

IV. AFFECTED ENVIRONMENT AND ENVIRONMENTAL IMPACTS

A. Land Ownership or Land Jurisdiction

The proposed improvements would be constructed on land under the jurisdiction of ADOT and the Town of Wickenburg, as well as on privately owned property. ADOT owns the R/W along the existing US 60 and US 93 routes, the Town owns the land parcel on which the Community Center is located, and the rest of the land is privately owned.

B. Land Use

Within the private property, the existing land uses are residential and commercial (Figures 22 and 23). Highway-oriented commercial areas are located adjacent to the existing US 93 and US 60 roadways, particularly at the termini of the proposed interim improvement. In addition, an equestrian facility and pasture are located in the central portion of the proposed alignment. Residential areas are present along the northern portion of and to the west of the proposed alignment. The Town of Wickenburg property includes the Community Center and adjacent RV hook-up areas located in the parking lot of the Community Center.

Due to the project's new R/W requirements, portions of existing residential and commercial lands would be permanently converted into ADOT R/W. Construction of the preferred alternative would require 42.1 acres of new R/W, including 39.9 acres of private land and 2.2 acres of Town of Wickenburg land.

Access to adjacent residential and commercial lands would be maintained at new intersections along the proposed alignment or by utilizing the existing street network in Wickenburg, which would be accessible at both ends of the proposed improvements.

C. Water Quality

1. Floodplain

In accordance with 23 Code of Federal Regulations (CFR) 650 Subpart A, the project was evaluated for its potential impact to the floodplain upstream and downstream of the proposed improvements. The Flood Insurance Rate Map panels for the project area were obtained from FEMA. The 100-year floodplain in the project area covers a broad swath along the Hassayampa River and Sols Wash (Figure 24).

The existing US 60 roadway is located within the 100-year floodplain of the Hassayampa River at the intersection of Jack Burden Road and Wickenburg Way, at the Hassayampa River Bridge, and at the intersection of Valentine Street and Wickenburg Way. The existing US 93 roadway intersects the Sols Wash 100-year floodplain at the Sols Wash Bridge on North Tegner Street. In addition, the floodplain boundary of Sols Wash lies adjacent to the western edge of North Tegner Street from Sols Wash north to Barnette Drive.

Most of the proposed roadway, with the exception of the termini, would be located within the Hassayampa River floodplain boundary. Construction of the preferred alternative would result in impacts to 24.5 acres of 100-year floodplain. The proposed project would be designed to minimize floodplain encroachment to the extent possible by constructing the roadway along the western boundary of the floodplain. In addition, the location of the new bridge structure would minimize the length of the river crossing.

A study of the area's hydrology concluded that the proposed project would not affect flood risk because any local increase in the base flood elevation of the river would not exceed 1.0 foot, as documented in *Initial Hydrology Report: US 93 Interim Alignment – Wickenburg* (Sverdrup 2001). The existing Hassayampa River bridges would be removed to eliminate the existing structural elements that currently restrict storm flow during 50-year and 100-year storm events. These existing bridges retard the flow of floodwater, resulting in a rise in the upstream water surface. By raising the elevation of the new Hassayampa River bridge, the water surface elevation would be reduced upstream and the existing floodwater constraints would be minimized (Table 4). Construction of the proposed roadway within the floodplain would create a rise in flood elevation; however, the removal of the existing bridges and the associated lowering of the flood elevation would offset this rise. Therefore, construction of the proposed project would result in less than a one-foot rise in flood elevation overall for the project.

Table 4 – Bridge Hydraulic Analysis Results

Data	Existing Hassayampa River Bridges	Proposed Hassayampa River Bridge
Flow for 50-year event	47,000 cubic feet per second (cfs)	47,000 cfs
Water surface elevation for 50-year event	2044.8 feet	2042.7 feet
Low chord elevation	2045.3 feet	2047.0 feet
Freeboard*	0.50 feet	4.3 feet
Flow for 100-year event	71,000 cfs	71,000 cfs
Water surface elevation for 100-year event	2047.3 feet	2045.7 feet
Top of bridge elevation	2053.6 feet	2754.0 feet

*Freeboard is the distance between the water surface and the lowest beam of the bridge.

In addition, several residences along Chestnut Street near the confluence of Sols Wash and the Hassayampa River are currently located within the 100-year floodplain and have experienced repeated, severe flooding. ADOT would consider removing those homes and relocating the residents as part of a flood remediation program. Also, the proposed roadway would be placed on an embankment in order to protect the roadway and traffic from floodwaters associated with a 50-year storm. The roadway would be located at the approximate height of the 100-year event water surface elevation. Therefore, floodwaters from a 100-year storm event would be expected to overtop the embankment by a

maximum of two to four inches with minimal damage to the roadway. In the event of overtopping, the resulting damage would consist of erosion on the west side of the roadway embankment.

2. Section 404/401 of the Clean Water Act

A jurisdictional determination regarding waters of the U.S. was made by delineating the ordinary high water mark for the Hassayampa River, Sols Wash, and other washes in the project area. The proposed project area would cross the Hassayampa River and Sols Wash, which are considered to be waters of the U.S. per the U.S. Army Corps of Engineers' (Corps) 1987 Delineation Manual. Additional potential waters of the U.S. regulated under Section 404 of the Clean Water Act were identified in the project area near the northern terminus of the proposed project near MP 197.8. The Corps' concurrence in this determination is pending.

Construction of the bridges associated with the proposed project would result in permanent fill within 0.009 acre of jurisdictional waters of the U.S. within the Hassayampa River and 0.006 acre within Sols Wash. An additional 0.04 acre of possible jurisdictional area within a wash that crosses existing US 93 at MP 197.8 would be permanently filled due to the construction of the roadway embankment. A Section 404 permit and a Section 401 Water Quality Certification would be required for the new bridges over the Hassayampa River and Sols Wash and for the placement of fill within any area determined to be jurisdictional waters of the U.S. During final design, the project plans would be reviewed to verify the extent of impacts to jurisdictional waters of the U.S. As appropriate, permits required under Sections 401 and 404 of the Clean Water Act would be acquired by ADOT or its final design consultant prior to construction in these areas.

In order to reduce erosion, minimize sedimentation, and eliminate non-storm water pollutants that may be discharged into waters of the U.S., the project would comply with the *Arizona Department of Transportation Standard Specifications for Road and Bridge Construction* (2000 edition), Section 104.09 "Prevention of Landscape Defacement: Protection of Streams, Lakes and Reservoirs." In addition, all disturbed soils that would not be landscaped or otherwise permanently stabilized would be seeded with species native to the project vicinity.

