

RECLAMATION

Managing Water in the West

Environmental Assessment

Realignment and Paving Project

**County 8th Street: From Mohawk Valley Road to Ave. 36 ³/₄ East
Yuma County, Arizona**



**U.S. Department of the Interior
Bureau of Reclamation
Yuma Area office
Yuma, Arizona**

January 2010

Environmental Assessment

**County 8th Street:
From Mohawk Valley Road to Ave. 36 ³/₄ East
Realignment and Paving
Yuma County, Arizona**

Prepared by:

**Harris Environmental Group, Inc.
58 East 5th Street
Tucson, Arizona 85705**

Prepared for:

**Bureau of Reclamation
7301 Calle Agua Salada
Yuma, Arizona 85364**

January 2010

Acronyms and Abbreviations

AASHTO	American Association of State Highway and Transportation Officials
AGFD	Arizona Game and Fish Department
ASHPO	Arizona State Historic Preservation Office
AZDEQ	Arizona Department of Environmental Quality
BE	Biological Evaluation
Reclamation	United States Bureau of Reclamation
CEQ	Council on Environmental Quality
EA	Environmental Assessment
EIS	Environmental Impact Statement
FONSI	Finding of No Significant Impact
HDMS	Heritage Data Management System
HEG	Harris Environmental Group
MOA	Memorandum of Agreement
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
PM	Particulate Matter
SHPO	State Historic Preservation Office
SPCCP	Spill Prevention, Control and Countermeasure Plan
SWFL	Southwestern Willow Flycatcher
ROW	Right-of-Way
USDA	United States Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
YCDDS	Yuma County Department of Development Services
YCR	Yuma Clapper Rail

TABLE OF CONTENTS

1.0 Purpose of and Need for Proposed Action.....	6
1.1. Introduction.....	6
1.2. Location	6
1.3. Background.....	6
1.4. Purpose and Need	6
1.5. Applicable Regulatory Requirements	8
1.6. Determinations to be Made.....	8
1.7. Public Scoping and Issues.....	8
2.0 Alternatives Considered	9
2.1. No Action Alternative.....	9
2.2. Proposed Action.....	9
2.2.1. Construction Activities	9
2.2.2. Maintenance Activities	10
2.3. Other Alternatives.....	10
2.1.1. Paving the present roadway alignment	10
2.1.2. Realigning the road but not paving it.....	10
2.1.3. Using a different alignment	10
3.0 Affected Environment and Environmental Consequences	14
3.1. Land Use	14
3.1.1. Affected Environment.....	14
3.1.2. Environmental Consequences.....	14
3.1.3. Management and Mitigation Measures.....	14
3.2. Air Quality	14
3.2.1. Affected Environment.....	14
3.2.2. Environmental Consequences.....	15
3.2.3. Management and Mitigation Measures.....	15
3.3. Biological Resources	15
3.3.1. Affected Environment.....	15
3.3.1.1. <i>Fish and Wildlife</i>	15
3.3.1.2. <i>Threatened and Endangered Species</i>	16
3.3.1.3. <i>Migratory Birds</i>	16
3.3.1.4. <i>Vegetation and Wetlands/Riparian Zones</i>	17
3.3.1.5. <i>Non-Native Invasive Species</i>	17
No non-native plants were located within the project area (Harris Environmental 2005). .	17
3.3.2. Environmental Consequences.....	17
3.3.2.1. <i>Fish and Wildlife</i>	17
3.3.2.2. <i>Threatened and Endangered Species</i>	17
3.3.2.3. <i>Migratory Birds</i>	20
3.3.2.4. <i>Vegetation</i>	20
3.3.3. Management and Mitigation Measures.....	20
3.4. Cultural Resources	21
3.4.1. Affected Environment.....	21
3.4.2. Environmental Consequences.....	22
Figure 5.	19

3.4.3	Management and Mitigation Measures.....	22
3.5	Indian Trust Assets	22
3.5.1	Affected Environment.....	22
3.5.2	Environmental Consequences.....	22
3.5.3	Management and Mitigation Measures.....	23
3.6	Energy Policy.....	23
3.6.1	Affected Environment.....	23
3.6.2	Environmental Consequences.....	24
3.6.3	Management and Mitigation Measures.....	24
3.7	Environmental Justice and Socio-Economic Conditions.....	24
3.7.1	Affected Environment.....	24
	Community Profile.....	24
3.7.2	Environmental Consequences.....	25
3.7.3	Management and Mitigation Measures.....	25
3.8	Floodplain	26
3.8.1	Affected Environm.....	26
3.8.2	Environmental Consequences.....	26
3.8.3	Management and Mitigation Measures.....	26
3.9	Hazardous or Solid Waste.....	26
3.9.1	Affected Environment.....	26
3.9.2	Environmental Consequences.....	26
3.9.3	Management and Mitigation Measures.....	27
3.10	Noise	27
3.10.1	Affected Environment.....	27
3.10.2	Environmental Consequences.....	27
3.10.3	Management and Mitigation Measures.....	28
	Because there are no nearby residential areas, no mitigation measures are required.	28
3.11	Geology and Soils.....	28
3.11.1	Affected Environment.....	28
3.11.2	Environmental Consequences.....	28
3.11.3	Management and Mitigation Measures.....	28
3.12	Surface and Groundwater Quality	28
3.12.1	Affected Environment.....	28
	3.12.1.1 Surface Water.....	28
	3.12.1.2 Groundwater	29
3.12.2	Environmental Consequences.....	29
3.12.3	Management and Mitigation Measures.....	29
3.13	Cumulative Impacts	29
3.13.1	Affected Environment.....	29
3.13.2	Environmental Consequences.....	29
4.0	Consultation, Coordination, and List of Preparers	30
4.1	Agencies Consulted	30
4.2	List of Preparers.....	30
4.2.1	Bureau of Reclamation	30
5.0	References.....	31

Figure 1. State Map	7
Figure 2. Project Vicinity	11
Figure 2. Project Area on Topographic Imagery.....	12
Figure 4. Project Area on Aerial Imagery.....	13
Figure 5. Tacna Marsh.....	19
Appendix A. Observed Plant List.....	33
Appendix B. MOA	34

1.0 Purpose of and Need for Proposed Action

1.1. Introduction

The Yuma County Department of Development Services (YCDDS) has proposed improvements to County 8th Street from Mohawk Valley Road to approximately Avenue 36 ¾ E in Yuma County, Arizona. This section of County 8th Street is a two-lane rural gravel road with two sharp turns. The road generally runs northwest-southeast, and serves as a connector route between two paved north-south roads.

This Environmental Assessment (EA) was prepared in accordance with the environmental review requirements of the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C., as amended) and the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR Parts 1500-1508). The format and content of this Environmental Assessment (EA) is consistent with the guidelines of the U.S. Department of Interior NEPA Handbook (Reclamation 2000). The U.S. Bureau of Reclamation (Reclamation) is the land owner and will be the lead Federal Agency under NEPA. Reclamation proposes to issue a license to YCDDS that will grant them the use of federal lands for implementing the project.

Resources and concerns addressed by this EA include land use, air quality, geology and soils, water resources, prime and unique farmlands, biological resources, threatened and endangered species, cultural resources, noise, socioeconomics, environmental justice, hazardous materials, non-native invasive species, and cumulative effects.

1.2 Location

The project area is located approximately two miles north of the Town of Noah and eight miles east of the Town of Wellton, in Sections 21, 22, 27, and 28 of Township 8 South, Range 17 West, Gila and Salt River Baseline and Meridian, Yuma County, Arizona (Figure 1). The project area is bound by Antelope Hill to the west, desert and farmland to the east and south, and the Gila River to the north.

