompassing approximately 372,000 acres (Reservation) and approximately 21,000 enrolled members. The Project's eastern section is directly adjacent to the Community's Reservation border, and, as shown in the BE (at 1 and Fig. 1), the "EIS Study area," the "Project area" and the "Project vicinity" each encompass portions of the Community's Reservation.

The BE indicates that Arizona Department of Transportation's (ADOT) "recommended alternative," which it will study in the Final Environmental Impact Statement (EIS), is located directly adjacent to the Community's Reservation. The Community maintains its position that ADOT should not build the Project.[1] If the Project goes forward, it is imperative that ADOT protect the abundant wildlife near the Project, including wildlife on the Community's Reservation. The Community cannot overstate the importance of considering the impacts of the Project on the Community, including wildlife that is present on or migrates across the Reservation. Thus, while not waiving its objection to the Project, the Community has prepared the comments below regarding the BE and impacts to biological resources.

II. Necessary Consideration of Cultural Significance of Wildlife to the Community

The Community holds all animals in the highest regard, and recognizes animals as culturally important. While the BE focuses primarily on impacts to protected species, ADOT must also address impacts to species of cultural significance to the Community in the BE and/or the Project's EIS.

The Community's traditional religious beliefs and practices originate from the natural world. Modern development that disrupts the spiritual balance of nature affects human beings. The natural landscapes where wildlife lives undisturbed ensures its right to enjoy a full life cycle.

[1] In February 2012, Community members voted via referendum in favor of ADOT not building the Project. It remains the Community's firm position that ADOT should select the No-Action Alternative to avoid irreversible impacts to the Community's Reservation, cultural and biological resources, and Traditional Cultural Properties.

O'Odham ceremonies involve use of animal fetishes or animal body parts that are acquired through religious practices. Threats to the environment of which wildlife is a part of are viewed as threats to the continuity and integrity of *Odham* and *Pee Posh* Culture. Activities that non-Indians interpret as subsistence activity relating to hunting or gathering of medicinal plants are actually considered "spiritual" activities by tribes. Respect is constant in every part of *Himdag* (Our way of Life). Vitality of *O'Odham* and *Pee Posh* cultures, health, religion, and the environment are inextricably linked with health of wildlife and their well-being. Wildlife life-cycle interruptions increase *O'Odham Himdag* imbalances. The well-being of wildlife is therefore intricately linked to the well-being of the *Akimel O'Odham*.

Below is a list of animals, provided by the Community's Tribal Historic Preservation Officer, which are culturally significant to the Community.

SPECIES	O'DHAM NAME	CULTURAL SIGNIFICANCE[2]
Eagle (Golden and Bald)	*ba'ag*	The eagle is the most revered bird in Akimel O'Odham culture and identified in oral history and creation story.
Yellow-billed Cuckoo	*kadgam*	The yellow-billed cuckoo is mentioned in Akimel O'Odham oral history.
Bats (all species)	*nanakmel*	The bat holds a significance position in O'Odham culture and is identified in the Akimel O'Odham song culture.
Burrowing Owl	*kokoho*	The Akimel O'Odham identify the burrowing owl in oral history and ceremonial dance.
Great Horned Owl	*chukuḍ*	The great horned owl is identified in Akimel O'Odham oral history.
Common Raven	*havañ*	The raven is identified in Akimel O'Odham oral history and in the creation story.
Swallows (all species)	*giidval*	The swallow holds a revered place in the Akimel O'Odham song culture and oral history.
Say's Phoebe	*hevel moos*	Hevel moos is "Wind's grandchild." Referred to in the song culture.
Rock Wren	*vavas*	Rock Wren referred to in O'Odham song culture.
Belted Kingfisher	*ba'ivchul*	Kingfisher identified in Akimel O'Odham oral history and song culture.
Rattlesnake	*koi'i*	Identified in Akimel O'Odham oral history and creation story.
Coyote	*ban*	The coyote identified in Akimel O'Odham oral history. Identified as one of the 4 primordial beings and in clan name.