All discarded waste (including but not limited to human waste, trash, debris, oil drums, fuel, ashes, equipment, concrete, and chemicals) generated during construction activities would be removed and/or disposed according to federal and state regulations. Waste material would not be discharged into perennial or intermittent streams or washes, or other waters of the U.S., unless the contractor has obtained the appropriate Section 401 and 404 permits in accordance with applicable federal and state regulations. Contractor staging areas and material stockpiles (including aggregates, fill materials, petroleum, and other chemical products) would be located outside existing floodways and protected so that sediment and/or spills would not enter stream channels or affect groundwater.

3. National Pollutant Discharge Elimination System/Storm Water Pollution Prevention Plan

Because five or more acres of land would be disturbed, a National Pollutant Discharge Elimination System permit would be required. The ADOT Roadside Development Section would determine who would prepare the Storm Water Pollution Prevention Plan during final design of preferred Alternative 16. The District Construction Office and contractor would submit the Notice of Intent and the Notice of Termination to the Environmental Protection Agency (EPA) and distribute copies to the Arizona Department of Environmental Quality (ADEQ).

D. Biological Resources

1. Description of Ecosystem or Biological Community

The project area is primarily developed, with native and non-native landscaped vegetation dominating the biological community, but natural areas are present along the Hassayampa River. These natural areas are classified as Sonoran riparian desertscrub habitat. Vegetation in the area immediately adjacent to the river channel is dominated by tamarisk, with occasional cottonwood, willow, and mesquite.

2. Wildlife

a. Threatened/Endangered Species

The U.S. Fish and Wildlife Service's (USFWS) list of endangered, threatened, candidate, and proposed species for Maricopa County includes the following wildlife species:

<u>Common Name</u>	<u>Scientific Name</u>	<u>Listing Status</u>
Bald eagle	<i>Haliaeetus leucocephalus</i>	Threatened
Brown pelican	<i>Pelecanus occidentalis</i>	Endangered
Cactus ferruginous pygmy-owl	<i>Glaucidium brasilianum cactorum</i>	Endangered
Desert pupfish	<i>Cyprinodon macularius</i>	Endangered
Gila topminnow	<i>Poeciliopsis occidentalis occidentalis</i>	Endangered
Lesser long-nosed bat	<i>Leptonycteris curasoae yerbabuena</i>	Endangered
Mexican spotted owl	<i>Strix occidentalis lucida</i>	Threatened
Razorback sucker	<i>Xyrauchen texanus</i>	Endangered
Sonoran pronghorn	<i>Antilocapra americana sonoriensis</i>	Endangered
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	Endangered
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	Candidate
Yuma clapper rail	<i>Rallus longirostris yumanensis</i>	Endangered

Designated critical habitat for the listed species does not occur in the project area.

This project would have no impact on the brown pelican, cactus ferruginous pygmy-owl, desert pupfish, Gila topminnow, razorback sucker, southwestern willow flycatcher,

yellow-billed cuckoo, or Yuma clapper rail. These species are associated with aquatic habitats, broadleaf riparian gallery forest, and/or perennial water sources. The only habitat suitable for these species in the vicinity of the study area is in the Hassayampa River Preserve. The proposed interim improvement would not affect this habitat area, which is located approximately three miles south of the proposed project area.

The bald eagle can occur anywhere in Arizona and individual birds may pass through the area of the proposed project. Potential foraging habitat and food sources for this species occur within the project area. However, it is highly unlikely that the proposed project would affect the species, should a bird occur in the project vicinity, because the project area does not contain nesting habitat or suitable roosting sites for this species.

The proposed project area is within the known range of the lesser long-nosed bat, although the project area does not contain suitable roosting or maternal sites for this species. Vegetation removal due to construction could result in the loss of food plants for this species; however, suitable foraging habitat for this species is abundant in the vicinity.

The Mexican spotted owl is found in forested highlands throughout Arizona at elevations of 5,000 to 9,000 feet. The proposed project would not affect this species because the proposed project area does not contain suitable habitat and is located outside the known range and elevations usually inhabited by this species.

b. Arizona Species of Concern

The Arizona Game and Fish Department's (AGFD) list of special status species for the project vicinity includes the following species classified as Wildlife of Special Concern in Arizona (WSCA):

<u>Common Name</u>	<u>Scientific Name</u>	<u>Listing Status</u>
American peregrine falcon	<i>Falco peregrinus anatum</i>	WSCA
Arizona skink	<i>Eumeces gilberti arizonensis</i>	WSCA
Bonytail chub	<i>Gila elegans</i>	WSCA
Desert pupfish	<i>Cyprinodon macularius</i>	WSCA*
Gila topminnow	<i>Poeciliopsis occidentalis occidentalis</i>	WSCA*
Lowland leopard frog	<i>Rana yavapaiensis</i>	WSCA
Razorback sucker	<i>Xyrauchen texanus</i>	WSCA*
Snowy egret	<i>Egretta thula</i>	WSCA
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	WSCA*
Western red bat	<i>Lasiurus blossevillii</i>	WSCA
Western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	WSCA

(* Also listed as endangered by the USFWS)

This project would have no impact on the Arizona skink, bonytail chub, desert pupfish, Gila topminnow, lowland leopard frog, razorback sucker, snowy egret, southwestern willow flycatcher, western red bat, or western yellow-billed cuckoo. These species are associated with aquatic habitats, broadleaf riparian gallery forest, and/or perennial water sources. The only habitat suitable for these species in the vicinity of the study area is in

the Hassayampa River Preserve. The proposed project would not affect this habitat area, which is located approximately three miles south of the proposed project area.

The peregrine falcon can occur anywhere in Arizona during the spring and fall migration periods and individual birds may pass through the area of the proposed project. Potential foraging habitat and food sources for this species occur within the project area. However, it is highly unlikely that the proposed project would affect the species, should a bird occur in the project vicinity, because the project area does not contain nesting habitat or suitable roosting sites for this species.