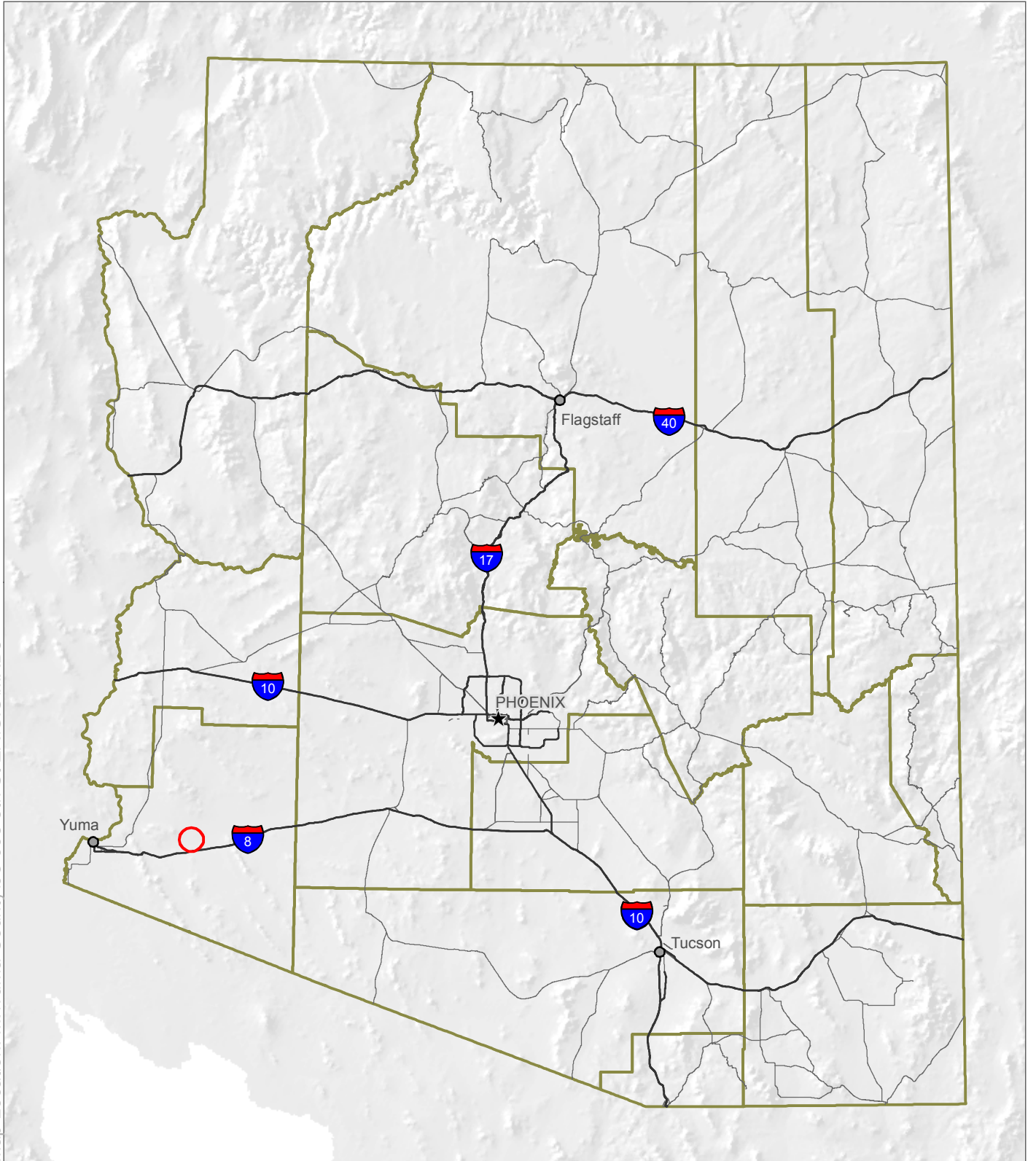
1.3 Background

YCDDS received several requests from nearby residents to pave the roadway to increase vehicular safety as well as to meet current American Association of State Highway and Transportation Official (AASHTO) standards. It is necessary to realign County 8th Street to smooth the existing curves before paving. The Mohawk Valley Road to approximately Avenue 36 ¾ E segment of County 8th Street is the last segment of County 8th Street that is unpaved.

1.4 Purpose and Need

The purpose of this project is to increase the safety of vehicular traffic travelling along County 8th Street between Mohawk Valley Road to approximately Avenue 36 ¾ E. Currently, the roadway is unsafe because of two sharp curves and the gravel-based covering. In addition, the roadway does

Map Location: M:\Yuma County\08-098 8th St EA\GIS\MXDs



**Realignment and Paving
of County 8th Street
From Mohawk Valley Road
to Avenue 36 3/4 East**
T8S R17W Sections 21, 22, 27, 28
Yuma County, Arizona
Imagery: NAIP 2007
HEG Project No. 08-098

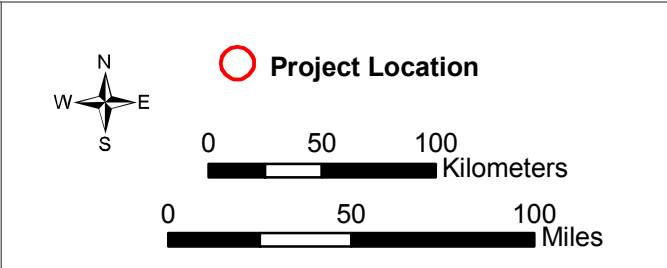


Figure 1. State Map.

not meet current AASHTO standards.

1.5 Applicable Regulatory Requirements

Land ownership within the County 8th Street realignment project is primarily public land (Reclamation). Reclamation consulted with U.S. Fish and Wildlife (USFWS) and Arizona Game and Fish Department (AGFD) on the Wellton-Mohawk Title Transfer project, which encompasses the County 8th Street Realignment project area. Reclamation received a concurrence letter from USFWS (June 2003) stating the Proposed Action/ Preferred Alternative ‘may affect, but is not likely to adversely affect’ two listed species: Yuma clapper rail and southwestern willow flycatcher.

To ensure compliance with Section 106 of the National Historic Preservation Act (NHPA), consultation on the Proposed Action would be conducted with Arizona State Historic Preservation Office (SHPO). In addition, coordination, and consultations with interested Indian tribes and groups need to be conducted.

The Memorandum of Agreement (MOA) among the Bureau of Reclamation (Reclamation), Arizona SHPO and Yuma County regarding the County 8th Street Realignment Project will affect this EA. In addition, Yuma County Department of Development Services (YCDDS) evaluated several repaving options and concluded that the present alignment does not meet current county, state, and AASHTO standards.

1.6 Determinations to be Made

This EA will be distributed to appropriate decision-makers within Reclamation for review to determine whether or not to issue the license/ROW for the construction of the road. This decision will be based on a determination that all potential impacts are either not significant or can be reduced to not significant levels through the implementation of mitigation measures. If any potential impacts are considered significant and cannot be avoided or reduced to not significant levels, the preparation and processing of an EIS is required to complete this project.

1.7 Public Scoping and Issues

No public meetings have been held. Of the 22 tribes initially consulted, only three have actively participated in meetings to discuss the proposed improvements: Cocopah, Quechan, and Tohono O’odham Nations.

2.0 Alternatives Considered

2.1 No Action Alternative

The no-action alternative provides a baseline to which impacts of the proposed action and other alternatives may be compared. Part 1502.14(d) of CEQ regulations require that agencies include the alternative of no action in every NEPA analysis.

If County 8th Street between Mohawk Valley Road and approximately Avenue 36 ³/₄ E is not realigned and paved, then current conditions will continue. Some community members consider the existing roadway to be dangerous because the existing sharp curves create a high potential for automobile accidents. This issue and the concerns of local residents would not be addressed if the No-action Alternative is retained. Furthermore, the roadway would continue to not meet AASHTO standards.

2.2 Proposed Action

2.2.1 Construction Activities

Under the Proposed Action, Reclamation would grant a license to YCDDS authorizing the implementation of the proposed realignment of County 8th Street located on Reclamation lands.

The County 8th Street site is located approximately two miles north of the Town of Noah and eight miles east of the Town of Wellton, Yuma County, Arizona. The proposed action involves the realignment of County 8th Street between Mohawk Valley Road and approximately Avenue 36 ³/₄ E. (Figure 2).

The preferred alternative is the realignment and paving of County 8th Street in Yuma County, from Mohawk Valley to approximately Avenue 36 ³/₄ E. The existing unpaved roadway would be replaced with a 42 foot wide roadway consisting of a 13-foot-wide paved travel lane and an eight-foot aggregate based shoulder in each direction (Figures 3 and 4).

The roadway would be widened to straighten two curves, permitting vehicles to maintain constant speed. The topography is relatively flat but grading would be necessary to level existing berms adjacent to the current roadway. The project would include installing a 24-inch metal culvert to accommodate miscellaneous storm water runoff from the surrounding area to the south. There is an existing 72- inch culvert that will be extended to accommodate the new roadway. This culvert currently serves solely as a spillway when the irrigation district drains its canal.

