

RECLAMATION

Managing Water in the West

Environmental Assessment

**United States Department of the Interior Bureau of Reclamation
and City of Yuma Land Conveyance
Yuma, AZ**



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

June 2010

ACRONYMS/ ABBREVIATIONS

AAQS	Ambient Air Quality Standards
ADEQ	Arizona Department of Environmental Quality
ANPL	Arizona Native Plant Law
AZGFD	Arizona Game and Fish Department
BLM	Bureau of Land Management
CEQ	Council of Environmental Quality
CFR	Code of Federal Regulation
COY	City of Yuma
dB	Decibel
dBA	A weighted sound level
EA	Environmental Assessment
ESA	Endangered Species Act
EPA	Environmental Protection Agency
GSRB&M	Gila and Salt River Baseline & Meridian
Hz	Hertz
HDMS	Heritage Data Management System
ITAs	Indian Trust Assets
L_{eq}	Equivalent sound level
L_{max}	maximum sound indicator
L_{min}	minimum sound indicator
NAAQS	National Ambient Air Quality Standards
NEAP	Natural Events Action Plan
NEPA	National Environmental Policy Act
OSHA	Occupational Safety and Health Administration
PM ₁₀	Particulate Matter Less Than 10 Microns
RCRA	Resource Conservation and Recovery Act
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
USFWS	U.S. Fish and Wildlife Service
WSC	Wildlife Species of Special Concern
YGB	Yuma Groundwater Basin

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1.0 PURPOSE AND NEED

This Environmental Assessment (EA) has been prepared in accordance with the National Environmental Policy Act (NEPA) and United States Bureau of Reclamation (Reclamation) guidelines. This EA summarizes the environmental effects of implementation of the proposed land conveyance (Proposed Project) between the City of Yuma (COY) and Reclamation.

The EA describes the Proposed Project, alternatives, and the potential environmental impacts of the project. It also sets forth the consultation used in preparing this EA.

1.1 BACKGROUND

The COY for many years has been seeking avenues to improve tourism and revitalize the historic downtown area. In 2008 the COY proposed to construct a parking lot for the future Yuma, Arizona Welcome Center. This project was to be constructed on Reclamation land which was to be licensed to the COY granting the COY the use of the federal lands. An EA was conducted for this project by Nicklaus Engineering, Inc. This EA is listed under References of this report and may be viewed at 180 West 1st Street in Yuma, Arizona. This project was to support the Yuma Welcome Center facility by providing a designated parking area within close proximity to and aiding in the revitalization of the city of Yuma's historic downtown area. To further assist in the revitalization effort, the COY and Reclamation propose to exchange land between the two entities. Reclamation will be the lead federal agency under NEPA.

1.2 PURPOSE AND NEED FOR THE PROPOSED PROJECT

The COY and the Reclamation propose to convey land between the two entities to address the scattered parcels owned by both entities.

The lands conveyed between the COY and Reclamation will be in accordance with Public Law 109-454, Section 3 titled Conveyance of Federal Land and Non-Federal Land, passed by the Senate and House of Representatives of the United States of America on December 22, 2006. This Public Law is known as the "City of Yuma Improvement Act".

1.3 PURPOSE AND NEED FOR AN ENVIRONMENTAL ASSESSMENT

Because a portion of the Proposed Project is located on Reclamation land, it is subject to review and documentation under NEPA (40 CFR Parts 1500 et seq.), and Reclamation NEPA Handbook (USBR 1990). This EA provides information needed by the responsible federal official to determine whether to prepare a Finding of No Significant Impact or an Environmental Impact Statement.

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2.0 DESCRIPTION OF THE PROPOSED PROJECT AND ALTERNATIVES

2.1 LOCATION

The Proposed Project sites are located in Yuma, Arizona, along the Yuma Valley Railroad commencing at Parcel A-3 lying within Gila Street Right-of-Way heading west to the west end of the Parcel I (sludge beds) in Section 35; Township 16 South, Range 22 East, Gila and Salt River Baseline and Meridian (GSRB&M).

A portion of the Proposed Project would be located on federal lands administered by Reclamation. See Table 1 for Parcel Owners. The Proposed Project sites are shown on Figure 1.

Table 1
Parcel Owners

Parcel Number	Owner
A	City of Yuma
A-3	City of Yuma
B-1	City of Yuma
B-2	City of Yuma
C	City of Yuma
D	U.S. Department of the Interior Bureau of Reclamation
E	U.S. Department of the Interior Bureau of Reclamation
F	U.S. Department of the Interior Bureau of Reclamation
H	U.S. Department of the Interior Bureau of Reclamation
I	U.S. Department of the Interior Bureau of Reclamation
J-1	U.S. Department of the Interior Bureau of Reclamation

2.2 ALTERNATIVE CONSIDERED IN DETAIL

There were two alternatives considered in detail: Alternative A, No Action, and Alternative B, the Proposed Project.

2.2.1 Alternative A – No Action

NEPA guidelines require that an EA evaluate the “No Action” alternative in addition to the Proposed Project. The No Action alternative provides a basis for comparison of the environmental consequences of the Proposed Project. In this EA, the No Action alternative assumes that the land currently owned by Reclamation would remain in the custody of Reclamation and land currently owned by the COY would remain in the custody of the COY.

2.2.2 Alternative B – Proposed Project

The COY and Reclamation propose to exchange land between the two entities to address scattered parcels owned by the two entities. Any proposed future development on these parcels could be subject to the NEPA process, if applicable. A COY/Reclamation Land Conveyance Exhibit is provided as Figure 2.



Figure 1
Site Map
U.S. Department of the Interior Bureau of Reclamation
and the City of Yuma Land Exchange

CITY OF YUMA / USBR LAND TRANSFER EXHIBIT

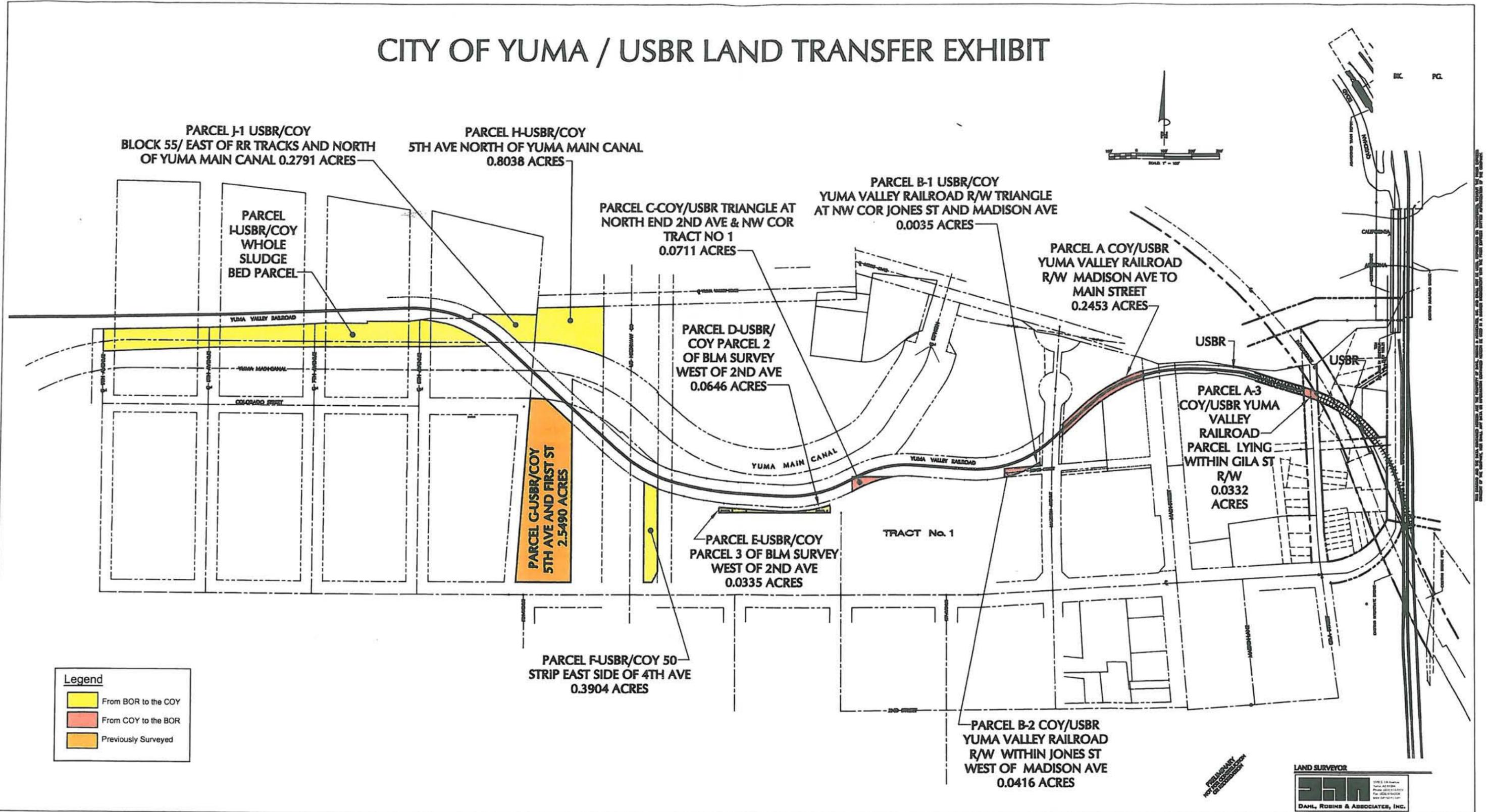


Figure 2
Parcel Map
BOR/COY Land Exchange
NEI Environmental 009-0195

LAND SURVEYOR
DAHL, ROBINS & ASSOCIATES, INC.

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3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

To comply with Council of Environmental Quality requirements for analytical and concise environmental documents (40 CFR 1502.2), resources identified as potentially affected by the Proposed Project or as a special concern are described in this section. Environmental resources could be affected during implementation of the Proposed Project. The effect, or impact, is defined as any change or alteration, produced directly or indirectly by the Proposed Project, to the pre-existing condition of the environment.

This EA evaluated the resource elements below in relation to the Proposed Project to determine the potential for both adverse and beneficial effects. Only the elements of the environment that could be affected by the Proposed Project would be discussed in detail.

Evaluated Resources:

- Noise
- Air Quality
- Hazardous and Solid Waste
- Water Resources
- Land Use/Ownership
- Biological Resources
- Cultural/Historic Resources
- Geology and Soils
- Indian Trusts Assets
- Socioeconomics
- Environmental Justice

3.1 Noise

3.1.1 Affected Environment

Noise is usually defined as sound that is undesirable because it interferes with speech communication and hearing, is intense enough to damage hearing, or is otherwise annoying (unwanted noise). The response of individuals to similar noise events is diverse and influenced by many factors, including the type of noise, the perceived importance of the noise and its appropriateness in the setting, the time of day and the type of activity during which the noise occurs, and the sensitivity of the individual.

Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air, and are sensed by the human ear. Sound is generally characterized by several variables, including frequency and amplitude. Frequency describes the sound's pitch and is measured in Hertz (Hz), while amplitude describes the sound's loudness and is measured in decibels (dB).