3. Plants

a. Threatened/Endangered Species

The USFWS's list of endangered, threatened, candidate, and proposed species for Maricopa County includes the following plant species:

<u>Common Name</u>	<u>Scientific Name</u>	<u>Listing Status</u>
Arizona agave	<i>Agave arizonica</i>	Endangered
Arizona cliffrose	<i>Purshia subintegra</i>	Endangered

The Arizona agave occurs at elevations of approximately 3,000 to 6,000 feet and is associated with oak-juniper and chaparral vegetation. The range of the Arizona cliffrose is limited to areas of limestone deposits. The proposed project would have no impact on the listed plant species because the proposed project area is located at an elevation of 2,100 feet, does not contain oak-juniper or chaparral vegetation, and is not characterized by limestone deposits.

b. Arizona Native Plant Law Species

The following protected native plant was included in the AGFD's list of species of concern for the project:

<u>Common Name</u>	<u>Scientific Name</u>	<u>Listing Status</u>
Hohokam agave	<i>Agave murpheyi</i>	Highly Safeguarded

The nearest known location for the Hohokam agave is approximately 80 miles east of the proposed project area north of Lake Pleasant. The species' range is primarily to the east and south of that population. It is unlikely to occur within the project area.

It is likely that additional protected native plants are found in landscaped or natural portions of the project area. These species could include various cactus species, agaves, yuccas, cholla, and leguminous trees such as palo verde, mesquite, and ironwood.

Protected native plants within the construction limits would be impacted by the proposed project; therefore, the ADOT Roadside Development Section would notify the Arizona

Department of Agriculture at least 60 days prior to the start of construction to afford commercial salvagers the opportunity to remove and salvage these plants.

4. Riparian Habitat

Riparian habitat is present along the Hassayampa River in the project vicinity. These areas are classified as Sonoran riparian desertscrub habitat. Vegetation in the area immediately adjacent to the river channel is dominated by tamarisk with occasional cottonwood, willow, and mesquite trees. Construction of Alternative 16 would result in the removal of 4.0 acres of riparian habitat at the crossing of the Hassayampa River and Sols Wash.

The preferred alternative would have minor effects on wildlife that inhabit the general vicinity of the project area or that utilize riparian vegetation located adjacent to the Hassayampa River and Sols Wash. Wildlife in the vicinity includes common Sonoran desertscrub species such as mule deer, coyotes, javelina, small mammals, lizards, and snakes, as well as migratory birds. The foraging and movement patterns of resident wildlife species would be temporarily altered during construction due to placement of fill and the removal of vegetation within the project area. However, these species would eventually adapt to the changed condition and resume regular behavioral patterns. The long-term impact would be minor due to the presence of available habitat upstream and downstream of the project.

Mitigation for impacts to riparian areas would include replacing cottonwood and willow trees removed as a result of construction of the project. The details of the tree replacement would be determined during the project's final design phase.

5. Vegetation

The project area is primarily developed, with native and non-native landscaped vegetation dominating the biological community. The vegetation in most of the project area is urban landscaping or grasses associated with pasture. The developed areas are dominated by grasses with mesquite trees along the western edges of the grass areas. A small area of Sonoran xeroriparian desertscrub vegetation is present immediately adjacent to the Hassayampa River channel. This area is dominated by tamarisk with occasional cottonwood, willow, and mesquite trees. Construction of Alternative 16 would result in the removal of 34.9 acres of vegetated areas as well as the impacts to riparian areas described on page 41. The majority of the vegetation removed would be within developed areas with landscaping or pasture. Disturbed areas would be revegetated in accordance with ADOT's *Standard Specifications for Roadway and Bridge Construction*.

6. Invasive Species

Under Executive Order 13112 dated February 3, 1999, projects that occur on federal lands or are federally funded must: "subject to the availability of appropriation, and within Administration budgetary limits, use relevant programs and authorities to: i)

prevent the introduction of invasive species; ii) detect and respond rapidly to, and control, populations of such species in a cost-effective and environmentally sound manner; iii) monitor invasive species populations accurately and reliably; and iv) provide for restoration of native species and habitat conditions in ecosystems that have been invaded.”

In accordance with Executive Order 13112, the project area was surveyed by a qualified invasive species authority. It was determined that there are no listed invasive species within the project boundaries. In order to prevent the introduction of invasive species, all earth-moving and hauling equipment would be washed at the contractor’s storage facility prior to entering the construction site. In addition, all disturbed soils that would not be landscaped or otherwise permanently stabilized by construction would be seeded using species native to the project vicinity.

E. Visual Resources

The existing visual environment in the project area contains man-made elements as well as natural elements along the Hassayampa River. The foreground contains several buildings, including residences, garages, sheds, and livestock enclosures. The existing background consists of the natural areas along the Hassayampa River, with views of trees and the river channel.

Because the roadway would be elevated along the riverbank, the proposed project would create a visual barrier, blocking the river view for areas immediately west of the roadway. Views from areas on the east side of the river would continue to have natural areas along the Hassayampa River in the foreground, with the roadway embankment and associated riprap protection visible in the middle of the visual range. Background vistas would not be affected.

Landscaping would be provided in the new R/W. In addition, the Town of Wickenburg could potentially use the proposed drainage area along the west side of the roadway embankment as a “greenbelt” extension of Coffinger Park. The Town of Wickenburg would be responsible for maintenance of this greenbelt area.

F. Air Quality Analysis

The Clean Air Act of 1970 and associated amendments in 1977 and 1990 established National Ambient Air Quality Standards (NAAQS) for carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM₁₀ and PM_{2.5}), sulfur dioxide (SO₂), and lead (Pb), as shown in Table 5. These laws also gave to EPA the authority to designate nonattainment areas where pollutant levels do not meet the NAAQS and require the development of State Implementation Plans (SIP) outlining the actions that would be taken to achieve compliance with the NAAQS. Projects in designated nonattainment areas must demonstrate conformance with the SIP and the local Transportation Improvement Program. The proposed project would be in an area that complies with all NAAQS. Therefore, the federal conformity procedures do not apply to this project.

Table 5 – National Ambient Air Quality Standards

Pollutant	Averaging Time	Primary Standard¹	Secondary Standard²
CO	1 hour	35 parts per million (ppm)	--
	8 hours	9 ppm	--
NO ₂	Annual	0.05 ppm	0.05 ppm
O ₃	1 hour	0.12 ppm	0.12 ppm
	8 hours	0.08 ppm	0.08 ppm
PM ₁₀	24 hours	150 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$)	150 $\mu\text{g}/\text{m}^3$
	Annual	50 $\mu\text{g}/\text{m}^3$	50 $\mu\text{g}/\text{m}^3$
PM _{2.5}	24 hours	65 $\mu\text{g}/\text{m}^3$	65 $\mu\text{g}/\text{m}^3$
	Annual	15 $\mu\text{g}/\text{m}^3$	15 $\mu\text{g}/\text{m}^3$
SO ₂	3 hours	--	0.5 ppm
	24 hours	0.14 ppm	--
	Annual	0.03 ppm	--
Pb	Quarter	1.5 $\mu\text{g}/\text{m}^3$	1.5 $\mu\text{g}/\text{m}^3$

¹ Defines levels “necessary to protect the public health” (40 CFR 50)

² Defines levels “necessary to protect the public welfare” (40 CFR 50)

The ADEQ and Maricopa County maintain a network of air quality monitoring sites throughout Maricopa County. The closest monitoring site to the proposed project area is at Lake Pleasant, approximately 29 miles southeast of Wickenburg. This monitoring site collects data on O₃ concentrations only. The nearest multi-pollutant monitoring site is located in Glendale, approximately 42 miles southeast of the proposed project area. All concentrations monitored in 2000 at both locations were below the NAAQS.

