Roadway Planning & Design Engineering Services for

La Cholla Boulevard:

Magee Road to Tangerine Road (4RTLTM)

Biological Evaluation

March 2010

Prepared by

URS

ORO VALLEY ARIZONA
FOUNDED 1974

PIMA COUNTY DOT

RTA
Regional Transportation Authority

LA CHOLLA BOULEVARD: MAGEE ROAD TO LAMBERT LANE (4RTLTM)

BIOLOGICAL EVALUATION

Prepared for the
Pima County Department of Transportation
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March 2010

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ACRONYMS AND ABBREVIATIONS

AGFD	Arizona Game and Fish Department
BE	Biological Evaluation
CDO	Cañada del Oro
CFPO	cactus ferruginous pygmy owl
CFR	Code of Federal Regulations
DCR	Design Concept Report
EAMR	Environmental Assessment and Mitigation Report
ESA	Endangered Species Act of 1973, as amended
FR	Federal Register
GIS	geographic information system
LLNB	lesser long-nosed bat
m	meter(s)
mph	miles per hour
MSCP	Pima County Multi-Species Conservation Plan
PCDOT	Pima County Department of Transportation
PVS	Priority Vulnerable Species
RTA	Regional Transportation Authority
URS	URS Corporation
USFWS	U.S. Fish and Wildlife Service

1.0 INTRODUCTION

The purpose of this Biological Evaluation (BE) is to provide technical information and to review the widening and improvements of La Cholla Boulevard from Magee Road to Lambert Lane (4RTLTM) (Figure 1) in sufficient detail to determine the extent of potential environmental consequences to species federally listed (United States 1988) as endangered, threatened, candidate, or proposed for listing or any designated critical habitat thereof that are associated with this proposed project. The document presents an analysis of the potential environmental impacts of the proposed project in order to make accurate effects determinations on each of these species.

This BE is the instrument to document, review, and analyze the impacts in the area affected by this proposed project on the lesser long-nosed bat (*Leptonycteris yerbabuenae)* and the cactus ferruginous pygmy owl (*Glaucidium brasilianum cactorum*), and other sensitive biological resources. To this end, the biologists who completed this assessment used the best available scientific and commercial data, local surveys, and professional expertise and judgment in their analysis and effects determinations.

The following terms are used consistently throughout this BE. “Project limits” refers to the area of land disturbed by the construction footprint. “Project area” describes the project limits and lands immediately next to the project limits. “Project vicinity” includes a broader landscape-scale reference.

2.0 PROJECT BACKGROUND

2.1 PROJECT LOCATION

URS Corporation (URS) was contracted to conduct a Biological Evaluation (BE) for widening and other improvements to La Cholla Boulevard between Magee Road and Lambert Lane. This part of La Cholla Boulevard is found in the jurisdictions of unincorporated Pima County and the Town of Oro Valley (Figure 1). The cadastral location of this segment of road is Township 12 South, Range 13 East, near the eastern boundaries of sections 9, 16, 21, and 28, and near the western boundaries of sections 10, 15, 22, and 27 (Figure 2). The project will occur on secured right-of-way acquired by the Pima County Department of Transportation and the Town of Oro Valley.

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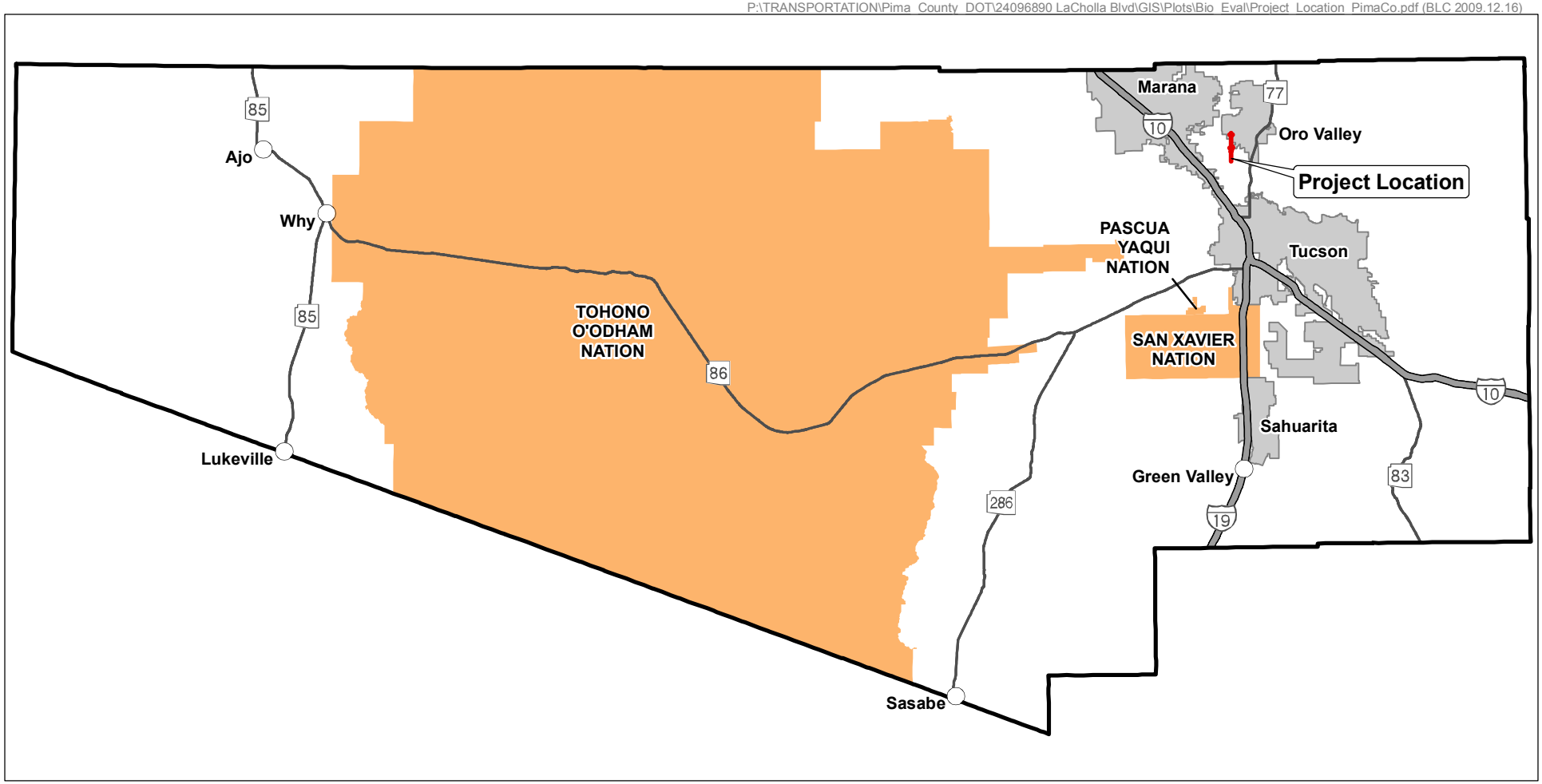

Legend

Project Location

General Features

Town

Interstate Highway

State Route

City

Indian Reservation

Pima County

N

0 10 20

Miles

Source:
Project Location: URS 2009
Base Map: ALRIS 2007, Pima County 2009
Roads: ADOT 2009

Figure 1
County Map

La Cholla Boulevard, Magee Road to Lambert Lane Phase 1

Pima County Project Number: 4RTLTM

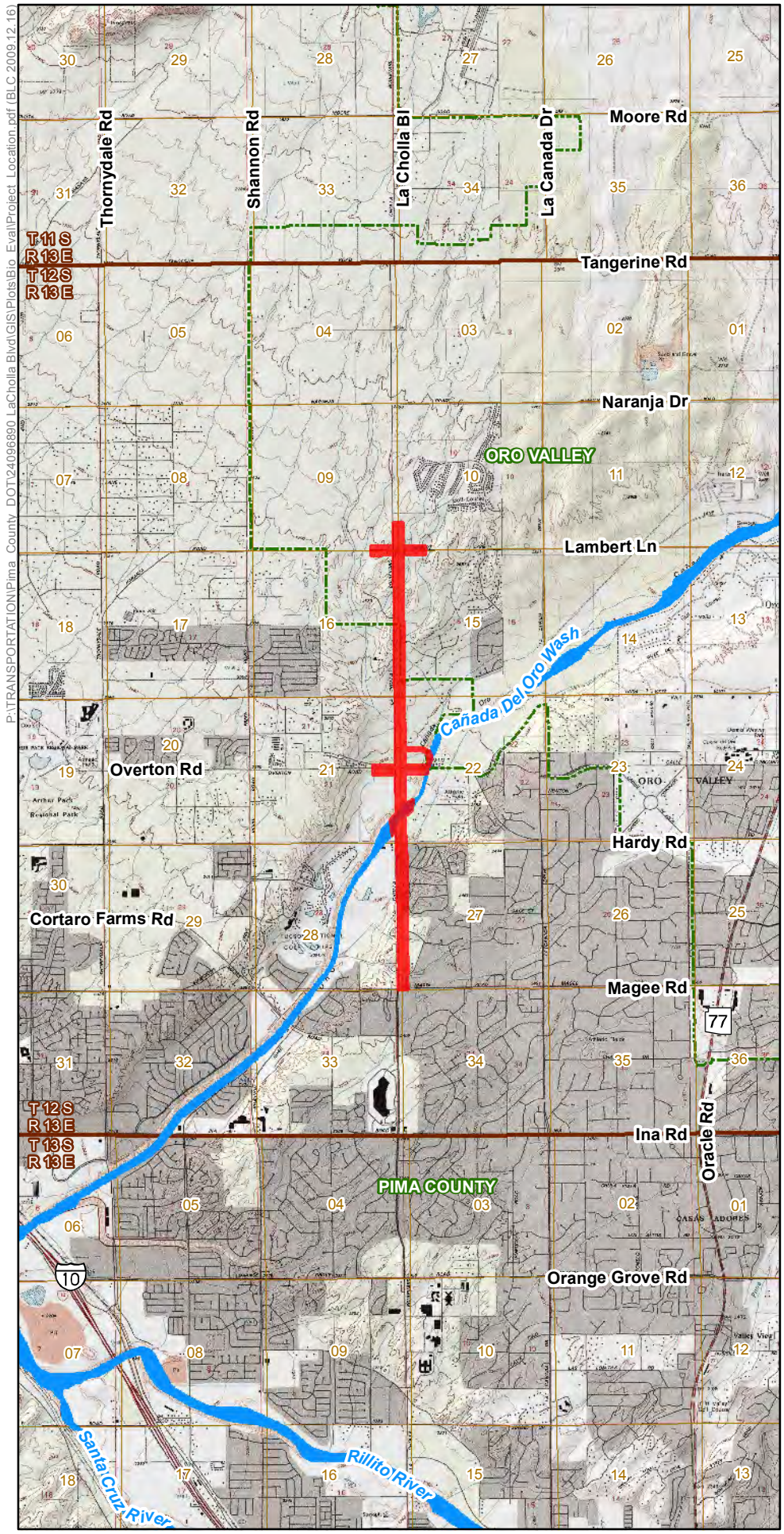

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Figure 2
Project Location

La Cholla Boulevard, Magee Road to Lambert Lane Phase 1

Pima County Project Number: 4RTLTM

Legend

Project Area

General Features

Major Wash

City Boundary

Township and Range Boundary

Section Boundary

Map depicted on the following USGS 7.5' quadrangles: Ruelas Canyon, Jaynes, Tucson North, and Oro Valley

Source:
Project Area: URS 2009
Base Features: ADOT 2009, Pima County DOT 2009
Base topographic data: Created with TOPO!, ©2007 National Geographic Maps, All Rights Reserved

N

0 0.5 1

Miles

2.2 PROJECT OVERVIEW

The Pima County Department of Transportation (PCDOT) proposes to widen approximately 5 miles of La Cholla Boulevard from a two-lane arterial roadway into a four-lane arterial roadway between Magee Road and Tangerine Road. The Inter-Governmental Agreement with the Regional Transportation Authority (RTA) call for this project to be completed in two phases. During Phase 1 of the proposed project, PCDOT will lead the preliminary roadway design for the entire corridor and will design and construct the roadway improvements from Magee Road to Lambert Lane. During Phase II, Oro Valley will complete the design and construct of the roadway improvements from Lambert Lane to Tangerine Road.

Phase 1 includes the conceptual design resulting in a Design Concept Report (DCR) for the roadway improvements from Magee Road to Tangerine Road and an Environmental Assessment and Mitigation Report (EAMR) for the roadway improvements from Magee Road to Lambert Lane. Construction of Phase 1 from Magee Road to Lambert Lane is planned for the 2012 to 2016 implementation period of the 20 year RTA plan. Final design and construction of the roadway from Lambert Lane to Tangerine Road is planned for 2022 to 2026 of the 20 year RTA plan.

This BE addresses Phase 1 of the project. During Phase 2, biological resources will be addressed in a separate study.

La Cholla Boulevard between Magee Road and Lambert Lane is currently a two-lane, uncurbed, undivided road with traffic signals at the intersections of Overton Road and Lambert Lane (Figure 3). The existing roadway has two 12-foot wide travel lanes with 14-foot wide unpaved and largely un-vegetated shoulder for most its length. Similarly, Overton Road and Lambert Lane are two-lane, uncurbed undivided roads with two 12-foot wide travel lanes and 14-foot wide unpaved and largely unvegetated shoulders. Additional roadway features such as street parking, bicycle lanes, sidewalks, or transit stops are not present in the project area.