The method commonly used to quantify environmental sounds consists of evaluating all frequencies of a sound according to a weighting system that reflects that human hearing is less sensitive at low frequencies and extremely high frequencies than at the mid-range frequencies. This is called “A” weighting, and the dB level measured is called the A - weighted sound level (dBA). In practice, the level of a noise source is conveniently measured using a sound level meter that includes a filter corresponding to the dBA curve. Unless specifically noted, the use of A weighting is always assumed with respect to environmental sound and community noise even if the notation is dB instead of dBA.

The amplitude of sound is measured using a logarithmic scale with units of dB. A sound level of 0 dBA is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. This threshold is the reference level against which the amplitude of other sounds is compared. Normal speech has a sound level of approximately 60 dBA. Sound levels above about 120 dBA begin to be felt inside the human ear as discomfort and eventually pain at still higher levels.

Although a dBA reading may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most ambient environmental noise includes a mixture of noise from nearby and distant sources that creates an ebb and flow of sound, including some identifiable sources plus a relatively steady background noise in which no particular source is identifiable. A single descriptor called the equivalent sound level (L_{eq}) is used to describe sound that is constant or changing in level. L_{eq} is the energy-mean dBA during a measured time interval. It is the “equivalent” constant sound level that would have to be produced by a given constant source to equal the acoustic energy contained in the fluctuating sound level measured during the interval. In addition to the energy-average level, it is often desirable to know the acoustic range of the noise source being measured. This is accomplished through the maximum L_{eq} (L_{max}) and minimum L_{eq} (L_{min}) indicators that represent the root-mean-square maximum and minimum noise levels measured during the monitoring interval. The L_{min} value obtained for a particular monitoring location is often called the acoustic floor for that location.

Federal, state and local agencies regulate environmental and occupational, as well as other aspects of noise. Federal and state agencies generally set noise standards for mobile sources, while regulation of stationary sources is left to local agencies. Local regulation of noise involves implementation of General Plan policies and noise ordinance standards, which are general principles intended to guide and influence development plans. Noise ordinances set forth specific standards and procedures for addressing particular noise sources and activities. The Occupational Safety and Health Administration (OSHA) sets and enforces noise standards for worker safety.

OSHA regulates occupational exposure to noise. The standard stipulates that protection against the effects of noise exposure shall be provided when sound levels exceed 90 dBA over an 8-hour exposure period. Protection shall consist of feasible administrative or engineering controls. If such controls fail to reduce sound levels to within acceptable levels, personal protective equipment shall be provided and used to reduce exposure of the employee. Additionally, employers must institute a Hearing Conservation Program whenever employee noise exposure equals or exceeds the Action Level of an 8-hour time-weighted average sound level of 85 dBA. The Hearing Conservation Program requirements consist of periodic area and personal noise monitoring, performance and evaluation of audiograms, provision of hearing protection, annual employee training, and record keeping.

3.1.2 Environmental Consequence/Impacts

The Proposed Project will not include the construction of any buildings, structures or infrastructure, or the demolition of any buildings, structures or infrastructure. The Proposed Project involves the conveyance of parcels between the COY and Reclamation. As a result, the Proposed Project is not expected to generate any noise.

3.2 Air Quality

3.2.1 Affected Environment

The Environmental Protection Agency (EPA), the Arizona Department of Environmental Quality (ADEQ), and local air pollution control districts determine the air quality attainment status of designated areas by comparing local air quality measurements from the state or local ambient air monitoring stations with the National and State Ambient Air Quality Standards (AAQS). Those areas that meet AAQS are classified as “attainment” areas; areas that do not meet the standards are classified as “nonattainment” areas. Areas that have insufficient air quality data may be identified as unclassifiable areas. These attainment designations are determined on a pollutant-by-pollutant basis. Yuma County is currently classified as nonattainment for the PM₁₀ NAAQS. Yuma is an attainment area for the remaining criteria pollutants.

State Implementation Plan

The State Implementation Plan (SIP) is the cumulative record of all air pollution strategies, [state statutes](#), [state rules](#), and local ordinances implemented under Title I of the [Clean Air Act](#) by governmental agencies within Arizona. Revisions to Arizona's SIP must be submitted to the EPA by the director of ADEQ on behalf of the governor. Once approved by EPA as published in the [Federal Register](#) the provisions contained in the SIP revision become enforceable by the federal government as well as by the appropriate governmental entities of Arizona. The cumulative and complete record of SIP

revisions that have been approved by EPA and federally enforceable in Arizona is called the "applicable Arizona SIP."

The first Arizona SIP submittal was in 1972. Because there have been so many changes to federal, state and local air quality programs in the last 30 years, there is not a single definitive document that contains all of the SIP requirements.

In addition to ADEQ, there are local air planning organizations that share in the responsibility of completing SIP requirements. The Maricopa Association of Governments and the Pima Association of Governments are metropolitan planning organizations that have been delegated the responsibility to complete SIP revisions for their respective county areas.

The Yuma PM₁₀ SIP that was submitted to the EPA on November 15, 1991, is in the process of being withdrawn by ADEQ. A revision to the PM₁₀ SIP was submitted to EPA on July 12, 1994, and was determined by EPA to be complete but was never approved. ADEQ is also withdrawing this plan. ADEQ began working with stakeholders in the Yuma area in July 2001 to develop a maintenance plan based on data that showed no exceedances of the [NAAQS](#) for PM₁₀. On August 18, 2002, however, the Yuma area experienced a violation of the 24-hour NAAQS due to high winds associated with a large thunderstorm. The high wind event data met all the technical criteria to be considered a natural event. Consequently, work on the Yuma Maintenance Plan was temporarily suspended because EPA policy required the development of a Natural Events Action Plan (NEAP) to prevent the area from being downgraded to a serious nonattainment area. The NEAP was developed by the Yuma area stakeholders and ADEQ, and submitted to EPA in February 2004. A [NEAP Implementation Report](#) was submitted to EPA on August 17, 2005.

ADEQ submitted a maintenance plan for the Yuma area to the EPA on August 14, 2006, which, upon EPA's approval, will re-designate the area to attainment for PM₁₀. The NEAP and maintenance plan will be re-evaluated every 5 years.

3.2.2 Environmental Consequences/Impacts

The Proposed Project will not include the construction of any buildings, structures or infrastructure, or the demolition of any buildings, structures or infrastructure. The Proposed Project involves the conveyance of parcels between the COY and Reclamation. As a result the Proposed Project is not anticipated to affect air quality.

3.3 HAZARDOUS MATERIALS/WASTE AND SOLID WASTE

3.3.1 Affected Environment

The Resource Conservation and Recovery Act (RCRA) gave the EPA the authority to control hazardous waste. This includes the generation,

transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous wastes.

Order 1050.19 states that an Environmental Due Diligence Audit should be conducted to evaluate subject properties for potential hazardous substances contamination.

A due diligence survey (Phase I Environmental Site Assessment) was conducted on November 15, 2009 by Nicklaus Engineering, Inc. The site inspection revealed no discrepancies. A regulatory database search was conducted through Environmental Data Resources Inc. for the project site and surrounding area. None of the surrounding properties or the project site was identified in this report. The (Phase I Environmental Site Assessment) is listed under References of this report and may be viewed at 180 West 1st Street in Yuma, Arizona.

3.3.2 Environmental Consequences/Impacts

The Proposed Project will not include the construction of any buildings, structures or infrastructure, or the demolition of any buildings, structures or infrastructure. The Proposed Project involves the conveyance of parcels between the COY and Reclamation. As a result, there will be no hazardous materials/waste and solid waste generated as a result of the Proposed Project.

3.4 WATER RESOURCES

3.4.1 Affected Environment

Surface Water

The project area falls within the Yuma Desert Watershed and a small portion of the Lower Colorado Watershed. The Yuma Desert Watershed has no naturally occurring perennial streams within its boundaries; however the East Main Canal meanders through the western and central portion of the Proposed Project site. The Colorado River is located north of the Proposed Project site.

Water Quality

In 1995, the ADEQ conducted a baseline study to assess the groundwater quality of the Yuma Groundwater Basin (YGB). The study found that YGB groundwater had no dominant water chemistry and is chemically similar to Colorado River water (ADEQ 1998). Groundwater quality differences were a function of length of time an area had been irrigated, depth to groundwater, and the source of irrigation water. The laboratory results revealed no detection of pesticides. This data suggests that regional groundwater quality

conditions in the YGB generally support drinking water use, but residents may prefer to use treated water for some domestic purposes (ADEQ 1998).

3.4.2 Environmental Consequences/Impact

Impacts to water resources are not anticipated since the Proposed Project will not include the construction of any buildings, structures or infrastructure, or the demolition of any buildings, structures or infrastructure. The Proposed Project involves the conveyance of parcels between the COY and Reclamation.

3.5 LAND USE/OWNERSHIP

3.5.1 Affected Environment

The study area for the land-use inventory is an area approximately 1 mile from all sides of the Proposed Project site.

In general, the Proposed Project is located in the residential and commercial part of town in Yuma Arizona. Primary land uses within the study area include agriculture, residential, retail, and transportation. The East Main Canal meanders through the western and central portion of the Proposed Project site. The Colorado River is located north of the Proposed Project site. See Table 2 for property uses. The Joint Land Use designations are shown on Figure 3.

Table 2
Property Uses

Parcel Number	Current Use	Prior Use (when known)
A	Section of Yuma Valley Railroad	Railroad
A-3	Section of Yuma Valley Railroad	Railroad
B-1	Vacant	Vacant
B-2	Vacant	Vacant
C	Vacant	Vacant
D	Vacant	Vacant
E	Vacant	Vacant
F	One abandoned structure on site	Weight Station
H	Vacant	Vacant
I	Sludge Bed	Vacant
J-1	Vacant	Vacant