An air quality assessment was performed to predict the impact of vehicle emissions from the proposed roadway on future CO levels in the project vicinity. The air quality receptor locations used in this analysis are shown in Figure 25. The analysis was performed using the CAL3QHC line source dispersion model, which was developed for the EPA in order to calculate the total emissions from moving and idling vehicles as well as to predict the dispersion and estimated concentrations of inert pollutants, primarily CO, near highways and arterial street intersections. Inputs to the CAL3QHC model consist of vehicle emissions factors, roadway configurations, traffic volumes, travel speeds, roadway links, receptor locations, meteorological conditions, and other assumptions.

Predicted 1-hour concentrations of CO resulting from the proposed roadway were generated and then added to the background concentration to derive the total predicted CO levels. The background 1-hour CO concentration used for this analysis was 4 ppm, based on data from the Glendale monitoring site. Predicted 8-hour concentrations are then calculated from the 1-hour concentrations using a persistence factor to account for variations in traffic characteristics and meteorological conditions.

The predicted 1-hour CO concentrations, when added to the background concentration, would range from 4.2 to 5.1 ppm for the preferred alternative (Table 6). Predicted 8-hour CO concentrations would range from 2.9 to 3.6 ppm. These concentrations would be substantially below the NAAQS listed in Table 5.

Table 6 – Predicted Carbon Monoxide Concentrations

Receptor No.	1-Hour Predicted Concentration (ppm)	8-Hour Predicted Concentration (ppm)
South Intersection		
S1	4.3	3.0
S2	4.7	3.3
S3	4.6	3.2
S4	4.3	3.0
S5	4.2	2.9
North Intersection		
N1	4.5	3.2
N2	5.0	3.5
N3	5.1	3.6
N4	4.3	3.0

Some temporary deterioration of air quality would be expected due to the operation of construction equipment and the slower traffic speeds associated with a construction zone. However, this localized condition would be discontinued when the project is completed.

Fugitive dust generated from construction activities would be controlled in accordance with the Arizona Department of Transportation Standard Specifications for Road and Bridge Construction, Section 104.08 (2000 Edition), special provisions, and local rules or ordinances. Construction of the proposed project would comply with *Maricopa County Air Quality Rule 310 –Fugitive Dust Sources* (Appendix B) and any required air quality permits. In addition, any necessary asbestos permits required by Maricopa County for demolition of structures would be obtained by the construction contractor.

This proposed project would have a beneficial effect on the air quality in the downtown Wickenburg area. The project would improve the air quality in the downtown area by rerouting regional traffic, primarily long-haul, 18-wheel trucks, to the new five-lane roadway. Alternative 16 would eliminate the time that passenger vehicles and trucks currently spend idling due to traffic congestion at the existing US 93/US 60 intersection, thereby reducing emissions in the downtown area.

G. Noise Analysis

To determine existing noise conditions, ambient noise level readings were taken on January 30, 2001, at four locations within the project limits (Table 7). Noise receptors

and monitoring locations are shown in Figure 26. Noise levels were monitored during non-peak traffic conditions using an integrating sound level meter placed approximately five feet above the ground. Existing noise levels varied from 52 decibels (dBA) to 64 dBA.

Table 7 – Ambient Noise Levels

Monitoring Site	Description	Ambient Noise Level
M-1	Single-family residence on Chestnut Street	52 dBA
M-2	Single-family residence on Weaver Street	
M-3	Apartments behind the Super 8 Motel	58 dBA
M-4	Entrance to Super 8 Motel	64 dBA

56

Short-term noise impacts would be experienced during construction of the proposed improvements. An analysis was conducted to assess the collective impact of construction noise. The maximum noise level (L_{max}) of various types of construction equipment was measured at the R/W line during a previous highway construction project. The results of the preliminary estimates indicate that sensitive receivers could be substantially affected by construction noise if the receivers are immediately adjacent to the R/W (Table 8). The highest noise levels would occur during the grading/earthwork phase.

Table 8 – Temporary Noise Impacts

Construction Phase	Equipment	Equipment L_{max} ¹	Distance to R/W	L_{max} at R/W ²
Site Clearing	Dozer	84 dBA	50 feet	----
	Backhoe	85 dBA	50 feet	88 dBA
Grading/Earthwork	Scraper	92 dBA	75 feet	----
	Grader	91 dBA	75 feet	93 dBA
Foundation	Backhoe	85 dBA	100 feet	----
	Loader	84 dBA	100 feet	85 dBA
Base Preparation	Compressor	85 dBA	100 feet	----
	Dozer	84 dBA	100 feet	85 dBA

¹ Noise levels provided by equipment manufacturer.

² Measured noise levels during use of equipment in highway construction.

A study of the predicted noise impacts adjacent to the project area was conducted pursuant to FHWA's requirements contained in 23 CFR 772, *Procedures for Abatement of Highway Traffic and Construction Noise*, and ADOT's *Noise Abatement Policy*, March 21, 2000. Predicted traffic noise levels were developed and evaluated against FHWA's Noise Abatement Criteria (NAC) using the STAMINA/Optima 2.0 noise prediction model. The model uses inputs consisting of traffic speeds and volumes, as well

as the mix of automobiles, medium trucks, and heavy trucks in the traffic stream. The model also calculates the propagation of noise between sources and receivers through the use of shielding factors, such as rows of homes, steep terrain, and dense trees, and propagation constants, which are used to reflect noise drop-off over distance for different types of terrain.

As indicated in the Noise Analysis Report prepared for this study, 14 representative sensitive noise receivers were identified within the proposed project limits in order to assess impacts from the proposed improvements (Figure 26). The receiver sites were identified because of their land use type and proximity to the proposed highway alignment (Table 9).