Notwithstanding that some of these culturally-significant species may not be "protected" under federal or state law, the Community requests that ADOT take every step possible to minimize the risk of injury to animal species generally, and the above species particularly, during the

[2] References: Rea, A.M. 1998, *Folk Mammalogy of the Northern Pimans*, The University of Arizona Press, Tucson.; Rea, A.M. 2007, *Wings in the Desert: A Folk Ornithology of the Northern Pimas*, The University of Arizona Press, Tucson.

construction and operation of this Project. To document animals present within the Project area, the Community requests information on all wildlife surveys completed for the Project and information on any animals harmed or killed in connection with the Project. This information would serve invaluable to future Community wildlife management goals and objectives, including the possible reintroduction of animals lost or displaced by the Project.

III. Comments Specific to the Biological Evaluation

a. Failure to Conduct Adequate Surveys

In general, the Community is concerned that ADOT has only conducted, and thus the BE only relied upon, one field trip (survey) from some time in 2013 with no documentation of procedures, time spent, or any other scientifically-necessary documentation for its determinations concerning habitat, species, and environment in the study area. Without adequate, scientific, field surveys, and the consideration of all data reasonably available (*i.e.*, aerial maps, flood control district websites - see III.b below), the conclusions in the BE regarding the presence of and impacts to protected and non-protected species is questionable.

The Community is particularly concerned that ADOT did not survey the portion of the Project's study area located south of Pecos Road on Community lands, consisting of the Broad Acres Agricultural Complex (BAAC), Queen Creek drainage, and an abandoned mine complex. This area experiences high wildlife usage and includes diverse habitat. The BAAC, which is located between the 35th Avenue and 32nd Street alignments approximately one mile south of Pecos Road, has existed for over 70 years and is an area of high wildlife usage. The earthen canal that feeds water to agricultural operations in the area functions, in essence, as a perennial riparian stream that serves as spawning habitat for carp, large-mouth bass, tilapia and other non-native fish species. Along with the abundance of fish in the canal, the riparian habitat along the canal's banks and the available foraging in adjacent fields attracts an array of migratory and local bird species, including golden eagles, a species protected under federal law by the Bald and Golden Eagle Protection Act.

To the south of the BAAC is the Queen Creek drainage corridor, which is a natural wildlife corridor for javelina, deer, bobcat, mountain lion, skunk, kit fox, and badger. To the north of the BAAC and south of Pecos Road is an abandoned mine complex, which possibly serves as roosting habitat for migrating and local bat species. Natural washes and drainages connect the wildlife areas discussed above with the South Mountain Park Preserve, thus serving as an important movement corridor for wildlife in the area.

Given the above, ADOT should survey these areas in order to identify and properly consider the impacts upon species, and to determine the presence of protected species under Federal and state laws. Once ADOT identifies species and potential impacts, ADOT and USFWS can determine whether a "take" of protected species will occur, and ADOT can then coordinate further with USFWS as required by the Endangered Species Act or the Bald and Golden Eagle Protection Act, if necessary. Regardless of whether Federal or state law requires further action, ADOT should implement mitigation and minimization measures to protect these important wildlife areas, including the following:

- Design culverts to minimize impacts to natural wash and drainage corridors and to facilitate wildlife movement through the area;
- Conduct maintenance and construction activities outside bird and bat breeding seasons;
- Use fencing design features to funnel wildlife in a manner that minimizes roadway collisions;
- Conduct construction activity at times when the fewest number of bats are present.

These measures, and other proposed by the USFWS in its June 10, 2014 letter, will provide for maximum protection of wildlife in the Project area.

b. Presence of Water within the Gravel Pits and Salt River

As stated, the sole field trip referenced in the BE is an examination of the gravel pits on the Salt River at an unknown date in 2013 (BE at 8), which found that these areas were dry during all of 2013. The BE relies heavily upon the lack of water in the Project area to support its conclusions regarding the presence or absence of specific species. For example, the BE concluded that the California Least Tern was excluded from further analysis due to a "lack of adequate water features." (BE at 10). The Bald Eagle was similarly dismissed, in large part, due to the existence of the dry gravel pits and proximate areas of the Salt River. (BE at 24).