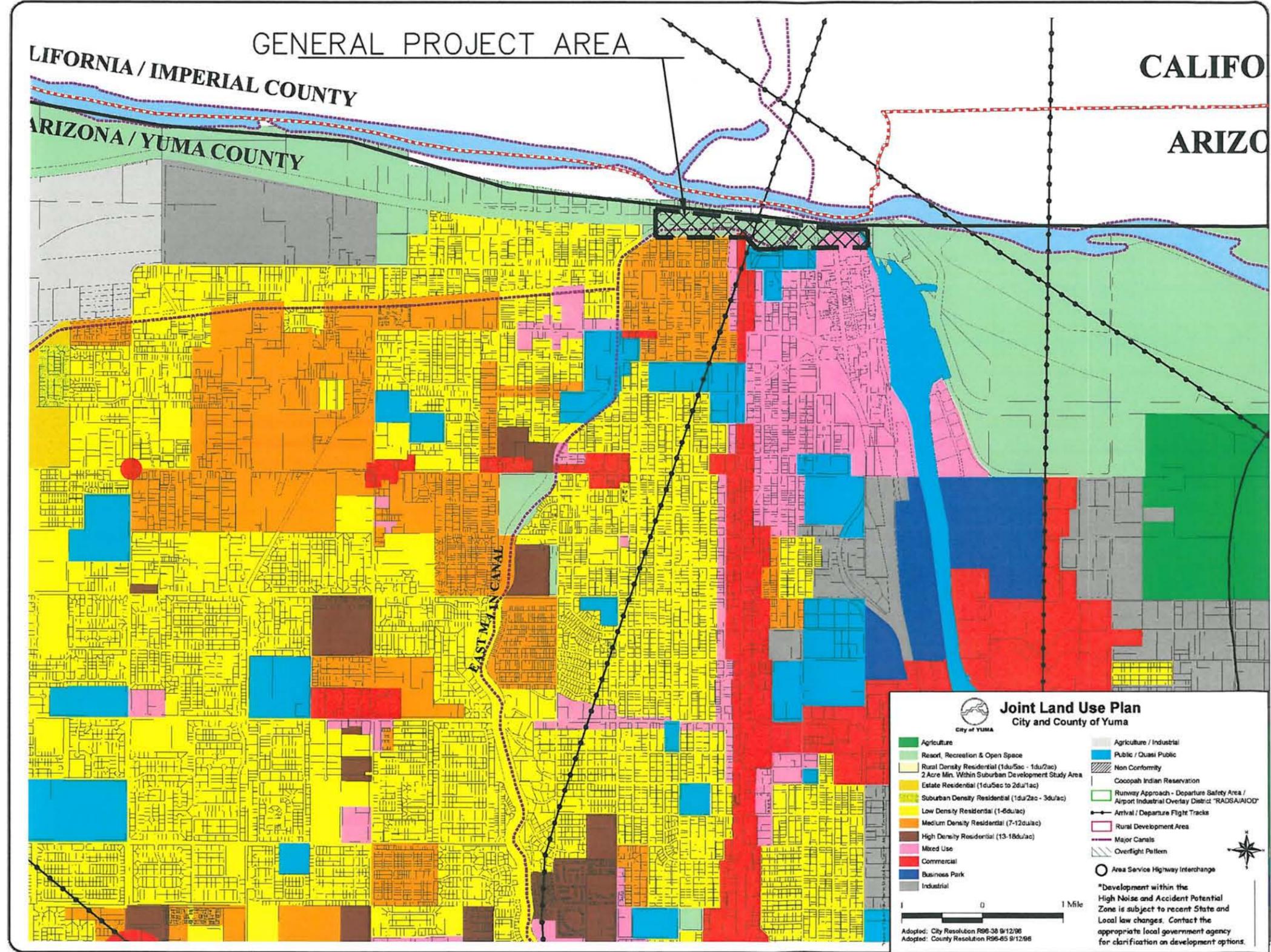
In general, the surrounding area is comprised of:

- Single family residences
- Multi-family apartments
- Retail business
- Public use areas
- Public and quasi-public use areas
- Retail business areas
- Light Industrial area

The study area includes federal lands withdrawn for and administered by Reclamation, as well as lands under jurisdiction of Bureau of Indian Affairs, and Arizona State Trust. Residential areas are located in the study area and are typically single and multi-family dwellings.

3.5.2 Environmental Consequences/Impacts

Impacts from the Proposed Project are not anticipated since the Proposed Project will not include the construction of any buildings, structures or infrastructure, or the demolition of any buildings, structures or infrastructure. The Proposed Project involves the conveyance of parcels between the COY and Reclamation.



LEGEND

 GENERAL PROJECT AREA



PRELIMINARY PLAN
NOT FOR CONSTRUCTION

COY/BOR LAND EXCHANGE

FIGURE 3



Nicklaus Engineering Inc.
1851 West 24th Street P.O. Box 6029
YUMA, ARIZONA 85364 (928)344-8374
Email: nei@nelaw.com

SCALE:	AS SHOWN
DATE:	JANUARY 2010
DES. BY:	M.G.
DRAWN BY:	J.A.R.
SURVEYED BY:	M.G.
JOB. No.:	008-0295
FILE No.:	XX-XX-XX

SHEET —
OF —

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3.6 BIOLOGICAL RESOURCES

3.6.1 Affected Environment

A site visit to the Proposed Project area was conducted on November 15, 2009 and December 10, 2009. The Proposed Project sites are located in Yuma, Arizona, along the Yuma Valley Railroad commencing at Parcel A-3 lying within Gila Street Right-of-Way heading west to the west end of the Parcel I (sludge beds) in Section 35; Township 16 South, Range 22 East GSRB&M. The East Main Canal meanders through the western and central portion of the Proposed Project site. The Colorado River is located north of the Proposed Project site.

Climate

The Yuma Desert is very dry, usually receiving less than 100 millimeter (mm) of rainfall per year (Phillips and Comus 2000). Temperatures are high in the summer, with a maximum near 120 degrees Fahrenheit. Winter maximum temperatures average in the upper 60 degrees Fahrenheit range. Daily variations of 30 to 50 degrees are common due to the low cloudiness and lack of vegetation cover to hold the heat. Low relative humidity accompanies the high summer temperatures, with daytime relative humidity readings frequently between 5 to 10 percent. Precipitation occurs primarily in the winter months (from October to June). Because of the high temperatures and low precipitation, the Lower Colorado River Valley Subdivision is the driest of the Sonoran desert subdivision (Phillips and Comus 2000).

Federally Listed and Special Status Species

Special status species are those wildlife and plant species, which because of loss of habitat and/or decline in their numbers, have been listed by the federal and/or state government as species of concern. The U.S. Fish and Wildlife Service (USFWS) maintains a list of threatened and endangered species, as well as species that are candidates for such listings under guidelines of the Endangered Species Act of 1973 (ESA), as amended. The U.S. Forest Service (Forest Service) maintains its own list of Forest Service Sensitive Species. The Arizona Game and Fish Department (AZGFD) monitors Wildlife Species of Special Concern in Arizona (WSC), and the Arizona Department of Agriculture provides protection for native plant species under the Arizona Native Plant Law (ANPL).

The Arizona Office of the USFWS requests that information on threatened or endangered species for specific projects be obtained from their Internet website. The list of federally protected species for Yuma County was obtained from the USFWS website and was reviewed in preparing this EA. Information obtained from the AZGFD includes records from their Heritage Data Management System (HDMS) within 3 miles of the project limits. The HDMS also includes listings for ESA, Forest Service, United States Bureau of

Land Management (BLM), WSC, and ANPL species. The HDMS also includes the former federal species of concern, under the ESA category, which are now being monitored by the AZGFD for the USFWS. Since there is always potential for sensitive species to be present for which there are no known records, the full HDMS list for Yuma County was also reviewed. Federally listed threatened, endangered, and other sensitive species of animals and plants that were thought to have some potential for occurring within the project study area are listed in Table 3-1. Table 3-1 includes a column listing the probability for each species occurring within the project study area. Background information, habitat suitability analyses, and potential impacts and effects of the Proposed Project on the species listed are located in Appendix A along with the response from AZGFD.

Former federal species of concern have no federal protection, but were species under an earlier classification that are currently being monitored by the AZGFD for the USFWS.

**TABLE 3-1
FEDERALLY LISTED SPECIES**

Scientific Name	Common Name	Status	Potential to Occur	Rationale
<i>Athene cunicularia hypugaea</i>	Western Burrowing Owl	Species of Concern	High	Within range and suitable foraging habitat is present near project site
<i>Ardea alba</i>	Great Egret	Species of Concern	Low	Within range and suitable foraging habitat is present near project site
<i>Egretta thula</i>	Snowy Egret	Species of Concern	Low	Within range and suitable foraging habitat is present near project site
<i>Empidonax traillii extimus</i>	Southwestern Willow Flycatcher	Endangered	Low	Within range and suitable foraging habitat is present near project site
<i>Rallus longirostris yumanensis</i>	Yuma Clapper Rail	Endangered	Low	Within range and suitable foraging habitat is present near project site
<i>Coccyzus americanus</i>	Yellow-billed Cuckoo	Candidate	Low	Within range and suitable foraging habitat is present near project site
<i>Sigmodon hispidus eremicus</i>	Yuma Hispid Cotton Rat	Species of Concern	High	Within range and suitable foraging habitat is present near project site

3.6.2 Environmental Consequences/Impacts

Vegetation

The Proposed Project would have no impact on native vegetation in the surrounding area. The project site is vacant of native vegetation. A concrete sludge bed is located on the west side of the project site. The area around the sludge bed has been landscaped by the COY. Project sites located east of 4th Avenue consist of little native vegetation as the sites contain asphalt, landscaping or railroad tracks.

Wildlife

The Proposed Project would have no effect on the wildlife since the Proposed Project does not include the construction of any new buildings, structures or infrastructure, or the demolition of any existing buildings, structures or infrastructure. As a result, there will be no wildlife impacts as a result of the Proposed Project.

3.7 CULTURAL RESOURCES/HISTORIC RESOURCES

3.7.1 Affected Environment

The National Historic Preservation Act of 1966, as amended, establishes the Advisory Council on Historic Preservation and the National Register of Historic Places (NRHP) within the National Park Service. Section 110 governs federal agencies responsibilities to preserve and use historic buildings; designate an agency Federal Preservation Officer; identify, evaluate, and nominate eligible properties under the control or jurisdiction of the agency to the NRHP. The Archaeological and Historic Preservation Act of 1974 provides for the preservation of historic American sites, buildings, objects, and antiquities of national significance by providing for the survey, recovery, and preservation of historical and archaeological data which might otherwise be destroyed or irreparably lost due to a federal, federally licensed, or federally funded action.

The file search indicates that 15 surveys have been conducted within a 1 mile radius of the project area. Twenty-six sites have been recorded within that same distance. Twenty properties within 1 mile of the project area are listed on the NRHP, and 16 are listed on the Arizona State Inventory of Historic Places.

Quechan Tribal History

Quechan tradition describes their creation, along with that of other lower Colorado River tribes, by their culture hero, Kukumat. After Kukumat died, his son Kumastamxo took the people to the sacred mountain Avikwame, near the present city of Needles, California. There he gave them bows and arrows and taught them how to cure illness and then sent them down from the mountain in various directions. The ancestors of the Quechan settled along the Colorado River to the south of the Mohave. Little archaeological evidence of the Quechan's past has survived the Colorado's flooding. The Quechan and some of the other lower Colorado River tribes may have begun as rather small patrilineal bands that gradually grew into larger "tribal" groupings. What caused the formation of these tribes is not altogether clear; the interrelated factors probably included population increase from a generally reliable and abundant river bottom horticulture; competition with neighboring riverine groups for control of lucrative trade routes between the Pacific Coast and cultures to the east of the Colorado (including, for a time, the great Hohokam Culture between about Anno Domini 1050 and 1200); and increasingly strong social bonds between small groups living next to one another along the river's banks.