The Proposed Action includes grading and paving approximately 6.2 acres of Reclamation land. The route is oriented northwest to southeast and is approximately one mile long. Construction would occur over a six to eight week period.

No disruption of utilities would occur and the present alignment would serve as a temporary detour around the construction area. No specific staging area would be used because of the linear nature of the project. All construction equipment would be parked along the roadway as construction proceeds. The speed limit for the preferred alternative would be 45 miles per hour.

Traffic is generally limited to residents of the rural area; therefore, only a slight increase in traffic volume is anticipated.

2.2.2 Maintenance Activities

Once completed, Yuma County will maintain the new County 8th Street roadway.

2.3 Other Alternatives

Three additional alternatives to the Proposed Action were considered but rejected because of safety and/or feasibility concerns. These alternatives are discussed below. None of the three alternatives were considered further.

2.1.1 Paving the present roadway alignment

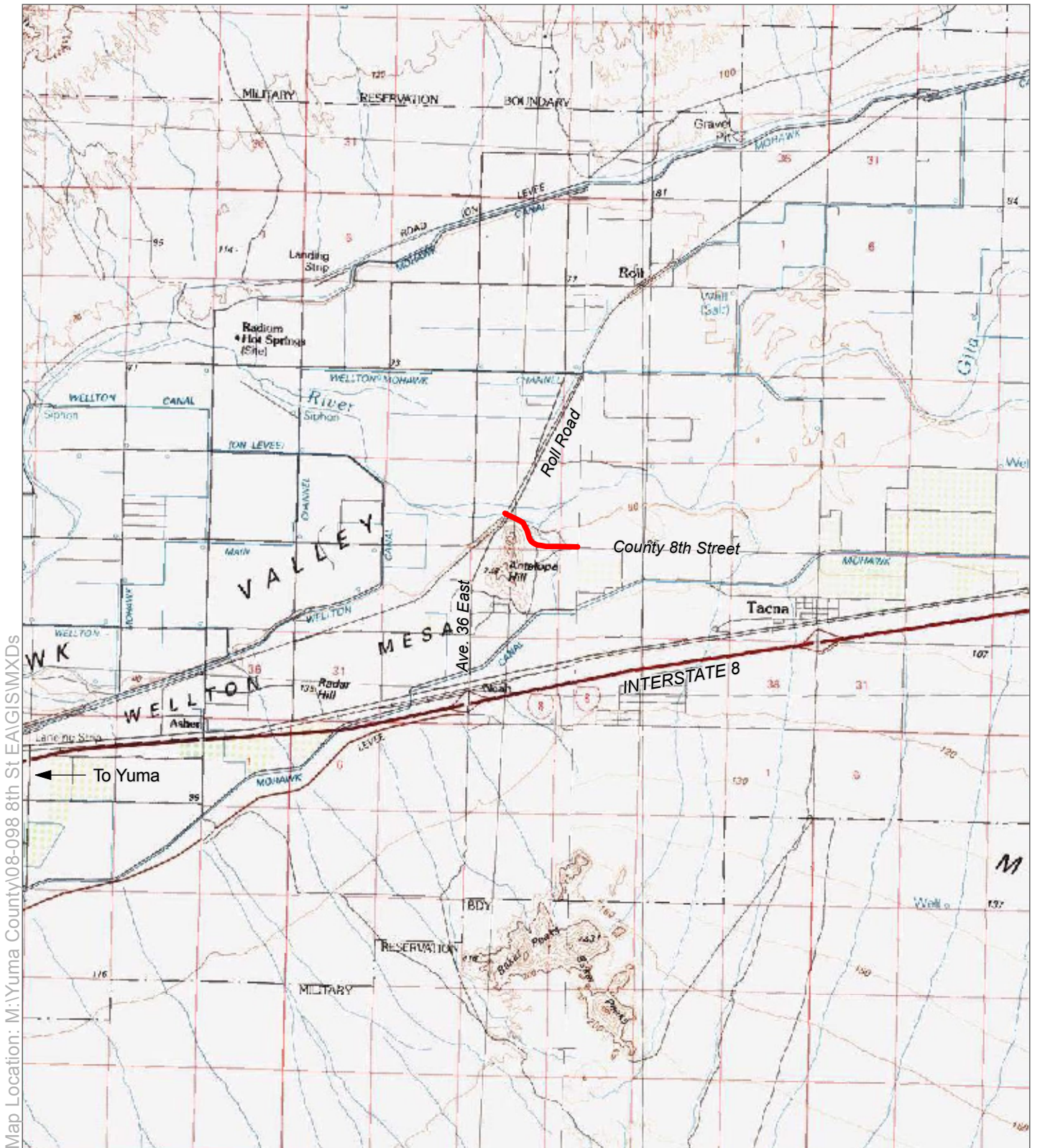
The first alternative would be to keep the present roadway alignment, and pave it. With the increased traction properties of pavement, vehicle speed would be anticipated to increase. This would create even more dangerous conditions because of the two sharp curves compared to existing conditions. In addition, the structural integrity of the existing roadway does not meet ASHSTO standards, so the roadbed would need to be graded.

2.1.2 Realigning the road but not paving it

The second alternative would be to realign the present roadway, smoothing the two sharp curves but not pave the surface. However, the structural integrity of the existing roadway does not meet current roadway standards, so the roadbed would need to be graded. Vehicle speed is expected to increase with greater visibility. It is possible that the roadway volume would increase as the road becomes recognized as a through-route, increasing the likelihood of accidents. The gravel roadway also would require additional maintenance if it receives more use.

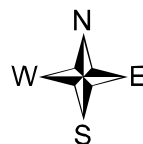
2.1.3 Using a different alignment

The third alternative would be to use a different alignment. Possibilities are constrained by the proximity of the Gila River and Antelope Hill. In addition, alternative alignments would require the disturbance of more land than the preferred alternative, because of the increased length of new roadway required to complete them.



**Realignment and Paving of County 8th Street
From Mohawk Valley Road
to Avenue 36 3/4 East**

T8S R17W Sections 21, 22, 27, 28
Yuma County, Arizona
Imagery: NAIP 2007
HEG Project No. 08-098