Reliance on conclusions from this 2013 field survey is problematic for several reasons. First, the BE conflicts with findings of the DEIS. The DEIS states "a large set of gravel mining pits located along the Salt River hold water year-round." (DEIS at 4-119). Second, it appears that the 2013 conditions were atypical, due to drought conditions, and thus are not reflective of the availability of water for species in most years. Google Earth historical photography shows that this area was wet each year between 2005 and 2012, with the exception of June 2007. In that period, 11 other aerial photos show impounded water in the gravel pits. Third, the BE also fails to note the Project crosses and is near several irrigated fields and that there are artificial lakes and golf courses along the route. (See the West 1/2 of Section 32 T1N R2E). In addition, outside of the Salt River channel and nearby areas, the LACC and BAAC have reliable water supplies that the BE also fails to recognize. As such, these areas could also provide wet areas for foraging. Finally, the BE states (at p. 8) that no jurisdictional wetlands exist "within or adjacent to the Project limits." This is not correct. The U.S. Army Corps of Engineers has determined that the Pee Posh wetlands, on the Community's Reservation, are jurisdictional. As such, the BE must take this into account in making its conclusions.

c. Yellow-billed Cuckoo

The BE determined that the Project would have no direct or indirect impact on the yellow-billed cuckoo (YBC) or its habitat.

The DEIS found the YBC to be within 3 miles of the proposed route. A January 18, 2002 letter from Arizona Fish and Game indicates that YBC are located within 0.5 miles of the Project area. (Attachment to BE). The BE also states that "[s]urveys have not been conducted upstream of the 91st Avenue Wastewater Treatment Plant because cuckoo habitat is degraded." (BE at 15). Aerial photos show no change in habitat between the DEIS investigations in 2009 and 2013,

other than the one set of ponds that went dry in 2013. During and before the two studies, there is and was a patch of riparian vegetation in the south half of the southeast quarter of section 30 T1N R2E. This location is at least partially within the Project limits depicted in Figure 2 of the BE, and this area appears to match the description of YBC preferred habitat. Specifically:

> While these western ecoregions differ in many respects, they are joined by common factors, which also distinguish them from most eastern ecoregions within which yellow billed cuckoos occur. Foremost among these is the fact that western cuckoo populations, and the vast majority of yellow billed cuckoos, occur along narrow and patchy riparian corridors which provide relatively suitable moist deciduous woodlands within arid landscapes otherwise dominated vegetation types unable to support cuckoos. (USFWS 2011 pg. 18)

It is also unclear from the BE whether ADOT has considered the on-going USFWS studies in connection with the mapping and designation of YBC habitat in the vicinity of the Project. The Community has consulted with the USFWS for over a year regarding potential presence and designation of YBC critical habitat on tribal lands along the Salt River. While the Community is not aware of all of the specific areas that USFWS is considering for critical habitat designation, the Community is aware that USFWS has focused on the areas in and around the Pee Posh Wetlands, and it is quite possible that the areas under consideration by USFWS overlap with the Project area. Based upon the Community's review of the BE, it does not appear that ADOT's BE considered the potential designation (and the vegetation supporting the potential designation) within the Pee Posh Wetlands.

Construction activity for the Project could impact the Pee Posh Wetlands by potentially disrupting flows conveyed by the Laveen Area Conveyance Channel (LACC). Should critical habitat designation occur for the area, the critical habitat on Community lands could potentially be impacted by Project construction activities. ADOT should coordinate with USFWS on the agency's current YBC efforts, and if YBC are present, or this species' critical habitat is designated at or in the vicinity of the Pee Posh Wetlands, re-examine the extent to which the Project will impact the YBC or its habitat.

d. Impacts to Bald and Golden Eagles.

1. *Bald Eagles*

The BE concludes that the Project "will not result in a 'take' and will not affect bald eagles" because the Project "will not eliminate foraging or nesting habitat" and there "will be no impacts on potential forage species."