In 1540 a Spanish expedition under Hernando de Alarcón was the first group of Europeans to reach Quechan territory. For the next three and a half centuries the Quechan were in intermittent contact with various Spanish, Mexican, and American expeditions' intent on developing the land route between southern California and the interior to the east of the Colorado River. The Quechan controlled the best crossing point along the lower Colorado River, just to the south of where it is joined by the Gila River. During this time, too, warfare was endemic between the Quechan and other tribes living along the Colorado and Gila Rivers. No permanent white settlements were attempted at the crossing until 1779, when Spanish settlers and soldiers arrived. In 1781, after two years of Spanish depredations, the Quechan attacked them, killing some and driving the others away. The tribe retained control of the area until the early 1850s, when the U.S. Army defeated them and established Fort Yuma at the crossing. Just across the river from the fort a small white American town soon sprang up to cash in on the increasing overland traffic between California and the East, and to the north and south along the Colorado River itself. A reservation was set aside for the Quechan on the west (California) side of the river in 1884.

No artifacts have been retrieved from the Proposed Project site. No present or future archeological excavations are planned for this location.

3.7.2 Environmental Consequences/Impacts

According to the Cultural Resources Inventory, no Cultural Resources were identified; see Appendix B for Cultural Resources Report. Scoping letters were sent to local Tribes (Cocopah and Quechan); only one response was received from the Cocopah Indian Tribe. Also no ground will be disturbed as

a result of this Proposed Project. Any future development will require further evaluation for Cultural Resources at that time.

3.8 GEOLOGY AND SOILS

3.8.1 Affected Environment

The geology of the study area consists primarily of alluvial deposits of silt and gravel due to depositional activities of the Colorado River.

The soil classification within the project area is identified as Indio Silt Loam. This deep, well drained, nearly level soil is on flood plains and alluvial fans. It formed in mixed alluvium. Elevation is 75 to 600 feet. The average annual precipitation ranges from 2 to 4 inches, the average annual air temperature ranges from 72 to 76 degrees Fahrenheit, and the average freeze-free period ranges from 250 to 325 days.

Typically, the surface layer is light brown silt loam about 6 inches thick. The underlying material to a depth of 60 inches or more is stratified, light brown very fine sandy loam silt. In some places the surface layer is very fine loam. Included with this soil in mapping are small areas of Glenbar silty clay loam, and Ripley silt loam. Permeability of this Indio Soil is moderate. Potential rooting depth is 64 inches or more. Available water capacity is high. Surface runoff is medium, and the hazard or water erosion is slight.

The Yuma Region has the greatest risk of earthquake-induced ground shaking within the State of Arizona (Yuma Plan 2002). The threat of ground shaking is due to the proximity of the southernmost portion of the San Andreas Fault system that runs through California.

3.8.2 Environmental Consequences/Impacts

The Proposed Project will not include the construction of any buildings, structures or infrastructure, or the demolition of any buildings, structures or infrastructure. The Proposed Project involves the conveyance of parcels between the COY and Reclamation. As a result, there will be no geological or soils disturbance by the Proposed Project.

3.9 INDIAN TRUST ASSETS

3.9.1 Affected Environment

It is Reclamation policy to protect Indian Trust Assets (ITAs), whenever possible, from adverse impacts caused by its programs and activities. ITAs are legal asset interests held in trust by the federal government for Indian Tribes or individual Indians. Types of actions that could affect ITAs include interference with the exercise of a water right, degradation of water quality where water is a right, impacts fish and wildlife where there is hunting or

fishing rights, and noise near a land asset where it adversely affects use of the reserved land. No ITAs have been identified within the study area.

3.9.2 Environmental Consequences/Impacts

The Proposed Project would have no effect on ITAs since no ITAs have been identified within the study area.

3.10 SOCIOECONOMICS

3.10.1 Affected Environment

This section describes the demographic and economic characteristics found in the study area and potential changes that could result from the proposed land conveyance between COY and Reclamation.

Yuma County encompasses 5,514 square miles and acts as a crossroads for international and interstate trade in the Southwest. Yuma County has a population of 189,682. The racial composition consists of 72.9 percent white, 1.9 percent African American, 1.4 percent Native American, 1.0 percent Asian, and 20.6 other. "Other" is intended to capture responses from people who consider themselves of more than one race, such as Mulatto, Creole, and Mestizo. Half of Yuma County residents (55.1 percent) consider themselves to be of Hispanic heritage (Census Bureau 2006-2008 American Community Survey). Hispanic heritage can be defined as persons of any race who trace their roots to Spain, Mexico, and the Spanish-speaking nations of Central America, South America, and the Caribbean.

Within Yuma County, the BLM accounts for approximately 15 percent of land ownership; Department of Defense, approximately 40 percent; Indian reservations, less than 0.5 percent; the State of Arizona, approximately 6 percent; private, approximately 11 percent; Reclamation, approximately 1 percent; and other federal lands, approximately 28 percent (Yuma County Department of Developmental Services 2006).

Yuma County has a labor force of 101,370 persons. Major industries include agriculture, military, government, manufacturing, and public utilities (ADOC 2007). Median household income for the county in 2008 was \$40,079, less than the United States median of \$52,175 (in 2008 inflation-adjusted dollars).

The City of Yuma contains over 110 square miles. The City of Yuma has a population of 96,120. The racial composition consists of 69.2 percent white, 2.7 percent African American, 0.9 percent Native American, and 1.6 percent Asian and 23.1 other. Residents of Hispanic heritage account for 54.9 percent of all residents in the City of Yuma (Census Bureau 2006-2008 American Community Survey).

The City of Yuma has a labor force of 45,810 persons. Major industries include agriculture, tourism, military, and light industry (ADOC 2007). Median household income for the city in 2008 was \$42,095, less than the United States median of \$52,175 (in 2008 inflation-adjusted dollars). The Profile of General Demographic Characteristics can be viewed in Appendix C.

3.10.2 Environmental Consequences/Impacts

In general, there will be no effect on the general population resulting from the land conveyance between COY and Reclamation.

3.11 ENVIRONMENTAL JUSTICE

3.11.1 Affected Environment

Executive Order 12898 requires each federal agency to achieve environmental justice as part of its mission, by identifying and addressing disproportionately high adverse human health or environmental effects (including social and economic effects) of its programs and activities on minority and low-income populations.

3.11.2 Environmental Consequences/Impacts

The Proposed Project will have no negative impact on the local community. The Proposed Project will not include the construction of any buildings, structures or infrastructure, or the demolition of any buildings, structures or infrastructure. The Proposed Project will not cause the relocation or displacement of any family or persons. The Proposed Project involves the conveyance of parcels between the COY and Reclamation.

3.12 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

NEPA guidelines (40 CFR 1502.16) required the discussion of any irreversible or irretrievable environmental changes that would be involved with the Proposed Project.

Irreversible commitments are decisions affecting renewable resources such as soils, wetlands, and wildlife habitat. Such decisions are considered irreversible because their implementation would affect a resource deterioration to the point that renewal could occur only over a long period of time or at great expense, or because they would cause the resources to be destroyed or removed.

Irretrievable commitment describes loss of production or use of resources as a result of a decision. It represents opportunities foregone for the period that a resource cannot be used. Irretrievable refers to the permanent loss of a

resource, including production, harvest, or use of natural resources. For example, production loss of agriculture lands can be irretrievable, while the action itself may not be irreversible.

The Proposed Project would not require the consumption of fossil fuels and or materials which might be considered an irretrievable resource. The Proposed Project will not include the construction of any buildings, structures or infrastructure, or the demolition of any buildings, structures or infrastructure; therefore, the use of any irretrievable resource is not anticipated. The Proposed Project involves the conveyance of parcels between the COY and Reclamation.

3.13 CUMULATIVE IMPACTS

Cumulative impacts may result from individually minor but collectively significant actions that occur within the same temporal study area and surrounding communities.

The Proposed Project could have a positive impact to the project area and surrounding community. Upon completion of the land conveyance there will be areas available for potential future development along the Colorado River that could revive the downtown area of Yuma.

4.0 CONSULTATION AND COORDINATION

The preparation of this EA required communication and consultation with various federal, state, and local agencies and citizens.

The following list summarizes the agencies contacted during the preparation of the U.S. Department of the Interior Bureau of Reclamation and the City of Yuma Land Exchange EA.

FEDERAL AGENCIES

U.S. Department of the Interior
 Bureau of Land Management
 Bureau of Reclamation, Yuma Area Office
U.S. Fish and Wildlife Service

STATE AGENCIES

Arizona Game and Fish Department
Arizona State Historic Preservation Office

LOCAL AGENCIES

Yuma County
 Engineering Department
 County Assessor's Office
 Metropolitan Planning Organization
Yuma County Water Users' Association
Yuma Audubon Society
Yuma Crossing National Heritage Area

TRIBAL AGENCIES

Cocopah Indian Tribe
Quechan Indian Tribe

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5.0 REFERENCES

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6.0 **LIST OF APPENDICES**

Appendix A - Species Accounts and Evaluations

Appendix B - Cultural Resources Inventory

Appendix C - Profile of General Demographic Characteristics: 2007
U.S. Census bureau American Community Survey (ACS)

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Appendix A: Species Accounts and Evaluations

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APPENDIX A

SPECIES ACCOUNTS AND EVALUATIONS

The following discussion provides information on the species with potential to occur within the project area.

Species Accounts

Federally Listed Species

Western Burrowing Owl (*Athene cunicularia hypugaea*)

Status: The Burrowing Owl is listed as a federal species of concern and is a BLM sensitive species.

Background: Burrowing Owls inhabit open areas in deserts, grasslands, and agricultural and range lands. They use well-drained areas with gentle slopes and sparse vegetation and may occupy areas near human habitation, such as golf courses and airports (Dechant et al. 1999; Ehrlich et al. 1988; Terres 1980). Burrowing Owls often select burrows where surrounding vegetation is kept short by grazing, dry conditions, or burning (Dechant et al. 1999; Hjertaas et al. 1995). In Arizona, Burrowing Owls prefer grasslands, creosote bush/bursage desert scrub communities, and agricultural lands (de Vos 1998).

Burrowing Owls are semi-colonial and usually occupy burrows excavated by small mammals, often at the edges of active colonies of Black-tailed Prairie Dogs or Richardson's Ground Squirrels (*Spermophilus richardsonii*). In areas that lack colonial burrowing mammals, burrowing owls will use excavations made by other mammals, such as Badgers, Woodchucks, Skunks, Foxes, Armadillos, and Coyotes. They may also use natural cavities in rocks. In addition to the nest burrow, the owls also may use several satellite burrows. Satellite burrows may serve as protection from predators and parasite (Dechant et al. 1999).

Burrowing Owls lay clutches averaging 5 to 7 eggs. The female remains in the burrow and is fed by the male through egg-laying, incubation, and brooding. The eggs hatch after 21 days of incubation, and young fledge from the nest approximately 28 days after hatching (Ehrlich et al. 1988).

Burrowing Owls are opportunistic feeders, preying on a variety of arthropods and small vertebrates (Dechant et al. 1999; Hjertaas et al. 1995). They may forage during the day or night, but tend to forage closer to the nest during the day. Foraging habit is variable, depending on prey availability and abundance.

