United States Department of the Interior
U.S. Fish and Wildlife Service
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021
Telephone: (602) 242-0210 FAX: (602) 242-2513

AESO/SE
02-21-02-F-0010 November 19, 2003

Mr. Robert E. Hollis
Division Administrator
Federal Highway Administration - Arizona Division
400 East Van Buren Street
Phoenix, Arizona 85004

Dear Mr. Hollis:

Thank you for your February 18, 2003, letter requesting initiation of formal section 7 consultation under the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 et seq.). The proposed project includes widening of US 60 between the State Route 79 intersection at Florence Junction, and the State Route 177 intersection in the town of Superior, Pinal County, Arizona. Your letter concluded that the proposed action may affect, and is likely to adversely affect, the endangered cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*).

You also concluded that the proposed project may affect, but is not likely to adversely affect, the lesser long-nosed bat (*Leptonycteris curasoae yerbuenae*). We concur with that determination, and a full explanation of our concurrence is provided as an appendix to the biological opinion.

This biological opinion is based on information provided on the proposed action by your agency, meetings held with Arizona Department of Transportation (ADOT), the Federal Highway Administration (FHWA), and the Tonto National Forest on October 24, 2001, June 20, 2002, and March 27, 2003, your comments on the draft biological opinion, telephone conversations, field investigations, and other sources of information. A complete administrative record of this consultation is on file at the Phoenix, Arizona Ecological Services Field Office (AESO).

Consultation History

- October 2001- June 2002 we conducted informal consultation that included several meetings and field visits.

- We received your request for consultation on February 21, 2003.

- We sent you a letter initiating formal consultation on March 28, 2003.
- On October 2, 2003, we sent you a draft biological opinion.
- On October 16, 2003, we received comments on the draft biological opinion via electronic mail.
- On October 21, 2003, we responded to comments via electronic mail.
- On October 27, we received electronic mail confirmation to incorporate your comments as agreed and to finalize the biological opinion.

BIOLOGICAL OPINION

DESCRIPTION OF PROPOSED ACTION

The project area is located in northeastern Pinal County, 15 miles east of Apache Junction and 20 miles west of Globe. Arizona Department of Transportation (ADOT) is proposing to widen US 60 between the State Route (SR) 79/US 60 intersection at Florence Junction (R10E, T2S, S16) and the US 60/SR 177 junction in the Town of Superior (R12E, T2S, S3); more specifically, from 0.5-mile east of the US 60/SR 79 intersection (Milepost (MP) 212.7), extending east to the SR 177 underpass in Superior (MP 226.85). A map and figure illustrating the location of the project and specific segments can be found in FHWA and ADOT's biological assessment.

ADOT currently has a separate project underway, contiguous with the proposed action: constructing a Traffic Interchange (TI) at Florence Junction, including widening of US 60 to four lanes from MP 211.7 to MP 212.7. We concluded informal consultation on that project on April 9, 2002, when we issued a concurrence with FHWA's determination that the TI was not likely to adversely affect the pygmy-owl or lesser long-nosed bat (consultation number 2-21-01-I-449).

The proposed improvements would widen the existing two-lane undivided highway to a four-lane divided highway for the majority of the project length, except within the Town of Superior, where a five-lane undivided highway would be built. Through most of the project, the cross section would consist of a divided highway with a variable-width median and a minimum of 108 feet between the centerlines of the eastbound and westbound roadways. Travel lanes would be 12 feet wide. Additionally, ADOT standards require the provision of 30-foot recovery areas (measured from the edge stripes) for errant vehicles to regain control when departing the travel lanes. Where a recovery area is required, the minimum distance between native trees and shrubs outside of the outer lanes and those that could be retained within the median would be 84 feet, as calculated by adding two 12-foot travel lanes and the inner and outer 30-foot recovery areas.

In areas where the 108-foot separation would be used, no more than a 24-foot-wide strip of native trees and shrubs could be retained within the median. This calculation is obtained by measuring the 108-foot distance between centerlines, subtracting the two 12-foot inner lanes, and subtracting two 30-foot inner recovery areas. Whenever feasible, a slightly wider "vegetated

median" was used to retain more natural vegetation in the median area, thereby enhancing the route aesthetics. The wider roadway separation enables independent alignments for each directional roadway, thus providing greater latitude in conforming the new construction to the terrain.

At Queen Creek and Reymert Wash, where bridges are being proposed, bridge rails and guardrails would be installed. Each of the bridges (eastbound and westbound) at these locations would be approximately 45 feet wide (two 12-foot travel lanes, a 12-foot outer shoulder, a 6-foot inner shoulder, and 1.8 feet to the inside and outside to allow for the bridge rails and external elements of the bridge). Trees would be retained or planted immediately beyond the bridge rails. Therefore, at these two locations, there would be a 45-foot gap between trees outside of the outer lanes and those in the median.

In Segment A, the existing lanes would be used for westbound traffic, and new parallel eastbound lanes would be constructed 108 feet (centerline to centerline) to the south from MP 212.7 to MP 215.2. At Queen Valley Road and the Magma Arizona Railroad tracks crossing at MP 214.2, a grade-separated TI would be planned when further development occurs along Queen Valley Road (10 to 20 years or more). However, an at-grade crossing would be constructed in the interim.

In the western portion of Segment B (from MP 215.2 to 218.5), the new lanes would continue on the south side of the existing lanes, but the median width would vary slightly, retaining a minimum separation of 108 feet (centerline to centerline), to better follow the existing topography. At MP 218.5, the new lanes would transition to the north side of the existing road.

In the eastern portion of Segment B and through most of Segment C (from MP 218.5 to MP 222.0), the existing lanes would be used for eastbound traffic, and new westbound lanes would be constructed generally 108 feet to the north, except at Gonzales Pass. Just east of Gonzales Pass (MP 218.5 to MP 219.3), the new westbound alignment would follow an independent alignment north of existing US 60, where the roadway separation would vary from 108 to 500 feet to retain the natural topography and rugged scenic character in the median. Near MP 219.3, the westbound lanes would return to a 108-foot separation to the north of the eastbound lanes along the existing roadway to avoid a major drainage and the relocation of a 10-inch natural gas pipeline.