In supporting these conclusions, the BE recognizes the eagle nests and documented breeding activity that has occurred at the Pee Posh Wetlands on the Community's Reservation.[3] The BE fails to consider, however, that upstream construction may impact the LACC, which conveys agricultural irrigation and urban runoff flows to the Pee Posh Wetlands. The LACC flows are the

[3] *See* Community's comments on the Project's Draft EIS, incorporated by reference herein, for a more detailed discussion of the presence of bald eagles on the Reservation lands in proximity to the Project.

primary source of water for the flora and fauna in the Pee Posh Wetlands. Disruption of these flows due to upstream construction could result in the loss of riparian and wetland plant and animal species, including wetland fish species foraged by nesting eagles.ADOT must consider this potential impact before determining whether a "take" will occur and identifying the appropriate mitigation necessary to protect bald eagles (and the Pee Posh Wetlands). If disruption of LACC flows is anticipated, mitigation measures should be implemented to prevent direct impacts to bald eagle foraging habitat and species, as well as other birds protected under the Migratory Bird Treaty Act. Such mitigation measures could include re-routing LACC flows around construction activities and conducting construction activities outside of breeding seasons.

ADOT must also recognize that the Bald Eagle has, irrespective of human development and activity, found areas adjacent to the Project site to be suitable habitat. We know, due to the fact that Bald Eagles are nearby, that they deem foraging to be adequate. The BE finds that this Project will impact the foraging but speculates that a new freeway in its vicinity will not adversely affect foraging. This "speculative" approach seems improper.

2. *Golden Eagles*

The body of the BE does not reference the potential presence of or impacts to golden eagles. Appendix A describes golden eagle habitat requirements and concludes that the occurrence of golden eagles is "unlikely." This is at odds, however, with reported golden eagle sightings at the BAAC, as referenced above. Similarly, the USFWS' June 10th letter recognizes the possibility that golden eagles could be in the Project area. Given this, ADOT should conduct golden eagle surveys, and if necessary based upon the survey results, conduct an analysis to determine the potential for the Project to "take" golden eagles.

e. Sonoran Desert Tortoise

The BE acknowledges that the Sonoran Desert Tortoise is present in the Project area and may be subject to adverse impacts. The Community is concerned that ADOT's mitigation efforts may be inadequate.

The BE indicates that ADOT will provide the Sonoran Desert Tortoise with multifunctional crossings "in appropriate locations," as shown in BE Figure 3. There is a strong likelihood, however, that the tortoise will cross the Project in an area outside of the two Riparian Movement Areas depicted on Figure 4, between approximately 17th Avenue and 27th Avenue. Despite finding that this area is a part of the Sonoran Desert Tortoise's habitat, ADOT chose not to place a crossing at this location. The problem is compounded by the presence of a proposed access road (*see* BE Figure 3) that crosses that corridor, where there also is no crossing proposed.

In the portion of the Project that crosses the Phoenix South Mountain Park Preserve, ADOT has included five crossings to cover a reach that is almost three miles long. In one location, crossings are 6,500 feet apart. The Sonoran Desert Tortoise is a slow animal and can only manage a rate of 725 feet per hour up to a maximum of 3 1/3 miles per hour. The tortoise, however, cannot keep up even the 725 foot per hour speed without overheating (San Diego Zoo Global at pg 6). Assuming a tortoise that comes to the freeway knows which way the nearest

crossing is located, it would be faced with a herculean task to walk that far, particularly in the summer heat. If it guesses wrong it can face a trek of over a mile.

The BE also indicates that wildlife fencing will be provided. Based upon Arizona Fish and Game's On-line Environmental Review Tool, it is recommended that the lowest strand of wire be a minimum of 18" above the ground. This recommendation is unrealistic because the desert tortoises are far less than 18" tall and could walk completely unimpeded under the fence and onto the freeway, with likely fatal results In addition, any fence will be of limited value since the Sonoran Desert Tortoise burrows under fences. Alternative (and desert tortoise specific) protections should be identified, as collisions with vehicular traffic are a major source of tortoise fatalities.

Finally, given the difficulties of identifying Sonoran Desert Tortoises in surveys, and the fragile nature of this species, it is absolutely critical that ADOT follow USFWS procedure, as identified in USFWS' letter of June 10, 2014.

f. Tucson Shovel-Nosed Snake

The BE indicates that the Project will also impact the Tucson Shovel-Nosed snake. The proposed mitigation fails to address the specific needs of the snake. It often "swims" in the sand only a couple inches below the surface. (BE at 20). The solution provided is for areas not directly taken to be reseeded and surveys undertaken to relocate the snakes. This approach, however, does not address the snake's need for uncompacted (*i.e.* loose) sands to allow it to move without exposure to predators. Inherently in building the freeway, large areas will be compacted by vehicular traffic. These areas need to be restored to their uncompacted status, rather than be reseeded.