Widespread declines in the range and abundance of burrowing owls have been attributed to habitat loss and fragmentation and extermination of colonial burrowing mammals (Dechant et al. 1999; Hjertaas et al. 1995). Reductions in Burrowing Owl populations have been

associated with reductions in populations of both Black-tailed Prairie Dogs and Richard's Ground Squirrels.

Populations in Study Area: Suitable habitat for the Burrowing Owl is present in the project area. The project area currently contains a sledge bed and vacant land as well as areas containing a portion of the Yuma Valley Railroad.

Potential Impacts and Determination of Effects: The Proposed Project will not include the construction of any buildings, structures or infrastructure, or the demolition of any buildings, structures or infrastructure. The Proposed Project involves the conveyance of parcels between the COY and Reclamation and therefore, would have no impact on the Burrowing Owl.

Southwestern Willow Flycatcher (*Empidonax traillii extimus*)

Status: The Southwestern Willow Flycatcher was listed as endangered, without designated critical habitat, on February 27, 1995, primarily because of riparian habitat loss or modification. Critical habitat was designated on July 22, 1997, and a Final Rule designating critical habitat for this species was published in the Federal Register on October 19, 2005. Eighteen critical habitat units, totaling 599 rivers miles in Arizona, California, Nevada, Utah, and New Mexico, were designated. Knowledge of important habitat areas for Willow Flycatchers has improved since 1997, and some designated critical habitats may not provide the most accurate description of critical habitat requirements for these birds. A draft Recovery Plan (USFWS 2001a) for the Southwestern Willow Flycatcher was released for public review on June 8, 2001.

Background: In the western United States, Willow Flycatchers are often found on willow (*Salix* spp.) covered islands, in dense brush along watercourses, beaver meadows, and mountain parks. They may be found as high as 2,400 meters (m) (7,875 feet) and they also follow willow or cottonwood (*Populus* spp.) lined streams out into desert regions (Terres 1980). Four specific habitat types have been described as breeding areas for the Southwestern Willow Flycatcher (Sogge et al. 1997). The first of these types is monotypic high-elevated willow. This habitat occurs above 300 m (984 feet) in Arizona and has dense stands of willow with no distinct overstory. This community is often associated with sedges, rushes, or other herbaceous wetland plants. A second habitat type is monotypic, exotic dense stands of salt cedar (*Tamarix* spp.) or Russian olive (*Elaeagnus angustifolia*) up to 10 m (33 feet) in height. These species form a dense, closed canopy, with no distinct overstory layer. Native broadleaf-dominated communities form a third habitat type. This habitat may be composed of a single species, such as Goodding willow (*Salix gooddingii*), but often includes other broadleaf tree and shrub species, including cottonwood, other willows, boxelder (*Acer negundo*), ash (*Fraxinus* spp.), alder (*Alnus* spp.), and buttonbush (*Cephalanthus occidentalis*). The vegetation in this habitat type ranges in height from 3 to 15 m (10 to 49 feet). There are trees of various size classes, and there is often a distinct overstory. The final habitat type is a mixture of native and exotic species including those listed above. Within any particular area, the native and exotic species may be dispersed as patches dominated by native or exotics, or they may be more evenly distributed throughout the area. Regardless of the species composition, all of these habitats share common structural characteristics (Sogge et al. 1997). Occupied habitats always have dense vegetation in the patch interior, and dense

patches are often interspersed with small clearings, open water, or areas of sparse shrubs. Habitat patches can vary in size and shape, with some occupied areas being relatively dense, linear, contiguous stands, and others being large, irregularly shaped mosaics of dense vegetation intermingled with open areas. Patch sizes can range from as little as 0.8 hectares (2.0 acres) to several hundred hectares (several hundred to a thousand acres). Southwestern Willow Flycatchers have not been found nesting in narrow riparian habitats than 10 m (33 feet) wide.

Like most other flycatchers, the Willow Flycatcher forges primarily by flying out from a perch to capture flying insects. They tend to be fairly active, moving frequently from perch to perch (Bent 1942). They will also use gleaning techniques when foraging for spiders, millipedes, and other arthropods and also when feeding on berries.

Two primary factors have been identified as serious threats to the continued existence of the Southwestern Willow Flycatcher (Federal Register 1995). These threats are the loss or degradation of riparian habitat and brood parasitism by Brown-headed Cowbirds. It has been estimated that the State of Arizona lost 35 percent of its wetlands between 1780 and 1980 (Dahl 1990), and as much as 90 percent of lowland riparian habitat in Arizona has been lost or modified (State of Arizona 1990). The primary causes for riparian degradation include urban and agricultural development, water diversion and impoundment, stream channelization, livestock grazing, off-road vehicles and other recreational use, and hydrological changes resulting from these uses (Federal Register 1995).

Population in Study Area: Suitable habitat for the Southwestern Willow Flycatcher is not present in the project area. The nearest populations are found along the lower Colorado River located north of the proposed site.

Potential Impacts and Determination of Effects: The Proposed Project will not include the construction of any buildings, structures or infrastructure, or the demolition of any buildings, structures or infrastructure. The Proposed Project involves the conveyance of parcels between the COY and Reclamation and therefore, would have no impact on the Southwestern Willow Flycatcher.

Yuma Clapper Rail (*Rallus longirostris yumanensis*)

Status: The Yuma Clapper Rail was listed on March 11, 1967 (Federal Register 1967), under endangered species legislation enacted in 1966 (Public Law 89-669). This listing protects the populations in California and Arizona. No critical habitat has been designated for this species. The Yuma Clapper Rail recovery Plan was released in 1983 (USFWS 1983). The Yuma Clapper Rail is a subspecies of Clapper Rail that lives and sometimes breeds in freshwater marshes in the Salton Sea of California, along the lower Colorado River, in the Colorado River Delta of Sonora and Baja California del Norte, on the Salt and Gila rivers upstream to the confluence with the Verde River, and at Picacho Reservoir (AZGFD 1996; Todd 1986).

Background: Yuma Clapper Rails in Arizona breed in freshwater marshes with dense vegetation such as cattail and giant bulrush (*Schoenoplectus californicus*). Todd (1986) reported that Yuma Clapper Rails require more dense woody or herbaceous vegetation that

exceeds 16 inches in height. Pond openings and flowing channels are also important, as are emergent soils. Water depth at preferred sites is 12 inches or less. The interface between water and soil is important, and rails use areas where the slope of the soil-to-water contact is relatively gentle. Conway et al. (1993) compared habitat variables between random sites and sites used heavily by Yuma Clapper Rails. They reported that during the breeding season, the rails used sites that had less residential vegetation, were farther from upland habitat, and were closer to vegetative edges, open water, and dry ground that were random sites. Yuma Clapper Rails usually build their nests on the ground or suspended in dense vegetation a few inches from over the ground or over water (Todd 1986). Nests are usually placed along channels near the water's edge or on a mud hummock within the marsh. Nests are usually placed in locations that provide overhead cover, and, if vegetation is relatively sparse, rails will pull grasses together over the nest to form a canopy (Conway and Eddleman 2000).

Yuma Clapper Rails feed on wetland invertebrates and small vertebrates. The birds forage by probing mud or sand with their long bills, spearing prey beneath the water surface, and picking prey off vegetation or the ground (Conway and Eddleman 2000). Their primary food source is crayfish, but they also feed on isopods, beetles, small fish, dragonfly and damselfly nymphs, and freshwater shrimp and clams (Ohmart and Tomlinson 1977). On the Colorado River, Yuma Clapper Rails feed very heavily on introduced crayfish (Bison 2001; LCRMSCP 2001). Of the 10 species examined from the Colorado River north of the Gila River, 95 percent of the diet by volume consisted of crayfish. The distribution of Yuma Clapper Rails appears to be closely related to the abundance and availability of crayfish, and the lack of crayfish might explain the absence of rails in otherwise suitable marshes (Virginia tech 1996).

The primary threat to Yuma Clapper Rails is habitat destruction (AZGFD 1996). Marshes may be destroyed as the result of stream channelization, dam construction, or appropriation of water for human uses. Marshland may also be affected by livestock grazing, and agricultural runoff may have high concentrations of pesticides (Todd 1986).

Populations in Study Area: Suitable habitat for the Yuma Clapper Rails is not present in the project area. The nearest populations are found along the lower Colorado River located north of the proposed site.

Potential Impacts and Determination of Effects: The Proposed Project will not include the construction of any buildings, structures or infrastructure, or the demolition of any buildings, structures or infrastructure. The Proposed Project involves the conveyance of parcels between the COY and Reclamation and therefore, would have no impact on the Yuma Clapper Rails.

Yellow-billed Cuckoo (*Coccyzus americanus*)

Status: Yellow-billed Cuckoo is listed as a federal candidate species and the State of Arizona as a Wildlife of Special Concern.

Background: Yellow-Billed Cuckoos are medium birds (26 to 30 cm long; 55 to 65 g) with long tails. They have uniform grayish-brown plumage on their head and back, and dull white underparts. Their tails are long with two rows of four to six large white circles on the

underside. The bill of yellow-billed cuckoos is short to medium in length and curved downward with a black upper mandible and a yellow or orange lower mandible. Yellow-Billed Cuckoos have zygodactylous feet, meaning that of the four toes, the middle two point forward and the outer two point backward. (Parker). Female yellow-billed cuckoos are slightly larger than males. Juveniles are similar in appearance to adults, but have a less distinct undertail pattern, and have cinnamon brown wing coverts.

Yellow-Billed Cuckoos prefer open woodlands with clearings and a dense shrub layer. They are often found in woodlands near streams, rivers or lakes. In North America, their preferred habitats include abandoned farmland, old fruit orchards, successional shrubland and dense thickets. In winter, yellow-billed cuckoos can be found in tropical habitats with similar structure, such as scrub forest and mangroves. (Hughes, 1999).

Yellow-Billed Cuckoos are probably monogamous, though their breeding system has not been well studied. Breeding pairs form in May or June, and pairs may visit prospective nest sites together before choosing a location. Males may attempt to procure or keep a mate by offering sticks and other nest materials to their mate as well as feeding them (Eaton, Erlich et al). (Hughes, 1999).

Yellow-Billed Cuckoos begin breeding in mid- to late-May. Most populations breed once per year, though some eastern populations may raise two broods in one breeding season. The male and female build the nest, which is made of twigs, lined with roots and dried leaves, and rimmed with pine needles. The female may begin laying eggs before nest construction is complete. She lays 1 to 5 (usually 2 or 3) light blue eggs, and begins incubating after the first egg is laid. Incubation is done by both parents, and lasts 9 to 11 days.

Yellow-Billed Cuckoos chicks are altricial at hatching, and are brooded often by the parents for the first week or so. Both parents feed the chicks, which begin to leave the nest 7 to 9 days after hatching. They begin to fly about 21 days after hatching. Soon thereafter they leave the nest for good. The male will usually take care of the first fledgling, and the female will care for the rest (Ehrlich et al.). There is little information available on when yellow-billed cuckoo chicks become independent from their parents. Most Yellow-Billed Cuckoos begin breeding at age 1.