In the eastern portion of Segment C (from MP 222.0 to 222.3), the new lanes would be shifted to the south to minimize impacts to Queen Creek by enabling a more perpendicular crossing of the creek. Through most of Segment D (from MP 222.3 to 224.4), the road would be realigned about 0.3 mile to the north of existing US 60 to avoid impacts to sensitive cultural, biological, and recreational resources at the Boyce Thompson Arboretum. At MP 224.4, as the project enters the Town of Superior, the new alignment would rejoin the existing alignment. In the eastern portion of Segment D and through Segment E (from MP 224.4 to the eastern project terminus at MP 226.85), the road would be widened to a five-lane undivided highway and would be centered within existing ADOT right-of-way.

Section 404 permits and Section 401 Water Quality Certification would be required due to the placement of fill within jurisdictional waters of the United States. Design is expected to occur between October 2002 and March 2004. Construction funds are programmed for use beginning in July 2004. Construction would be phased over the course of the following 10 or more years, as the need for the project increases and funds become available.

Conservation Measures

In order to minimize potential effects to listed and sensitive species, FHWA and ADOT would implement the following conservation measures.

1. Pygmy-owl surveys will be conducted within suitable habitat for 2 consecutive years immediately prior to the initiation of any clearing and construction activities to determine the presence or absence of CFPO throughout the US 60 alignment corridor according to the recommended Fish and Wildlife Service (FWS) protocol. Surveys will continue throughout the project as necessary for additional habitat clearing as required by the FWS protocol. If any pygmy-owls are located during surveys, FHWA and ADOT would reinitiate section 7 consultation with FWS.

2. To maintain continuity of suitable pygmy-owl habitat and increase the likelihood of pygmy-owls safely crossing the highway at Reymert Wash (MP 219.8) and Queen Creek (MP 222.0), these crossings will be designed to ensure that the canopies of trees on each side of the road and within the median can grow to within 45 feet of each other.

3. To maintain habitat structure and continuity within jurisdictional waters at Reymert Wash (MP 219.8) and Queen Creek (MP 222.0), native trees 3 inches diameter at breast height (DBH) and larger that would be removed would be replaced with 5-15 gallon container plants at a 4 to 1 ratio. Plantings would be concentrated both directly behind the proposed guardrail up to the right-of-way fence, and from 15 to 40 feet from the guardrails both within the median and outside of the outer bridge barriers, so that the tree canopies would grow to reach the bridge barriers at maturity, minimizing the gap in vegetation across the roadway to approximately 45 feet. Any trees that die within a 2-year establishment period will be replaced.

5. To minimize impacts on desert tortoises, the Arizona Game and Fish Department's (AGFD) "Guidelines for Handling Desert Tortoises" would be followed if tortoises are encountered during construction.

6. Existing vegetation would be retained to the greatest possible extent. All disturbed areas would be seeded with a seed mix consisting of native species. Within 30 feet of the shoulder, the seed mix will include grasses, annuals, and perennials including desert hackberry, gray thorn, white-thorn acacia, catclaw acacia, and creosote (as available). ADOT would retain the authority to cut down any of this vegetation within the recovery zone of the highway in the future if the plant reaches a size of 4 inches diameter at breast height (cutting down the plant would alleviate safety concerns, yet allow the plant to resprout and still support habitat

values). Beyond 30 feet from the shoulder, native tree seed would be included in the seed mix. In addition, any salvageable saguaro or agave found within the project clearing limits will be salvaged and replanted outside the recovery zone or behind the guardrail. Saguaros will be transplanted to the same depth as the plant was previously growing and guyed or staked as appropriate to improve transplant success.

7. ADOT will contribute $100,000 thorough an intergovernmental agreement to AGFD for use in future pygmy-owl research by August 31, 2004, or sooner, if possible. ADOT will provide FWS documentation that the transfer occurred. AGFD will coordinate with FWS on the use of the funds, and will provide regular progress reports and a final report for the funded research to FWS, FHWA, and ADOT.

8. FHWA and ADOT will fund research projects conducted by the University of Arizona and the AGFD in the amounts of $279,271 and $217,000, respectively, for cactus ferruginous pygmy-owl studies assessing road impacts to nesting and movement of owls in relation to highways.

STATUS OF THE SPECIES

CACTUS FERRUGINOUS PYGMY-OWL (*Glaucidium brasilianum cactorum*)

The pygmy-owl is in the order Strigiformes and the family Strigidae. They are small birds of prey, averaging 6.75 inches in length. The pygmy-owl is reddish brown overall, with a cream-colored belly streaked with reddish brown. The crown is lightly streaked and a pair of dark brown/black spots outlined in white occur on the nape suggesting "eyes." The species lacks ear tufts and the eyes are yellow.

The Arizona population of the pygmy-owl was listed as an endangered distinct population segment on March 10, 1997 (U.S. Fish and Wildlife Service 1997a) without critical habitat. On November 27, 2002, we proposed 1,208,001 acres of critical habitat in Pima and Pinal counties for the pygmy-owl in Arizona (U.S. Fish and Wildlife Service 2002). A draft recovery plan was released in January 2003 (U.S. Fish and Wildlife Service 2003).

Pygmy-owls are considered non-migratory throughout their range, and are primarily diurnal (active during daylight) with crepuscular (active at dawn and dusk) tendencies. Pygmy-owls are most vocal and responsive during the courtship and nesting period (February through June). However, calling and defensive behavior is also manifest in nesting territories from fledging to dispersal (June through August). Territories normally contain several potential nest-roost cavities from which responding females select a nest. Hence, cavities/acre may be a fundamental criterion for habitat selection. Most known nests in recent years have been in saguaros. Estimated home range size is based on telemetry work completed in Texas; a 280 acre home range is considered necessary for pygmy-owls to meet their life history requirements on an annual basis (Proudfoot 1996, Proudfoot and Johnson 2000). Their diverse diet includes birds, lizards, insects, and small mammals (Bendire 1888, Sutton 1951, Sprunt 1955, Earhart and Johnson 1970, Oberholser 1974, Proudfoot 1996, Abbate *et al.* 1996, 1999). Free-standing water

does not appear to be necessary for the survival of pygmy-owls.