2.3 PROPOSED PROJECT ELEMENTS

The project involves the widening of La Cholla Boulevard between Magee Road and Lambert Lane. The design speed for this project is 50 miles per hour (mph) and will be posted for 45 mph. Project construction is scheduled to begin in the summer of 2012 and last 18 to 24 months.

Phase I includes the construction of the following specific improvements (Figure 4):

- Widen La Cholla Boulevard from a two-lane roadway to a four-lane roadway (two lanes northbound and two lanes southbound) between Magee Road and Lambert Lane.
- Construct raised medians and turning lanes throughout the length of the project.
- Construct bike lanes between Magee Road and Lambert Lane.
- Construct a multi-use path on the west side of La Cholla Boulevard between Magee Road and Lambert Lane.

- Reconstruct the Overton Road and Lambert Lane intersections to provide two through lanes, one left-turn lane, and a right-turn lane for La Cholla Boulevard. Overton Road and Lambert Lane will supply one through lane, one left-turn lane, and a right-turn lane.
- A new 600' bridge structure will be placed over the Cañada del Oro (CDO) Wash to replace the existing roadway dip crossing. This crossing will consist of two separate structures for the northbound and southbound La Cholla Boulevard traffic lanes. Soil cement bank protection will be provided in front of both the north and south abutments and will be extended for a distance north and south along the eastern La Cholla fill slope. The soil cement along the north abutment will connect to the existing soil cement bank protection adjacent to The Bluffs Subdivision, immediately west of the proposed bridge crossing.
- Additional drainage improvements will include new box culverts, lined channels, box culvert extensions, and a storm drain system consisting of catch basins, scuppers, and pipe culverts capable of conveying a 50-year storm. Riprap lining will likely be required along the eastern La Cholla fill slope.
- This project will include the installation of landscaping improvements in the medians and the roadway shoulders to the right-of-way limit in accordance with the Pima County Department of Transportation Landscape and Irrigation Design Guidelines and the Pima County Roadway Design Manual. The Arizona Community Tree Council's Guide to Arizona Desert Shade Trees will be used as a resource in the selection of shade trees for placement near overhead electric power lines. Placement of landscape improvements will consider the extensive network of existing underground utilities in the project area and follow the appropriate sight distance requirements.

The project area will be accessed from existing La Cholla Boulevard and from major street crossings. Access to the CDO Wash for bridge construction will be via a temporary ramp constructed for this project. Traffic detours during construction are not anticipated. Staging areas are to be determined; however, likely locations lie adjacent to the project area.

The existing right-of-way varies significantly throughout the corridor from 60 feet to 200 feet. A minimum right-of-way width of 150 feet will be maintained for the majority of the new roadway. Additional right-of-way widths will be required in those areas, such as near the CDO Wash and locations between Magee Road and Lambert Lane. Additional easements for drainage and construction will also be required.

The project is expected to impact undisturbed desert uplands, riparian areas, and native vegetation. The exact area impacted by the project construction is yet to be determined. The average right-of-width of 150 feet for the final roadway width minus the existing roadway width approximately 52 feet (existing lanes and graded shoulders) equals an average disturbance width of approximately 98 feet over approximately 3

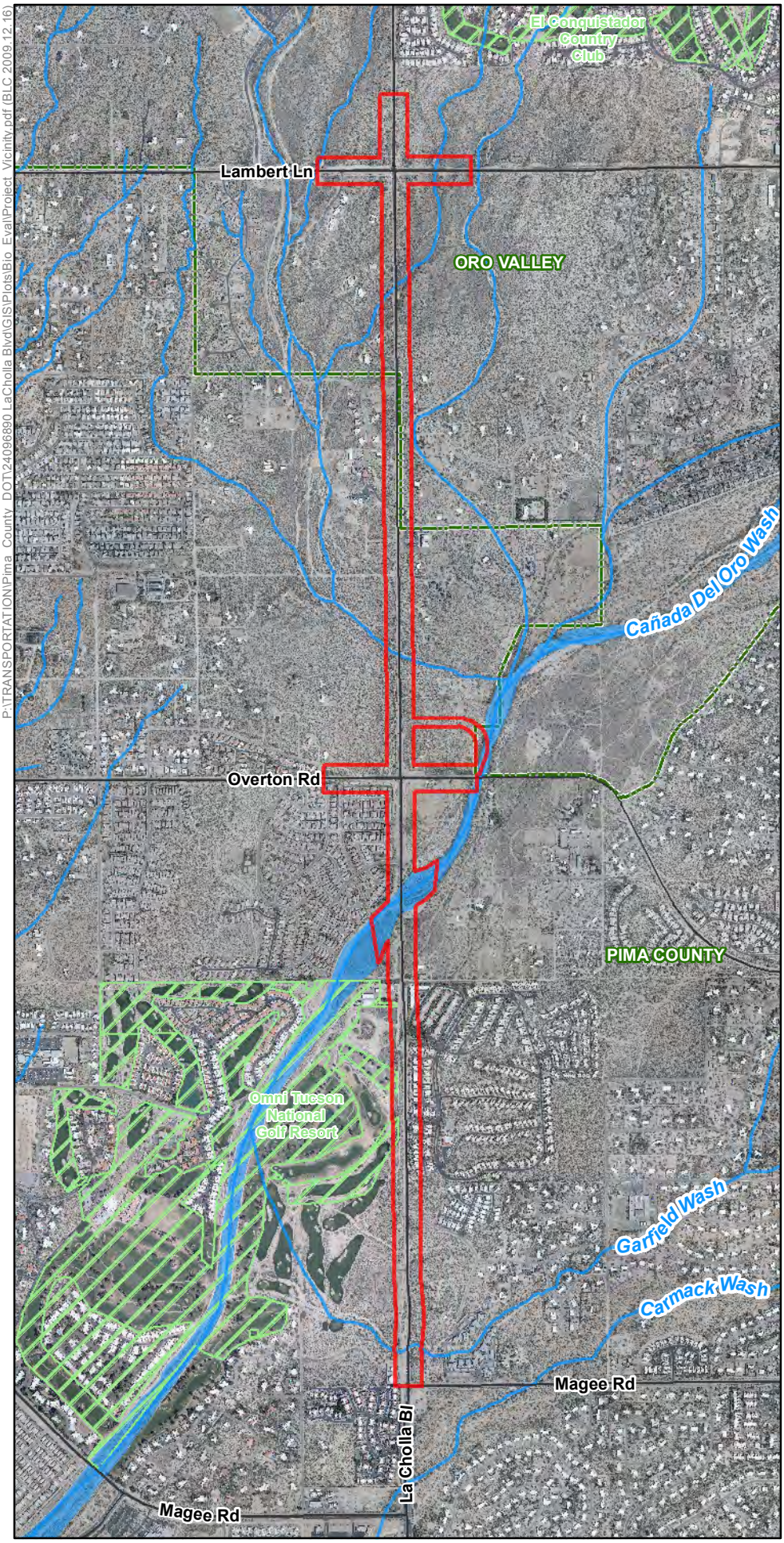

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Figure 3
Project Vicinity

La Cholla Boulevard, Magee Road to Lambert Lane Phase 1

Pima County Project Number: 4RTLTM

Legend

- Project Area
- Golf Course

General Features

- Arterial Road
- Minor Wash/Tributary
- Major Wash
- City Boundary

Source:
Project Area: URS 2009
Base Features: Pima County DOT 2009
Imagery: PAG 2008

N

0 1,000 2,000
Feet

P:\TRANSPORTATION\Pima_County_DOT\24096890 LaCholla Blvd\GIS\Plots\EMAR\Proposed_Roadway_Design_Sheet1.pdf (BLC 2009.12.22)

Legend

- Curb, Concrete, Sidewalk and Driveway
- Median
- Drainage Features
- Existing Right-of-Way
- New Right-of-Way
- New Easement
- Parcel

N

0 100 200

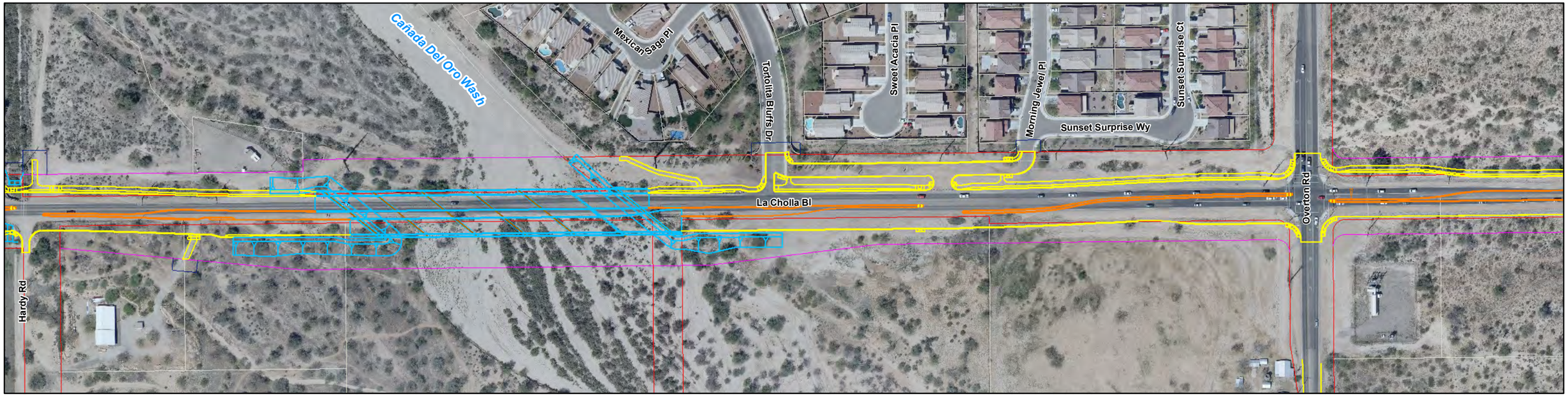
Feet

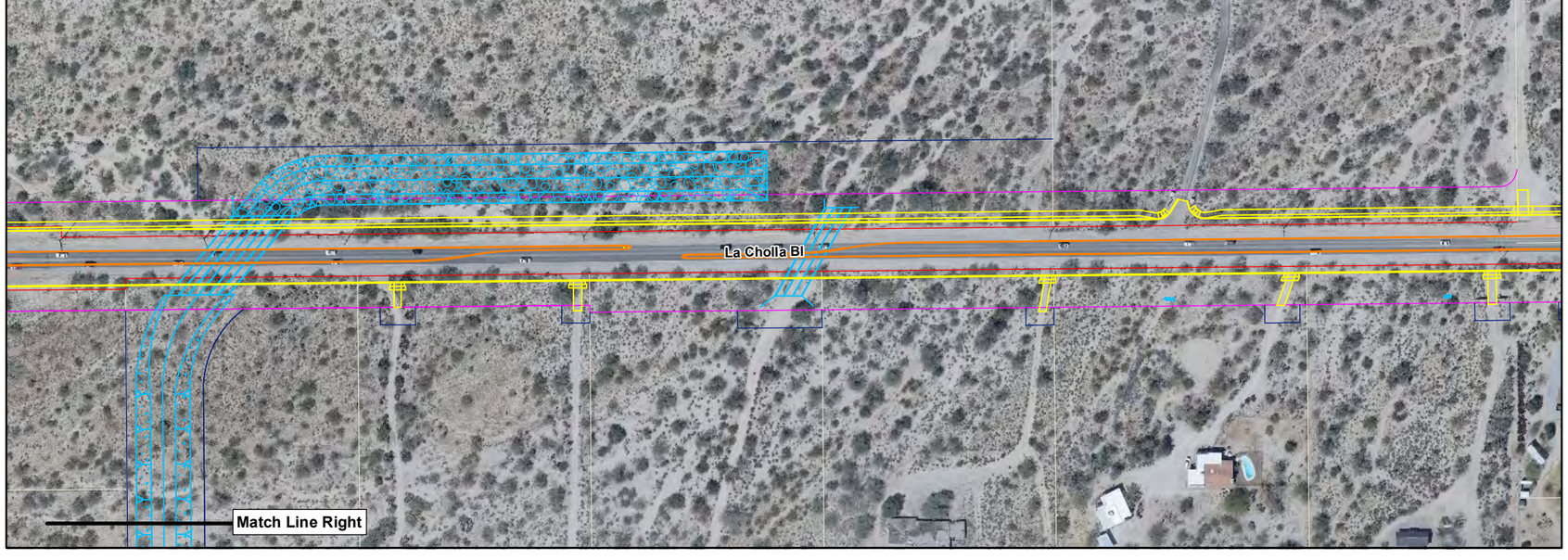
Figure 4
Sheet 1 of 3

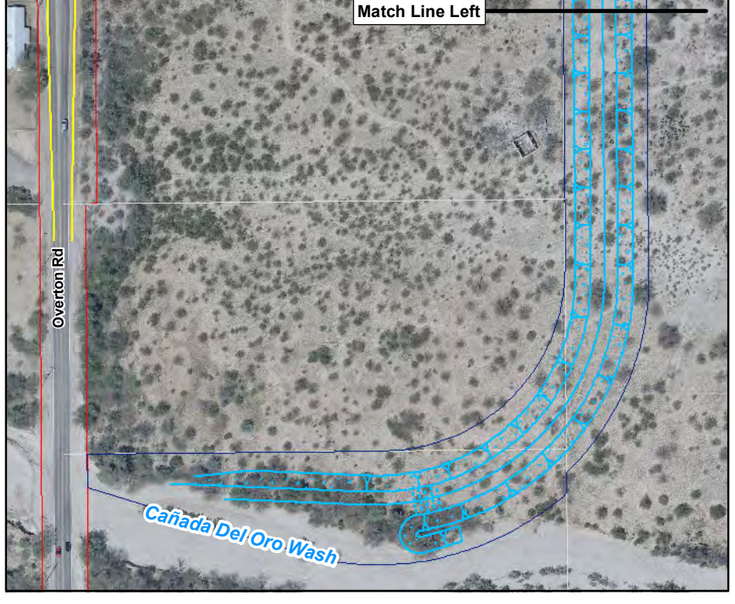
Proposed Roadway Design

La Cholla Boulevard, Magee Road to Lambert Lane Phase 1
Pima County Project Number: 4RTLTM

URS RTA Regional Transportation Authority PIMA COUNTY DOT







Legend

- Curb, Concrete, Sidewalk and Driveway
- Median
- Drainage Features
- Existing Right-of-Way
- New Right-of-Way
- New Easement
- Parcel

N

0 100 200

Feet

Figure 4
Sheet 2 of 3
Proposed Roadway Design

La Cholla Boulevard, Magee Road to Lambert Lane Phase 1
Pima County Project Number: 4RTLTM

URS RTA Regional Transportation Authority PIMA COUNTY DOT

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Legend

- Curb, Concrete, Sidewalk and Driveway
- Median
- Drainage Features
- Existing Right-of-Way
- New Right-of-Way
- New Easement
- Parcel

N

0 100 200

Feet

Figure 4
Sheet 3 of 3

Proposed Roadway Design

La Cholla Boulevard, Magee Road to Lambert Lane Phase 1
Pima County Project Number: 4RTLTM

URS RTA Regional Transportation Authority PIMA COUNTY DOT

miles of the project area. Much of the existing and future right-of-way between Magee Road and Overton Road is previously disturbed bare ground with scattered vegetation, while the existing and future right-of-way between Overton Road and Lambert Lane is undisturbed vegetation. It is anticipated that the project will permanently impact approximately 25 acres of undisturbed native vegetation.