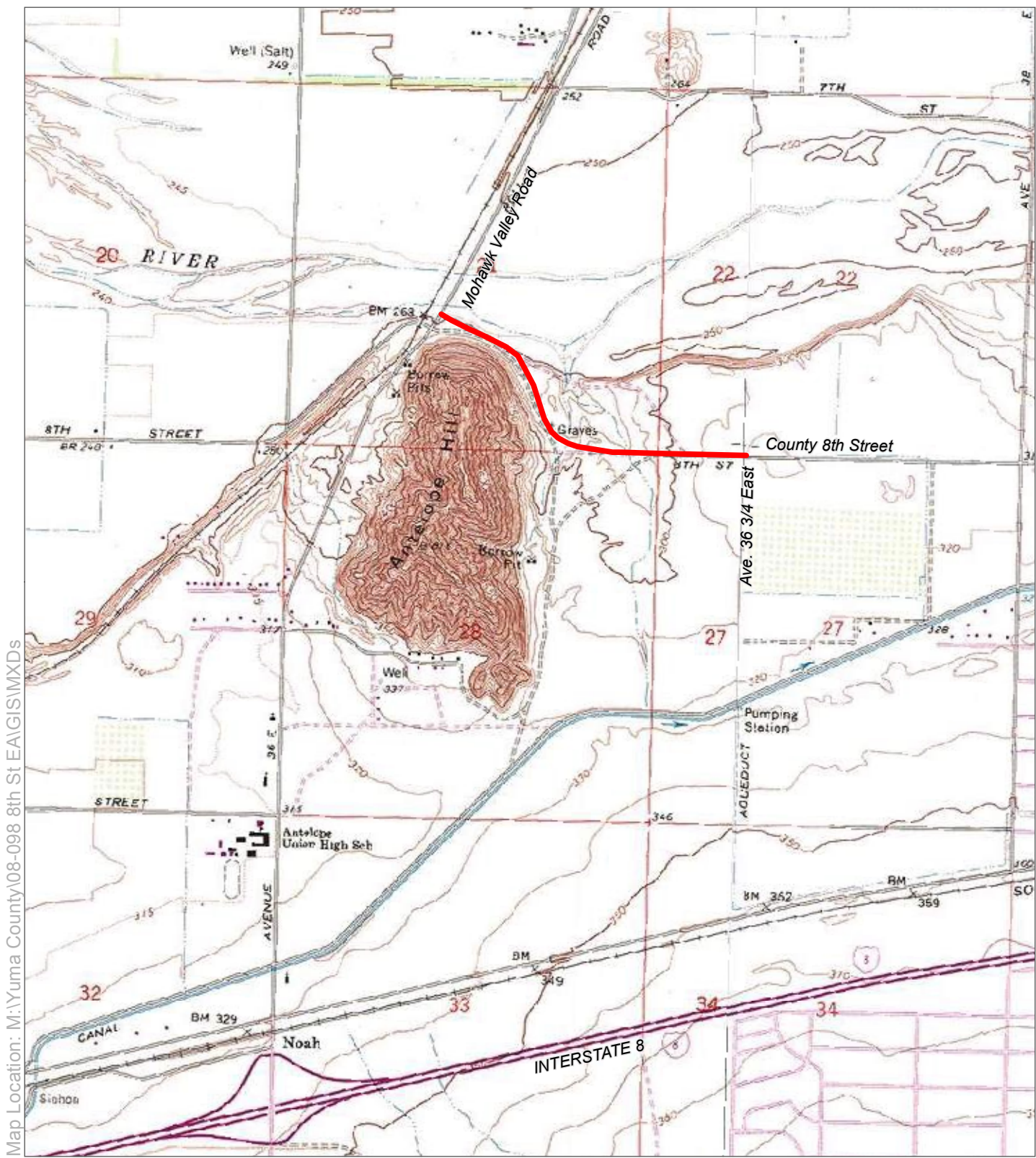


Project Area

0 2,000 4,000 Meters

0 2 4 Miles

Figure 2. Project Vicinity



**Realignment and Paving of County 8th Street
From Mohawk Valley Road
to Avenue 36 3/4 East**

T8S R17W Sections 21, 22, 27, 28
 USGS Quad: Wellston Mesa, Tacna
 Yuma County, Arizona
 Imagery: NAIP 2007
 HEG Project No. 08-098



Project Area

0 500 1,000 Meters

0 0.5 1 Miles

Figure 3. Project Area

Map Location: M:\Yuma County\08-098 8th St EA\GIS\MXD\Ds



<p>Realignment and Paving of County 8th Street From Mohawk Valley Road to Avenue 36 3/4 East</p> <p>T8S R17W Sections 21, 22, 27, 28 Yuma County, Arizona Imagery: NAIP 2007 HEG Project No. 08-098</p>	<p>— New Road Alignment — Existing Road Alignment</p> <p>0 250 500 Meters 0 0.25 0.5 Miles</p>
--	--

Figure 4. Road Alignment

3.0 Affected Environment and Environmental Consequences

This section describes the existing condition of the environmental components that could be affected by the Proposed Action and No Action Alternatives, if implemented. It also serves as the baseline for the comparison of alternatives. The following critical elements of the human environment are not present or would not be affected by the alternatives; therefore, they will not be addressed in this EA: Areas of Critical Environmental Concern, Farm Lands (Prime or Unique), Wild and Scenic Rivers, Wilderness, and Standard for Rangeland Health.

3.1 Land Use

The relevant resources described in this chapter are those that would have the potential to be affected by the proposed action if implemented. The effects (impacts or issues) to these resources created by the alternatives if implemented are discussed in Chapter 4. Land use in the project vicinity consists mainly of low density residential properties and open desert. The project area is not located on prime or unique farmland (pers. comm. S. Samarik, Natural Resource Conservation Service (NRCS), November 9, 2009).

3.1.1 Affected Environment

The County 8th Street realignment project is located in Yuma County, Arizona, approximately two miles north of the Town of Noah and eight miles east of the Town of Wellton. (Figure 4). The project area is bounded by the Gila River to the north, Antelope Hill to the west, and undisturbed desert and farmland to the east and south. The project area is situated on Reclamation lands.

3.1.2 Environmental Consequences

No Action – Under the No Action alternative, the realignment project would not take place. Use and status of the land would not change.

Proposed Action – Improvements and realignment of County 8th Street would be consistent with present land use in the local area. All activities undertaken as part of the proposed project would be compatible with adjacent land uses and consistent with Yuma County zoning of the project area. The project will not impact any prime or unique farmland (pers. comm. S. Samarik, NRCS, November 9, 2009).

3.1.3 Management and Mitigation Measures

No mitigation is necessary.

3.2 Air Quality

3.2.1 Affected Environment

The project area is within an air quality attainment zone for all criteria pollutants as designated by the Arizona Department of Environmental Quality (AZDEQ) using National Ambient Air Quality Standards (NAAQS). The nearest non-attainment area to the project area is the City of Yuma,

approximately 35 miles to the west, which has been designated a non-attainment area for Particulate Matter (PM₁₀). Major sources of PM₁₀ in Yuma County are non-industrial in nature, and include farming, erosion of soils, vehicle emissions, and emissions from excavation and equipment operation.

3.2.2 Environmental Consequences

No Action – There would be no change to the existing conditions and no effects to air quality.

Proposed Action – Under this alternative, PM₁₀ emissions from the project will increase during construction due to combustion of petroleum fuels, but will likely return to pre-construction levels once construction is complete. The amount of traffic along the roadway is not anticipated to increase enough to significantly increase the amount of Carbon dioxide emissions.

As County 8th Street is realigned and paved, soils would be disturbed, and the road would be graded and contoured. These activities would generate sporadic, temporary, and localized emissions of particulate matter (dust) and gaseous exhaust from vehicle and heavy equipment operation.

During windy conditions, dust would be eroded from stockpiles, but with atmospheric dispersal, it is unlikely that ambient PM₁₀ concentrations would be measurably changed. Thus, emissions would have a minimal, if any, effect on local ambient air quality and would not contribute appreciably to the area's non-attainment of the PM₁₀ standard.

As a result of heavy equipment use during construction, particulate matter would increase in the project area. The increased dust levels would only occur during construction. After construction, air quality is likely to increase due to the paved surface reducing the amount of airborne dust particles from vehicle traffic.

3.2.3 Management and Mitigation Measures

Although Yuma County does not require dust abatement permits, YCDDS will minimize potential effects on ambient air quality by spraying the roadway and construction areas with water and covering hauling trucks with tarps.

3.3 Biological Resources

3.3.1 Affected Environment

3.3.1.1 Fish and Wildlife

The area surrounding the County 8th Street realignment project is primarily undisturbed desert habitat. The roadway runs northwest-southeast and parallel to the Gila River. Wildlife in the project area consists of terrestrial vertebrate and invertebrate species common to the Lower Colorado River Subdivision of the greater Sonoran Desertscrub biotic community. Non-migratory birds common to this subdivision include Gila woodpecker (*Melanerpes uropygialis*), ash-throated

flycatcher (*Myiarchus cinerascens*), black-tailed gnatcatcher (*Polioptila melanura*), phainopepla (*Phainopepla nitens*), and black-throated sparrow (*Amphispiza bilineata*).

3.3.1.2 Threatened and Endangered Species

Preliminary review of the FWS List of Threatened and Endangered Species for Yuma County identified the Yuma clapper rail (*Rallus longirostris yumanensis*) (YCR) and southwestern willow flycatcher (*Empidonax traillii extimus*) (SWFL) as species with potential habitat in the project area. The BE conducted in 2004 for this EA addressed two species protected by the Endangered Species Act of 1973, as amended (U.S. Congress (1979)). These species were further evaluated based upon information provided by the AGFD Heritage Data Management System (HDMS) and a site visit conducted by a qualified biologist (11 February 2004).

The AGFD HDMS query conducted in October, 2008 listed only the YCR as potentially occurring within two miles of the project area. The updated query results exclude the southwestern willow flycatcher from the special status species list. However the results from the 2004 BE are presented below.

Yuma Clapper Rail

The YCR was listed as an endangered species in 1967. Critical habitat has not been designated for this species. The YCR Recovery Plan (USFWS 1983) was signed in 1983. The YCR is primarily associated with freshwater marshes and the highest densities of this subspecies occur in mature stands of dense to moderately dense cattails and bulrushes. The main factors determining habitat suitability are the annual range in water depth and the presence of mats of marsh vegetation (Rosenberg et al. 1991). The main threats to the YCR are habitat destruction through river channelization, dredging, and drying and flooding of marshes; wildfires; and toxic levels of heavy metals (AGFD 2001).