Cactus ferruginous pygmy-owls are known to occur from lowland central Arizona south through western Mexico to the States of Colima and Michoacan, and from southern Texas south through the Mexican States of Tamaulipas and Nuevo Leon. The range of the Arizona DPS of the pygmy-owl extends from the International Border with Mexico north to central Arizona. The northernmost historical record for the pygmy-owl is from New River, Arizona, about 35 miles north of Phoenix, where Fisher (1893) reported the pygmy-owl to be "quite common" in thickets of intermixed mesquite and saguaro cactus. The majority of Arizona pygmy-owl detections in the last seven years have been from the northwestern Tucson area and Pinal County. Pygmy-owls have also been detected in areas of southern Pinal County, and at Organ Pipe Cactus National Monument, Cabeza Prieta National Wildlife Refuge, Buenos Aires National Wildlife Refuge, and on the Coronado National Forest.

Recent drought has impacted pygmy-owls in Arizona. Surveys conducted during the 2001 season resulted in a total of 47 adult pygmy-owls confirmed at 29 sites, including 17 nests, in Arizona. During 2002 surveys, only 18 adult pygmy-owls from 14 sites were confirmed. In comparison with 2001 when 17 nests were confirmed, only 3 nests were observed in 2002. From those 3 nests, 9 young were produced, all of which died. Drought has persisted in 2003, and pygmy-owl numbers reflect this: only 4 nests have been documented, 21 adults have been detected, and 16 fledglings are known to have been produced, one of which died.

Proposed critical habitat includes approximately 1,208,000 acres in portions of Pima and Pinal counties, Arizona, and links a network of State, private and Federal lands (U.S. Fish and Wildlife Service 2002). The proposed system of critical habitat is designed to provide an interconnected system of suitable habitat essential to Arizona pygmy-owl survival and maintain the viability of groups of owls that are dependant upon continued genetic interchange. The primary constituent elements include: 1) elevations below 1,200 m (4,000ft) within the biotic communities of Sonoran riparian deciduous woodlands; Sonoran riparian scrubland; mesquite bosques; xeroriparian communities; tree-lined drainages in semidesert, Sonoran savanna, and mesquite grasslands; and the Arizona Upland and Lower Colorado River subdivisions of Sonoran desertscrub (see Brown 1994 for a description of vegetation communities); 2) nesting cavities; 3) multilayered vegetation; 4) vegetation providing for dispersal behaviors; and 5) human activity levels minimized.

Proposed critical habitat is divided into five separate critical habitat units (CHUs) encompassing all of the verified recent sites (since 1997) occupied by pygmy-owls in Arizona, with the exception of pygmy-owls located on the Tohono O'odham Nation. Each of the proposed units serve varying functions necessary for the recovery of the pygmy-owl, including areas of significant breeding activity, the maintenance and expansion of groups of owls, facilitating the movement of juvenile pygmy-owls to establish breeding sites, as well as movements among currently known groups of pygmy-owls essential for gene flow.

The draft pygmy-owl recovery plan (U.S. Fish and Wildlife Service 2003) identified six reasons for decline of the pygmy-owl, that, without management action, may negatively affect pygmy-owl recovery in Arizona and continue to contribute to their decline. These factors include: (1) habitat destruction and degradation; (2) human activity and mortality; (3) predation; (4) disease; (5) genetic stochasticity; and (6) fires. The draft plan identifies 8 Recovery Areas (RAs) and 4 Special Management Areas (SMAs). RAs were developed based on historical and current pygmy-owl occurrences and form a network of pygmy-owl habitat extending from the United States-Mexico border to central Arizona. SMAs were developed to identify areas that are in need of special management because of current or potential threats to the recovery of the pygmy-owl (see U.S. Fish and Wildlife Service 2002).

Of the factors listed above, perhaps the most important in the decline of the pygmy-owl are loss and fragmentation of habitat (Oberholser 1974, Johnsgard 1988, Millsap and Johnson 1988, Wauer *et al.* 1993, Tewes 1995). Early (Bendire 1892, Fisher 1893, Gilman 1909, Swarth 1914, Griscom and Crosby 1926, Friedmann *et al.* 1950) and more recent (Falls 1973, Davis and Russell 1979, 1984 and 1990) information suggest that indirect correlations exist between the decline in abundance of pygmy-owls and urban and agricultural expansion, such as that occurring in many portions of southern Arizona. Loss and fragmentation of upland and xeroriparian Sonoran Desert scrub and semidesert grassland vegetation from large-scale residential and commercial developments continue to threaten the pygmy-owl. Human-caused mortalities, both direct and indirect (e.g. collisions with cars, glass windows, fences, power lines, domestic cats, etc.) are beginning to be documented in Arizona (Abbate *et al.* 1999, AGFD 2003) and may be underestimated. Human activities near nests at critical periods of the nesting cycle may cause pygmy-owls to abandon their nests sites, whereas activities during other periods could affect dispersal and foraging (U.S. Fish and Wildlife Service 2003).

Additional information on pygmy-owl life history, distribution, status, and threats can be found on the Arizona Ecological Services website (arizonaes.fws.gov), in the draft recovery plan (U.S. Fish and Wildlife Service 2003), in published listing and critical habitat documents (U.S. Fish and Wildlife Service 1997a, 1999, 2002), and in Abbate *et al.* (1999, 2000), Catron and Finch (2000) and in Proudfoot and Johnson (2000).

Since listing in 1997, at least 53 Federal agency actions have undergone formal and informal section 7 consultation throughout the pygmy-owl's range (Table 1). Of these, only one resulted in a draft jeopardy opinion, and that was resolved as a non-jeopardy final opinion. However, many activities continue to adversely affect the distribution and extent of all types of pygmy-owl habitat throughout its range (habitat loss to development and urbanization, overgrazing, fire, recreation, ground and surface water extraction, etc.). Stochastic events also continue to adversely affect the distribution and extent of pygmy-owl habitat. It should be noted that loss of occupied pygmy-owl habitat due to Federal or federally permitted projects has resulted in biological opinions that led to acquisition of otherwise unprotected property specifically for the pygmy-owl.