3.0 LOCATION DESCRIPTION

The project area is located in the northern Sonoran Desert biotic region and southern portion of the Basin and Range physiographic province. The topography is punctuated by northwest-southeast trending mountain ranges of fault-block or volcanic origin that are separated by intervening, lowland basins. Despite the scarce, erratic, and unreliable precipitation patterns and the high summer temperatures, this region supports one of the most diverse floras and faunas in the United States and is the most biologically diverse of the North American deserts.

The existing terrain varies greatly north and south of the CDO Wash. South of the CDO Wash the terrain slopes to the northwest until it meets the CDO Wash where it turns to the southwest. North of the CDO Wash the terrain slopes to the southeast until it meets the CDO Wash where it turns to the southwest. The elevation in the project area is 2,390 feet at Magee Road and ranges up to 2,610 feet at Lambert Lane. The low point is 2,360 feet at the CDO Wash. From the southern roadway limits at Magee Road, the grade gradually falls from south to the CDO Wash and from the northern roadway limits at Lambert Lane, the grade gradually falls from the north to the CDO Wash.

Along the west side of La Cholla Boulevard, between Magee Road and the CDO Wash, the existing terrain drops off severely towards the Tucson National Golf Course, requiring large fill slopes and retaining walls. Between Magee Road and McCarty Road, there are areas where large cut hills exist along the roadway, requiring large cut slopes and cut walls. Between Lucero Road and Lambert Lane, there are both large cut hills and drop off locations that will require both cut and fill slopes and walls.

The project area includes several places that have sensitive environmental designations. La Cholla Boulevard is designated by Pima County as an environmentally sensitive roadway. Other Sensitive Environmental Resources defined by Pima County in the project area include three Conservation Land System designations: (1) Special Species Management Area for cactus ferruginous pygmy-owl is located west of La Cholla Boulevard from Hardy Road to Lambert Lane; (2) Multiuse Management Area is located east and west of La Cholla Boulevard from Hardy to Lambert Lane; and (3) Important Riparian Area at the CDO Wash. The CDO Wash is not considered a unique or impaired water by the State of Arizona.

The project will include the CDO Wash and several small ephemeral washes, including Garfield Wash, which are assumed to be Waters of the United States as defined by the United States Army Corps of Engineers. A jurisdictional delineation will be completed to ascertain the location and extent of Waters of the United States within the project area.

Current land use in the project area includes residential (single-family homes and townhome complexes), commercial (Omni Tucson National Resort), institutional (Alive Christian Fellowship and Grace Community Church), recreation (CDO Wash proposed linear parkway, La Cholla/Honey Bee Loop Trail, and Birch Way), and vacant land. The density of development in the area is consistent with a suburban setting.

3.1 VEGETATION

Vegetation associations and landcover in the project area include Sonoran palo verde mixed-cactus desert scrub, Sonoran creosote triangle-leaf bursage desert scrub, and Sonoran riparian scrub (USGS, National GAP Analysis Program 2004).

Sonoran paloverde-mixed cacti desertscrub is the typical vegetation community that grows in hilly to mountainous terrain, foothills, breaks, and major incised channels in the project area. This vegetation community typically forms on coarse, gravelly to rocky soils and outcrops in the Sonoran Desert (NatureServe 2007). Common overstory species surveyed in the project area included blue palo verde (*Parkinsonia floridium*) and catclaw acacia (*Acacia greggii*), with occasional saguaro (*Carnegiea gigantea*) and ocotillo (*Fouquieria splendens*) from Magee Road to Lambert Lane. Mid-canopy species included creosotebush (*Larrea tridentata*), triangle-leaf bursage (*Ambrosia deltoidea*), desert broom (*Baccharis sarothroides*), broom snakeweed (*Gutierrezia sarothrae*), crucifixion thorn (*Canotia holacantha*), and various cacti (e.g., *Opuntia* sp., *Cylindropuntia* sp., *Ferocactus* sp., *Mammilaria* sp.). Grasses form a ground cover at several disturbed sites and in some washes.

Creosotebush triangle-leaf bursage desertscrub (creosote scrub) occurs in level lowland parts of the project area where soils are arid and fine-textured. This form of desertscrub is characterized by a sparse to moderately dense layer of small-leaved shrubs and sub-shrubs and occasional cacti (NatureServe 2007). Creosotebush, white bursage (*Ambrosia dumosa*), or triangle-leaf bursage are the usual dominants. Other typical species include long-leaf joint fir (*Ephedra trifurca*), cacti, and galleta grass (*Pleuraphis rigida*).

Washes cross or parallel the project area at multiple localities. Two of these are named; the largest wash in the project area is CDO Wash and a smaller one is named Garfield Wash. All the washes in the project area are tributaries of CDO Wash. Vegetation in these slightly wetter areas included velvet mesquite (*Prosopis velutina*), white thorn acacia (*Acacia constricta*), catclaw acacia (*Acacia greggii*), desert willow (*Chilopsis linearis*), and salt cedar (*Tamarix* sp.) in addition to many of the species found in the surrounding upland sites. Plant cover in most washes was typically denser and more diverse than the upland sites.

Appendix C provides a list of protected native plant species observed in the project area. Appendix D consists of a list of native plant species observed during Releve native plant surveys.

3.2 SOILS

Soils in the project area are upland and alluvial types. Upland soils consist of the Nolam-Tombstone complex immediately above the upper terraces and tributaries of the CDO Wash south to about Magee and north to about 0.2 mile south of Lambert Lane (Cochran and Richardson 2003). This association is primarily composed of 45 percent Nolam extremely gravelly fine sandy loam on gently sloping (8-15 percent slope) fan terraces and about 40 percent Tombstone very gravelly loam on hilly fan terraces of 15 to 30 percent slope (Cochran and Richardson 2003).

Upland areas from about 0.2 mile south of Lambert Lane to the project limits are comprised of the Palos Verdes-Jaynes complex, occurring on 2 to 8 percent slopes (Cochran and Richardson 2003). This soil association is about 40 percent Palos Verdes gravelly sandy loam, 35 percent Jaynes gravelly sandy loam, and about 10 percent Delthorny extremely cobbly fine sandy loam (Cochran and Richardson 2003).

Upland soils at Magee Road include the Palos Verdes-Sahuarita complex, occurring on 2 to 8 percent slopes (Cochran and Richardson 2003). This association is 40 percent Palos Verdes gravelly sandy loam and 40 percent Sahuarita very gravelly fine sandy loam (Cochran and Richardson 2003). This association occurs on relict or current fan terraces (Cochran and Richardson 2003).

Soils in the CDO Wash, its terraces, and tributaries are predominantly Anthony fine sandy loam, occurring on 0 to 3 percent slopes (Cochran and Richardson 2003). The strata of this association consist of fine sandy loam, loamy sand, gravelly loamy sand, and gravelly loamy coarse sand (Cochran and Richardson 2003). Occasional areas with sandbars and river wash occur within the wash channel itself.

4.0 SPECIES IDENTIFICATION

Species assessed for this BE included species federally listed as endangered, threatened, candidate, or proposed for listing or species managed under a conservation agreement. The list of species discussed in this report was compiled from the federally listed and candidate species for Pima County, Arizona, as recorded on the Web site of the U.S. Fish and Wildlife Service (USFWS), Arizona Ecological Field Office. Currently there are 22 species included on the USFWS list of federally listed or managed species for Pima County (Appendix E). Fifteen of these are listed as threatened or endangered, four are candidate species, one is a species proposed for relisting, and two are managed under conservation agreements. Twenty of these species were eliminated from further comprehensive analysis (Table 5-1) because these were either outside the geographic or elevational range of the species or the project area did not support adequate vegetation, substrate, or topography to sustain a local population. Rationale for excluding each of these species is provided in Table 5-1. In addition, the Arizona Game and Fish Department (AGFD) provided a list of current occurrence records of special status species, including federally listed species that have been documented within 3 miles of the project area (Appendix F). The AGFD review indicates that the project vicinity contains no documented occurrences of federally listed, proposed, or candidate species; or designated critical habitat.

Appendix A discusses Arizona sensitive species. Appendix B identifies Pima County Priority Vulnerable Species.

Table 5-1 Special Status Species Excluded from Further Consideration and Reasons for Omission

Species	Federal Status	Habitat Requirements	Reason For Exclusion
Mammals			
Jaguar (*Panthera onca*)	E	Occurs in thorn scrub forest, desert scrub, to pine woodlands in the borderlands of New Mexico, Arizona, and Mexico that are remote from human disturbance. Ranges in elevation from 2,400 to 4,100 ft (732 to 1,250 m). (USFWS 2000b)	Project vicinity includes too much human disturbance and development to be suitable.
Ocelot (*Leopardus pardalis*)	E	Found in desert scrub in Arizona. May persist in partly-cleared forests, second-growth woodland, and abandoned cultivated areas reverted to brush. Universal component is presence of dense cover. Ranges in elevation up to 8,000 feet (2,430 m). (USFWS 2002d)	Project vicinity lacks adequate dense cover and includes too much human disturbance and development to be suitable.
Sonoran Pronghorn (*Antilocapra americana sonoriensis*)	E	Occurs in lowland valleys with desert grassland, often mixed with creosote desert scrub. Ranges in elevation from 2,000 to 4,000 feet (610 to 1,220 m). (USFWS 2002f)	No habitat in project vicinity and species range is outside affected area.
Birds			
California least tern (*Sterna antillarum browni*)	E	Gregarious, forms nesting colonies on barren to sparsely vegetated areas – sandbars, gravel pits, or exposed flats along shorelines of inland rivers, lakes, reservoirs, or drainage systems. Feeds primarily on fish in shallow waters and secondarily on invertebrates. Nests in a simple scrape on sandy or gravelly soil (USFWS 2009a).	An occasional migrant that also sometimes nests in Arizona. No suitable habitat in project vicinity.
Mexican spotted-owl (*Strix occidentalis lucida*)	T	Utilizes old-growth habitats in mixed-conifer and fir forests with a multi-layered canopy, often associated with canyons. Nests on cliffs or in mature trees. Ranges in elevation from 4,100 to 9,000 feet (1,250 to 2,743 m). (USFWS 2008)	No suitable habitat in project vicinity.
Masked bobwhite (*Colinus virginianus ridgewayi*)	E	Desert grasslands often with acacia and a diversity of native grasses and other shrubs. Ranges from 1,000 to 4,000 feet (305 to 1,220 m) in elevation. (USFWS 2002b)	Outside range of species and no suitable habitat in project vicinity.
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	C	Large blocks of riparian woodlands (cottonwood, willow, or tamarisk galleries) at elevations below 6,600 feet (2,012 m). (USFWS 2003b)	No suitable habitat in project vicinity.
Southwestern willow flycatcher (*Empidonax traillii extimus*)	E	Cottonwood/willow and tamarisk vegetation communities along streams and rivers at elevations below 8,500 feet (2,591 m). (USFWS 2001d)	No suitable habitat in project vicinity.
Reptiles/Amphibians			
Chiricahua leopard frog (*Rana chiricahuensis*)	T	Found in streams, rivers, backwaters, and stock tanks that are mostly free of introduced fish, bullfrogs, and crayfish at elevations from 3,300 to 8,900 feet (1,006 to 2,713 m). (USFWS 2002a)	No habitat in project vicinity.