Southwestern Willow Flycatcher

The SWFL is a small passerine bird that was listed as endangered in 1995 with critical habitat designated in 1997. In 2001, the 10th Circuit Court of Appeals set aside the critical habitat designation and instructed the USFWS to issue new critical habitat. In 2004 the USFWS re-opened critical habitat designation and a ruling was issued in 2005 that includes approximately 120,824 acres within Arizona, California, Nevada, New Mexico, and Utah. There is no critical habitat designated within Yuma County, Arizona (USFWS 2005). The SWFL is a riparian obligate species, nesting along rivers, streams, and other wetlands where dense growths of willow (*Salix* spp.), seepwillow (*Baccharis* sp.), buttonbush (*Cephalanthus* sp.), boxelder (*Acer negundo*), saltcedar (*Tamarix chinensis*), carrizo (*Phragmites australis*) or other plants are present, often with a scattered overstory of cottonwood (*Populus fremontii*) and/or willow (*Salix* spp.) (AGFD 2002). Threats to the SWFL include loss, fragmentation and modification of breeding habitat, and brood parasitism by the brown-headed cowbird (*Molothrus ater*) (Sogge, et al. 1997; McCarthey, et al. 1998).

3.3.1.3 Migratory Birds

With the exception of domestic pigeons (*Columba livia*), house sparrows (*Passer domesticus*), and European starlings (*Sturnus vulgaris*), all birds in the Proposed Action vicinity are protected under

the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. 703-712). The Migratory Bird Treaty Act states it is unlawful to take, kill, or possess migratory birds that are listed under its protection.

3.3.1.4 Vegetation and Wetlands/Riparian Zones

The Gila River is located approximately 0.1 mile north of the intersection of County 8th Street and Mohawk Valley Road. This location marks the western terminus of the Proposed Action. Tacna Marsh, considered an area of high biological diversity and one of Arizona's top 50 prioritized Heritage Water Sites (Stevens 2008) is located along the river within sections 21-24 of Township 8 South, Range 17 West (Figure 5). Although the project area is entirely within Tacna Marsh, no wetlands exist within or adjacent to the boundaries of the project area.

3.3.1.5 Non-Native Invasive Species

No non-native plants were located within the project area (Harris Environmental 2005).

3.3.2. Environmental Consequences

3.3.2.1 Fish and Wildlife

No Action – Under the No Action alternative, the County 8th Street realignment project would not be implemented, therefore there are no adverse impacts to wildlife resources.

Proposed Action – The Proposed Action will not convert any undisturbed land (i.e. wildlife habitat) to roadway. There would be no impact to fish and wildlife if the Proposed Action were implemented.

3.3.2.2 Threatened and Endangered Species

No Action – Under the No Action alternative, the County 8th Street realignment project would not be implemented, therefore no adverse impacts to wildlife resources.

Proposed Action – The Proposed Action will not impact any suitable habitat for YCP or SWFL because the habitat components necessary to support these species does not occur within the project area. In addition, the project is not located within the proposed or designated critical habitats.

Yuma Clapper Rail

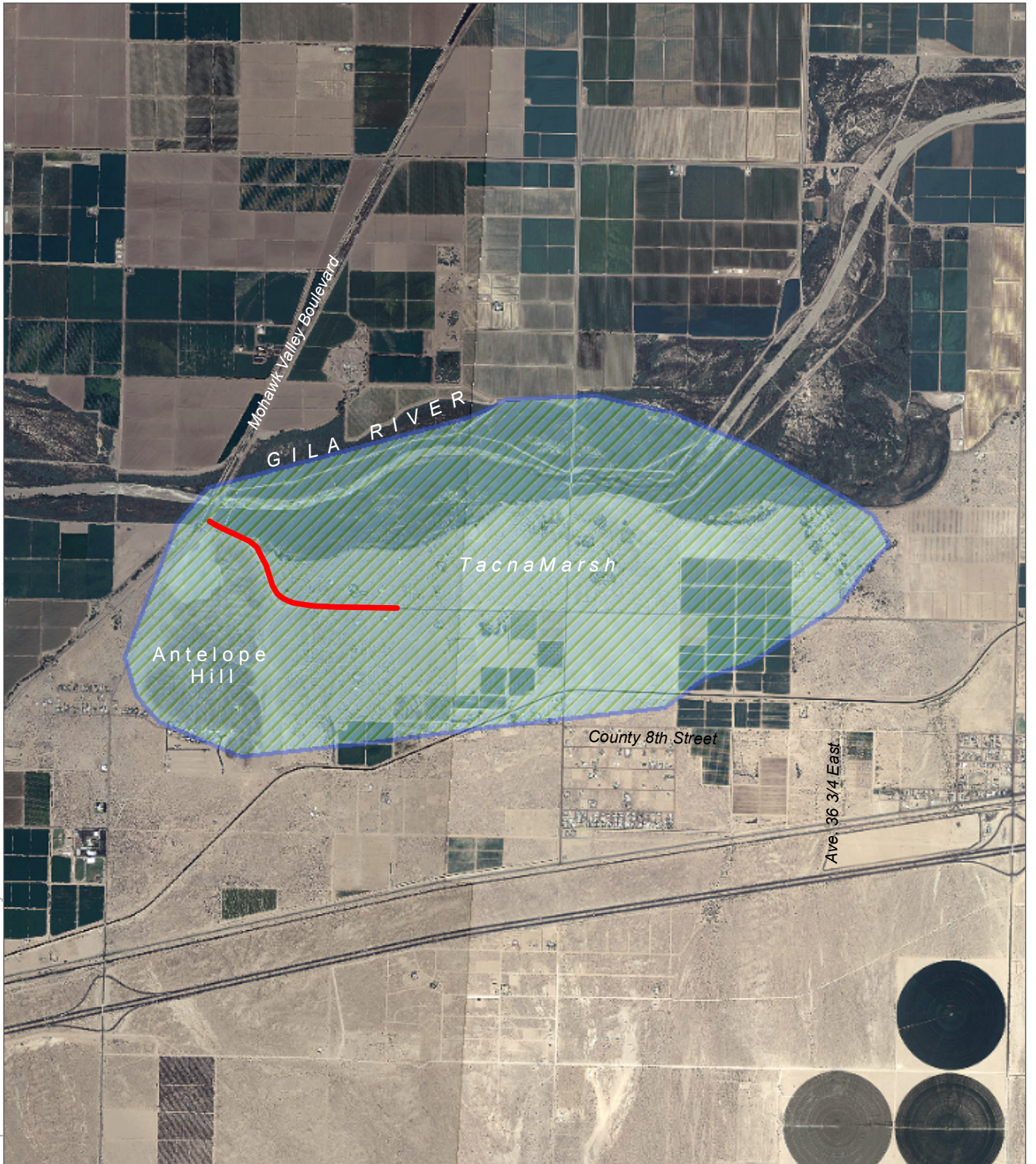
The proposed project area does not contain the habitat components for YCR; therefore, the proposed action will not result in loss of habitat. However, breeding pairs of YCR have been known to occur approximately 0.5 mile east of the proposed project area (pers. comm. L. Piest, AGFD, November 2009). The proposed alignment is closest to the Gila River at the western terminus (0.1 mile), increasing in distance towards the eastern terminus (0.5 miles).

Noise generated during project construction would be short-term and marginally louder than existing conditions. Because of the distance between the project area and the Gila River, it is doubtful that noise would be audible at nest sites. Once the project is complete, no significant

increase in traffic volume or noise levels is anticipated.

Because neither YCR nor their habitat is known to occur in the project vicinity the Proposed Action will not affect the YCR.

Map Location: M:\Yuma County\08-098 8th St EA\GIS\MXD\Ds



**Realignment and Paving of County 8th Street
From Mohawk Valley Road
to Avenue 36 3/4 East**

T8S R17W Sections 21, 22, 27, 28
Yuma County, Arizona
Imagery: NAIP 2007
HEG Project No. 08-098



 Project Area

0 0.5 1
 Kilometers


0 0.5 1
 Miles

Figure 5. Tacna Marsh

Therefore, the proposed realignment and paving of County 8th Street will not affect the YCR or its habitat.