Some Yellow-Billed Cuckoos may parasitize other birds by laying eggs in the nest of other parents. They may lay eggs in the nest of other Yellow-Billed Cuckoos, or in the nests of other bird species, including black-billed cuckoos, American Robins, gray catbirds, and wood thrushes. (Hughes, 1999).

There are two recognized subspecies of *Coccyzus americanus*; *Coccyzus americanus americanus* (the eastern version) and its western counterpart, *Coccyzus americanus occidentalis*. These two subspecies are differentiated by tail, wing and bill length. (Hughes, 1999).

Population in Study Area: Yellow-billed cuckoos reside along stream sides in cottonwoods, willow groves, and larger mesquite bosques for migrating and breeding. The Yellow-Billed Cuckoos rarely are observed as transient in xeric desert or urban settings. The Proposed Project site is situated near a residential setting as well as the Yellow-Billed Cuckoos

migrates to South America for the winter. Therefore, it is unlikely the Yellow-Billed Cuckoos would be found in the Proposed Project site during this time of year.

Potential Impacts and Determination of Effects: The Proposed Project will not include the construction of any buildings, structures or infrastructure, or the demolition of any buildings, structures or infrastructure. The Proposed Project involves the conveyance of parcels between the COY and Reclamation and therefore, would have no impact on the Yellow-Billed Cuckoos.



THE STATE OF ARIZONA
GAME AND FISH DEPARTMENT

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REGION IV, 9140 E. 28TH ST., YUMA, AZ 85365

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ROBERT D. BROSCHEID



December 9, 2009

Mark Galate
Environmental Professional
Nicklaus Engineering
1851 West 24th Street
Yuma, AZ 85364

Re: Species List: Reclamation/City of Yuma Land Exchange

Dear Mr. Galate:

The Arizona Game and Fish Department (Department) has reviewed your request, dated November 18, 2009, regarding special status species information associated with the above-referenced land exchange. The attached receipt was developed using the Department's Arizona On-line Environmental Review Tool. The receipt identifies seven special status species, including two listed Threatened and Endangered species (Southwest Willow Flycatcher and Yuma Clapper Rail) and one candidate species (Yellow-billed Cuckoo). We further note that nesting burrowing owls may be found on these parcels. The Department does not anticipate any impacts on special status species from the proposed land exchange. However, future projects on these parcels could impact these species.

The Department appreciates the opportunity to provide comments early in the planning and design stages of proposed projects. We would like to continue this coordinated effort and offer additional site-specific guidance that will help conserve wildlife and their habitats, including sensitive, threatened, non-game and game species. If you have any questions regarding this letter, please contact me at 928-341-4047.

Sincerely,

William C. Knowles
Habitat Specialist
Region IV, Yuma

Attachment

cc: Troy Smith, Habitat Program Manager, Region IV
Laura Canaca, Proj. Eval. Prog. Supervisor, Habitat Branch

AGFD # M09-12075455

Special Status Species within 5 Miles of CA T16S,R22E Sec 27, 34, 35

NAME	COMMON NAME	ESA	USFS	BLM	STATE
<i>Ardea alba</i>	Great Egret			S	WSC
<i>Athene cunicularia hypugaea</i>	Western Burrowing Owl	SC		S	
<i>Coccyzus americanus</i>	Yellow-billed Cuckoo (Western U.S. DPS)	C			WSC
<i>Egretta thula</i>	Snowy Egret			S	WSC
<i>Empidonax traillii extimus</i>	Southwestern Willow Flycatcher	LE	S		WSC
<i>Rallus longirostris yumanensis</i>	Yuma Clapper Rail	LE			WSC
<i>Sigmodon hispidus eremicus</i>	Yuma Hispid Cotton Rat	SC			

No Critical Habitats in project area.

Arizona Game and Fish Department, Heritage Data Management System, December 4, 2009.

within project area

within 1 mile of project area

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

Arizona's On-line Environmental Review Tool:

1. This On-line Environmental Review Tool inquiry has generated recommendations regarding the potential impacts of your project on Special Status Species (SSS) and other wildlife of Arizona. SSS include all U.S. Fish and Wildlife Service federally listed, U.S. Bureau of Land Management sensitive, U.S. Forest Service sensitive, and Arizona Game and Fish Department (Department) recognized species of concern.
2. These recommendations have been made by the Department, under authority of Arizona Revised Statutes Title 5 (Amusements and Sports), 17 (Game and Fish), and 28 (Transportation). These recommendations are preliminary in scope, designed to provide early considerations for all species of wildlife, pertinent to the project type you entered.
3. This receipt, generated by the automated On-line Environmental Review Tool does not constitute an official project review by Department biologists and planners. Further coordination may be necessary as appropriate under the National Environmental Policy Act (NEPA) and/or the Endangered Species Act (ESA).

The U.S. Fish and Wildlife Service (USFWS) has regulatory authority over all federally listed species under the ESA. Contact USFWS Ecological Services Offices: <http://arizonaes.fws.gov>.

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

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

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

Disclaimer:

1. This is a preliminary environmental screening tool. It is not a substitute for the potential knowledge gained by having a biologist conduct a field survey of the project area.
2. The Department's Heritage Data Management System (HDMS) data is not intended to include potential distribution of special status species. Arizona is large and diverse with plants, animals, and environmental conditions that are ever changing. Consequently, many areas may contain species that biologists do not know about or species previously noted in a particular area may no longer occur there.
3. Not all of Arizona has been surveyed for special status species, and surveys that have been conducted have varied greatly in scope and intensity. Such surveys may reveal previously undocumented population of species of special concern.
4. HDMS data contains information about species occurrences that have actually been reported to the Department.

Arizona Game and Fish Department Mission

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

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

Project Category: Development Within Municipalities (Urban Growth), Commercial/Industrial (mall) and associated infrastructure, Maintenance/expansion/rehabilitation of existing facilities

Project Type Recommendations:

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

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

Development plans should provide for open natural space for wildlife movement, while also minimizing the potential for wildlife-human interactions through design features. Please contact Project Evaluation Program for more information on living with urban wildlife.

During planning and construction, minimize potential introduction or spread of exotic invasive species. Invasive species can be plants, animals (exotic snails), and other organisms (e.g. microbes), which may cause alteration to ecological functions or compete with or prey

upon native species and can cause social impacts (e.g. livestock forage reduction, increase wildfire risk). The terms noxious weed or invasive plants are often used interchangeably. Precautions should be taken to wash all equipment utilized in the project activities before and after project activities to reduce the spread of invasive species. Arizona has noxious weed regulations (Arizona Revised Statutes, Rules R3-4-244 and R3-4-245). See Arizona Department of Agriculture website for restricted plants

<http://www.azda.gov/PSD/quarantine5.htm>. Additionally, the U.S. Department of Agriculture has information regarding pest and invasive plant control methods including: pesticide, herbicide, biological control agents, and mechanical control: <http://www.usda.gov/wps/portal/usdahome>. The Department regulates the importation, purchasing, and transportation of wildlife and fish (Restricted Live Wildlife), please refer to the hunting regulations for further information http://www.azgfd.gov/hunting_rules.shtml.

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

Follow manufacturer's recommended application guidelines for all chemical treatments. The U.S. Fish and Wildlife Service, Region 2, Environmental Contaminants Program has a reference document that

serves as their regional pesticide recommendations for protecting wildlife and fisheries resources, titled "Recommended Protection Measures for Pesticide Applications in Region 2 of the USFWS." The Department recommends direct or indirect impacts to sensitive species and their forage base from the application of chemical pesticides or herbicides be considered carefully.

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

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

Project Location and/or Species recommendations:

Tribal Lands are within the vicinity of your project area (refer to page 1 of the receipt) and may require further coordination. Please contact:
Fort Yuma-Quechan Tribe
P.O. Box 1899
Yuma, AZ 85366
Phone: 760-572-0213
Fax: 760-572-2102

Heritage Data Management System records indicate that one or more listed, proposed, or candidate species or Critical Habitat (Designated or Proposed) have been documented in the vicinity of your project (refer to page 1 of the receipt). Please contact:
Ecological Services Office

US Fish and Wildlife Service
2321 W. Royal Palm Rd.
Phoenix, AZ 85021-4951
Phone: 602-242-0210
Fax: 602-242-2513

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

Recommendations Disclaimer:

1. Potential impacts to fish and wildlife resources may be minimized or avoided by the recommendations generated from information submitted for your proposed project.
2. These recommendations are proposed actions or guidelines to be considered during preliminary project development.
3. Additional site specific recommendations may be proposed during further NEPA/ESA analysis or through coordination with affected agencies.
4. Making this information directly available does not substitute for the Department's review of project proposals, and should not decrease our opportunity to review and evaluate additional project information and/or new project proposals.
5. The Department is interested in the conservation of all fish and wildlife resources, including those Special Status Species listed on this receipt, and those that may have not been documented within the project vicinity as well as other game and nongame wildlife.
6. Further coordination requires the submittal of this initialed and signed Environmental Review Receipt with a cover letter and project plans or documentation that includes project narrative,

are to be impacted, how construction or project activity(s) are to be accomplished, and project locality information (including site map).

7. Upon receiving information by AZGFD, please allow 30 days for completion of project reviews. Mail requests to:

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

Terms of Use

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

1. This Environmental Review and project planning website was developed and intended for the purpose of screening projects for potential impacts on resources of special concern. By indicating your agreement to the terms of use for this website, you warrant that you will not use this website for any other purpose.
2. Unauthorized attempts to upload information or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act.
3. The Department reserves the right at any time, without notice, to enhance, modify, alter, or suspend the website and to terminate or restrict your access to the website.
4. This Environmental Review is based on the project study area that was entered. The review must be redone if the project study area,

location, or the type of project changes. If additional information becomes available, this review may need to be reconsidered.

5. A signed and initialed copy of the Environmental Review Receipt indicates that the entire receipt has been read by the signer of the Environmental Review Receipt.

Security:

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

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

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

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

Arizona's On-line Environmental Review Tool
Search ID: 20091202010848
Project Name: Reclamation Land Exchange
Date: 12/2/2009 7:47:09 AM

provided.

Signature: _____

Date: _____

Proposed Date of Implementation: _____

Please provide point of contact information regarding this Environmental Review.