Table 1. Agency actions that have undergone formal and informal section 7 consultation and levels of incidental take anticipated for the pygmy-owl in Arizona, both within and outside the US 60 Florence Junction to Superior action area (CHU = Critical Habitat Unit, RA = Recovery Area, MANLAA = May Affect, Not Likely to Adversely Affect).

Action (CHU/RA)	Year	Federal Agency	Incidental Take Anticipated	In Action Area
International Boundary Vehicle Barrier on Organ Pipe Cactus National Monument (CHU 5 and RA 8)	2003	NPS	None	
Marana Development, Section 36, Township 11 South, Range 12 East (CHUs 2 and 4 and RA 3)	2003	ACOE	Take in the form of harassment of 1 pygmy-owl	
CWA 404 Nationwide Permit Program (all CHUs and RAs)	2003	ACOE	None	X
State Route 85 Drainage Improvement Project Organ Pipe Cactus National Monument (CHU 5 and RA 8)	2003	NPS	None	
Organ Pipe Cactus National Monument General Management Plan (CHU 5 and RA 8)	2003	NPS	None	
BANWR City Hall Fire Emergency Consultation (CHU 1/RA 1)	2003	USFWS	None	
Tonto National Monument Fire Management Plan (Not in CHU/RA)	2003	NPS	MANLAA	
Roosevelt Waterline (Not in CHU/RA)	2002	USFS	MANLAA	
Arivaca Junction Sewer Line (Not in a CHU or RA)	2002	EPA	None	
Mission Mine (Not in a CHU or RA)	2002	EPA	No Effect	
EPA Approval of the State of Arizona's Pollutant Discharge Elimination System (All CHUs and RAs)	2002	EPA	None	X
Buenos Aires National Wildlife Refuge Fire Plan (CHU 1/RA1)	2002	USFWS	None	
Chaparral Heights Residential Development (CHU 3/RA 3)	2002	EPA	None	
US 60-SR 79 Interchange	2002	FHWA	MANLAA	X
SR 188 Road Improvements (Not in CHU/RA)	2002	FHWA	MANLAA	

Thornydale Road Project (CHU 3/RA 3)	2002	EPA	Take in the form of harassment of 1 pygmy-owl	
Tohono O'odham Nation Road Project (Not in a CHU or RA)	2002	BIA	None	
Tucson Federal Prison (Not in a CHU or RA)	2002	U.S. Dept. of Justice	MANLAA	
Florence Military Reservation (Not in a CHU/RA 6)	2002	AZ Army National Guard	None	X
Puerto Blanco Road (CHU 5/RA 8)	2002	NPS	None	
Coronado National Forest Continuation of Grazing (Not in a CHU or RA)	2002	USFS	None	
Buenos Aires National Wildlife Refuge CCP (CHU 1/RA 1)	2002	USFWS	None	
Saguaro Canyon Ranch Residential/Commercial Development (CHU 3/RA 3)	2002	EPA	None	
5 Grazing Allotments near Ajo (CHU 5/RA 8)	2002	BLM	None	
Pueblo Oasis Residential Development (CHU 3/RA 3)	2002	EPA	None	
Bartlett Lake SB Cove Recreation Site (Not in CHU/RA)	2002	USFS	MANLAA	
Duval Mine Road Traffic Interchange (Not in a CHU or RA)	2002	USDOT	MANLAA	
Butterfly Mountain Residential Development (CHU 3/RA 3)	2002	EPA	None	
Tonto National Forest 20 Allotments (Not in CHU/RA)	2002	USFS	None	X
South Vekol Allotment Reinitiation (Not in a CHU/In RA 7)	2002	BLM	None	
Mountain View High School Expansion (CHU 3/RA 3)	2001	EPA	None	
Hartman Vistas Residential Development (CHU 3/RA 3)	2001	EPA	None	

Safford/Tucson Grazing Program (CHU 1,2,3,4/RA 1,2,3,4)	2001	BLM	Take in the form of harassment for 1 nesting pair + 1 unpaired pygmy-owl	X
Twin Peaks Road Stabilization (CHU 5/RA 8)	2001	NPS	None	
Crescent Ridge Apartments (CHU 3/RA 3)	2001	EPA	None	
Catalina State Park Road Project (Not in a CHU or RA)	2001	USFS	None	
Ray Mine Land Exchange (Not in a CHU /In RA 5)	2001	BLM	None	
Helmet Peak Sand and Gravel (Not in a CHU or RA)	2001	EPA	No Effect	
Conley Beloat Grazing Allotment (Not in a CHU/In RA 7)	2001	BLM	None	
Saguaro National Park 5-year Trails Plan (CHU 3/RA 3)	2001	NPS	None	
Tecolote del Oro Residential Development (CHU 3/RA 3)	2000	EPA	None	
Dove Mountain Residential and Commercial Development (CHU 3/RA 3)	2000	EPA	Take in the form of harassment for 1 pair of pygmy-owls	
Central Avra Valley Active Recharge Project (CHU 2/RA 2)	2000	EPA	None	
AEPCO Electrical Substation (CHU 3/RA 3)	2000	Rural Utility Service	None	
Arizona State Prison Expansion (Not in a CHU/RA)	2000	EPA	No Effect	
Countryside Vista Residential Development (CHU 3/RA 3)	2000	EPA	None	
Blue Point Recreation Site (Not in a CHU/In RA 6)	2000	USFS	None	X
Lazy K Bar Ranch HCP (CHU 2/RA 2)	1998	USFWS	Take in the form of harassment for 1 nesting pair + young	

Kearney Municipal Building Relocation (Not in a CHU/In RA 5)	1998	FEMA	MANLAA	X
Phoenix RA Management Plan (CHU 1-4 and RA 1-6)	1998	BLM	None	X
Lower Gila RA Management Plan (CHU 5/ RA 7 and 8)	1998	BLM	None	
11 National Forests Management Plan (Not in a CHU/RA 6)	1997	USFS	None	X
Organ Pipe Cactus NM General Management Plan (CHU 5/RA 8)	1997	NPS	Take in the form of harassment of 15 adults and young	

ENVIRONMENTAL BASELINE

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

The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR §402.02). We have determined that the action area for the pygmy-owl includes US 60 between MP 212.7 and 226.85, and adjacent lands containing suitable habitat within 21 miles of this section of the US 60. We base this determination on the maximum documented dispersal distance of juvenile pygmy-owls from natal areas in Arizona (AGFD 2002a. Abbate et al. 2000, Abbate et al. 1999).