Southwestern Willow Flycatcher

Within the proposed project area, the tributaries of the Gila River support dense vegetation but typically contain no surface water. The tamarisk/shrub thickets are approximately two meters in height and do not provide breeding habitat for SWFL. Furthermore, there are no records of SWFL in the vicinity of the project area; the closest known locations occur in the Colorado River approximately 30 miles to the west (AGFD 2009).

Because neither SWFL nor their habitat is known to occur in the project vicinity the Proposed Action will not affect the SWFL.

3.3.2.3 Migratory Birds

No Action – If the County 8th Street realignment project is not implemented, there would be no change to the existing conditions; therefore no additional impacts to migratory birds.

Proposed Action - The proposed action may increase vehicular rate of speed, thereby increasing the bird-vehicle interactions and increasing avian mortality. However, the chance of a slight increase in bird mortality would not jeopardize the populations of any migratory bird species.

3.3.2.4 Vegetation

Vegetation in the project vicinity is largely characteristic of the creosotebush-white bursage series of the Lower Colorado River Valley subdivision of Sonoran Desertscrub (Turner and Brown 1994). Species diversity is relatively low, consisting mainly of creosote (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*). The dry tributary washes that cross the project area contain dense shrubs including mesquite (*Prosopis* spp.), acacia (*Acacia* spp.), arrowweed (*Pluchea* spp.), and salt cedar (*Tamarix* spp.). A complete list of plant species observed in the project area is presented in Appendix A.

No Action - There would be no change to the existing conditions and no effects to vegetation.

Proposed Action – Although vegetation will be removed from within the ROW for the proposed project, plant species to be removed are common and widespread throughout the project vicinity.

3.3.3 Management and Mitigation Measures

To minimize impacts to vegetation in the vicinity, project work area shall be clearly flagged or similarly marked at the outer boundaries to define the limit of work activities. All workers shall be instructed that their activities are restricted to flagged and cleared areas.

Certain portions of the old alignment that are not part of the new road shall be seeded with native plant species.

3.4 Cultural Resources

3.4.1 Affected Environment

The National Historic Preservation Act (NHPA) establishes national policy for protecting significant cultural resources that are defined as “historic properties” under 36 CFR 60.4. NHPA Section 106 (36 CFR §800) requires that federal agencies consider and evaluate the effect that federal projects may have on historic properties under their jurisdiction.

A Class I records search and a Class III cultural resource inventory were conducted within 6.2 acres for the County 8th Street realignment project (O’Mack et al 2004).

The records search revealed that five of the six archaeological sites previously recorded within 0.5 miles could potentially exist in the proposed ROW. The Class III survey area covered a 150 foot-wide corridor slightly wider than the proposed ROW. No new sites were found during the field survey, although two of the previously recorded sites were found in the proposed ROW (Table 1), and two isolated prehistoric artifacts were documented (O’Mack et al 2004). A third site (AZ X:8:77) was located outside, but close to the ROW.

Table 1. Archaeological and historical sites in the vicinity of the proposed realignment.

ASM Site No.	Site Name	NRHP Status	In proposed ROW?
AZ T:15:32	Butterfield Overland Mail Route	Determined eligible	no
AZ X:8:6	Antelope Hill (including Antelope Hill Stage Station)	Determined eligible	yes
AZ X:8:13	Antelope Hill bridge	Listed	no
AZ X:8:74	Severo Mendoza Homestead	Determined eligible	yes
AZ X:8:77	Severo Mendoza Cemetery	Determined not eligible	no

Key: ASM = Arizona State Museum, NRHP = National Register of Historic Places.

The historic route of the Butterfield Overland Mail (AZ T:15:32) is eligible for listing in the NHRP. Parts of the former stage route later became the Tucson-Yuma Road.

Antelope Hill (AZ X:8:6) is a pre-historic and historic-period site that includes petroglyphs and probably the Antelope Stage Station and is eligible for listing in NRHP.

The abandoned Antelope Hill Bridge (AZ X:8:13) is currently listed in the NRHP.

The early twentieth-century Severo Mendoza homestead (AZ X:8:74) is within the proposed ROW and is eligible for listing in NRHP. The associated three-grave cemetery (AZ X:8:77) is not within the proposed ROW and is not eligible for listing in NRHP.

3.4.2 Environmental Consequences

No Action – There would be no change to the existing conditions and no effects to cultural resources.

Proposed Action – No previously recorded sections of the Butterfield Overland Mail were found within the project area, and no trace was found during the Class III survey, therefore the Proposed Action would not affect the site.

The proposed road realignment ROW is further away from Antelope Hill than the existing road. The Class III survey found that no known features would be affected by the proposed action, and that the action would not affect NRHP eligibility.

The Antelope Hill Bridge crosses the Gila River north of the proposed ROW, and therefore construction activities would not impact the site.

The proposed road realignment ROW passes through a portion of the Severo Mendoza homestead and within 25 feet of the historical-period cemetery. The Proposed Action will impact two surface concentrations of artifacts at the homestead, but will not directly impact the cemetery site.

3.4.3 Management and Mitigation Measures

See Mitigation measures in section 3.5.3.

3.5 Indian Trust Assets

3.5.1 Affected Environment

Comments on project related impacts to traditional properties were requested from 22 tribal communities (O’Mack et al 2004). Six groups: the Cocopah Indian Tribe, Fort Yuma Quechan Indian Tribe, Tohono O’odham Nation, Gila River Indian Community (GRIC), and Hopi Tribe, have expressed verbal or written concerns over increased traffic and visitation to Antelope Hill if the project is approved. The Salt River Pima-Maricopa Indian Community, GRIC, and the Hopi Tribe have deferred to the opinions of the Cocopah Indian Tribe, Quechan Indian Tribe, and Tohono O’odham Indian Nation. The Cocopah have concurred with the MOA but the Quechan and Tohono O’odham have not returned the signed agreement. Reclamation continues to consult with the three tribes.

3.5.2 Environmental Consequences

No Action - There would be no change to the existing conditions and no effects to Indian Trust Assets.

Proposed Action - The proposed realignment ROW passes through the northernmost portion of Antelope Hill (AZ X:8:6), a pre-historic and historic-period site that includes petroglyphs and

probably the Antelope Stage Station. No site features would be affected by the realignment project. However, the proposed improvements could indirectly lead to an increase in traffic and vandalism of the site.

The ROW also passes through a portion of the early twentieth-century Severo Mendoza homestead (AZ X:8:74) and within 25 feet of a three-grave cemetery associated with the homestead (AZ X:8:77). The proposed realignment will adversely impact two surface concentrations of artifacts at the homestead, but will not directly impact the cemetery site.

The Tohono O'odham Nation and the Cocopah Indian Tribe questioned the project need and stated the realigned road would adversely affect the site by facilitating more vehicle and pedestrian traffic near the hill, which may lead to an increase in disturbance and vandalism. The Gila River Indian Community had similar concerns as well as impacts on the buffer established around the hill, although no such buffer exists. They deferred further comment to the opinions of the Cocopah and the Fort Yuma Quechan Tribe. The Hopi Tribe recommended that the project be designed to avoid the site, or the site boundary be modified to omit portions that do not contain Native American features. The Hopi defer further comment to other interested tribes and Arizona SHPO.

3.5.3 Management and Mitigation Measures

To protect and minimize impacts to the pre-historic and historic resources in the project area during the proposed action, mitigation measures were formalized in a MOA between Reclamation, SHPO, and Yuma County (Appendix B). These measures include presence of an archaeological monitor during construction on the northern two-thirds of the proposed realignment. This segment may have existing buried features associated with the Antelope Hill Station of the Butterfield Overland Mail. Approximately 1,100 feet of post and cable barrier with additional signage will be installed to the east on the north side of the hill to minimize further vandalism. Site stewards will continue to monitor the site. Because the concentration of surface artifacts may indicate the presence of buried artifacts at the Mendoza homestead site, data recovery will be conducted in all areas of the site affected by project activities. Further, the historic-period cemetery will be surrounded by a permanent post-and-cable barrier to prevent vehicles from entering during and after construction. Construction personnel will be instructed to stay clear of the Antelope Hill Bridge on its southern extent.

The Arizona SHPO concurred with Reclamation that project effects would be limited to the Antelope Hill and Mendoza Homestead sites, and that the mitigation measures would adequately reduce the adverse effects on the Mendoza Homestead site below significant levels (Appendix B).