In addition, surveys to relocate the snakes will be of limited effectiveness. These snakes swim beneath the surface. They do not create burrows (although they take advantage of other species' burrows) to track. As the BE recognized (at 21), "the ... snake is difficult to document without rigorous survey efforts."

g. The Acuna Cactus

Table 1 of the BE states that the endangered Acuna Cactus was excluded from further analysis in the BE. The "Exclusion Justification" states "No suitable habitat in the project area; no well drained knolls or gravel ridges in Palo Verde- Saguaro Association in Arizona of Upland subdivision of the Sonaran Desert in project area." The Community remains concerned that the Acuna Cactus could be present and impacted by the Project, as the USFWS website indicates that this species' range includes Maricopa County.

h. Need to Address Noise and Light Pollution

The Community is concerned with potential noise and light pollution that may affect biological patterns of a variety of nocturnal animals in the vicinity of the Project. In areas along the Project limits, there remain pockets of Sonoran desert habitat that are currently minimally impacted, if at all, by noise and light pollution. These areas provide an "oasis" for many nocturnal species and are becoming an exception in the valley. The Community requests that ADOT implement

mitigation measures to reduce noise and light pollution to sensitive wildlife species in the vicinity of the Project.

IV. Need for Continued Consultation with the Community

Due to the proximity of the Project to Community lands (*i.e.*, directly adjacent), impacts to Community wildlife resources are unavoidable. Because wildlife movement corridors extend well into Community lands, and given the cultural significance of wildlife to the Community, the Community requests that it be included in developing appropriate mitigation measures for impacts to biological resources and in preconstruction (design phase) planning of wildlife-sensitive roadway structures for the Project.

U.S. Fish and Wildlife Service

Trust Resources List

This resource list is to be used for planning purposes only — it is not an official species list.

Endangered Species Act species list information for your project is available online and listed below for the following FWS Field Offices:

Arizona Ecological Services Field Office
2321 WEST ROYAL PALM ROAD, SUITE 103
PHOENIX, AZ 85021
(602) 242-0210
http://www.fws.gov/southwest/es/arizona/
http://www.fws.gov/southwest/es/EndangeredSpecies/lists/