Species	Federal Status	Habitat Requirements	Reason For Exclusion
Sonyota mud turtle (*Kinosternon sonoriense longifemorale*)	C	Ponds and streams in Organ Pipe National Monument. Occurs at an elevation of 1,100 feet (335 m). (USFWS 2001e)	No habitat in project vicinity and outside range of the species.
Nothern Mexican gartersnake (*Thamnophis eques megalops*)	C	Uses cienegas, stock tanks, large river-riparian woodlands and forest, and streamside gallery forests. It is strongly associated with a native prey base of native fish and leopard frogs. (AGFD 2001b)	No habitat in project vicinity and outside the range of the species.
Fish			
Desert pupfish (*Cyprinodon macularis*)	E	Lives in shallow springs, small streams, and marshes. Tolerates warm and saline water. Found below 4,000 feet (1,120 m) in elevation. (USFWS 2000a)	No habitat in project vicinity.
Gila chub (*Gila intermedia*)	E	Found in pools, springs, cienegas, and streams at elevations from 2,000 to 5,000 feet (610 to 1,524 m). (USFWS 2003a)	No habitat in project vicinity
Gila topminnow (*Poeciliopsis occidentalis occidentalis*)	E	Found in small streams, springs, and cienegas with vegetated shallows at elevations below 4,500 feet (1,372 m). (USFWS 2001a)	No habitat in project vicinity
Invertebrates			
San Xavier tallussnail (*sonorella eremita*)	CA	Found on north-facing limestone rockslides in deep canyons at an elevation of about 3,900 feet (1,189 m). (USFWS 2001g)	No habitat in project vicinity and outside range of species.
Plants			
Godding's onion (*Allium goddingii*)	CA	Found on shady sites on north-trending drainages and grows on slopes or narrow canyons within mixed-conifer and spruce fir forests. Ranges in elevation from 7,500 to 11,250 feet (2,286 to 3429 m). (USFWS 2001f)	No habitat in project vicinity
Huachuca water umbel (*Lilaeopsis schaffneriana recurva)*	E	Grows in cienegas, perennial low-gradient streams, and wetlands from 3,500 to 6,500 feet (1,067 to 1981 m). (USFWS 2001b)	No habitat in project vicinity and outside range of the species.
Kearney blue star (*Amsonia kearneyana*)	E	Occurs in west-facing drainages in the Baboquivari Mountains, growing on stable, partially shaded, coarse alluvium. Grows at an elevation of about 3,700 feet (1,128 m). (USFWS 2001c)	No habitat in project vicinity and outside range of the species.
Nichol Turk's head cactus (*Echinocactus horizonthalonius var. nicholii*)	E	Occurs on limestone outcrops and saddles or rocky, limestone derived soils in desertscrub with little or no grass cover. Ranges in elevation from 2,400 to 4,100 feet (732 to 1,250 m). (USFWS 2002c)	No habitat in project vicinity and outside range of species.
Acuña cactus (*Echinomastus erectocentrus var. acunensis*)	C	Restricted to well drained knolls and gravel ridges between major washes in Sonoran desertscrub habitat. Acuña cacti are found on granite substrates on rounded small hills at elevations ranging from 1,300 to 2,000 feet (396 to 610 m). (USFWS 2000c)	Suitable granitic soils not found in project area and outside restricted range and elevation of the species.
Pima pineapple cactus (*Coryphantha scheeri robustispina*)	E	Occurs in lower Sonoran desertscrub or semi-desert grassland communities on flat ridge tops or alluvial hillsides with rocky loam or sandy soils. Ranges in elevation from 2,300 to 5,000 feet (701 to 1,524 m). (AGFD 2001c)	Suitable habitat not found in project area and outside restricted range of the species.

LISTING SOURCE: USFWS 2009b
NOTES: C = candidate, CA = conservation agreement, E = endangered, T = threatened, m = meter(s)

The lesser long-nosed bat (*Leptonycteris yerbabuenae*), an endangered species, and the cactus ferruginous pygmy owl (*Glaucidium brasilianum cactorum*), a species proposed for relisting, are analyzed in greater detail in this BE (Table 5-2). The project limit does not currently support any designated critical habitat; however, previously designated critical habitat for the cactus ferruginous pygmy owl (CFPO) occurs on the western side of the project area from Hardy Road to Lambert Lane. This area is currently managed by Pima County as a Special Species Management Area and is located in the project area from Hardy Road to Lambert Lane; and from 150 feet east of La Cholla Boulevard centerline, to the full extent of the study area west of the La Cholla Boulevard centerline.

Table 5-2 Listed Species Potentially Impacted by the Proposed Project and Included in this Biological Evaluation

Species	Federal Status	Habitat Requirements	Critical Habitat	
			Date Designated	Federal Register No.
Mammals				
Lesser long-nosed bat (*Leptonycteris yerbabuenae*)	E	Occurs in upper Sonoran desert scrub with columnar cacti and agave. Day roosts include caves, mines, and tunnels. Ranges in elevation from 1,600 to 11,500 feet (488 to 3,505 m). (AGFD 2003)	N/A	N/A
Birds				
Cactus ferruginous pygmy owl (*Glaucidium brasilianum cactorum*) *Note:* recent investigation suggests a new taxonomic name, *Glaucidium ridgway cactorum*, for this DPS.	PT	Found in areas with desert woodlands having a tall canopy cover. Usually found in Sonoran desert scrub and occasionally in riparian drainages and woodlands within semi-desert grassland communities. Prefers to nest in cavities in saguaro cacti but has been found nesting in low-density suburban developments that include natural open spaces. Found below 4,000 feet (1,220 m) in elevation. (AGFD 2001a)	N/A, previously designated critical habitat was withdrawn when the species was delisted.	N/A

LISTING SOURCE: USFWS 2009b
NOTES: C = candidate, E = endangered, PT = Petitioned for relisting, N/A = not applicable, No. = number, DPS = Distinct Population Segment.

5.0 SPECIES EVALUATION

5.1 LESSER LONG-NOSED BAT

5.1.1 Life History Information

Status

The lesser long-nosed bat (*Leptonycteris yerbabuenae*) was listed as endangered in 1988 under the accepted taxonomic name at the time of *Leptonycteris sanborni*, Sanborn's long-nosed bat (USFWS 1988). No critical habitat has been designated for this species. A recovery plan was completed in 1997 (USFWS 1997b) under the species' revised taxonomic name of *Leptonycteris curasoae yerbabuenae*, lesser long-nosed bat. Loss of roost and foraging habitat, as well as direct taking of individual bats during animal control programs, particularly in Mexico, have contributed to the current endangered status of the species. The recovery plan states that the species will be considered for delisting when three major maternity roosts in the U.S., two post-maternity roosts in the U.S., and three maternity roosts in Mexico have remained stable or increased in size for at least five years, following the approval of the recovery plan. The five-year review has been completed and recommendations support down listing of the species to threatened (USFWS 2005, USFWS 2007).

Reasons for Listing

The primary reasons for listing the lesser long-nosed bat (LLNB) as an endangered species is as follows:

1. Long-term decline in population numbers.
2. Reports documenting its absence from previously occupied sites.
3. Decline in the pollination of specific agaves.

Threats: The primary threat to the LLNB is roost disturbance or loss. The colonial roosting behavior of this species, where high percentages of the population can congregate at a limited number of roost sites, increases the risk of significant declines or extinction due to impacts at roost sites. LLNBs remain vulnerable because they are so highly aggregated (USFWS 1997b). Threats to the foraging habitat include excess harvesting of agaves in Mexico; collection and destruction of cacti in the U.S.; conversion of habitat for agricultural and livestock uses; the introduction of buffelgrass (*Pennisetum cilare*) and other invasive species that can carry fire in Sonoran Desert scrub; wood-cutting; drought; fires; and urban development.

Species Description

The LLNB is a medium-sized bat with grayish to reddish-brown fur. Juveniles have gray fur. Its elongated rostrum bears a small, triangular nose-leaf, and its ears are relatively small and simple in structure (USFWS 1997b). It has three caudal vertebrae but no externally visible tail (Hoffmeister 1986).

The LLNB is one of three genera in the family Phyllostomidae that occur Arizona (AGFD 2003) and one of three species in the genus, *Leptonycteris*. *Leptonycteris yerbabuenae* is the only species of the genus occurring in Arizona (AGFD 2003).

The recently accepted taxonomic name for LLNB, *Leptonycteris curasoae yerbabuenae*, which included both North American and South American populations, has undergone recent revision. Genetic evidence indicated that the North American and South American populations represent distinct species, and the taxonomic name for the populations in Mexico and the United states should be elevated to *Leptonycteris yerbabuenae* and that of the South American populations should be revised to *Leptonycteris curasoae* (Cole and Wilson 2006).

Distribution and Abundance

The LLNB is found throughout its historical range from southern Arizona, southwestern New Mexico, through western Mexico, and south to El Salvador. The species range in southern Arizona includes an area from the Picacho Mountains southwest to the Agua Dulce Mountains and southeast to the Chiricahua Mountains. In New Mexico, it occurs in the Animas and Peloncillo Mountains. The species generally isn't present in Arizona or New Mexico in the winter (Hinman and Snow 2003), and occasional extra-limital records have been reported outside of the normal range in the Phoenix area and at the Bill Williams River. These likely represent disoriented juveniles.

Recent information indicates that populations appear to be increasing or are stable at most Arizona roost sites identified in the recovery plan (USFWS 2007). Populations also appear to be increasing or stable at other roost sites in Arizona and Mexico not included as monitoring sites in the recovery plan (USFWS 2007). Little is known about population trends and numbers at roosts in New Mexico. Though populations appear to be doing well, many threats to their stability and recovery still exist.

Approximately 17 roost sites, including maternity and late-summer roosts, have been documented in Arizona (USFWS 2007). Of these, 11 late-summer and 3 maternity roots are monitored on an annual basis depending on available resources. Monitoring in Arizona in 2004 documented approximately 72,615 individuals at late-summer roosts and approximately 34,615 in maternity roosts (USFWS 2007). Ten to 20 roost sites in Mexico are also monitored annually. Over 100,000 individuals are found at just one natural cave at Pinacate National Park, Sonora, Mexico (Cockrum and Petryszyn 1991). These numbers indicate that although a relatively large number of LLNBs exist, the relative number of known large roosts is quite small.

Habitat

Within the U.S., suitable habitat types for the LLNB include upper Sonoran desertscrub, semi-desert grasslands, oak woodlands, and pine-oak woodlands (Arita 1991). The types of useable habitats occur at higher elevations south of the United States. Two sets of resources, suitable day roosts and appropriate concentrations of food plants, are vital to maintain local populations of the LLNB. Caves and abandoned

mines are used as day roosts (USFWS 1997b). Maternity roosts tend to be very warm and poorly ventilated (Arends et al. 1995, USFWS 1997b). Such roosts reduce the energetic requirements of adult females while raising their young (Arends et al. 1995, Bonaccorsco et al. 1992). The microclimatic requirements for other kinds of day roosts seem to be much less specific (USFWS 1997b).

The availability of night roosts in foraging habitat is another factor that may affect the suitability of habitat for LLNBs (USFWS 1997b). LLNBs are less selective when choosing night roosts, which are used for short periods of time during the night to digest meals between foraging stints (USFWS 1997b). They may use day roosts or separate caves, mines, rock overhangs, shrubs, trees, and inactive buildings for night roosts (Cockrum and Petryszyn 1991, Hoyt et al. 1994). The extent to which night roosts represent essential habitat for this species is currently unknown.

Roost Behavior and Ecology

Roost sites in Arizona typically are occupied from April to September, but males may remain until early November (Cockrum and Petryszyn 1991). The species has been recorded rarely during the winter at hummingbird feeders in Tucson (Fleming et al. 1995, Hoffmeister 1986). In spring, adult females, most of which are pregnant, arrive in Arizona and gather into maternity colonies in southwestern Arizona. These roosts are typically at low elevations in upper Sonoran desertscrub near concentrations of flowering columnar cacti and paniculate agaves. After the young are weaned in July and August, maternity colonies typically disperse; some females and young typically relocate to higher elevations in southeastern Arizona near concentrations of blooming paniculate agaves. These sites can range up to more than 6,000 ft (1,829 m), and the dates of these seasonal movements vary from year to year (Cockrum and Petryszyn 1991, Fleming et al. 1995). Adult males are uncommon in the U.S. and typically occupy separate bachelor colonies located in the Chiricahua and Galiuro mountains, but males also occasionally are found with adult females and young-of-the-year at maternity roosts (USFWS 1997b).

LLNBs are sensitive to human disturbance in all types of roosts and may react by abandoning the disturbed site (various references in USFWS 1997b). Once a roost is abandoned, it may or may not be re-colonized in the foreseeable future (USFWS 1997b).

In Mexico, LLNBs are known to share roosts with various species of mormoopid bats (Bonaccorsco et al. 1992). Co-occupancy in maternal and other summer roosts in Arizona and New Mexico has been documented and seems rare, but formal investigation into the frequency of shared roosts is lacking (Hayward and Cockrum 1971; USFWS 1997b).

Food and Foraging Habits

The LLNB has a specialized diet in the United States. It predominantly feeds on nectar, pollen, and some fruit from paniculate agaves like Palmer's agave (*Agave palmeri*), Parry's agave (*A. parryi*), desert agave (*A. deserti*), and amole (*A. schotti*) (Slauson 1996). Paniculate agaves produce flowers in a tall panicle, which is a compound inflorescence with a central stem that bears flowering branches that are themselves

branched again. Columnar cacti also are important food sources and include saguaro (*Carnegiea gigantea*) and organ pipe cactus (*Stenocereus thurberi*). The LLNB is characterized as a keystone pollinator and disperser of seeds for columnar cacti and paniculate agaves (Cockrum and Petryszyn 1986), because it is exceedingly specific in its food requirements. Habitats with columnar cacti grow in low to mid-elevations of the Sonoran Desert, and paniculate agaves usually are found at higher elevations or in more mesic situations in desertscrub, desert grasslands, chaparral, or oak woodlands (Gentry 1982).