3.6 Energy Policy

3.6.1 Affected Environment

The County 8th Street realignment project and the surrounding area contain no features related to the energy development, production, supply, or distribution.

3.6.2 Environmental Consequences

The alternatives were evaluated for their potential impact to energy in the future in accordance with Executive Orders 13211 and 13212 (Presidential Documents 2001).

No Action – The No Action alternative would not have an adverse impact on energy development production, supply, and/or distribution.

Proposed Action – The Proposed Action would not have an adverse impact on energy development production, supply, and/or distribution.

3.6.3 Management and Mitigation Measures

No mitigation measures are proposed.

3.7 Environmental Justice and Socio-Economic Conditions

3.7.1 Affected Environment

As per Executive Order 12898, *Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations*, requires federal agencies to achieve environmental justice “to the greatest extent practicable” by identifying and addressing “disproportionately high and adverse human health or environmental effects of its activities on minority populations and low-income populations...”.

Minority populations include all persons identified by the Census of Population and Housing to be of Hispanic or Latino Origin, as well as, non-Hispanic persons who are African American, American Indian and Alaska Native, Native Hawaiian or other Pacific Islander.

Low-income populations are those that fall within the annual statistical poverty thresholds from the Bureau of the Census’ Current Population Reports, Series P-60 on Income and Poverty. If the total income of a person’s family is less than the threshold appropriate for that family, then the person is living below the poverty level, together with every member with his or her family (U.S. Census Bureau 2000). The definition of poverty is dependent on the size of the family. For example, the poverty threshold for a family of three is \$13,290; whereas, \$17, 029 is the threshold for a family of four.

Community Profile

The project area lies within Yuma County and the nearest towns are Wellton (approximately eight miles to the west), Noah (approximately two miles to the south), and Tacna (approximately five miles east). Wellton has a population of approximately 1,829 residents. Tacna has a population of approximately 555 residents. Census data was not available for Noah. These towns are located along the I-8 corridor. Between 1990 and 2002, the population of Yuma County grew by 58.5 percent; statewide population grew by 49.3 percent during the same period. The City of Yuma contained 47.9 percent of the Yuma County population in 2002, a decrease from 51.4 percent in 1990 (Census Bureau 1990).

Slightly more than half (50.5 percent) of Yuma County’s residents are Hispanic or Latino, while the state figure is 25.2 percent. Approximately 44.4 percent of the remaining population of Yuma County is non-Hispanic white. The remaining less than 6 percent of the population include Asians, Blacks, and other non-Hispanic ethnic groups. The median age for Yuma County residents is 33.9 years. The county has a high number of senior citizens, with 36.0 percent of the population over the age of 62. The majority of the elderly in Yuma County are non-Hispanic whites (Census Bureau 2000).

Minimal facilities are available in the nearby towns of Wellton, Noah, and Tacna, and the majority of schools, medical facilities, shops, services, and recreational facilities are in the City of Yuma, approximately 35 miles west of the project area. Information on total population, minority population, and poverty status for Yuma County and surrounding cities is provided in Table 2.

Table 2. Information on total population, minority population and poverty status for Yuma County and surrounding towns.

Location	Total Population	Minority Population	Percent Minority	Population Living Below Poverty Level	Percent Population Living Below Poverty Level
Yuma County	160,026	88,896	55.6	29,670	19.2
Wellton	1,829	582	31.8	390	21.3
Tacna	555	185	33.3	139	25.1
Noah	N/A	N/A	N/A	N/A	N/A

Source: US Census Bureau 2000

3.7.2 Environmental Consequences

No Action - There would be no change to the existing conditions and no effects to socioeconomics.

Proposed Action - Yuma County has a large, primarily low-income Hispanic population. Project impacts, if any, would be short-term and would not affect this population disproportionately greater than other populations. The proposed action will have a long-term beneficial impact on the community by increasing safety of travel on County 8th Street. The proposed action would not measurably affect local socioeconomic character. During construction, a traffic detour would be provided south of the project area, using Avenue 36 E, Old Highway 80, and Avenue 38 E.

3.7.3 Management and Mitigation Measures

There is no environmental justice or socio-economic issues involved with any of the alternatives

proposed for the project. The project will not adversely affect low-income or minority populations, therefore no management or mitigation measures will be necessary.

3.8 Floodplain

3.8.1 Affected Environment

A review of the Federal Emergency Management Agency Flood Insurance Rate Map for the project area indicates that the project is located in an area of minimal flood hazard. It is determined to be outside of the 500-year flood zone and protected by levee from 100-year floods. The Gila River is located 0.1 miles northwest of the project area, and the Colorado River is located 30 miles to the west. Flood events in the area are more likely to be a result of Gila River than the Colorado River because the Gila River has considerably fewer flood control features and is located much closer to the project area. Furthermore, the Colorado River is approximately 130 feet lower in elevation than the project area. Historically, the Gila River floods on average every ten years with the last major event occurring in 1993. The Proposed Action will not affect the Gila River floodplain.

3.8.2 Environmental Consequences

No Action – The No Action alternative would not impact the integrity of the Gila River floodplain. There would be no change to the existing conditions.

Proposed Action – The Proposed Action would not impact the Gila River floodplain.

3.8.3 Management and Mitigation Measures

There will be no impact to the Gila River or its floodplain; therefore no mitigation measures are necessary.

3.9 Hazardous or Solid Waste

3.9.1 Affected Environment

There are no landfills (municipal or non-municipal) nor any known hazardous or solid waste sites along or near the project area. During a Preliminary Initial Site Assessment (Bowers 2009), several abandoned tires and scattered bottles and cans resulting from illegal dumping were observed. However, the site assessment did not reveal any indications of hazardous environmental conditions. No further hazardous materials studies were found to be necessary.

3.9.2 Environmental Consequences

No Action - The No Action alternative would not change the existing conditions and no effects related to hazardous and toxic materials, and waste.

Proposed Action - With the exception of potential accidental spills of contaminants during construction (e.g., fuel, lubricants, cleaning agents), the Proposed Action would not affect the quality of soil at the site.

3.9.3 Management and Mitigation Measures

Hazardous materials anticipated to be used during construction of the project are small quantities of fuels, lubricants, and/or petroleum products. Should an accident or spill occur, YCDDS or its contractor would implement a Spill Prevention, Control, and Countermeasures Plan (SPCCP) to contain and/or remove contamination to soils.

Areas for refueling of equipment would be chosen so as to prevent any accidental fuel leakage from contaminating surface water, groundwater, or soils.

3.10 Noise

3.10.1 Affected Environment

Current noise levels in the project vicinity are relatively low and consist of infrequent vehicle traffic along County 8th Street and household noise associated with nearby residences. The Proposed Action is in a rural part of Yuma County and is largely surrounded by desert and farmland. There are no major businesses or residences in the immediate vicinity. Interstate Highway 8 is located 1.5 miles to the south of the project area and runs somewhat parallel to County 8th Street. This highway carries the majority of east-west traffic.

3.10.2 Environmental Consequences

No Action - In the No Action alternative, current noise levels including noise from motor vehicles along County 8th Street would continue at the present levels.

Proposed Action- The operation of heavy equipment to implement the proposed project would cause temporary noise disturbances in the project area. This would not affect residences, neighborhoods or commercial facilities because the surrounding area has no development associated with it.

Because of the nature of the work this project involves, this project will increase current noise levels. However, construction noise will 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.

As a result of heavy equipment operation during construction, particulate matter and noise would increase in the project area. The increased noise levels only would occur during construction. After construction, noise levels are expected to increase only minimally with the slight increase in expected traffic return to the same conditions as existed before construction activities.

3.10.3 Management and Mitigation Measures

Because there are no nearby residential areas, no mitigation measures are required.

3.11 Geology and Soils

3.11.1 Affected Environment

The project area is located within the Yuma Valley, which is a broad plain with little topographic relief. The Yuma area is characterized by floodplains and terraces, crossed by many arroyos and washes and is separated into valleys by low, rocky rugged hills and mountains oriented in a north-south or northwest-southeast direction (Reclamation 1975).

The project area contains areas of three soil types: 1) Rositas sand, 2) Lagunita loamy sand, and 3) Salorthids Family (USDA Soil Conservation Service 1980). The first two soil types comprise the majority of the project area and are characterized as deep and somewhat excessively drained, mostly level, with rapid permeability and slow run off. The Salorthids Family is also deep, but poorly drained, strongly saline soils on the floodplain of the Gila River. Permeability is moderate to slow and surface runoff is medium. These soils are saturated with saline water at shallow to moderate depth; the capillary rise of the saline water and its evaporation concentrates the salts in the upper part of the soil profile, leaving a white crust on the surface.