Table 9 – Noise Receiver Site Descriptions

Receiver	Description
R-1	Wickenburg Chamber of Commerce Building.
R-2	Single-family residence on Chestnut Street.
R-3	Single-family residence on Chestnut Street.
R-4	Coffinger Park.
R-5	Single-family residence on Weaver Street near Genung Avenue.
R-6	Single-family residence on Weaver Street near Genung Avenue.
R-7	Single-family residence overlooking the Hassayampa River.
R-8	Apartment complex with three buildings located behind the Super 8 Motel.
R-9	Super 8 Motel.
R-10	Mobile home/RV park located east of existing US 93.
R-11	Single-family residence located east of existing US 93.
R-12	Single-family residence located east of existing US 93.
R-13	Single-family residence located east of existing US 93.
R-14	Single-family residence located east of existing US 93.

Unmitigated noise levels for design-year traffic and roadway conditions were predicted at the receiver sites and compared with FHWA's NAC (Table 10) to determine if traffic noise mitigation should be considered for specific land use categories. For residential properties (Activity Category B), noise mitigation would be considered if the projected future noise levels approach (within 3 dBA) or exceed 67 dBA or when the predicted noise levels exceed the ambient levels by 15 dBA or more. Generally, mitigation considerations consist of sound barriers adjacent to these properties within the proposed R/W line. Sound barriers may consist of earthen berms, concrete/masonry walls, or combinations thereof. According to ADOT's Noise Abatement Policy, noise mitigation may not be warranted if the cost of abatement exceeds \$35,000 per benefited residence. Activity Category C consists of commercial properties, which are not eligible for noise abatement.

Table 10 – Noise Abatement Criteria

Activity Category	Noise Level	Description of Activity Category
A	57 dBA (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of the area is to continue to serve its intended purpose.
B	67 dBA (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 dBA (Exterior)	Developed lands, properties, or activities not included in Categories A or B.
D	-	Undeveloped lands.
E	52 dBA (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Predicted noise levels along the proposed roadway would range from 54 dBA to 68 dBA (Table 11). Six of the receiver sites are predicted to experience noise levels that would either approach or exceed the NAC. Traffic speeds of 30 mph were modeled for the existing southern section and 45 mph in the existing northern section. The proposed roadway was modeled at 45 mph. A traffic mix of 80 percent automobiles, five percent medium trucks, and 15 percent heavy trucks was used in the noise prediction model.

Table 11 – Summary of Noise Impacts at Receptors

Receiver	Activity Category	Existing Noise Level (2001)	Predicted Noise Level (2025)	Mitigation Considerations
R-1	C	--	61 dBA	None
R-2	B	52 dBA	65 dBA	Barrier C
R-3	B	--	67 dBA	Barrier C
R-4	B	--	58 dBA	None
R-5	B	--	60 dBA	None
R-6	B	56 dBA	59 dBA	None
R-7	B	--	58 dBA	None
R-8	B	58 dBA	58 dBA	None
R-9	B	64 dBA	54 dBA	None
R-10	C	--	60 dBA	None
R-11	B	--	64 dBA	Barrier D
R-12	B	--	65 dBA	Barrier D
R-13	B	--	65 dBA	Barrier D
R-14	B	--	68 dBA	Barrier E

Future noise level increases would be primarily caused by an increase in traffic volumes on a new roadway alignment that would introduce US 93 traffic to areas that are not currently exposed to highway traffic noise. Several noise receivers on the current US 93 roadway, such as R-9, would experience reduced noise levels with the shift of traffic.

To analyze possible mitigation for noise impacts, the effect of standard barriers on noise levels at residences adjacent to the proposed roadway was evaluated (Figure 26). Barrier C consists of a wall located on the west side of the proposed roadway that would reduce traffic noise at residences along Chestnut Street. The barrier would be 12 feet high for 800 feet, then 10 feet high for an additional 450 feet. Barrier D consists of a wall located on the east side of the proposed roadway that would reduce traffic noise at residences near the northern terminus of the new roadway. The wall would be 12 feet high for 200 feet, then 10 feet high for 500 feet. Barrier E consists of a wall located on the west side of the intersection of the proposed roadway with existing North Tegner Street. This wall would be 10 feet high and 320 feet long.

Barrier C would provide a 5-dBA reduction at R-3 and the cost of construction per benefited residence would be approximately \$41,375. Barrier D would provide a reduction of at least five dBA at R-11, R-12, and R-13. The cost of construction for this barrier would be approximately \$46,866 per benefited residence. Barrier E would provide a reduction of at least five dBA at R-14 and would cost approximately \$60,800 per benefited residence. While these barriers would achieve the desired 5-dBA reduction, none of the noise barriers would meet ADOT's Noise Abatement Policy guideline regarding cost per benefited residence. As a result, noise mitigation is not warranted.

H. Hazardous Materials

A Preliminary Initial Site Assessment (PISA) for hazardous materials was conducted for the project area in order to determine the potential for encountering environmental contamination from hazardous materials due to previous and/or existing activities in the proposed R/W for the preferred alternative. Field reconnaissance was conducted on September 10, 2001, in order to identify potential contamination based on observations of existing and former land uses, soil conditions, construction materials, chemicals, and on-site equipment. A search of available ADEQ and EPA records disclosed numerous Underground Storage Tanks (UST), several Leaking Underground Storage Tank (LUST) cases, three hazardous materials incidents, several Resource Conservation and Recovery Act generators, and one WQARF site in the project vicinity.

Further investigation of the hazardous materials records resulted in the identification of four potential hazardous materials concerns in the area of impact for the proposed project. These included gas stations adjacent to the east end of the Hassayampa River bridge and at the intersection of Wickenburg Way and Kerkes Street, as well as at the Vulture Mill WQARF site on the northeast side of the Super 8 Motel on North Tegner Street. The other sites identified in the PISA were determined to be of low concern for the project due to their distance from the area of impact, the nature of the hazardous materials sources, and/or remediation previously conducted at those sites.

Construction of the preferred alternative would require the demolition of the Exxon gas station adjacent to the eastern end of the Hassayampa River bridges. According to ADEQ records, this gas station has two active gasoline USTs, five removed USTs, and three open LUST cases. Soil staining and odor evidencing multiple releases of diesel fuel and gasoline were discovered on November 4, 1998, while three tanks were being closed. ADEQ requested a Site Characterization Report (SCR) from the property owner on March 6, 2000, and again on January 31, 2001, in order to determine the full extent and degree of contamination resulting from the releases. A Site Characterization Work Plan stipulating the proposed methodology to assess the extent of hydrocarbon contamination within the soil and groundwater at the site was submitted to the ADEQ on December 6, 2000. As of the date of this Draft EA, no SCR has been submitted to the ADEQ for these LUST cases.