The action area includes Federal lands under the jurisdiction of the U.S. Forest Service, Department of Defense, and Bureau of Land Management, State Trust lands under the jurisdiction of the Arizona State Land Department (ASLD), and private land. Adjacent land use primarily consists of cattle grazing, mining, recreation, off-highway vehicle driving, wildlife habitat, utility corridors, and transportation rights-of-way. Commercial and residential development occurs at the southeastern edge of the greater Phoenix metro area, near the town of Florence, and in several smaller communities.

Most of the action area is located within the Arizona Upland subdivision of the Sonoran desertscrub biotic community (see Brown 1994). Annual rainfall averages about 17 inches in Superior, with less rainfall closer to Florence Junction. The elevation in the action area as defined ranges from 1,800 to 4,000 ft above mean sea level. Six major washes transect the US 60 in the project area, including Reymert Wash, Happy Camp Wash, Alamo Wash, Queen Creek, Silver King Wash, and an unnamed wash in the vicinity of MP 224.6. An estimated 75 to 100

smaller washes intersect US 60 in the project area. The action area provides suitable habitat for pygmy-owls for foraging, sheltering, and movement, and could support nesting and territorial pygmy-owls if present. The eastern portions of the action area are a transition zone with a higher predominance of desert grasses, ocotillo, and incidental occurrences of chaparral species. We recognize that some parts of the action area do not support suitable pygmy-owl habitat: areas higher than 4,000 feet in elevation; active farm fields; and areas of intense urban development and associated infrastructure that no longer support appropriate vegetation components.

Although pygmy-owls are not currently known to occupy the action area, little of it has been surveyed. The nearest historical records of pygmy-owls to the US 60 corridor are about 30 miles away in the Blue Point Cottonwoods area at the confluence of the Salt and Verde rivers; pygmy-owls were documented there in 1897, 1949, 1951, 1964, and 1971 (AGFD 2002b, Phillips *et al.* 1964, Millsap and Johnson 1988). Although recent surveys have not detected pygmy-owls along the Salt River (Johnson and Haight 1998), this area still appears to provide suitable conditions for pygmy-owls and may be one of the most suitable areas in central Arizona (Johnson and Simpson 1971). Currently, the nearest known pygmy-owls to the US 60 corridor are near Oracle Junction along the border between Pinal and Pima counties, approximately 50 miles to the south. There is no proposed critical habitat in the action area.

The action area contains areas of high-quality habitat for pygmy-owls that are important in the recovery strategy for the species. The draft recovery plan for the pygmy owl defines 8 recovery areas, geographic areas important in pygmy-owl recovery (U.S. Fish and Wildlife Service 2003). US 60 transects the lower third of RA 6 in the action area, from approximately MP 213 to MP 217.4 (the TNF boundary). RA 6 extends north from the Gila River to the Salt River east of Phoenix. Land ownership is almost entirely TNF or ASLD. RA 6 serves to protect potential breeding habitat along the Salt River and in upland desertscrub elsewhere in the RA, provides connection between the northern edge of the subspecies' historical range in Arizona and potential breeding habitat in RA 5, and serves as a potential reestablishment site as outlined in the draft recovery plan (U.S. Fish and Wildlife Service 2003). The documentation or establishment of a subpopulation of pygmy-owls in this area may be necessary to meet the draft recovery criteria. No single activity in RA 6 can be identified as a dominant management issue, but it is influenced by grazing, development, military operations, and recreation.

The draft recovery plan also defines specific areas within Recovery Areas for special management (i.e., Special Management Areas, SMAs) that are of the highest concern because: (1) they contain high concentration of pygmy-owls, particularly nesting owls, that are important sources of young owls to increase the population; (2) pygmy-owl recovery is dependent on the availability of suitable habitat near breeding areas not currently known to have owls, where juvenile owls can disperse into and successfully breed; and (3) they are threatened by rapid urban development or other immediate threats.

Within RA 6, the draft recovery plan identifies the Superstition Special Management Area. The southern boundary of the Superstition SMA is US 60, from approximately MP 213 to MP 217.4.

For this SMA, the draft recovery plan recommends facilitating movement between Florence Junction and the TNF by maintaining and restoring habitat thorough which pygmy-owls can move. Conserving washes and upland vegetation that provide connectivity between areas of breeding habitat is particularly important. Conservation and restoration of breeding and dispersal habitat within RA 6 and the Superstition SMA are important to the maintenance and establishment of a pygmy-owl subpopulation in the northern part of the pygmy-owl's historical range (U.S. Fish and Wildlife Service 2003).

We have formally consulted on 8 Federal projects and informally consulted on 2 Federal projects on the pygmy-owl in the action area (see Table 1). In none of these did we anticipate take of the pygmy-owl in the action area. Two of these consultations, the Army Corps of Engineers (ACOE) Clean Water Act 404 Nationwide Permit Program and the Environmental Protection Agencies' approval of the State of Arizona's Pollutant Discharge Elimination System have wide-ranging ramifications on the pygmy-owl in the action area. The Corp's CWA consultation resulted in the development of guidelines which should aid in the conservation of pygmy-owl habitat throughout the action area assuming the guidelines are implemented by the ACOE. The EPA transfer of the NPDES program eliminated the Section 7 nexus for the issuance of discharge permits, although effects to pygmy-owls of the State issuing these permits are still subject to the Act and could be covered via Section 10(a)(1)(B) through a Habitat Conservation Plan.

The three consultations with the U.S. Forest Service and Bureau of Land Management on land use plans and programs included hundreds of thousands of acres in the action area, and resulted in a determination that adverse affects to pygmy-owl habitat, primarily from cattle grazing and recreational use, would result from plan and program implementation. The Tonto 20 Allotment consultation evaluated adverse affects from modification of pygmy owl habitat on five allotments in the action area (Bohme, Sleeping Beauty, Bellvue, Millsite, and Pinto Creek) totaling approximately 100,000 acres. The Blue Point Recreation Site consultation evaluated the removal or modification of 163 acres of pygmy-owl habitat. The Kearney Municipal Building Relocation resulted in the loss of 10 acres of pygmy-owl habitat, and the Florence Military Reservation resulted in some degradation to pygmy-owl habitat, but after revegetation of disturbed areas, there was no net loss of habitat.