Populations of this bat require adequate densities of flowers and/or fruits of food-plants within the foraging range of day roosts or along migration routes. The location of suitable feeding localities in relation to roost sites is inextricably linked to the ecology and distribution of the LLNB. Ober et al. (2000) calculated that, near a roost, a population of 100,000 bats would need an average density of 0.16 flowering food-plants/ha across an area of 3,771 km^2 (1,456 square-miles). However, food-plant density over a broad area is probably less of a determinant than is the arrangement and density of those flowering plants in the respective populations. Thus, the suitability of selected day roosts is strongly influenced by surrounding ecological conditions and the energetic limitations determined by habitat quality.

Another determinant of the suitability of an area is the distance required to fly between day roosts and foraging areas. The LLNB has been documented flying distances of 24 to 100 km (15 to 62 miles) (USFWS 1997b) from roost sites to foraging areas (USFWS 1997b). This is possible, in part, because the LLNB is a strong, swift, and efficient flier capable of flight speeds up to 14 miles (23 km) per hour (Sahley et al. 1993, Winter and Von Helversen 1998) and, in part, because its diet of nectar and pollen is high in available calories.

Night flights from maternity colonies to flowering columnar cacti have been documented at 25 km (15 miles) in Arizona and at 40 km (25 miles) and 61 km (38 miles) (one way) in Mexico (Dalton, pers. comm. as cited in USFWS 2007; Petryszyn, pers. comm. as cited in USFWS 2002e). Fleming et al. (1995) suggested that a substantial portion of the LLNBs at the Pinacate Cave in Sonora fly 40 to 50 km (25 to 31 miles) each night to foraging areas in Organ Pipe Cactus National Monument. Horner et al. (1990) found that individuals would commute 25.8 km (15.5 miles) between an island maternity roost and the mainland in Sonora, Mexico. These authors estimated that bats regularly flew at least 78.3 km (47 miles) along their foraging routes each night. Additionally, LLNBs have been observed feeding at hummingbird feeders near Tucson, which is many miles from the closest known roost site (Dalton, pers. comm. as cited in USFWS 2007; Petryszyn, pers. comm. as cited in USFWS 2002e). Bogan (pers. Comm. as cited in USFWS 2007) mentioned that foraging distances in Arizona are far from adequately known and that specific studies relating roost locality to foraging areas are needed to augment the available anecdotal information in the state.

LLNBs emerge to forage between sunset and dusk and often forage in flocks (Sahley et al. 1993). Frequently, the bats visit plants without feeding during the initial part of the evening, apparently to gather information on the location of open flowers (Horner et al. 1990). The peak feeding period lasts from about 9 p.m. to about 2 a.m. after flowers have accumulated substantial amounts of nectar (Horner 1990, USFWS 2007). Horner et al. (1990) stated that the foraging behavior of *L. yerbabuenae* is characterized

by relatively long commuting flights, consistent short-term use of a foraging area, occasional long forays to night roosts or other areas, and visits to many flowers scattered over many plants.

Ober et al. (2000) present evidence that LLNBs select areas with both high resource abundance (numerous blooming agaves) and evidence of high resource abundance in previous years (old floral stalks), which suggests the bats have a site fidelity to agave stands. The seasonal dietary specialization of LLNBs further implies that future reduction or fragmentation of agave populations could have serious effects on behavior and ecology of the species. This would force individuals to commute farther, roost in sub-optimal caves or mines, or compete more with one another at fewer available plants. All of these factors could combine to jeopardize the reproductive success at maternity colonies and reduce the populations throughout Arizona. These effects would be exacerbated during years with low flower production (e.g. drought years), when energy expended by bats would be appreciably higher.

Overall, destruction of food plants many miles from a roost could have a strong negative impact on this bat (USFWS 1997b). Activities that protect day roosts from human activity and that positively affect the density and productivity of columnar cacti and paniculate agaves may provide the best means of increasing populations of LLNBs (USFWS 1997b).

5.1.2 Species Surveys

A habitat evaluation of the project area was completed by a biologist from URS from 7 to 10 June 2009. The project area was surveyed for the presence of potential roosts sites, forage plants, or indices of use. Results of the survey indicate no day roost sites or indices of use were found in the project area. Adequate foraging habitat does occur in the project area and project vicinity and trees and buildings in the area could serve as temporary night roosts. Foraging habitat exists throughout the project area, with the best available habitat occurring on the west side of La Cholla Boulevard. The remainder of the project area has moderate to inadequate foraging habitat.

AGFD in cooperation with the City of Tucson and Town of Marana has been conducting an urban use investigation in recent years, which has provided new data on local foraging patterns and roost sites in the project vicinity. Tracking studies have led to the discovery of previously unknown roost sites near Tucson and has documented this bat foraging at humming bird feeders in the project vicinity and its use of the Omni Tucson National Resort (Ingraldi 2009).

5.1.3 Habitat Evaluation and Suitability

The project area is located within the geographic range of the lesser long-nosed bat. The nearest known major lesser long-nosed bat maternity roost site is at Old Mammon Mine, in the Slate Mountains in Ironwood Forest National Monument, approximately 45 miles northwest of the project area. Surveys of Old Mammon Mine in 1992 and 1993 documented 3,600 adults and young (USFWS 2007). Surveys at the Old Mammon Mine within the past 5 years detected 6,300 bats (USFWS 2007). Smaller days roost sites include Box Canyon Crevice in Saguaro National Park (20 miles southeast of the project area) and Colossal Cave Mountain Park (20 miles southeast of the project area) (USFWS 1995).

The AGFD has documented recent occurrence of the LLNB within 3 miles of the project area and day roost sites in the project vicinity (Ingraldi 2009). Tracking studies have has documented this bat foraging at humming bird feeders in the project vicinity and its use of the Omni Tucson National Resort (Ingraldi 2009). Although hummingbird feeder use is not typical foraging behavior for the lesser long-nosed bat and may be a response to fewer than normal numbers of flowering agaves, it indicates that northwest Tucson lies within the foraging radius of day roosts in the region. Survey results indicate that LLNB are more abundant in the Tucson Basin in late summer and fall. The number of active roosts in southeastern Arizona during May through June, the flowering period for saguaro, is limited to a small number of bachelor males and females. Most spring roosts are located in south-central and western Arizona, particularly in the vicinity of Organ Pipe National Park. Large numbers of bats begin to arrive in southeastern Arizona in July through August when agave being to flower.

Forage plants occur in the project area while potential day roost sites occur in the project vicinity. A habitat survey of the project area did not observe agaves in the project area. Saguaros are common in the project area, although saguaro abundance has diminished due to development in the area.

Given the previously noted foraging range of the LLNB and observations of the species in the project vicinity, nocturnally active LLNB are likely present seasonally in the project area.

5.1.4 Analysis and Determination of Effects

The action area for the lesser long-nosed bat consists of all areas to be affected directly or indirectly by the proposed action, not merely the immediate area involved in the action. The action area for this proposed project includes the area directly impacted by the improvements to La Cholla Boulevard from Magee Road to Lambert Lane and the area defined by a 0.5 mile (0.8 km) radius around the improvement area.

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

5.1.4.1 Effects Analysis

The primary threat to lesser long-nosed bat is roost disturbance or loss. No day or night roost sites were detectable in the project area, but trees and buildings in the action area could serve as night roosts. Because there are no roost sites in the project area, construction activities would not result in the loss of LLNB roost sites. There would be no loss of potential roost sites from construction activities outside the project area, but within the action area. Noise and disturbance during construction could displace any bats that may use the action area; however, construction activities would occur during daylight hours when

LLNB are not expected to be in the action area. There is currently no street lighting along La Cholla Boulevard in project area and the proposed road design will not include street lighting. Thus, no impacts area anticipated from changes to nighttime lighting conditions. While temporary impacts from construction activities may occur, widening La Cholla Boulevard will have no long-term impact on LLNB dispersal or use of the action area for nighttime forage and roosting.

Loss of foraging habitat is also an important threat to lesser long-nosed bats. Lesser long-nosed bats are directly affected by development, which removes forage habitat, but also indirectly as growing numbers of people increase the potential for roost disturbance. The impacts to lesser long-nosed bat habitat are of greatest concern because they tend to be permanent, long-term disturbances, as opposed to the often temporary, shorter-term impacts from fire, grazing, and agave harvesting (USFWS 2007). Forage vegetation along the proposed right-or way would be acquired and vegetation removed or modified by the proposed roadway improvements. No agaves occur in the project area. A preliminary survey of vegetation in the project area found 76 saguaros. Because only a portion of the project area would be directly impacted by construction activities, the exact number of saguaro impacted cannot be determined at this time. Saguaros that cannot be transplanted or avoided would be replaced with 4-foot to 6-foot saguaros at a ratio of 1:1. The largest number of LLNB arrives in the project area between July and August, following the saguaro flowering season. Thus saguaros in the project area represent a limited food source for LLNB that utilize the area. As a result, the proposed action would directly affect actual or potential foraging areas in the action area, but this area is small relative to the available foraging habitat in the project vicinity. Additionally, saguaros in the project area represent a limited food sources because of LLNB seasonally movement patterns.

Studies have documented LLNB foraging at humming bird feeders in the project vicinity including the Omni Tucson National Resort. No humming bird feeders were observed in the project area. Construction activities would not result in the loss or relocation of humming bird feeders. Widening of La Cholla Boulevard would not impact LLNB access to or use of humming bird feeders located outside the project area.

Cumulative effects include impacts from future state, local, or private actions that are reasonably certain to occur in the project action area. Future federal actions are subject to consultation requirements established under Section 7 of the Endangered Species Act (ESA) and; therefore, are not considered cumulative in the project action area. The action area lies within the rapidly growing northwest Tucson metropolitan area, and additional development of the area is reasonably certain to occur. Anticipated development in the project area will result in a decrease in available forage habitat and reduced numbers of forage plants. Increased development will also result in an increase in nighttime lighting. These factors many combine to discourage LLNB use of the action area in the future.

5.1.4.2 Determination of Effects

After reviewing the current roost and habitat requirements of the lesser long-nosed bat, the actual presence or potential presence of these in the action area, and because that affected area would be small in

comparison to the overall availability of roost sites and foraging habitat in the project vicinity; the proposed action may affect, but is not likely to adversely affect the lesser long-nosed bat or its habitat.

5.2 CACTUS FERRUGINOUS PYMGY-OWL

5.2.1 Life History Information

Status

The cactus ferruginous pygmy-owls (CFPO) are a distinct vertebrate population in Arizona, that was previously federally-listed as endangered (USFWS 1997a) with proposed critical habitat (USFWS 2002g). A Draft Recovery Plan was completed in January 2003 (USFWS 2003c). A court action led to the delisting of the species in 2006 (71 FR 19452-19458), but a petition for relisting was initiated in 2008 (73 FR 31418-31424). A 12-month rule on its listing is pending. Currently, the species is not protected under the ESA.

Species Description

The CFPO is a small reddish-brown, or sometimes grayish, bird with a cream-colored belly streaked with reddish-brown. Males average 2.2 ounces and females average 2.6 ounces. Length is approximately 6.75 inches, including tail. The eyes are yellow, the crown is lightly streaked, and there are no ear tufts. Paired black spots on the back of head suggest “eyes”. The tail is long for an owl and reddish-brown in color with dark bars (Proudfoot and Johnson 2000).

Recent systematic investigation has indicated that the taxonomic name should be revised from *Glaucidium brasilanum cactorum* to *Glaucidium ridgway cactorum* to reflect significant genetic differences between populations in Arizona and western Mexico and populations in Texas and eastern Mexico (Proudfoot et al. 2006a, 2006b).

Range

The CFPO was formerly fairly common in mesquite bosques throughout central southern Arizona. The owl had been found south and west of the Tortolita Mountains, in the Rincon Mountains, in the Pajarito Mountains, in the Puerto Blanco Mountains, in the Ajo Mountains, in the Santa Catalina Mountains, in the Santa Rita Mountains, in the Tucson area, at the Gila River near Bonita Creek and San Francisco River, at the San Pedro River near Dudleyville, and at Sonoyta Creek. The only recent records of CPFO are from Organ Pipe Cactus National Monument, near Ajo, and suburban Tucson (AGFD 2001a). CFPO is non-migratory throughout its range.

Habitat

The CFPO has been found in river bottom woodlands, and palo verde cacti mixed scrub associations of the Sonoran Desert. In central and southern Arizona, CFPO are currently found primarily in Sonoran desertscrub vegetation with some locations in riparian drainages and semi-desert grassland vegetation

communities. CFPO nest in cavities, primarily in saguaro cacti, but they also use tree cavities. CFPO are found below 4,000 feet in elevation (USFWS 2003c).

USFWS defines suitable habitat for the CFPO as areas below 4,000 feet in elevation containing one or more of the following vegetation communities:

> **Riparian vegetation**: Broadleaf, riparian gallery forests of cottonwoods, willows, mesquites, ash, or other trees growing along watercourses and associated species.
>
> **Sonoran desertscrub**: Characterized by braided wash systems and vegetation that is dense and well structured. Key species include mesquite, foothill and blue palo verde, ironwood, saguaro, organ pipe cactus, and various other shrubs and cacti.
>
> **Semidesert grasslands**: Containing wooded drainages with mesquite, hackberry, ash, and a limited number of saguaros.

Plant communities listed above that have saguaro cactus or other columnar cactus that are 8 feet or taller, or ironwood, mesquites, palo verde, or other large trees with a trunk diameter of 6 inches or greater measured at 4.5 feet above the ground may provide nesting opportunities for CFPO. Areas of low-density development are considered suitable habitat if one or more of the above vegetation communities are present. All areas of suitable habitat as defined above should be surveyed. However, urban areas and areas currently devoid of saguaros, other columnar cactus, or large trees (e.g., agricultural fields) are excluded (USFWS 2000d).