Construction of the preferred alternative would also require the demolition of a portion of the Stotz service station on the northwest corner of the Wickenburg Way/Kerkes Street intersection. According to ADEQ records, the property has three active gasoline tanks. No LUST cases have been filed for this property; however, due to the age of the facility, it is possible that discovery of contaminated soil could occur during UST removal.

Construction of the connection of Wickenburg Way and Kerkes Street to the new roadway would require work immediately adjacent to the site of a former gas station on the southwest corner of the Wickenburg Way/Kerkes Street intersection. ADEQ records show that three gasoline and one used oil UST have been removed from the premises, and that one permanently closed tank remains. In addition, three open LUST cases are on file for the property. Soil staining and odor was detected beneath all five tanks and beneath the dispenser island during the permanent closure of the USTs on December 29, 1998. ADEQ requested a SCR from the property owner on March 8, 2000, to determine the full extent and degree of contamination resulting from the releases. On March 21, 2000, the ADEQ discussed these cases with the property owner. As a result of this discussion, it was determined that two of the open LUST cases would be submitted for closure, but that the third case needed further investigation due to the high concentrations of benzene, toluene, ethylbenzene, and xylene (BTEX) compounds reported in the UST closure report. The reported BTEX concentration beneath the USTs was unusually high considering the approximate age of the release. As of the date of this Draft EA, no request for case closure or SCR has been submitted to the ADEQ for these LUST cases.

The proposed project would be located immediately adjacent to the eastern boundary of the Vulture Mill WQARF site located between existing US 93 and the Hassayampa River. The site is the location of a former gold ore milling facility and 90,000 to 100,000 cubic yards of stockpiled mine tailings. The tailings and affected soil are found in an area covering about 32 acres. Elevated levels of lead and arsenic are found in the mine tailings and soil in the vicinity. ADEQ's remediation plan for the Vulture Mill WQARF site involves removing the contaminated soil from the affected areas and stockpiling the soil in a consolidation site that would be located about 150 feet west of the proposed roadway. A Letter of Agreement is being prepared by ADOT and ADEQ in order to resolve issues regarding liability for contaminated soils associated with the Vulture Mill

WQARF site. As part of the pending agreement, ADEQ would agree to remove or neutralize contaminated soil in the proposed R/W before construction of the proposed roadway begins. Upon finalization, the agreement will be incorporated into this environmental document.

Initial Site Assessments would be prepared to assess impacts to and to determine the need for remediation at the UST facilities at the Stotz service station, the Exxon station, and the former gas station located on the southwest corner of the Wickenburg Way/Kerkes Street intersection.

If suspected hazardous materials are encountered during construction, work would cease at that location and the project engineer would be notified immediately to arrange for proper assessment, treatment, or disposal of those materials.

I. Cultural Resources

The project area was surveyed for cultural resources as documented in *Cultural Resources Survey for the Interim Bypass of US Highway 93, Wickenburg, Maricopa County, Arizona* (Archaeological Consulting Services, Ltd., 2001). One prehistoric isolate was identified. No archaeological sites eligible or potentially eligible for the National Register of Historic Places (NRHP) were identified within the limits of the preferred alternative.

Concurrent with the cultural resources survey, an architectural survey of structures in and near the proposed R/W was conducted. The survey disclosed a group of three houses, referred to as the St. Clair property, that may possess sufficient historical and architectural significance to merit further study. This group of structures was determined to be potentially eligible for the NRHP under Criteria A, B, and C. The proposed project would have no impact on the St. Clair property because the preferred alternative would be located 350 feet east of that property. As a result, the predicted noise level at the St. Clair property, represented by R-7 in the noise study, would be 58 dBA after construction of the preferred alternative (page 49), well below the 65 dBA threshold for considering noise abatement measures.

Due to the removal of the existing Hassayampa River bridges, the proposed interim improvement would alter the eastern approach and sense of entrance to a collection of historic buildings known as the Wickenburg Multiple Historic Resource Area (WMHRA), which is bounded roughly by Sols Wash on the north, Kerkes Street on the east, Cochise Street on the south, and Adams Street on the west. However, the proposed roadway would avoid direct impacts on this area and would provide access via a new intersection at US 93 and Wickenburg Way, just beyond the west end of the new Hassayampa River bridge. In order to ensure travelers' awareness of the WMHRA's location, appropriate signage would be provided at the new roadway's intersections with Wickenburg Way and North Tegner Street. In addition, a gateway feature would be incorporated into the project during final design to enhance the entrance into the historic downtown area.

Consultation with the State Historic Preservation Office regarding the determination of effects to cultural resources is currently underway.

J. Socioeconomic

1. Demographics/Minority Groups

Demographic data obtained from the U.S. Bureau of the Census were used to compare the demographic profile of the project vicinity to that of Wickenburg and Maricopa County (Table 12). The population within the project area is represented by Census Tract 405.02, Block Group 1 (Figure 27). Census tracts are small statistical subdivisions of a county. Block groups are smaller statistical subunits of census tracts. The boundaries of this block group are formed by North Tegner Street, Rincon Road, the Hassayampa River, Constellation Road, Calamity Wash, and Wickenburg Way. The area described by these statistics extends outside the project area; therefore, the exact population and demographic characteristics of the project area may vary from these data.

Table 12 – 2000 Census Data Summary

Demographic Characteristic	Project Vicinity	Wickenburg	Maricopa County
Total population	486	5,082	3,072,149
Gender:			
Male	48.8%	47.1%	50.0%
Female	51.2%	52.9%	50.0%
Race:			
White alone	84.6%	91.8%	77.4%
Black or African-American alone	1.0%	0.3%	3.7%
American Indian/Alaska Native alone	1.2%	1.2%	1.8%
Asian alone	0.6%	0.4%	2.2%
Native Hawaiian/other Pacific Islander alone	0.0%	0.1%	0.1%
Some other race alone	10.1%	4.5%	11.9%
Two or more races	2.6%	1.8%	2.9%
Hispanic or Latino	16.3%	11.0%	24.8%
Age 60 years and over	25.5%	35.3%	15.2%
Disabled ¹	7.1%	7.0%	4.2%
Below poverty level ²	10.3%	15.3%	12.1%

¹ 1990 Census data; defined as persons with a mobility limitation, self-care limitation, or mobility and self-care limitation.

² 1990 Census data.