We conducted informal consultation with FHWA and ADOT on construction of a traffic interchange between the US 60 and State Road 79 at Florence Junction (consultation number 2-21-01-I-449) which resulted in the loss of approximately 25 acres of marginal pygmy-owl habitat. As part of that project, FHWA and ADOT will maintain habitat connectivity at a large wash that crosses the US 60 at approximately MP 213.3 by ensuring that native trees will be retained close to the edges of the roadway such that their canopies can grow to within 40 feet of each other, providing pygmy-owls a way to safely cross the US 60.

EFFECTS OF THE ACTION

Effects of the action refer to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated and interdependent with

that action, that 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.

No pygmy-owls have been documented in the action area, although surveys are incomplete. In an effort to reduce the potential for adverse effects on the pygmy-owl and its habitat, FHWA and ADOT will conduct surveys throughout the action area prior to the initiation of clearing and construction activities. Surveys will continue throughout the project as necessary for additional habitat clearing as recommended in the FWS protocol. Consultation with FWS will be reinitiated and potential effects will be reevaluated if pygmy-owls are located during surveys.

Table 2. FHWA and ADOT's evaluation of cactus ferruginous pygmy-owl habitat in the US 60 Florence Junction to Superior action area.

Location	CFPO Habitat Evaluation	Clearing / Grubbing Area
MP 212.7 - MP 217.9	Suitable habitat. Habitat contains the elements necessary for CFPO nesting and foraging.	164 acres would be cleared and grubbed, 20% of which is currently unsuitable due to previous disturbance. Net suitable habitat within area of impact is 131 acres.
MP 217.9 - MP 219.8	Unsuitable. Most trees and saguaros were burned in wildfires that have occurred within the past 10 years. Area has low potential for developing into higher quality CFPO habitat because wildfire has resulted in increased erosion and the loss of most topsoil, and steep slopes have reduced the potential of the ground to retain moisture.	34 acres would be cleared and grubbed, 100% of which is currently unsuitable due to previous disturbance or wildfire. No suitable habitat would be impacted.
MP 219.8 - MP 221.0	Marginal. Hillsides to the north of US 60 are within wildfire burn area, but some suitable habitat is present immediately adjacent to the project area and to the south. Area would have moderate potential for developing into higher quality CFPO habitat in the absence of periodic wildfires and the isolation of this area from other concentrations of suitable habitat.	48 acres would be cleared and grubbed, 25% of which is currently unsuitable due to previous disturbance. Net marginal habitat within area of impact is 36 acres.
MP 221.0 - MP 224.0	Suitable. Project area includes the primary elements of suitable habitat, but is at the edge of suitable habitat and	81 acres would be cleared and grubbed, 10% of which is currently unsuitable due to previous disturbance. Net

	semi-desert grassland. Area would have moderate potential for developing into higher quality CFPO habitat in the absence of periodic wildfires and the isolation of this area from other concentrations of suitable habitat.	suitable habitat within area of impact is 73 acres.
MP 224.0 - MP 226.85	Marginal. Project area enters a mosaic of vegetation types with some incidental occurrences of chaparral species and then the built environment of Superior. Area has low potential for developing into higher quality CFPO habitat because it has been disturbed by human development.	7 acres would be cleared and grubbed, 70% of which is currently unsuitable due to previous disturbance. Net marginal habitat within area of impact is 2 acres.

The action area provides suitable habitat for pygmy-owls and has been identified in the draft recovery plan as being important to the recovery of the species. Portions of the action area contain RA 6, including the Superstition SMA. These areas are important to the recovery of the pygmy-owl because they provide dispersal habitat that the pygmy-owl could naturally disperse into from populations in the south, or be artificially reintroduced into (U.S. Fish and Wildlife Service 2003). Thus, it is imperative that areas of habitat large enough to support the species be maintained in the action area, and that corridors be maintained throughout the action area that connect to habitat to the south.

The project will result in habitat loss, both the permanent loss of habitat as a result of construction of new roadway and associated median and shoulders, and temporary habitat loss in cleared areas that will be revegetated (see Table 2). Of the approximately 204 acres of suitable habitat that will be removed, only 75 acres will be permanently lost. ADOT/FHWA will reseed and or replant all of the remaining areas as described in the proposed action.

Removal of vegetation would not only represent a loss of potential nesting and foraging habitat, but also has the potential to create a movement barrier for dispersing owls. Because pygmy-owls have been observed moving around the perimeter of golf courses, avoiding non-vegetated areas, roads and other openings may act as barriers to their movements (Abbate *et al.* 1999, AGFD 2003). On one occasion, a radio-tagged dispersing juvenile stopped within 0.7 mile of I-10 where there were large openings and few trees or shrubs, and reversed its direction (Abbate *et al.* 1999). However, radio-tagged, juvenile pygmy-owls have been observed on several occasions crossing two-lane roads with light to moderately heavy vehicular traffic, where trees and large shrubs were present on either side (Abbate *et al.* 1999). This project would also increase the current capacity of US 60 and may increase the likelihood of owls being killed or injured by vehicles, should they attempt to cross the highway. FHWA and ADOT will, however, replant trees both on the edges of the roadway and within the median of US 60 at Reymert Wash and Queen Creek, which will maintain the connectivity of potential movement corridors through the action area and increase the chances of owls safely crossing the highway. FHWA and ADOT have also committed to funding AGFD pygmy-owl research, in part to assess road impacts to

nesting and movement of owls in relation to highways, in the amount of $596,271. While funding research will not mitigate habitat loss associated with this project, it will likely benefit pygmy-owl conservation in the future.