Biology

The CFPO is a non-social owl that is active mostly at dawn and dusk. This diurnal habit helps separate it from other small owls that are active in the evening and night. Vocalizations typically only occur during the breeding period; outside of that, it is normally silent. The principal vocalization is a rapid, monotonously repeated, shrill hooting. The flight is quick and direct, generally flying short distances from one tree or bush to another. When perching, it is usually found sitting in a leafy palo verde, mesquite, or perhaps a cottonwood or willow (AGFD 2001a).

Reproduction: The CFPO nests in woodpecker holes or natural cavities in broadleaf riparian trees or saguaro cacti (USFWS 1997a). Nests are usually 10-20 feet up but may be as high as 40 feet, and no lining material is used. Eggs usually are laid by 20 April. Three to four white, unmarked eggs (1.1 inches long) are laid in the bottom of the cavity (USFWS 2003c). The incubation period is twenty-eight days and is provided mostly by the female. Young are immobile, downy, and have eyes closed after hatching (Proudfoot and Johnson 2000). Both parents feed the young, and the male will also feed its mate while the female cares for the nestlings (Proudfoot and Johnson 2000). Hatching is synchronous but siblings compete for food resulting in size differences (Proudfoot and Johnson 2000). Young fledge in 27-30 days (Proudfoot and Johnson 2000).

Food Habits: The CFPO forages in microphyllous woodland, especially well developed mesquite bosques, but they also hunt in desert washes with mature palo verde, mesquite, and ironwood (USFWS 2003c). Small birds, insects (e.g. crickets, scorpions, caterpillars), lizards, and mammals are thought to be their main diet (Proudfoot and Johnson 2000). Prey is snatched from the ground in talons, after a gliding descent from a perch.

5.2.2 Survey History

Numerous surveys for cactus ferruginous pygmy-owls have been conducted in the project vicinity. Since 2000, three CFPO were detected in the project vicinity. Of the three owls, one mortality is confirmed, one owl was relocated, and the third has not been detected since 2002. The nearest occurrence records of the CFPO was 18 to 20 miles northwest of the project area in 2007 and 20 to 25 miles southwest of the project area in 2008 (SWCA 2009). There are no known pygmy-owl territories within 20 miles of the project area.

The first year of protocol surveys was completed in the proposed project area from Magee Road to Lambert Lane in 2009, and a second survey period is planned for 2010. Surveys used broadcast call protocols developed by the USFWS and AGFD (SWCA 2009). CFPOs were not detected during survey periods in 2009 (SWCA 2009).

5.2.3 Habitat Evaluation and Suitability

The project area is within the historic range of CFPO, is adjacent to or contains previously designated critical habitat, and does contain suitable habitat elements for the species that are adequate for nesting and foraging. Saguaro in the project area are widely scattered from Magee Road to Lambert Lane. Swales and washes in the project area have wooded sites with an overstory of velvet mesquite, palo verde, and desert willow trees that are of sufficient trunk diameter for CFPOs. Understory vegetation in these sites is moderate to dense. In Arizona, cactus ferruginous pygmy owls use saguaros almost exclusively as nesting sites, although they may also nest in cavities in trees with diameters greater than six inches (USFWS 2003c). Nesting opportunities in the project area are possible, and the more sparsely developed areas can still serve as adequate habitat for individuals. However, the relatively high volume of traffic along La Cholla Boulevard and the major intersecting roads may preclude any CFPOs from nesting in habitat within the proposed right-of-way and within the project limits.

CFPOs forage in microphyllous woodlands, especially in well developed mesquite bosques, but desert washes with mature palo verde, mesquite, and ironwood are utilized as well (USFWS 2003c). To be considered foraging habitat, these riparian desertscrub areas must have a multi-story structure. Washes in the project area supported mature palo verde, velvet mesquite, and desert willow trees as well as a complex understory in many areas. These areas seemed to support favorable populations of prey species for CFPOs. Rodent burrows were common; small birds were present; and moderate to large insects such as grasshoppers, tarantula hawks, and larger beetles were seen in wash habitats.

5.2.4 Analysis and Determination of Effects

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

5.2.4.1 Effects Analysis

Direct effects will include the permanent loss or degradation of suitable foraging habitat within the improved roadway and shoulders and temporary loss of vegetation during construction outside these areas. Vegetation removal will temporarily and, in some cases, permanently alter the vegetation structure of the project area. Following construction, native species will be replanted outside the shoulders of the improved roads. A preliminary survey of vegetation in the project area found 76 saguaros. Because only a portion of the project area would be directly impacted by construction activities, the exact number of saguaro impacted cannot be determined at this time. Saguaros that cannot be transplanted or avoided would be replaced with 4-foot to 6-foot saguaros at a ratio of 1:1. A wider road (La Cholla Boulevard) may function as a greater instrument of habitat fragmentation and an isolating mechanism for the regional population of CFPOs, which could hinder any future efforts to re-establish the species in the project vicinity.

Noise during construction could temporarily displace individuals in the project area. Vehicles used for construction, construction activities, and personnel may produce noise at levels that will affect the owls' potential use of the area for nesting or foraging. Noise from construction would be a temporary impact.

Cumulative effects would be related to ongoing residential and commercial development pressures in the region. Some individual undeveloped parcels within the project area may not require a federal permit or have any other federal nexus and will continue to be built. This is particularly important due to the possibility of undeveloped parcels that, when developed, may further reduce the amount of suitable habitat, increase fragmentation, and degrade habitat. However, most lands in the project area have some level of development. The proposed project should have no affect on residential and commercial development outside of the project limits.

The lack of detections in the project vicinity indicates that CFPO are not found in the project area. Therefore, the project will not directly affect the CFPO.

5.2.4.2 Determination of Effects

After reviewing the current habitat requirements of the cactus ferruginous pygmy-owl, and documenting the presence of some suitable habitat in the action area, and because that affected area is already disturbed by human activities, doesn't seem to have any owl's living there, and would be small in comparison to the

overall availability of habitat outside the project vicinity; the proposed action may affect, but is not likely to adversely affect the cactus ferruginous pygmy-owl or its habitat.

6.0 MITIGATION MEASURES

The following mitigation measures will apply. Additional mitigation measures may be warranted depending on consultation with the United States Army Corps of Engineers as part of anticipated Clean Water Act Section 404 permitting needs for the project.

- Project construction will adhere to the Pima County Environmentally Sensitive Roadway Design guidelines. Tree species protected by Pima County shall be replaced with individuals of approximately the same size and density of species in the surrounding plant community. Releve plant surveys will be used to determine the species composition and density of native trees, shrubs, grasses, forbs, and cacti. Results of the Releve survey will inform re-vegetation efforts and landscaping plans. Saguaros less than 10 feet in height that are impacted by the project construction shall be relocated within the project right-of-way. Saguaros taller than 10 feet in height, in poor health, or un-transplantable for other reasons shall be replaced with 4- to 6-foot-tall saguaros at a ration of 1:1.
- A Riparian Mitigation Plan will be developed in accordance with the Pima County Floodplain Ordinance to address any impacts to the washes in the Project Limits.
- Impacts to washes shall be kept to the minimum necessary to construct the project in accordance with Pima County Environmentally Sensitive Roadway Design guidelines. Specific mitigation for permanent and temporary impacts to Waters of the United States will be addressed with the United States Army Corps of Engineers prior to construction.
- Opportunities for wildlife-accessible culvert crossings will be investigated during the design process. Design elements provide for local wildlife movement through the project area. Where feasible, vegetated medians will be included in the design. Native trees will be incorporated into the roadside landscaping to reduce flight distance across the road.
- Cactus ferruginous pygmy-owl surveys will continue through initiation of project construction.

7.0 COORDINATION

URS obtained data from these agencies that provided information on local occurrences, regional distribution, and habitat requirements.

USFWS, Arizona Ecological Services Field Office

- List of threatened and endangered species for Pima County, Arizona
- Threatened and endangered species abstracts
- Threatened and endangered species range maps
- Threatened and endangered species critical habitat shapefiles

AGFD, Heritage Database Management System

- List of special status species for Pima County, Arizona
- On-Line Environmental Review Tool for a list of special status species and special habitat elements in the vicinity of the project area
- Special status species abstracts
- Special status species distribution maps

Pima County

- Priority vulnerable species habitat requirements
- Sonoran Desert Conservation Plan Map Guide

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9.0 ADDITIONAL INFORMATION

Field notes, photographs, and online reports are on file at the Pima County Department of Transportation and URS Corporation offices in Tucson.

10.0 SIGNATURE PAGE

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APPENDIX A

ARIZONA SENSITIVE SPECIES

State listed species, referred to by the Arizona Game and Fish as Wildlife of Special Concern in Arizona, are defined as 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 (AGFD 1996, AGFD 1988).

As part of the environmental review process the Arizona Game and Fish Department (AGFD) provided a list of current occurrence records of special status species, including state listed species that have been documented within 3 miles of the project area (Appendix F). The AGFD review indicates that the Fulvous whistling-duck (*Dendrocygna bicolor*), Tumamoc globeberry (*Tumamoca macdougalii*), cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*), and a non-species specific bat colony are documented as occurring within 3 miles of the project area. AGFD did not include specific concerns related to this project. Based on the lack of specific concerns from the AGFD, no protection of sensitive species is necessary for this work.

- Fulvous whistling-duck most likely would occur in association with the Omni Tucson National Resort. This is a USFWS species of concern.

- Tumamoc globeberry is a state restricted plant species, and is a focal species for vegetation sampling and documentation as part of ongoing environmental studies. Avoidance, salvage, and relocation efforts could offset impacts to this species.

- Cactus ferruginous pygmy-owl is found is Section 5.2 of this report. There are no known pygmy-owl territories within 20 miles of the project area. Owls were not detected during survey periods in 2009 (SWCA 2009).

- A bat colony has been documented in this area. There was no evidence of any bat colonies within the project area. General mitigation measures should be adequate to avoid any adverse impacts to this resource.

The Sonoran desert tortoise may occur infrequently in the project area. It has been documented extensively throughout Pima County, but adequate habitat is infrequent along La Cholla Boulevard. The soils often contain too much coarse material to make the site adequate for burrow construction. But the species could utilize cut banks along CDO wash or its tributaries for burrowing or shelter sites. The most adequate habitat for the desert tortoise likely occurs in the vicinity of Lambert Lane, where development is less prevalent, the plant composition is more diverse, and the distance to upland montane areas is

smaller. The flood plain along CDO wash also may serve as a conduit for migrant individuals to move from highland areas to the east and west of the project area. No signs or individual tortoises were observed during reconnaissance wildlife surveys of the project site.

Suitable habitat for the western burrowing owl (*Athene cunicularia hypugaea*), protected under the Migratory Bird Treaty Act, is located within the open desert areas near and within and Canada del Oro Wash, and the Omni Tucson National Golf Course. Results from the Arizona Game and Fish Depart Online Environmental Review indicated no documented occurrence of burrowing owls within a 3-mile vicinity of the project area. No signs or individual burrowing owls were observed during reconnaissance wildlife surveys of the project site.

APPENDIX B

PIMA COUNTY PRIORITY VULNERABLE SPECIES

The list of Priority Vulnerable Species (PVS) used in this report was developed from the Pima County Multi-Species Conservation Plan (MSCP). The list contains 56 species that have been identified as PVS and evaluated in the Pima County MSCP. These species include nine mammals, eight birds, two amphibians, eight reptiles, six fish, sixteen invertebrates, and seven plants, including federally listed endangered, threatened, and candidate species described above.

A number of PVS from the Pima County MSCP have potential to occur in the project area. One of these, the ground snake (Sonora semiannulata) and other species in the MSCP that could potentially occur in the project area are provided in the table below. Federally listed species discussed previously are not included here.

Species	Habitat Requirements	Modeled Potential Habitat	Priority Conservation Area	Subject Project Area
Acuña cactus *Echinomastus erectrocentrus* var. *acunensis*	Well-drained knolls and gravel ridges in Sonoran desertscrub. Populations are known only from western Pima to Maricopa, and Pinal counties, including Organ Pipe Cactus National Monument, Ajo, Coffee Pot Mountain, and Florence.	Mostly Medium to Low	None	The project area is not near any known populations of the Acuña Cactus. Modeled potential habitat of varying quality is within the project area.
Arizona shrew *Sorex arizonae*	This species is known only from high-elevation (above 5,500 ft) locations in areas with downed woody debris, generally near surface water along drainages in mountain canyons.	Medium to Low	None	Although modeled habitat is present, the project area is lower than the lowest known elevation for the species.
California leaf-nosed bat *Macrotus californicus*	Mostly found in the Sonoran desertscrub; primary summer and winter range essentially the same; primarily roost in mines, caves, and rock shelters.	Medium to Low	None	The project area has suitable foraging habitat for the California leaf-nosed bat.
Desert box turtle *Terrapene ornata luteola*	This species occurs in grasslands and desert grasslands and inhabits arid and semi-arid treeless plains and rolling grass and shrub land where soils are sandy.	Medium to Low	None	The project area has some grassy groundcover.