2. Title VI/Environmental Justice

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

The project has been evaluated with regard to Title VI of the Civil Rights Act of 1964, the Americans with Disabilities Act of 1990, and Executive Order 12898 on Environmental Justice. The project area has fewer non-whites and persons classified as Hispanic or Latino than Maricopa County. However, the proportion of non-whites and persons of Hispanic or Latino origin within the project vicinity is higher than the average for Wickenburg as a whole. The project vicinity has a larger proportion of persons over age 60 than Maricopa County, but this percentage is lower than Wickenburg's average. In addition, the project area has a lower percentage of residents living below the poverty line than Wickenburg and Maricopa County. The percentage of residents with a disability is higher in the project area than in Wickenburg and Maricopa County; however, the percentage within the project area is not substantially higher than for Wickenburg.

Although minorities are present within the project area, no distinct minority or low-income groups were identified because the percentage of these populations does not vary substantially from that of the general population of Wickenburg and Maricopa County. Therefore, the proposed project would not have a disproportionately high and adverse human health and environmental effect on minority and low-income populations.

3. Neighborhood Continuity

The proposed roadway would be located between the residential area east of North Tegner Street and an equestrian facility located alongside the Hassayampa River. In addition, the proposed roadway would pass directly west of a residential area north of the APS substation, displacing the existing access to US 93 from several homes. Access would be provided to these properties from the proposed roadway, thereby connecting the property and residents to shopping, schools, and other community services. As a result, the preferred alternative would have only a minor impact upon neighborhood continuity.

4. Emergency Services – Police, Fire, Ambulance, Hospital

The proposed project would have a positive impact on emergency services within Wickenburg because the project would decrease traffic congestion on local streets by diverting the regional traffic to the new facility, thereby improving response times. The proposed project would have no effect on the existing access to the Wickenburg police station, fire station, or hospital. At the public information meeting held on December 5, 2001, a representative of the Wickenburg Police Department endorsed Alternative 16 as the preferred alternative.

5. Social Services, Schools, Recreation

The proposed project would have a minor impact on recreation due to the acquisition of a portion of an equestrian facility on the west bank of the Hassayampa River and the removal of several RV hookups located on the eastern edge of the Community Center parking lot. In addition, the proposed project would create a barrier to currently available access to recreational opportunities along the Hassayampa River because the roadway would be situated between neighborhoods to the west of the roadway and areas east of the roadway that are currently used to provide river access. However, access to those areas would be provided from the proposed roadway.

The proposed project would have no impact on social services or schools in the area because the project would not affect the existing access to schools or social services offered in Wickenburg.

6. Relocations/Displacements

The preferred alternative would result in two business displacements and six residential displacements. ADOT would implement a R/W relocation program in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act) and FHWA's regulations concerning R/W acquisition (49 CFR Part 24).

The Uniform Act provides minimum real property acquisition policies and requires uniform and equitable treatment of persons displaced as a result of a federally assisted program or project. The stated purpose of the Uniform Act is to ensure that affected persons would not suffer disproportionate injuries as a result of programs and projects designed for the benefit of the public as a whole and to minimize the hardship of displacement on such persons. The Uniform Act requires that displaced persons receive uniform and consistent services and payments regardless of race, color, sex, or national origin.

7. Temporary Impacts

During construction of the facility, traffic through the area and access to adjacent properties would be maintained in accordance with current ADOT traffic control management procedures for highway construction and maintenance.

The existing US 60/US 93 configuration would continue to be used during construction of the proposed project. Traffic control during construction of the connections of Alternative 16 to existing US 60 and US 93 would be in accordance with Part VI of the *Manual on Uniform Traffic Control Devices for Streets and Highways*, published by the U.S. Department of Transportation, FHWA (1993), Traffic Control Supplement (1996), and/or associated provision in the project plans, as determined by the ADOT Traffic Design Section during design.

Business disruption during construction of the proposed project would be minimal. Existing access to businesses and parking areas near the Tegner Street/Wickenburg Way intersection would not be affected during construction. In commercial areas where lane closures would occur during various stages of construction, such as adjacent to the existing Hassayampa River bridges, at the Kerkes Street/Wickenburg Way intersection, and near the northern terminus of the project area, access to businesses and parking would be provided during construction.

In order to minimize temporary impacts, the District Construction office would provide a construction notice to adjacent residents and businesses at least two weeks prior to construction.

8. Permanent Impacts

Access to properties adjacent to the new roadway would not change as a result of the proposed project, except for the equestrian facility and residences north of the APS substation, which would require new access points from the proposed roadway. Residences and businesses in the vicinity would continue to be accessible from Tegner Street and Wickenburg Way.

Traffic patterns within downtown Wickenburg would be largely unchanged after construction of the proposed project, except that Kerkes Street north of Wickenburg Way would be closed to accommodate a connector road linking US 60 traffic to the new roadway. US 60 traffic would be diverted via the connector road to a signalized intersection with the proposed roadway, rather than using the existing Hassayampa River bridges. In addition, a portion of North Tegner Street would be diverted to tie into the northern terminus of the proposed roadway.

Through-traffic on US 93 would be diverted onto the new roadway, resulting in lower traffic volumes for local traffic at the existing US 93/US 60 intersection. Traffic operations would improve substantially for through-traffic due to the increased capacity provided by the new roadway.

Business disruption after construction of the proposed project would be kept to a minimum because businesses in downtown Wickenburg and along North Tegner Street to the northern terminus of the proposed roadway would continue to use existing North Tegner Street and Wickenburg Way for business access and parking. Businesses located east of the Hassayampa would continue to use existing access from US 60, although the McDonald's access to US 60 would be need to be reconstructed due to the realignment of the roadway adjacent to that property.

K. Section 4(f) of the Transportation Act

Section 4(f) of the U.S. Department of Transportation Act of 1966 states that the FHWA “may approve a transportation program or project requiring publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local

significance, or land of an historic site of national, state, or local significance (as determined by the federal, state, or local officials having jurisdiction over the park, area, refuge, or site) only if there is no prudent or feasible alternative to using that land and the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from such use” (49 U.S. Code 303).