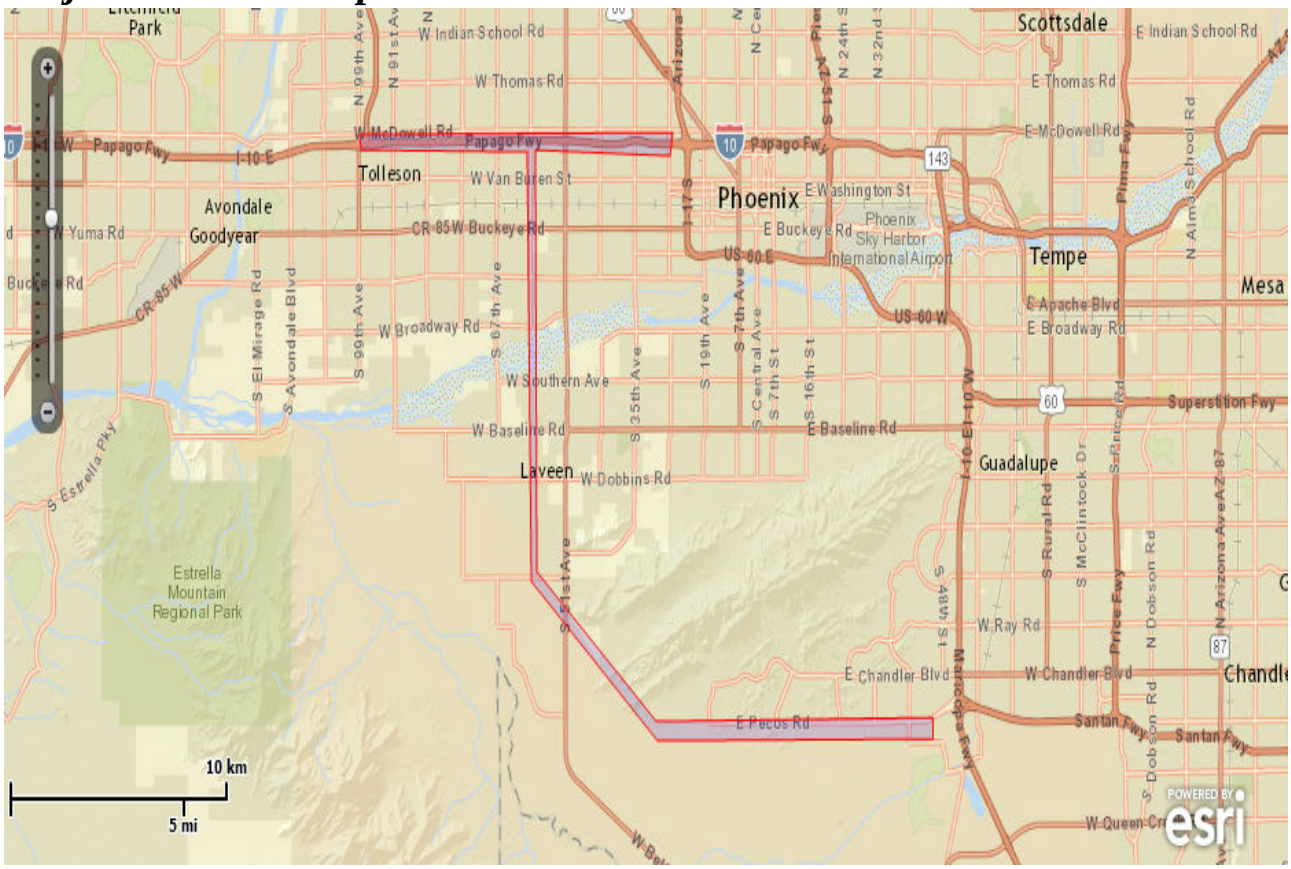
Project Name:

H5764, 7/29/2014

U.S. Fish and Wildlife Service

Trust Resources List

Project Location Map:



Project Counties:

Maricopa, AZ

Geographic coordinates (Open Geospatial Consortium Well-Known Text, NAD83):

MULTIPOLYGON (((-112.2719305 33.4641188, -112.1154097 33.4647202, -112.1167486 33.4578175, -112.1840399 33.4595361, -112.1833876 33.3351956, -112.1236494 33.2910117, -111.9856337 33.2921596, -111.9856337 33.2858459, -112.1229628 33.2852719, -112.1861342 33.3323272, -112.1881941 33.4590205, -112.2712439 33.4595361, -112.2719305 33.4641188)))

Project Type:

Transportation

U.S. Fish and Wildlife Service

Trust Resources List

Endangered Species Act Species List (USFWS Endangered Species Program).

There are a total of **10** threatened, endangered, or candidate species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fishes may appear on the species list because a project could cause downstream effects on the species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section below for critical habitat that lies within your project area. Please contact the designated FWS office if you have questions.

Species that should be considered in an effects analysis for your project:

Birds	Status		Has Critical Habitat	Contact
California Least tern (*Sterna antillarum browni*)	Endangered	species info		Arizona Ecological Services Field Office
Southwestern Willow flycatcher (*Empidonax traillii extimus*) Population: Entire	Endangered	species info	Final designated critical habitat	Arizona Ecological Services Field Office
Sprague's Pipit (*Anthus spragueii*)	Candidate	species info		Arizona Ecological Services Field Office
Yellow-Billed Cuckoo (*Coccyzus americanus*) Population: Western U.S. DPS	Proposed Threatened	species info		Arizona Ecological Services Field Office
Yuma Clapper rail (*Rallus longirostris yumanensis*) Population: U.S.A. only	Endangered	species info		Arizona Ecological Services Field Office
Fishes				
Roundtail chub (*Gila robusta*) Population: Lower Colorado River Basin DPS	Candidate	species info		Arizona Ecological Services Field Office
Mammals				
Lesser Long-Nosed bat (*Leptonycteris curasoae yerbabuenae*) Population: Entire	Endangered	species info		Arizona Ecological Services Field Office