Species	Habitat Requirements	Modeled Potential Habitat	Priority Conservation Area	Subject Project Area
Giant spotted whiptail *Aspidoscelis burti stictogrammus*	This species occurs in lower Sonoran (chiefly riparian areas) and upper Sonoran life zones in dense, shrubby vegetation often near streams.	Medium to Low	None	The project area does not have true riparian areas with flowing water. CDO Wash has modeled potential habitat.
Ground snake *Sonora semiannulata*	Desert grassland and mesquite thicket valley floors and in grassland to encinal slopes.	None	None	A ground snake was observed as a roadside casualty near Tangerine Road
Merriam's mouse *Peromyscus merriami*	Found primarily in mesquite bosque. Also found in thick stands of cholla, prickly pear, paloverde, and grasses.	Medium to Low	None	The project area does not contain mesquite bosque known to support the Merriam's mouse. Dense cholla and prickly pear vegetation is located on the north part of the project area.
Mexican long-tongued bat *Choeronycteris mexicana*	Canyons of mixed oak-conifer forests in mountains rising from the desert. Caves and abandoned mines are favored daytime roosts. They are often also found in shallow caves or rock shelters. A few found in paloverde-saguaro areas.	Medium to Low	None	Foraging habitat present in the north part of the project area
Pale Townsend's big-eared bat *Plecotus townsendii pallescens*	Summer day roosts are found in caves and mines from desertscrub up to woodlands and coniferous forests. Night roosts may often be in abandoned buildings. In winter, they hibernate in cold caves, lava tubes and mines mostly in uplands and mountains from the vicinity of the Grand Canyon to the southeastern part of the state.	High, Medium, and Low	None	Potential habitat is present in the project area.
Rufous-winged sparrow *Aimophila carpalis*	Flat or gently hilly Sonoran desert scrub and Sinaloan thorn scrub, characterized by scattered spiny trees and shrubs.	Medium to Low	None	The subject property does contain low potential habitat for the Rufous-winged sparrow.
Sonoran desert tortoise *Gopherus agassizii (Sonoran Population)*	Occurs primarily on rocky slopes and bajadas of Mojave and Sonoran desertscrub. Caliche caves in incised, cut banks of washes (arroyos) are also used for shelter sites, especially in the Lower Colorado River Valley subdivision. Shelter sites are rarely found in shallow soils.	None	None	The project area contains vegetation that could support the desert tortoise. Soils may be inadequate.

Species	Habitat Requirements	Modeled Potential Habitat	Priority Conservation Area	Subject Project Area
Swainson's hawk *Buteo swainsoni*	Grasslands, Semidesert Grasslands, and Savanna Grassland, either apart or intermixed with open desertscrub habitats of the Sonoran, Mohave, Chihuahuan, and Great Basin Deserts. Forage in open stands of grass dominated vegetation, sparse shrub-lands, and small open woodlands.	Medium to Low	None	The project area has medium to low potential habitat for the Swainson's hawk.
Tucson shovel-nosed snake *Chionactis occiptalis klauberi*	Found in flat and sparsely vegetated areas with fine, wind-blown sand, such as dunes, washes, sandy flats, loose soil. Not found in rocky desert terrain.	High, Medium, and Low	None	The project area has potential habitat of varying quality for the Tucson shovel-nosed snake. Most likely habitat occurs along the CDO Wash.
Tumamoc globeberry *Tumamoca macdougalii*	Occurs in xeric situations, in the shade of a variety of nurse plants along gullies and sandy washes of hills and valleys in Sonoran desertscrub and Sinaloan thornscrub communities.	Medium to Low	None	Documented in the project vicinity.
Western burrowing owl *Athene cunicularia hypugaea*	Variable in open, well-drained grasslands, steppes, deserts, prairies, and agricultural lands, often associated with burrowing mammals. Sometimes in open areas such as vacant lots near human habitation, golf courses or airports.	High, Medium, and Low	None	The project area has potential habitat of varying quality for the western burrowing owl.
Western yellow bat *Lasiurus xanthinus*	Found primarily in association with planted fan palms in residential and park areas. Also found in riparian deciduous forests and woodlands.	High, Medium, and Low	None	Most likely to occur in developed residential areas. Modeled potential habitat occurs throughout project area.

Source: URS and Pima County Multispecies Conservation Plan.

APPENDIX C

PROTECTED PLANT SPECIES

The project area was surveyed for the presence of protected native plants. A general pedestrian survey was conducted within the project limits including existing and current right-of-way, drainage easements, and the Cañada del Oro Wash. Because the project will impact more than 0.25 acres of native plants, the following mitigation measure will be implemented.

- Pima County Department of Transportation will submit a notice to salvage protected native vegetation to the Arizona Department of Agriculture at least 60 days prior to the start of construction.

The following protected native plant species were observed in the project area.

Common Name	Scientific Name
Salvage Restricted Native Plants	
Barrel cactus	*Ferocactus wislizenii*
Cane cholla	*Opuntia spinosior*
Catclaw acacia	*Acacia greggii*
Century plant	*Agave americana*
Chain-fruit cholla	*Opuntia fulgida*
Desert Christmas cactus	*Opuntia leptocaulis*
Engelmann's prickly pear	*Opuntia engelmannii*
Fendler hedgehog	*Echinocereus fendleri*
Ocotillo	*Fouquieria splendens*
Saguaro	*Carnegiea gigantea*
Staghorn cholla	*Opuntia versicolor*
Teddy-bear cholla	*Opuntia bigelovii*
Salvage Assessed Native Plants	
Blue paloverde	*Parkinsonia floridum*
Desert willow	*Chilopsis linearis*
Foothill paloverde	*Parkinsonia mircophyllum*
Ironwood	*Olneya tesota*
Velvet mesquite	*Prosopis veluntina*
Harvest Restricted Native Plants	
Ironwood	*Olneya tesota*
Velvet mesquite	*Prosopis veluntina*

APPENDIX D

PLANT SPECIES OBSERVED IN THE PROJECT AREA

Common Name	Scientific Name
Trees and Large Shrubs	
Blue paloverde	*Parkinsonia floridum*
Catclaw acacia	*Acacia greggii*
Creosote bush	*Larrea tridentata*
Foothill paloverde	*Parkinsonia mircophyllum*
Ironwood	*Olneya tesota*
Velvet mesquite	*Prosopis veluntina*
Whitethorn acacia	*Acacia constricta*
Desert willow	*Chilopsis linearis*
Salt Ceder[1]	*Tamarix ramosissima*
Cactus	
Barrel cactus	*Ferocactus wislizenii*
Cane cholla	*Opuntia spinosior*
Century plant	*Agave americana*
Chain-fruit cholla	*Opuntia fulgida*
Desert Christmas cactus	*Opuntia leptocaulis*
Engelmann's prickly pear	*Opuntia engelmannii*
Fendler hedgehog	*Echinocereus fendleri*
Saguaro	*Carnegiea gigantea*
Staghorn cholla	*Opuntia versicolor*
Teddy-bear cholla	*Opuntia bigelovii*
Shrubs, forbs, and grasses	
Bahia	*Bahia absinthifolia*
Burroweed	*Isocoma tenuisecta*
camphorweed	*Heterotheca subaxillaris*
Canyon ragweed	*Ambrosia ambrosoides*
Coyote gourd	*Cucurbita palmata*
Desert globemallow	*Sphaeralcea ambigua*
Desert hackberry	*Celtis pallida*
Desert marigold	*Baileya multiradiata*
Desert poppy	*Kallstroemia grandiflora*
Desert trumpet	*Eriogonum inflatum*
Desert zinnia	*Zinnia acerosa*
Desertbroom	*Baccharis sarothroides*
Flame flower	*Talinum aurantiacum*
Fluff grass	*Dasyocloa pulchella*
Paper flower	*Psilostrophe cooperi*
Purple threeawn	*Aristida purpurea*
Rabbit brush	*Ericameria ciliare*

Rattlesnake weed	*Euphorbia albomarginata*
Sand dropseed	*Sporobolus cryptandrus*
silverleaf nightshade	*Solanum elaeagnifolium*
Six-weeks needle grama	*Bouteloua arstidoides*
Snakeweed	*Gutierrezia sarothrae*
Spider grass	*Aristida ternipes*
Tanglehead	*Heteropogon contortus*
Triangleleaf bursage	*Ambrosia deltoidea*
Vine mesquite	*Panicum obtusum*
White ratany	*Krameria grayi*