With respect to noise disturbance at the project site, it is noted that human and vehicle use in and around the area is on-going; however, activity levels will increase as a result of this project. If pygmy-owls are nesting in the action area, noise disturbance may affect productivity during the breeding season. Disturbance outside of this period may affect the energy balance and, therefore, survival. Based on the best available scientific information, it appears this species may be tolerant, at least to some extent, of certain low-level noise disturbances associated with human activity. The threshold between noise levels and types of activities that an owl can tolerate versus those that will cause an owl to leave an area are not clearly known at this time.

Other effects of the project include increased exposure to toxic substances, increased potential for the spread of exotic species, and an increase in the frequency of wildfire. New roads and the associated vehicle traffic alters the physical and chemical environment resulting in a potential reduction in quality of habitat and introduction of contaminants into the environment (Trombulak and Frissel 2000). This includes an increase in the potential for hazardous materials spills, which could result in environmental contamination. Roads facilitate dispersal of exotic species by altering conditions, inhibiting native species, and allowing easier dispersal by wild or human vectors (Trombulak and Frissel 2000). Increased traffic along major highways is a suspected cause of increasing fire frequencies in Sonoran Desert areas of the Tonto National Forest (Alford and Brock 2002). Several recent wildfires along the US 60 corridor in the action area were likely due to vehicular use of the road.

New road construction is often implicated as a causal agent in urban and suburban growth and sprawl, and numerous studies have shown that new roads induce vehicle use in urban areas (Kitamura 1991, Hansen and Huang 1997). There is some evidence to indicate that large increases in lane mile capacity has a strong sprawl-inducing impact relative to the existing infrastructure (Noland and Cowart 2000). However, two recent studies in Ohio and North Carolina concluded that new roads accommodate growth rather than promote it, and have little influence on future urban growth patterns (Hartgen 2003a, 2003b).

Summary

While pygmy owls are not known to occupy the action area, it is important to note that surveys are incomplete. The primary adverse effects to the species from the project will be in the form of permanent habitat loss of 75 acres, and an increased barrier effect to dispersal. FHWA and ADOT have addressed the dispersal issue. The planned improvements at Reymert Wash and Queen Creek should maintain corridors though the action area, providing routes for pygmy-owls

to immigrate from their current range across US 60 to areas in the northernmost parts of their historical range. FHWA and ADOT have not provided mitigation offsetting the 75 acres of permanent habitat loss; however, they will provide funding to AGFD to research the impacts of roads and highways on the species.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, Tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA.

State Trust land and private land occur in large blocks in the southern and western portions of the action area. Existing development and development proposals are becoming an increasing management issue in these areas. State Trust lands may be sold or exchanged and could be used by future owners for development. In addition to residential and commercial development, recreation, off-road vehicle use, and other activities on State and private lands in the action area will continue to degrade or destroy pygmy-owl habitat and create barriers to pygmy-owl dispersal. Cutting of firewood can remove potential nest trees, and campfires result in an increased risk of wildfire. Because the human population in Pinal County is beginning to experience rapid growth as the suburban sprawl of Phoenix and Tucson continues to expand, we can reasonably expect these activities to increase in scope and magnitude.

CONCLUSION

After reviewing the current status of the pygmy-owl, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is our biological opinion that the proposed action is not likely to jeopardize the continued existence of the pygmy-owl. No critical habitat is proposed in the action area, thus none will be affected. Our rationale for our non-jeopardy finding is described below.

FHWA and ADOT have proposed conservation measures that reduce the effects of the proposed action on the pygmy-owl (see Description of Proposed Action). FHWA and ADOT can mitigate, at least in part, their contribution to future impacts to the pygmy-owl through implementation of their conservation measures. When added to the environmental baseline, the status of the species, and cumulative effects, the effects of the proposed action, which includes significant new conservation measures, do not reduce appreciably the likelihood of survival and recovery of the distinct population segment in the wild. Therefore, the FHWA and ADOT action, with modifications and conservation measures, will not jeopardize the continued existence of the pygmy-owl. As described, the proposed action does not significantly adversely affect important pygmy-owl nesting areas. Concerns about increasing the effects of US 60 barrier to pygmy-owl dispersal are minimized by FHWA and ADOT's conservation measures. In determining that the proposed action is not likely to jeopardize the continued existence of the pygmy-owl, we assume that the conservation measures will be implemented fully.

INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulation pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct (50 CFR 17.3). "Harm" is defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR 17.3). Harass is defined as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the provided that such taking is in compliance with the terms and conditions of this incidental take statement.

Amount or Extent of Take Anticipated

We do not anticipate the proposed action will incidentally take any pygmy-owl based on the current project description and full implementation of the conservation measures.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. We recommend implementing the following actions:

1. We recommend that FHWA and ADOT assist in the implementation of recovery tasks identified in the pygmy-owl recovery plan when approved (see U.S. Fish and Wildlife Service 2003).

2. We recommend that FHWA and ADOT acquire pygmy-owl habitat to be set aside in perpetuity at a ratio of 3 to 5 acres per acre lost, depending on habitat quality, for any highway project that results in the permanent loss of pygmy-owl habitat. The ASLD's Arizona Preserve Initiative provides a process that aids the acquisition of State lands for conservation that may be helpful in this regard (http://www.land.state.az.us/programs/operations/api.htm).

3. We recommend that FHWA and ADOT maintain suitable corridors of pygmy-owl habitat across roads and highways throughout southern Arizona by reducing the flight distance across roads using vegetation retention and plantings, revegetated medians, overpasses, and/or underpasses.

4. We recommend that FHWA and ADOT maintain flexibility in the intergovernmental agreement. For example, if funds can be transferred by January 1, 2004, it could provide for survey opportunities or other research needs during the 2004 breeding season.

DISPOSITION OF DEAD OR INJURED LISTED ANIMALS

Upon locating a dead, injured, or sick pygmy-owl, initial notification must be made to FWS's Law Enforcement Office, 2450 West Broadway Suite #113, Mesa, Arizona 85202 (telephone: (480) 835-8289) within three working days of its finding. Written notification must be made within five calendar days and include the date, time, and location of the animal, a photograph if possible, and any other pertinent information. The notification shall be sent to the Law Enforcement Office with a copy to this office. Care must be taken in handling injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible condition. If feasible, the remains of intact specimens of listed animal species shall be submitted to educational or research institutions holding appropriate State and Federal permits. If such institutions are not available, the information noted above shall be obtained and the carcass left in place.