Application or organization responsible for project implementation

Agency/organization: _____

Contact Name: _____

Address: _____

City, State, Zip: _____

Phone: _____

E-mail: _____

Person Conducting Search (if not applicant)

Agency/organization: _____

Contact Name: _____

Address: _____

City, State, Zip: _____

Phone: _____

E-mail: _____



Element Status Designations by County, Taxon, Scientific Name
 Arizona Game and Fish Department, Heritage Data management System
 Updated: December 01, 2009

COUNTY	TAXON	SCIENTIFIC NAME	COMMON NAME	ESA	BLM	CRIT HAB	USFS	NESL	MEXFED	STATE	ELCODE	S RANK	G RANK
Apache	AMPHIBIAN	Anaxyrus microscaphus	Arizona Toad	SC			S			WSC	AAAAB01110	S3S4	G3G4
Apache	AMPHIBIAN	Rana chiricahuensis	Chiricahua Leopard Frog	LT			S	A		WSC	AAAABH01080	S2	G3
Apache	AMPHIBIAN	Rana pipiens	Northern Leopard Frog		S		S	2		WSC	AAAABH01170	S2	G5
Apache	AMPHIBIAN	Rana yavapaiensis	Lowland Leopard Frog	SC	S		S		PR	WSC	AAAABH01250	S3	G4
Apache	AMPHIBIAN	Spea intermontana	Great Basin Spadefoot							WSC	AAAABF02030	S3	G5
Apache	BIRD	Accipiter gentilis	Northern Goshawk	SC	S		S	4	A	WSC	ABNKC12060	S3B	G5
Apache	BIRD	Anthus rubescens	American Pipit								ABPBM02050	S2B,S5N	G5
Apache	BIRD	Aquila chrysaetos	Golden Eagle					3	P		ABNKC22010	S4	G5
Apache	BIRD	Asio otus	Long-eared Owl								ABNSB13010	S2B,S3S4N	G5
Apache	BIRD	Athene cunicularia hypugaea	Western Burrowing Owl	SC	S		S	4	A		ABNSB10012	S3	G4T4
Apache	BIRD	Catharus fuscescens	Veery							WSC	ABPB118080	S1	G5
Apache	BIRD	Catharus ustulatus	Swainson's Thrush								ABPB118100	S1	G5
Apache	BIRD	Charadrius montanus	Mountain Plover	SC			S	4			ABNNB03100	S1B,S2N	G2
Apache	BIRD	Coccyzus americanus	Yellow-billed Cuckoo (Western U.S. C DPS)					2		WSC	ABNRB02020	S3	G5
Apache	BIRD	Dolichonyx oryzivorus	Bobolink							WSC	ABPBXA9010	S1	G5
Apache	BIRD	Dumetella carolinensis	Gray Catbird							WSC	ABPBK01010	S1	G5
Apache	BIRD	Empidonax traillii eximius	Southwestern Willow Flycatcher	LE			S	2		WSC	ABPAE33043	S1	G5T1T2
Apache	BIRD	Falco peregrinus anatum	American Peregrine Falcon	SC	S		S	4	A	WSC	ABNKD06071	S4	G4T4
Apache	BIRD	Gallinago delicata	Wilson's Snipe								ABNNF18030	S1B,S4N	G5
Apache	BIRD	Haliaeetus leucocephalus	Bald Eagle		S		S	2	P	WSC	ABNKC10010	S2S3B,S4N	G5
Apache	BIRD	Haliaeetus leucocephalus (wintering pop.)	Bald Eagle - Winter Population	SC	S		S	2	P	WSC	ABNKC10015	S4N	G5TNR
Apache	BIRD	Megaceryle alcyon	Belted Kingfisher					4		WSC	ABNXD01020	S2B,S5N	G5
Apache	BIRD	Numenius americanus	Long-billed Curlew								ABNNF07070	S1B,S3S4N	G5
Apache	BIRD	Pandion haliaetus	Osprey		S					WSC	ABNKC01010	S2B,S4N	G5
Apache	BIRD	Pica hudsonia	Black-billed Magpie							WSC	ABPAV09010	S3	G5

COUNTY	TAXON	SCIENTIFIC NAME	COMMON NAME	ESA	BLM	CRIT HAB	USFS NESL	MEXFED	STATE	ELCODE	S RANK	G RANK
Yavapai	PLANT	Solanum heterodoxum	Melonleaf Nighthshade							PDSOL0Z0X0	S4	G4G5
Yavapai	PLANT	Talinum angustissimum	Yellow Flame Flower							PDPOR08010	S2	G4
Yavapai	PLANT	Talinum parviflorum	Small-flowered Flame-flower							PDPOR080E0	S3	G5
Yavapai	PLANT	Talinum validulum	Tusayan Flame Flower	SC				SR		PDPOR080M0	S3	G3
Yavapai	PLANT	Thelypteris puberula var. sonorensis	Aravaipa Wood Fern		S					PPTHE05192	S2	G5T3
Yavapai	PLANT	Trichostema brachiatum	Flux Weed							PDLAM22030	S4	G5
Yavapai	PLANT	Triteleia lemmoniae	Mazatzal Tritileia					SR		PMLJL210C0	S3	G3
Yavapai	PLANT	Washingtonia filifera	California Fan Palm					SR		PMARE0G010	S1	G4
Yavapai	REPTILE	Gopherus agassizii (Sonoran Population)	Sonoran Desert Tortoise	SC	S		A	WSC		ARAAF01013	S4	G4T4
Yavapai	REPTILE	Heloderma suspectum	Gila Monster				A			ARACE01010	S4	G4
Yavapai	REPTILE	Heloderma suspectum cinctum	Banded Gila Monster	SC			A			ARACE01011	S4	G4T4
Yavapai	REPTILE	Lampropeltis triangulum taylori	Utah Milksnake			4				ARADB19058	S2	G5T4Q
Yavapai	REPTILE	Lichanura trivirgata gracia	Desert Rosy Boa	SC	S		S			ARADA01021	S3S4	G4G5T3
Yavapai	REPTILE	Plestiodon "gilberti" arizonensis	Arizona Skink	SC			PR	WSC		ARACH01061	S1	G5T1Q
Yavapai	REPTILE	Plestiodon "gilberti" rubricaudatus	Western Red-tailed Skink				PR			ARACH01065	S3S4	G5T4Q
Yavapai	REPTILE	Thamnophis eques megalops	Northern Mexican Gartersnake	C			A	WSC		ARADB36061	S1	G5T5
Yavapai	REPTILE	Thamnophis rufipunctatus	Narrow-headed Gartersnake	SC	S		S	WSC		ARADB36110	S1	G3G4
Yavapai	REPTILE	Xantusia arizonae	Arizona Night Lizard				S			ARACK01050	S1	G3
Yuma	BIRD	Ardea alba	Great Egret		S			WSC		ABNGA04040	S1B,S4N	G5
Yuma	BIRD	Ardea herodias	Great Blue Heron							ABNGA04010	S5	G5
Yuma	BIRD	Athene cunicularia hypugaea	Western Burrowing Owl	SC	S		4	A		ABNSB10012	S3	G4T4
Yuma	BIRD	Bubulcus ibis	Cattle Egret							ABNGA07010	S1B,S4N	G5
Yuma	BIRD	Coccyzus americanus	Yellow-billed Cuckoo (Western U.S.C DPS)			2		WSC		ABNRB02020	S3	G5
Yuma	BIRD	Egretta thula	Snowy Egret		S			WSC		ABNGA06030	S1B,S4N	G5
Yuma	BIRD	Empidonax traillii extimus	Southwestern Willow Flycatcher	LE		2		WSC		ABPAE33043	S1	G5T1T2
Yuma	BIRD	Glauclidium brasilianum cactorum	Cactus Ferruginous Pygmy-owl	SC	S		A	WSC		ABNSB08041	S1	G5T3
Yuma	BIRD	Haliaeetus leucocephalus (wintering pop.)	Bald Eagle - Winter Population	SC	S	2	P	WSC		ABNKC10015	S4N	G5TNR

COUNTY	TAXON	SCIENTIFIC NAME	COMMON NAME	ESA	BLM	CRIT HAB	USFS	NESL	MEXFED	STATE	ELCODE	S RANK	G RANK
Yuma	BIRD	<i>Himantopus mexicanus</i>	Black-necked Stilt								ABNND01010	S2	G5
Yuma	BIRD	<i>Icterus bullockii</i>	Bullock's Oriole								ABPBXB9220	S?	G5
Yuma	BIRD	<i>Ixobrychus exilis</i>	Least Bittern	S				A		WSC	ABNGA02010	S3	G5
Yuma	BIRD	<i>Lanius ludovicianus</i>	Loggerhead Shrike	SC							ABPBR01030	S4	G4
Yuma	BIRD	<i>Laterallus jamaicensis coturniculus</i>	California Black Rail	SC	S			PR		WSC	ABNME03041	S1	G4T1
Yuma	BIRD	<i>Rallus longirostris yumanensis</i>	Yuma Clapper Rail	LE				P		WSC	ABNME0501A	S3	G5T3
Yuma	FISH	<i>Xyrauchen texanus</i>	Razorback Stecker	LE				P		WSC	AFCJCI1010	S1	G1
Yuma	MAMMAL	<i>Antilocapra americana sonoriensis</i>	Sonoran Pronghorn	LE				P		WSC	AMALD01012	S1	G5T1
Yuma	MAMMAL	<i>Antrozous pallidus</i>	Pallid Bat								AMACC10010	S4	G5
Yuma	MAMMAL	Bat Colony									OBATCOLONY	SU	GNR
Yuma	MAMMAL	Bat Foraging Area	High Netting Concentration								OBATFORAG1	SU	GNR
Yuma	MAMMAL	<i>Corynorhinus townsendii palliense</i>	Pale Townsend's Big-eared Bat	SC	S			4			AMACC08014	S3S4	G4T4
Yuma	MAMMAL	<i>Euderma maculatum</i>	Spotted Bat	SC	S			PR		WSC	AMACC07010	S1S2	G4
Yuma	MAMMAL	<i>Eumops perotis californicus</i>	Greater Western Bommated Bat	SC	S						AMACD02011	S3	G5T4
Yuma	MAMMAL	<i>Lasurus xanthinus</i>	Western Yellow Bat	S						WSC	AMACC05070	S2S3	G5
Yuma	MAMMAL	<i>Leptonycteris curasoae yerbabuena</i>	Lesser Long-nosed Bat	LE				S		WSC	AMACB03030	S2S3	G4
Yuma	MAMMAL	<i>Macrotus californicus</i>	California Leaf-nosed Bat	SC	S					WSC	AMACB01010	S3	G4
Yuma	MAMMAL	<i>Myotis californicus</i>	California Myotis								AMACC01120	S4S5	G5
Yuma	MAMMAL	<i>Myotis yumanensis</i>	Yuma Myotis	SC							AMACC01020	S3S4	G5
Yuma	MAMMAL	<i>Nyctinomops femorosaccus</i>	Pocketed Free-tailed Bat								AMACD04010	S3	G4
Yuma	MAMMAL	<i>Peromyscus eremicus</i>	Cactus Mouse								AMAFF03010	S5	G5
Yuma	MAMMAL	<i>Sigmodon hispidus eremicus</i>	Yuma Hispid Cotton Rat	SC							AMAFF07013	S2	G5T2T3
Yuma	MAMMAL	<i>Tadarida brasiliensis</i>	Brazilian Free-tailed Bat								AMACD01010	S3S4	G5
Yuma	PLANT	<i>Allium parishii</i>	Parish Onion	S					SR		PMLIL021N0	S1	G3
Yuma	PLANT	<i>Astragalus insularis</i>	Sand Flat Milk-yetch								PDFAB0F490	S2	G5
Yuma	PLANT	<i>Berberis harrissoniana</i>	Kofa Mt Barberry	S							PDBER02030	S1S2	G1G2
Yuma	PLANT	<i>Calandrinia ambigua</i>	Rock Purslane								PDPOR09010	S2?	G4