A “use” of a Section 4(f) resource, as defined in 23 CFR 776.135(p), occurs: 1) when land is permanently incorporated into a transportation facility; 2) when there is a temporary occupancy of land that is adverse in terms of the statute’s preservationist purposes; or 3) when there is a constructive use of land. A constructive use of a Section 4(f) resource occurs when the transportation project does not incorporate land from a resource but the project’s proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired. For example, a constructive use can occur when:

- a) the projected noise level increase, attributable to the project, substantially interferes with the use and enjoyment of a noise-sensitive facility of a resource protected by Section 4(f);
- b) the proximity of the proposed project substantially impairs aesthetic features or attributes of a resource protected by Section 4(f), where such features or attributes are considered important contributing elements to the value of the resource. An example of such an effect would be the location of a proposed transportation facility in such proximity that it obstructs or eliminates the primary views of an architecturally significant historical building or substantially detracts from the setting of a park or historic site that derives its value in substantial part due to its setting; and/or
- c) the project results in a restriction of access that substantially diminishes the utility of a significant publicly owned park, recreation area, or historic site.

Two Section 4(f) resources are located near the proposed project (Figure 28). The first is Coffinger Park, located north of Sols Wash between the proposed roadway and North Tegner Street. In addition, the architectural survey documented a group of structures that is recommended as potentially eligible for the NRHP under Criteria A, B, and C, and is therefore considered a Section 4(f) property. These structures, referred to as the St. Clair property, are located between the proposed roadway and North Tegner Street south of the intersection of Rose Lane and North Tegner Street. No direct impacts to either of these Section 4(f) resources would occur as a result of the construction of the proposed project. No constructive use of the park or St. Clair property would occur because the projected noise level, represented by receptors R-4 and R-7 (Table 11), would neither approach nor exceed the 67-dBA NAC. In addition, the proposed roadway would not interfere with aesthetic characteristics of these resources nor restrict access to them. Therefore, the proposed project would have no direct or proximity impacts on these Section 4(f) properties.

L. Utilities

Construction of the proposed project would necessitate the relocation of water and power lines located on the existing Hassayampa River bridges, street lights at the Kerkes Street/Wickenburg Way intersection, 12-kilovolt (kV) overhead power lines along North Tegner Street at the northern tie-in with the proposed interim roadway, and manholes providing access to water and sewer lines along North Tegner Street. In addition, a 12-kV overhead power line that feeds the equestrian facility would need to be buried and 12-kV and 16-kV overhead power lines heading east from the APS substation would need to be raised in order to provide adequate clearance over the proposed roadway.

ADOT's Utility and Railroad Engineering Section would investigate utility involvement during the project design phase. Potential utility conflicts would be resolved during final design of the preferred alternative.

M. Materials Sources and Waste Materials

Due to the constraints of maintaining the proposed roadway above the 50-year peak flow of the Hassayampa River, the proposed roadway would be located predominantly on embankment and no earthwork balance would be achievable for the project. The volume of borrow required for the preferred alternative would be approximately 200,000 cubic yards.

A review of borrow pit information available at ADOT's Materials Section revealed a large number of borrow pits that have been historically used by ADOT along the US 60 and US 93 highway corridors. Approximately 40 of these pits are located within 10 miles of the proposed project. For an ADOT-leased pit to be considered a potential material source, the lease agreement between ADOT and the landowner has to be active and an environmental permit has to be issued. No current ADOT-leased (deeded or granted) sources were identified. However, two commercial pits were identified within 10 miles of the proposed project (Table 13). These pits could be used as alternative material sources for the project.

Table 13 – Potential Materials Sources

Site No.	Location	Company	Materials Produced
CM 101	US 60, MP 115	Wickenburg Concrete and Material	Aggregate base, sand, riprap
CM 237	US 60, MP 117	Wickenburg Concrete and Material	Mineral aggregate, aggregate base, sand, riprap, borrow

It would be the responsibility of the construction contractor to identify any needed material sources or waste disposal sites and to provide the environmental documentation regarding the potential use of these sites.

N. Secondary Impacts

Secondary impacts are broadly defined in the Council on Environmental Quality Guidelines as “those impacts that are caused by an action and occur later in time, or are farther removed in distance but are still reasonably foreseeable after the action had been completed” (40 CFR 1508.8). Secondary impacts comprise a wide variety of effects such as changes in land use, economic vitality, and population density.

A secondary impact of the project would likely be increased use of US 93 in comparison with today’s usage. Currently, some drivers may avoid US 93 and use alternate routes such as SR 95, Interstate 17, or US 89 to travel between Interstate 10 (I-10) and I-40. Project improvements would reduce the likelihood of drivers avoiding US 93. Associated impacts from this increased traffic would potentially include increased noise levels in the project area.

The proposed project would have no secondary effect on land use adjacent to the majority of the project area because new development is precluded within the 100-year floodplain (Figure 24) by Town of Wickenburg and Maricopa County regulations. There is potential for new development to occur adjacent to the northern terminus of the proposed roadway; however, no additional projects or developments are planned along the proposed interim route at this time.

The new facility would improve the LOS and operational efficiency of US 93 throughout the project area due to the increased capacity provided by the five-lane roadway and reduced congestion in downtown Wickenburg. Such improvements would likely have a positive secondary impact on the growth and the success of businesses and future community development in Wickenburg by increasing the commercial, retail, and residential marketability of the area. However, businesses on the existing route would experience reduced drive-by traffic due to the diversion of traffic from the existing US 60/US 93 intersection. These businesses, particularly travel-oriented businesses, may experience lower revenues and find it more difficult to compete with similar establishments that are not bypassed by the proposed roadway. However, this effect would be minimized through the use of advance highway signage directing traffic to establishments providing food, lodging, and gas.

O. Cumulative Impacts

Cumulative impacts are defined in 40 CFR 1508.7 as “the incremental impact(s) of the action when added to other past, present, and reasonably foreseeable future actions.” For this project, cumulative effects would be generally related to the growth and development in the general project vicinity. Development has occurred recently in the Wickenburg area and is continuing at a rapid rate. Previously undivided sections are being subdivided and marketed for individual development. This ongoing residential development could increase the effect of minor project-related impacts to utility lines, grazing, recreation, waters of the U.S., wildlife, native vegetation, cultural resources, and visual resources.

Furthermore, the proposed project could potentially have a slight growth-inducing effect due to the improved traffic operations in the Wickenburg area.

When considered cumulatively, the preferred alternative would have a positive effect with regard to economic development. The proposed roadway would provide improved traffic circulation and access in the Wickenburg area, greatly improving the mobility of the increasing regional traffic volumes and increasing the potential for new development.

Also, this project would be an incremental improvement of the US 93 corridor preceding the widening of US 93 north of Wickenburg to the Santa Maria River and the construction of the ultimate US 93 bypass southwest of Wickenburg. Construction of this project would therefore contribute to the cumulative effects resulting from the widening of the entire US 93 corridor from the Phoenix area to the Nevada state line, including habitat loss and development along the corridor.