3.11.2 Environmental Consequences

No Action - Under this alternative, there would be no changes to soils or geology. Disturbances would continue as they are currently.

Proposed Action - Implementation of the Proposed Action would disturb soils during construction of the roadway; however, these disturbances are short-term and would cease after construction is completed.

3.11.3 Management and Mitigation Measures

No mitigation measures are proposed.

3.12 Surface and Groundwater Quality

3.12.1 Affected Environment

3.12.1.1 Surface Water

The Yuma area receives approximately 3.5 inches of rainfall a year, and the mean summer temperature is approximately 31 degrees Celsius (Turner and Brown 1994). This combination of low annual precipitation and relatively high summer temperature makes the area the driest in the Sonoran Desert (Turner and Brown 1994).

There are no permanent surface water features within the project area. However, the Gila River is located less than 0.1 mile north of the western portion of the project area, and approximately 0.5 mile from the eastern portion of the project area. The Gila River contains permanent water and supports emergent riparian vegetation species including cattails (*Typha* sp.), cottonwood (*Populus fremontii*), willow (*Salix* sp.), and tamarisk. In addition, two ephemeral tributaries cross the project area and a series of man-made surface water canals are present in the vicinity. The closest canal to the project area is the Mohawk Canal which lies approximately 0.5 mile to the south. The project includes a 24-inch culvert to accommodate storm water runoff from the surrounding area to the south.

3.12.1.2 Groundwater

Antelope Water Company is largely the provider of water service to the residents in the vicinity of the project area; the source is not groundwater, but canal water (Harris 2004). There are also several groundwater wells in the vicinity of the project area.

3.12.2 Environmental Consequences

No Action - There would be no change to the existing conditions and no effects to water resources.

Proposed Action - Vehicles and equipment used during construction are potential sources of water contaminants (e.g., fuel, lubricants, and cleaning agents). Should an accident or spill occur, YCDDS would implement a SPCCP to contain and remediate contamination to water bodies.

With the exception of accidental spills of contaminants (e.g., fuel, lubricants, and cleaning agents), the realignment and repaving of County 8th Street would not affect the quality or quantity of groundwater at the site.

3.12.3 Management and Mitigation Measures

No mitigation measures are proposed; however, should an accident or spills occur, YCDDS would implement a Spill Prevention, Control, and Countermeasures Plan (SPCCP) to contain and/or remove contamination to groundwater.

3.13 Cumulative Impacts

3.13.1 Affected Environment

Cumulative impacts are those “effects that are the result of incremental impacts of an action, when added to other past, present, and reasonably foreseeable future actions, regardless of which agency... or person undertakes such actions” (Bass et al. 2001).

3.13.2 Environmental Consequences

No Action - Under a no action scenario the roadway would remain in its present configuration,

and there would be no cumulative impacts.

Proposed Action – This project demonstrates a low level of proposed impacts. Paving the roadway has the potential to directly impact the amount of traffic and vehicular speed, which in turn has the potential to increase wildlife mortality along the roadway. Increased accessibility to the area may also increase the amount of vandalism and theft of cultural resources, as well as illegal trash dumping in the area. The increase in graded land within the project area may increase invasive plant species within the project area.

4.0 Consultation, Coordination, and List of Preparers

4.1 Agencies Consulted

AGFD. Letter received January 22, 2004 regarding special-status species present within 2 miles of the proposed project area.

AGFD. Email received November 1, 2009 from Lin Piest regarding the potential for YCR and SWFL occurring within the project area.

NRCS. Information regarding soils received from Robert Wilson, Chandler Soil Survey Office (September 14, 2004).

NRCS. Information regarding prime and unique farmland received from Bobbi McDermot, Yuma Service Center (August 31, 2004).

NRCS. Information regarding prime and unique farmland received from Steve Samaris, Phoenix Service Center, November 1, 2009.

4.2 List of Preparers

4.2.1 Bureau of Reclamation

Renee Kolvet	Archaeologist
Julian DeSantiago	Environmental Protection Specialist
Nick Heatwole	Environmental Protection Specialist

4.2.2 Harris Environmental Group Inc.

Lisa K. Harris, Ph.D.	Principal
Robin Llewellyn	Senior Biologist
Su Benaron	Senior Archaeologist
Kim Hould	Wildlife Biologist

5.0 References

Arizona Game and Fish Department

- 2002 *Empidonax traillii extimus*. Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, AZ. 5 pp.
- 2001 *Rallus longirostris yumanensis*. Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, AZ. 10 pp.
- 2009 Heritage Data Management System
http://www.gf.state.az.us/w_c/edits/images/empitrex.gif

R. E. Bass, A. I. Herson, and K. M. Bogdan

- 2001 The NEPA Book, Solano Press Books, Point Arena, CA.

BEC (Bowers Environmental Consulting)

- 2009 Preliminary Initial Site Assessment: Realignment and Paving of County 8th Street From Mohawk Valley Road to Avenue 36 ¾ East, Yuma County Arizona.

Bureau of Reclamation

- 1975 Final Environmental Impact Statement: Colorado River Basin Salinity Control Project, Title 1 (FES 75-57). U.S. Department of Interior, Bureau of Reclamation, Lower Colorado Region, June 18, 1975.
- 2000 National Environmental Policy Act Handbook (Public Review Draft). U.S. Department of Interior, Bureau of Reclamation.

Harris Environmental Group, Inc.

- 2004 Biological Evaluation for Realignment and Paving of County 8th Street from Mohawk Valley Road to Avenue 36 ¾ East, Yuma County Arizona.

Rosenberg, K.V., R. D. Ohmart, W. C. Hunter, and B. W. Anderson

- 1991 Birds of the Lower Colorado River. The University of Arizona Press, Tucson, Arizona. 416 pp.

Stevens, Lawrence E.

- 2008 Arizona Heritage Waters: Draft Final Report to the Arizona Water Institute. Museum of Northern Arizona. Flagstaff, Arizona.

O'Mack, Scott, Scott Thompson, and Heather Miljour

- 2004 *A Cultural Resources Assessment for the Proposed County 8th Street Realignment, Yuma County, Arizona*. SRI Technical report 04-59. Statistical Research, Inc., Tucson.

Presidential Documents

- 2001 Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use. Federal Register: May 22, 2001 (Volume 66, Number 99).

2001 Actions To Expedite Energy-Related Projects. Federal Register: May 22, 2001 (Volume 66, Number 99).

Turner, R. M. and D. E. Brown.

1994 Tropical-Subtropical Desertlands. Pages 180 – 222 *in* Biotic Communities: Southwestern United States and Northwestern Mexico, D. E. Brown, ed. University of Utah Press, Salt Lake City.

United States Department of Agriculture Soil Conservation Service.

1980 Soil Survey of the Yuma-Wellton Area: Parts of Yuma County, Arizona, and Imperial County, California. Washington, D.C. 104 pp.

United States Census Bureau

1990 Census 1990. <http://www.census.gov/main/www/cen1990.html>.

2000 Census 2000. <http://www.census.gov/main/www/cen2000.html>.

United States Congress

1978 Endangered Species Act Amendments of 1978, Legislative History.” U.S. Code Congressional and Administrative News Volume 7. St. Paul, Minnesota: West Publishing Co.

U.S. Fish and Wildlife Service

2005 Endangered and threatened species; determination of endangered status of southwestern willow flycatcher. Federal Register: October 19, 2005 (Volume 70, Number 201).

Appendix A.

Plants observed within the proposed project site

Scientific Name	Common Name
<i>Acacia</i> sp.	acacia
<i>Ambrosia dumosa</i>	white bursage
<i>Atriplex polycarpa</i>	desert saltbush
<i>Encelia farinosa</i>	brittlebush
<i>Ephedra</i> sp.	Mormon tea
<i>Larrea tridentata</i>	Creosote bush
<i>Parkinsonia florida</i>	blue palo verde
<i>Pluchea sericea</i>	arrowweed
<i>Porophyllum gracile</i>	odora
<i>Prosopis</i> sp.	mesquite
<i>Suaeda torreyana</i>	seepweed
<i>Tamarix</i> sp.	tamarisk

Appendix B. MOA