Trust Resources List

Sonoran pronghorn (*Antilocapra americana sonoriensis*) Population: Entire	Endangered	species info		Arizona Ecological Services Field Office
Reptiles				
Sonoran desert tortoise (*Gopherus morafkai*) Population:	Candidate	species info		Arizona Ecological Services Field Office
Tucson Shovel-Nosed Snake (*Chionactis occipitalis klauberi*)	Candidate	species info		Arizona Ecological Services Field Office

Critical habitats within your project area:

There are no critical habitats within your project area.

FWS National Wildlife Refuges (USFWS National Wildlife Refuges Program).

There are no refuges found within the vicinity of your project.

FWS Migratory Birds (USFWS Migratory Bird Program).

The protection of birds is regulated by the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA). Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. For more information regarding these Acts see http://www.fws.gov/migratorybirds/RegulationsandPolicies.html.

All project proponents are responsible for complying with the appropriate regulations protecting birds when planning and developing a project. To meet these conservation obligations, proponents should identify potential or existing project-related impacts to migratory birds and their habitat and develop and implement conservation measures that avoid, minimize, or compensate for these impacts. The Service's Birds of Conservation Concern (2008) report identifies species, subspecies, and populations of all migratory nongame birds that, without

additional conservation actions, are likely to become listed under the Endangered Species Act as amended (16 U.S.C 1531 et seq.).

For information about Birds of Conservation Concern, go to http://www.fws.gov/migratorybirds/CurrentBirdIssues/Management/BCC.html.

Migratory birds of concern that may be affected by your project:

There are **12** birds on your Migratory birds of concern list. The Division of Migratory Bird Management is in the process of populating migratory bird data with an estimated completion date of August 1, 2014; therefore, the list below may not include all the migratory birds of concern in your project area at this time. While this information is being populated, please contact the Field Office for information about migratory birds in your project area.

Species Name	Bird of Conservation Concern (BCC)	Species Profile	Seasonal Occurrence in Project Area
Bell's Vireo (*Vireo bellii*)	Yes	species info	Breeding
Bendire's Thrasher (*Toxostoma bendirei*)	Yes	species info	Year-round
Black-chinned Sparrow (*Spizella atrogularis*)	Yes	species info	Wintering, Breeding
Brewer's Sparrow (*Spizella breweri*)	Yes	species info	Wintering
Chestnut-collared Longspur (*Calcarius ornatus*)	Yes	species info	Wintering
Costa's Hummingbird (*Calypte costae*)	Yes	species info	Breeding
Le Conte's thrasher (*toxostoma lecontei*)	Yes	species info	Breeding
Least Bittern (*Ixobrychus exilis*)	Yes	species info	Breeding, Year-round
Lucy's warbler (*Vermivora luciae*)	No	species info	Breeding
Mountain plover (*Charadrius montanus*)	Yes	species info	Wintering
Prairie Falcon (*Falco mexicanus*)	Yes	species info	Year-round
Sonoran Yellow Warbler (*Dendroica petechia ssp. sonorana*)	Yes	species info	Breeding

Trust Resources List

NWI Wetlands (USFWS National Wetlands Inventory).

The U.S. Fish and Wildlife Service is the principal Federal agency that provides information on the extent and status of wetlands in the U.S., via the National Wetlands Inventory Program (NWI). In addition to impacts to wetlands within your immediate project area, wetlands outside of your project area may need to be considered in any evaluation of project impacts, due to the hydrologic nature of wetlands (for example, project activities may affect local hydrology within, and outside of, your immediate project area). It may be helpful to refer to the USFWS National Wetland Inventory website. The designated FWS office can also assist you. Impacts to wetlands and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes. Project Proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate U.S. Army Corps of Engineers District.

Data Limitations, Exclusions and Precautions
The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery and/or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Exclusions - Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Precautions - Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the

advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

The following wetland types intersect your project area in one or more locations:

Wetland Types	NWI Classification Code	Total Acres
Lake	L2UB	34.1884
Riverine	R4SB	89.9213