APPENDIX E

UNITED STATES FISH AND WILDLIFE SERVICE SPECIES LIST FOR PIMA COUNTY

Pima County

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
California Least Tern	*Sterna antillarum browni*	Endangered	Least terns are smallest of the North American Terns. Body length is 21 to 24 cm (8 to 9 inches) with a wingspan of 45 to 51cm (18 to 20 inches). Characterized by a black crown and loral stripe on their head, snowy white forehead and underside, and gray upperparts. Outer two primaries are black, bill is yellow or orange with black tip, and legs are orange. Males have a wider dark loral stripe but sexes are mostly distinguished by behavior. Immatures have darker plummage, dark bill, and dark eye strips on white heads.	Maricopa, Mohave, Pima	< 2,000 ft	Open, bare or sparsely vegetated sand, sandbars, gravel pits, or exposed flats along shorelines of inland rivers, lakes, reservoirs, or drainage systems.	Breeding occasionally documented in Arizona; migrants may occur more frequently. Feeds primarily on fish in shallow waters and secondarily on invertebrates. Nests in a simple scrape on sandy or gravelly soil.
Chiricahua leopard frog	*Lithobates [Rana] chiricahuensis*	Threatened	Cream colored tubercles (spots) on a dark background on the rear of the thigh, dorsolateral folds that are interrupted and deflected medially, and a call given out of water distinguish this spotted frog from other leopard frogs.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, Navajo, Pima, Santa Cruz, Yavapai	3,300-8,900 ft	Streams, rivers, backwaters, ponds, and stock tanks that are mostly free from introduced fish, crayfish, and bullfrogs.	Require permanent or nearly permanent water sources. Populations north of the Gila River may be a closely-related, but distinct, undescribed species. A special rule allows take of frogs due to operation and maintenance of livestock tanks on State and private lands.
Desert pupfish	*Cyprinodon macularius*	Endangered	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 and juveniles tan to olive colored back and silvery sides.	Cochise, Graham, Maricopa, Pima, Pinal, Santa Cruz, Yavapai	< 4,000 ft	Shallow springs, small streams, and marshes. Tolerates saline and warm water.	Two subspecies are recognized: Desert Pupfish (C.m. macularis) and Quitobaquito Pupfish (C.m. eremus). Critical habitat includes Quitobaquito Springs, Pima County, portions of San Felipe Creek, Carrizo Wash, and Fish Creek Wash, Imperial County, California.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Gila chub	*Gila intermedia*	Endangered	Deep compressed body, flat head. Dark olive-gray color above, silver sides. Endemic to Gila River Basin.	Cochise, Gila, Graham, Greenlee, Pima, Pinal, Santa Cruz, Yavapai	2,000-5,500 ft	Pools, springs, cienegas, and streams.	Found on multiple private lands, including the Nature Conservancy and the Audubon Society. Also occurs on Federal and state lands and in Sonora, Mexico. Critical habitat occurs in Cochise, Gila, Graham, Greenlee, Pima, Pinal, Santa Cruz, and Yavapai counties.
Gila topminnow	*Poeciliopsis occidentalis occidentalis*	Endangered	Small (2 inches), guppy-like, live bearing, lacks dark spots on its fins. Breeding males are jet black with yellow fins.	Cochise, Gila, Graham, Maricopa, Pima, Santa Cruz, Yavapai	< 4,500 ft	Small streams, springs, and cienegas vegetated shallows.	Species historically also occurred in backwaters of large rivers but is currently isolated to small streams and springs.
Huachuca water umbel	*Lilaeopsis schaffneriana ssp. recurva*	Endangered	Herbaceous, semi-aquatic perennial in the parsley family (Umbelliferae) with slender erect, hollow, leaves that grow from the nodes of creeping rhizomes. Flower: 3 to 10 flowered umbels arise from root nodes.	Cochise, Pima, Santa Cruz	3,500-6,500 ft	Cienegas, perennial low gradient streams, wetlands.	Species also occurs in adjacent Sonora, Mexico, west of the continental divide. Critical habitat in Cochise and Santa Cruz counties (64 FR 37441, July 12, 1999).
Jaguar	*Panthera onca*	Endangered	Largest species of cat native to Southwest. Muscular, with relatively short, massive limbs, and a deep-chested body. Usually cinnamon-buff in color with many black spots. Weights ranges from 90-300 lbs.	Cochise, Santa Cruz, Pima	1,600-9,000 ft	Found in Sonoran desertscrub up through subalpine conifer forest.	Also occurs in New Mexico. A Jaguar conservation team is being formed that is being led by Arizona and New Mexico state entities along with private organizations.
Kearney blue star	*Amsonia kearneyana*	Endangered	A herbaceous perennial about 2 feet tall in the dogbane family (Apocynaceae). Thickened woody root and many pubescent (hairy) stems that rarely branch. Flowers: white terminal inflorescence in April and May.	Pima	3,600-3,800 ft	West-facing drainages in the Baboquivari Mountains.	Plants grow in stable, partially shaded, coarse alluvium along a dry wash in the Baboquivari Mountains. Range is extremely limited. Protected by Arizona Native Plant Law.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Lesser long-nosed bat	*Leptonycteris curasoae yerbabuenae*	Endangered	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.	Cochise, Gila, Graham, Greenlee, Maricopa, Pima, Pinal, Santa Cruz, Yuma	1,600-11,500 ft	Desert scrub habitat with agave and columnar 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 September and south of the border the remainder of the year.
Masked bobwhite	*Colinus virginianus ridgewayi*	Endangered	Males have a brick-red breast and black head and throat. Females are generally nondescript but resemble other races such as the Texas bobwhite.	Pima	1,000-4,000 ft	Desert grasslands with diversity of dense native grasses, forbs, and brush.	Species is closely associated with Prairie acacia (Acacia angustissima). Formerly occurred in Altar and Santa Cruz valleys, as well as Sonora, Mexico. Presently only known from reintroduced populations on Buenos Aires NWR.
Mexican spotted owl	*Strix occidentalis lucida*	Threatened	Medium sized with dark eyes and no ear tufts. Brownish and heavily spotted with white or beige.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai	4,100-9,000 ft	Nests in canyons and dense forests with multi-layered foliage structure.	Generally nest in older forests of mixed conifer or ponderosa pine/gambel oak type, in canyons, and use variety of habitats for foraging. Sites with cool microclimates appear to be of importance or are preferred. Critical habitat was finalized on August 31, 2004 (69 FR 53182) in Arizona in Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Navajo, Pima, Pinal, Santa Cruz, and Yavapai counties.
Nichol Turk's head cactus	*Echinocactus horizonthalonius var. nicholii*	Endangered	Blue-green to yellowish-green, columnar, 18 inches tall, 8 inches in diameter. Spine clusters have 5 radial and 3 central spines; one curves downward and is short; 2 spines curve upward and are red or pale gray. Flowers: pink; fruit: woolly white.	Pima, Pinal	2,400-4,100 ft	Sonoran desertscrub.	Found in unshaded microsites in Sonoran desertscrub on dissected alluvial fans at the foot of limestone mountains and on inclined terraces and saddles on limestone mountain sides.
Ocelot	*Leopardus (=Felis) pardalis*	Endangered	Medium-sized spotted cat that is yellowish with black streaks and stripes running from front to back. Tail is spotted and about 1/2 the length of head and body. Face is less heavily streaked than the back and sides.	Cochise, Pima, Santa Cruz	< 8,000 ft	Desert scrub in Arizona. Humid tropical and sub-tropical forests, and savannahs in areas south of the U.S.	May persist in partly-cleared forests, second-growth woodland, and abandoned cultivated areas reverted to brush. Universal component is presence of dense cover. Unconfirmed reports of individuals in the southern part of the State continue to be received.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Pima pineapple cactus	*Coryphantha scheeri var. robustispina*	Endangered	Hemispherical stems 4-7 inches tall 3-4 inches diameter. Central spine 1 inch long straw colored hooked surrounded by 6-15 radial spines. Flower: yellow, salmon, or rarely white narrow floral tube.	Pima, Santa Cruz	2,300-5,000 ft	Sonoran desertscrub or semi-desert grassland communities.	Occurs in alluvial valleys or on hillsides in rocky to sandy or silty soils. This species can be confused with juvenile barrel cactus (Ferocactus). However, the spines of the later are flattened, in contrast with the round cross-section of the Coryphanta spines. About 80-90% of individuals occur on state or private land.
Sonoran pronghorn	*Antilocapra americana sonoriensis*	Endangered	Upperparts tan; underparts, rump, and two bands across the neck are white. Male has two black cheek pouches. Hoofed with slightly curved black horns having a single prong. Smallest and palest of the pronghorn subspecies.	Maricopa, Pima, Yuma	2,000-4,000 ft	Broad intermountain alluvial valleys with creosote-bursage and palo verde-mixed cacti associations.	Typically, bajadas are used as fawning areas and sandy dune areas provide food seasonally. Cacti (jumping cholla) appears to make up substantial part of diet. This subspecies also occurs in Mexico.
Southwestern willow flycatcher	*Empidonax traillii extimus*	Endangered	Small passerine (about 6 inches) grayish-green back and wings, whitish throat, light olive-gray breast and pale yellowish belly. Two wingbars visible. Eye-ring faint or absent.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, Yuma	< 8,500 ft	Cottonwood/willow and tamarisk vegetation communities along rivers and 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 finalized on October 19, 2005 (50 CFR 60886). In Arizona there are critical habitat segments in Apache, Cochise, Gila, Graham, Greenlee, Maricopa, Mohave, Pima, Pinal, and Yavapai counties.
Acuna cactus	*Echinomastus erectocentrus var. acunensis*	Candidate	Less than 12 inches tall; spine clusters borne on tubercles, each with a groove on the upper surface. 2-3 central spines and 12 radial spines. Radial spines are dirty white with maroon tips. Flowers pink to purple.	Pima, Pinal	1,300-2,000 ft	Well drained knolls and gravel ridges in Sonoran desertscrub.	Immature plants distinctly different from mature plants. Immatures are disc-shaped or spherical and have no central spines until they are about 1.5 inches.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Northern Mexican Gartersnake	*Thamnophis eques megalops*	Candidate	Background color ranges from olive, olive-brown, to olive-gray. Body has three yellow or light colored stripes running down the length of the body, darker towards tail. Species distinguished from other native gartersnakes by the lateral stripes reaching the 3rd and 4th scale rows. Paired black spots extend along dorsolateral fields.	Apache, Cochise,Coconino , Gila, Graham, Navajo, Pima, Pinal, Santa Cruz, Yavapai	130-8,500 ft	Cienegas, stock tanks, large-river riparian woodlands and forests, streamside gallery forests.	Core population areas in the U.S. include mid/upper Verde River drainage, mid/lower Tonto Creek, and the San Rafael Valley and surrounding area. Status on tribal lands unknown. Distributed south into Mexico along the Sierra Madre Occidental and Mexican Plateau. Strongly associated with the presence of a native prey base including leopard frogs and native fish.
Sonoyta mud turtle	*Kinosternon sonoriense longifemorale*	Candidate	Aquatic; dark, medium-sized; shell up to 7 inches long; head, neck, and limbs mottled; carapace is olive brown to dark brown; plastron hinged; long barbels on chin, webbed feet.	Pima	1,100 ft	Ponds and streams.	Found only in Quitobaquito Springs in Organ Pipe Cactus National Monument, Arizona. Species also occurs in Rio Sonoyta, Sonora, Mexico.
Yellow-billed cuckoo	*Coccyzus americanus*	Candidate	Medium-sized bird with a slender, long-tailed profile, slightly down-curved bill that is blue-black with yellow on the lower half. Plumage is grayish-brown above and white below, with rufous primary flight feathers.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, Yuma	< 6,500 ft	Large blocks of riparian woodlands (cottonwood, willow, or tamarisk galleries).	Neotropical migrant that winters primarily in South America and breeds primarily in the U.S. (but also in southern Canada and northern Mexico). As a migrant it is rarely detected; can occur outside of riparian areas. Cuckoos are found nesting statewide, mostly below 5,000 feet in central, western, and southeastern Arizona. Concern for cuckoos are primarily focused upon alterations to its nesting and foraging habitat. Nesting cuckoos are associated with relatively dense, wooded, streamside riparian habitat, with varying combinations of Fremont cottonwood, willow, velvet ash, Arizona walnut, mesquite, and tamarisk. Some cuckoos have also been detected nesting in velvet mesquite, netleaf hackberry, Arizona sycamore, Arizona alder, and some exotic neighborhood shade trees.

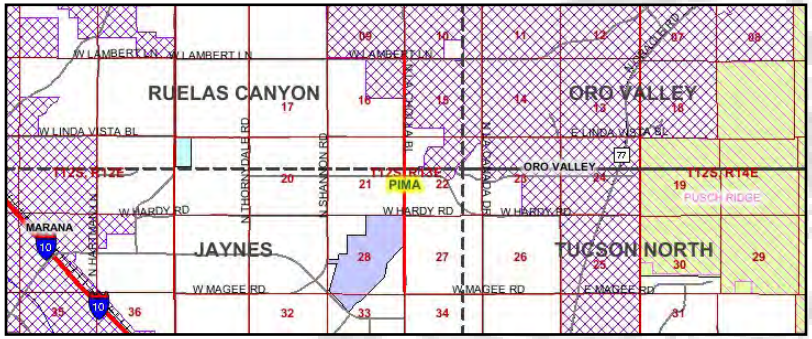
COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Gooddings onion	*Allium gooddingii*	Conservation Agreement	Herbaceous perennial plant; broad, flat, rather blunt leaves; flowering stalk 14-18 inches tall, flattened, and narrowly winged toward apex; fruit is broader than long; seeds are short and thick.	Apache, Greenlee, Pima	7,500-11,250 ft	Shaded sites on north-trending drainages, on slopes, or in narrow canyons, within mixed conifer and spruce fir forests.	Known from the White, Santa Catalina, and Chuska Mountains. Also found in New Mexico on the Lincoln and Gila National Forests. A Conservation Agreement between the Service and the Forest Service signed in February 1998.
San Xavier talussnail	*Sonorella eremita*	Conservation Agreement	Land snail, less than one inch in diameter (about .75 inches); round shell with 4.5 whorls; white to pinkish tint and chestnut-brown shoulder band.	Pima	3,850-3,920 ft	Inhabits a deep, northwest-facing limestone rockslide.	Restricted to 50 by 100 foot area of land privately owned in southeastern Arizona. A Conservation Agreement was finalized in 1995 and renewed in May 2008.
American peregrine falcon	*Falco pereginus anatum*	Delisted	A crow-sized falcon with slate blue-gray on the back and wings, and white on the underside; a black head with vertical “bandit’s mask” pattern over the eyes; long pointed wings; and a long wailing call made during breeding. Very adept flyers and hunters, reaching diving speeds of 200 mph.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, Yuma	3,500-9,000 ft	Areas with rocky, steep cliffs, primarily near water, where prey (primarily shorebirds, songbirds, and waterfowl) concentrations are high. Nests are found on ledges of cliffs, and sometimes on man-made structures such as office towers and bridge abutments.	Species recovered with over 1,650 breeding birds in the US and Canada.
Cactus ferruginous pygmy-owl	*Glaucidium brasilianum cactorum*	Delisted; petitioned for relisting	Small reddish-brown owl with a cream-colored belly streaked with reddish-brown. Males average 2.2 oz and females average 2.6 oz. Length is approximately 6.5 in., including a relatively long tail. Lacks ear tufts, and has paired black spots on the back of the head.	Pima, Pinal	< 4,000 ft	Areas of desert woodlands with tall canopy cover. Primarily found in Sonoran desert scrub and occasionally in riparian drainages and woodlands within semi-desert grassland communities. Prefers to nest in cavities in saguaro cacti but has been found in low-density suburban developments that include natural open spaces.	Not recognized as a protected taxonomic entity under the Act, but protected from direct take of individuals and nests/eggs under the Migratory Bird Treaty Act. A 2006 petition for relisting under the Act is currently being evaluated. Due to low population numbers, captive breeding research was initiated in 2006 with some success.

APPENDIX F

ARIZONA GAME AND FISH DEPARTMENT PROJECT EVALUATION RESPONSE

Arizona's On-line Environmental Review Tool
Search ID: 20090608009004
Project Name: La Cholla Phase 1
Date: 6/8/2009 9:26:03 AM

Project Location



Project Name: La Cholla Phase 1
Submitted By: Jean Charpentier
On behalf of: CONSULTING
Project Search ID: 20090608009004
Date: 6/8/2009 9:25:52 AM
Project Category: Transportation & Infrastructure,Road construction (including staging areas),Road widening (shoulders or additional or new lanes)
Project Coordinates (UTM Zone 12-NAD 83): 498788.378, 3581941.584 meter
Project Length: 4943.619 meter
County: PIMA
USGS 7.5 Minute Quadrangle ID: 1683
Quadrangle Name: RUELAS CANYON
Project locality is not anticipated to change

Location Accuracy Disclaimer

Project locations are assumed to be both precise and accurate for the purposes of environmental review. The creator/owner of the Project Review Receipt is solely responsible for the project location and thus the correctness of the Project Review Receipt content.

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	ESA	USFS	BLM	State
Bat Colony					
Glaucidium brasilianum cactorum	Cactus Ferruginous Pygmy-owl	SC		S	WSC
Tumamoca macdougalii	Tumamoc Globeberry		S	S	SR

 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.

Arizona's On-line Environmental Review Tool:

1. This On-line Environmental Review Tool inquiry has generated recommendations regarding the potential impacts of your project on Special Status Species (SSS) and other wildlife of Arizona. SSS include all U.S. Fish and Wildlife Service federally listed, U.S. Bureau of Land Management sensitive, U.S. Forest Service sensitive, and Arizona Game and Fish Department (Department) recognized species of concern.
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.
3. This receipt, generated by the automated On-line Environmental Review Tool does not constitute an official project review by Department biologists and planners. Further coordination may be necessary as appropriate under the National Environmental Policy Act (NEPA) and/or the Endangered Species Act (ESA).

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.
3. Not all of Arizona has been surveyed for special status species, and surveys that have been conducted have varied greatly in scope and intensity. Such surveys may reveal previously undocumented population of species of special concern.
4. HDMS data contains information about species occurrences that have actually been reported to the Department.

Arizona Game and Fish Department Mission

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

 APPLICATION INITIALS: _____

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),Road widening (shoulders or additional or new lanes)

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 State Historic Preservation Office may be required http://www.pr.state.az.us/partnerships/shpo/shpo.html#anchor561695

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.

 APPLICATION INITIALS: _____

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.

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.

Project Location and/or Species recommendations:

HDMS records indicate that one or more native plants listed on the Arizona Native Plant Law and Antiquities Act have been documented within the vicinity of your project area (refer to page 1 of the receipt). Please contact:

Arizona Department of Agriculture

1688 W Adams
Phoenix, AZ 85007
Phone: 602-542-4373

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**

 APPLICATION INITIALS: _____

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.

Print this Environmental Review Receipt using your Internet browser's

 APPLICATION INITIALS: _____

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: _____

APPENDIX G

PROJECT AREA PHOTOGRAPHS

(TAKEN JUNE 7TH TO 10TH, 2009)

Habitat on a hill slope between La Cholla Boulevard and the Omni Tucson National Resort.

Shrubs and sparse grass cover in CDO Wash on the east side of La Cholla Boulevard.

Vegetation on terraces along CDO Wash west of La Cholla Boulevard.

Disturbed vegetation along La Cholla Boulevard at Overton Road.

An ephemeral wash that parallels La Cholla Boulevard north of Overton Road.

Habitat with upper Sonoran desert scrub and development looking south near Owl's Peak Place.

Mixed upland desert scrub south of Lambert Lane.