Arrangements regarding proper disposition of potential museum specimens shall be made with the institution prior to implementation of the action. Injured animals should be transported to a qualified veterinarian by a qualified biologist. Should any treated listed animal survive, the FWS should be contacted regarding the final disposition of the animal.

REINITIATION NOTICE

This concludes formal consultation on the proposed US 60 project. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Thank you for your cooperation and assistance throughout this consultation process. If we can be of further assistance, please contact Glen Knowles (x233) or Debra Bills (x239).

Sincerely,

/s/ Steven L. Spangle
Field Supervisor

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (ARD-ES)
Steve Thomas, Federal Highway Administration, Phoenix, AZ
Gary Smith, Tonto Basin Ranger District, Tonto National Forest, Roosevelt, AZ

John Kennedy, Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ
Audrey Colclough, Arizona Department of Transportation, Phoenix, AZ

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APPENDIX A - CONCURRENCE

This appendix contains our concurrence with your determination that the proposed action may affect, but is not likely to adversely affect, the lesser long-nosed bat *(Leptonycteris curasoae yerbabuenae)*.

LESSER LONG-NOSED BAT *(Leptonycteris curasoae yerbabuenae)*

The lesser long-nosed bat is a medium sized leaf-nosed bat. It has a long muzzle, a long tongue, and is capable of hover flight. These features are adaptations that allow the bat to feed on nectar from the flowers of columnar cacti such as the saguaro and organ pipe cactus (*Stenocereus thurberi*), and from paniculate agaves such as Palmer's agave (*Agave palmeri*) and Parry's agave (*A. parryi*) (Hoffmeister 1986).

The lesser long-nosed bat was listed (originally, as *Leptonycteris sanborni*; Sanborn's long-nosed bat) as endangered in 1988 (US Fish and Wildlife Service 1988). No critical habitat has been designated for this species. A recovery plan was completed in 1997 (US Fish and Wildlife Service 1997b). 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 and two post-maternity roosts in the United States, and three maternity roosts in Mexico have remained stable or increased in size for at least five years.

The lesser long-nosed bat is migratory and found throughout its historical range, from southern Arizona and extreme southwestern New Mexico, through western Mexico, and south to El Salvador. In southern Arizona, lesser long-nosed bat roosts have been found from the Picacho Mountains (Pinal County) southwest to the Agua Dulce Mountains (Pima County), southeast to the Chiricahua Mountains (Cochise County), and south to the international boundary. Individuals have also been observed from the vicinity of the Pinaleno Mountains (Graham County) and as far north as Phoenix and Glendale (Maricopa County) (AGFD Heritage Data Management System). This bat is also known from far southwestern New Mexico in the Animas and Peloncillo Mountains (Hidalgo County). Roosts in Arizona are occupied from April to as late as early November (Cockrum and Petryszyn 1991; Sidner 1999, 2000); although the species has been recorded in winter at hummingbird feeders in Tucson (Sidner and Houser 1990).

Food requirements of the lesser long-nosed bat are very specific. Adequate numbers of flowers or fruits are required within foraging range of day roosts and along migration routes to support large numbers of this bat. Locations of good feeding sites play an important role in determining availability of potential roosting sites, and roost/food requirements must be considered jointly when discussing the habitat requirements of this bat. A suitable day roost is probably the most important habitat requirement, but potentially suitable roosts must be within reasonable foraging distances of sufficient amounts of required foods before this bat will use them. It seems evident that the lesser long-nosed bat forages over wide areas and that large roosts require extensive stands of cacti or agaves for food. Therefore, destruction of food plants many miles from a roost could have a negative impact on this bat (U.S. Fish and Wildlife Service 1997b).

The lesser long-nosed bat recovery plan (US Fish and Wildlife Service 1997b) identifies the need to protect foraging areas and food plants. Columnar cacti and agaves provide critical food resources for this bat. Populations of these plants need continued protection to sustain nectar-feeding bat populations. A critical need in this area is information about the size of the foraging areas around roosts so that adequate areas can be protected. This information will show the minimum area needed to support a roost of nectar- and fruit-eating bats, provided the roost locations are known. Additional life history information can be found in the recovery plan (US Fish and Wildlife Service 1997b) and other references cited there.

Known major roost sites include 17 large roosts in Arizona and Mexico (US Fish and Wildlife Service 1997b, FWS files). According to surveys conducted in 1992 and 1993, the number of bats estimated to occupy 16 of the 17 sites was greater than 200,000. A recently discovered roost in Cochise County may support an additional 25,000 bats. Twelve major maternity roost sites are known from Arizona and Mexico. According to the same surveys, the maternity roosts are occupied by a total of more than 150,000 lesser long-nosed bats. The numbers above indicate that, although many of these bats are known to exist, the relative number of known large roosts is small. Disturbance of these roosts and the food plants associated with them could lead to the loss of the roosts. Limited numbers of maternity roosts may be the critical factor in the survival of this species.

Surveys for the lesser long-nosed bat have not been conducted in the US 60 corridor. The nearest known occupied roosts are about 45 miles to the south in the Picacho Mountains of Pinal County, which is farther than any documented one-way foraging flights by this species (38 miles). Suitable foraging habitat for the bat is present, but no potential roosting sites have been found in the project area. The closest potential roosting sites occur approximately 10 miles east of the project area in the foothills of the Pinal Mountains, where many abandoned mines and caves are found. Saguaros and agaves, food sources for this species, are located within the project area. To offset impacts to the bat from the project, all saguaros and agaves in the project area will be transplanted to adjacent areas where future development is not expected to occur.

CONCLUSION

We concur with the FHWA's determination that the proposed action may affect, but is not likely to adversely affect, the lesser long-nosed bat. No critical habitat has been designated for the species, thus none will be affected. We base our concurrence on the following:

1. The nearest known roost is 45 miles to the south of the project area.

2. All saguaros and agaves in the project area will be transplanted to adjacent areas.

No further section 7 consultation is required for this project at this time. Should project plans change, or if additional information on the distribution of listed or proposed species or critical habitat becomes available, the conclusions herein may need to be reconsidered.