COUNTY	TAXON	SCIENTIFIC NAME	COMMON NAME	ESA	BLM	CRIT HAB	USFS	NESL	MEXFED	STATE	ELCODE	S RANK	G RANK
Yuma	PLANT	<i>Colubrina californica</i>	California Snakewood								PDRHA05030	S2S3	G4
Yuma	PLANT	<i>Croton wigginsii</i>	Dune Croton								PDEUP0H140	S1	G2G3
Yuma	PLANT	<i>Cryptantha ganderi</i>	Gander's Cryptantha	SC							PDBOR0A120	S1	G1G2
Yuma	PLANT	<i>Drymaria viscosa</i>									PDCAR09090	S1	G3?
Yuma	PLANT	<i>Echinocactus polycephalus</i> var. <i>polycephalus</i>	Clustered Barrel Cactus					SR			PDCAC05033	S2	G3G4T3T4
Yuma	PLANT	<i>Echinodorus berteroi</i>	Upright Burrhead								PMALI020B0	S1	G5
Yuma	PLANT	<i>Erigeron lobatus</i>	Lobed Fleabane								PDAST3M2C0	S3	G4
Yuma	PLANT	<i>Eriogonum deserticola</i>	Desert Wild-buckwheat								PDPGN081Q0	S1	G4?
Yuma	PLANT	<i>Eryngium nasturtifolium</i>	Hierba del Sapo								PDAP10Z0L0	S1	G5
Yuma	PLANT	<i>Euenide rupestris</i>	Flor de la Piedra								PDLOA02020	S1	G3
Yuma	PLANT	<i>Euphorbia platysperma</i>	Dune Spurge	SC							PDEUP0D1X0	S1	G3
Yuma	PLANT	<i>Ferocactus cylindraceus</i>	Desert Barrel Cactus				PR				PDCAC08080	S4	G5
Yuma	PLANT	<i>Helianthus niveus</i> ssp. <i>tephrodes</i>	Dune Sunflower	SC							PDAST4N0Z2	S2	G4T2
Yuma	PLANT	<i>Lophocereus schottii</i>	Semita								PDCAC14010	S1S2	G4
Yuma	PLANT	<i>Nemacaulis denudata</i>	Woolly Heads								PDPGN0G010	S2	G3G4
Yuma	PLANT	<i>Opuntia echinocarpa</i>	Straw-top Cholla								PDCAC0D2W0	S5	G5
Yuma	PLANT	<i>Petalonyx linearis</i>	Longleaf Sandpaper Plant								PDLOA04010	S2	G4
Yuma	PLANT	<i>Pholisma sonora</i>	Sand Food	SC	S			HS			PDLNN02020	S1	G2
Yuma	PLANT	<i>Pilostyles thurberi</i>	Thurber Pilostyles								PDRAF01010	S2	G5
Yuma	PLANT	<i>Polygonum fusiforme</i>	Needles Knotweed								PDPGN0L110	S3?	G3G4Q
Yuma	PLANT	<i>Rhus kearneyi</i>	Kearney Sumac		S						PDANA08050	S2	G4
Yuma	PLANT	<i>Selaginella eremophila</i>	Desert Spike Moss								PPSEL010G0	S3S4	G4
Yuma	PLANT	<i>Stephanomeria schottii</i>	Schott Wire Lettuce		S						PDAST8U0D0	S2	G2
Yuma	PLANT	<i>Stillingia linearifolia</i>	Linearleaf Sand Spurge								PDEUP1B020	S3S4	G4
Yuma	PLANT	<i>Stillingia spinulosa</i>	Spiny Sand Spurge								PDEUP1B040	S3S4	G4
Yuma	PLANT	<i>Tetradococcus fasciculatus</i> var. <i>hallii</i>	Hall Shrub Spurge								PDEUP1C021	S3S4	G4T4
Yuma	PLANT	<i>Teucrium glandulosum</i>	Desert Germander								PDLAM20040	S3?	G4

COUNTY	TAXON	SCIENTIFIC NAME	COMMON NAME	ESA	BLM	CRIT HAB	USFS	NESL	MEXFED	STATE	ELCODE	S RANK	G RANK
Yuma	PLANT	<i>Triteleopsis palmeri</i>	Blue Sand Lily		S					SR	PMLJL22010	S1	G3
Yuma	PLANT	<i>Washingtonia filifera</i>	California Fan Palm							SR	PMARE0G010	S1	G4
Yuma	REPTILE	<i>Crotalus mitchellii</i>	Speckled Rattlesnake					PR			ARADE02060	S5	G5
Yuma	REPTILE	<i>Crotaphytus bicinctores</i>	Great Basin Collared Lizard								ARACF04010	S4	G5
Yuma	REPTILE	<i>Crotaphytus nebricus</i>	Sonoran Collared Lizard								ARACF04050	S3S4	G4
Yuma	REPTILE	<i>Gopherus agassizii</i> (Sonoran Population)	Sonoran Desert Tortoise	SC	S			A		WSC	ARAAF01013	S4	G4T4
Yuma	REPTILE	<i>Heloderma suspectum cinctum</i>	Banded Gila Monster	SC				A			ARACE01011	S4	G4T4
Yuma	REPTILE	<i>Lichamura trivirgata gracia</i>	Desert Rosy Boa	SC	S		S				ARADA01021	S3S4	G4G5T3
Yuma	REPTILE	<i>Phrynosoma mcallii</i>	Flat-tailed Horned Lizard	SC	S			A		WSC	ARACF12040	S2	G3
Yuma	REPTILE	<i>Sauromalus ater</i> (Arizona Population)	Arizona Chuckwalla	SC	S			A			ARACF13013	S4	G5T4Q
Yuma	REPTILE	<i>Uma rufopunctata</i>	Yuman Desert Fringe-toed Lizard	SC	S		S	A		WSC	ARACF15040	S2	G3

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Appendix B: Cultural Resources Inventory

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THE COCOPAH INDIAN TRIBE

Cultural Resource Department
County 15th & Avenue G
Somerton, Arizona 85350
Telephone (928) 627-4849
Fax (928) 627-3173

CCR-005-09-002

December 14, 2009

Mark Galate
Environmental Professional
Nicholaus Engineering, Inc.
1851 W. 24th Street
Yuma, AZ 85364

Re: Reclamation Land Exchange

Dear Mr. Galate:

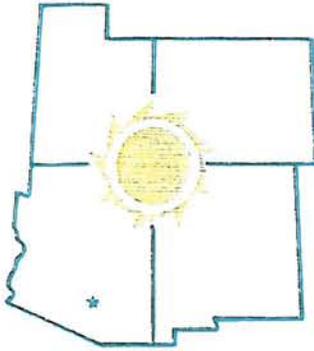
The Cultural Resources Department of the Cocopah Indian Tribe appreciates your consultation efforts on this project. We are pleased that you contacted our department on this issue for the purpose of solicitation of our input and to address our concerns on this matter. At this time we wish to make no comments on the development of the project. However, we would like to continue to be kept informed on the progress of this project and be a part of future consultation on projects that affect the cultural resources in this region. Additionally, we expect to be provided with all documents pertinent to this project, both draft and final.

If you have any questions or need additional information please feel free to contact the cultural resource department. We will be happy to assist you with any and all future concerns or questions. Again, thank you for your efforts in this matter and we look forward to working with you in the future.

Sincerely,

H. Jill McCormick

Cultural Resource Manager



AZTLAN ARCHAEOLOGY, INC.
ENVIRONMENTAL CONSULTANTS

1026 North Columbus Blvd. Tucson, Arizona 85711
(520) 620-1480 FAX (520) 620-1432

**A Cultural Resources Inventory for a
Land Transfer Between the City of Yuma and Bureau of Reclamation
near the Yuma Canal in Yuma, Arizona**

Prepared by:

Laurie V. Slawson, Ph.D., RPA
Principal Investigator

Submitted to:

Nicklaus Engineering, Inc.
1851 West 24th Street
Yuma, Arizona 85364

Technical Report No. 2010-11

January 19, 2010

Abstract

Agency:

Bureau of Reclamation and City of Yuma; Arizona Antiquities Permit No. 2009-021b1

Project Title:

A Cultural Resources Inventory for a Land Transfer Between the City of Yuma and Bureau of Reclamation near the Yuma Canal in Yuma, Arizona (report dated 1/19/2010)

Project Description:

Class I and III surveys of eight parcels for a land transfer between the City of Yuma and the Bureau of Reclamation near the Yuma Canal in Yuma, Arizona, Arizona, were conducted for Nicklaus Engineering, Inc. The purpose of the inventory was to locate and describe any cultural resources that might be adversely affected by the proposed land transfer.

Location:

Portions of Section 35, Township 16 South, Range 22 East, Township 8 South, Range 22 East; Gila and Salt River Baseline and Meridian, U.S.G.S. Yuma West and Yuma East, Arizona-California 7.5 Minute quadrangle maps; Yuma County, Arizona

Number of Acres Surveyed:

Approximately 10 acres

Number of Sites:

None

Number of National Register-Eligible Sites:

None

Number of National Register-Ineligible Sites:

None

Comments:

No National Register-eligible cultural resources are adversely affected by the proposed undertaking, and archaeological clearance is recommended for the project area.

A Cultural Resources Inventory for a Land Transfer Between the City of Yuma and Bureau of Reclamation near the Yuma Canal in Yuma, Arizona

A cultural resources inventory of eight parcels for a land transfer between the City of Yuma (COY) and the Bureau of Reclamation (BOR) near the Yuma Canal in Yuma, Arizona, was conducted by Aztlan Archaeology, Inc., for Nicklaus Engineering, Inc. The purpose of the inventory was to locate and describe any cultural resources that might be adversely affected by the proposed land transfer. Tasks completed as part of this project consisted of a Class I overview (i.e., records check and literature search) and a Class III archaeological survey (100% coverage). The fieldwork was conducted on December 1, 2009, by Laural Myers (field director). The field survey was conducted under the authority of Arizona Antiquities Act Permit No. 2009-21bl.

Project Area Location

The project area consists of four COY parcels and four BOR parcels totaling approximately 10 acres located near the Yuma Canal in Yuma (Yuma County), Arizona. This location is in portions of Section 35, Township 16 South, Range 22 East; the township and range are located with respect to the Gila and Salt River Baseline and Meridian, on the U.S.G.S. Yuma West (1997) and Yuma East (1994), Arizona-California 7.5 Minute quadrangle maps. The project area location is shown in Figures 1 and 2.

Environmental Setting

The project area is situated within the Basin and Range physiographic province and surrounding vegetation is characteristic of the Lower Colorado River Subdivision of the Sonoran Desertscrub Formation (Brown and Lowe 1994). On-site vegetation consists of transplanted trees and grasses. Ground visibility was unrestricted within the project area, which is paved. No faunal observations were made during the survey and no endangered or threatened plant species were noted. The terrain within the project area averages 140 feet above mean sea level.

Culture History

Human occupation in Arizona began with a long and relatively stable lifeway that was based on the hunting and gathering of native animal and plant foods. This form of subsistence adaptation continued relatively unchanged for several thousand years. Around A.D. 200 to 300,

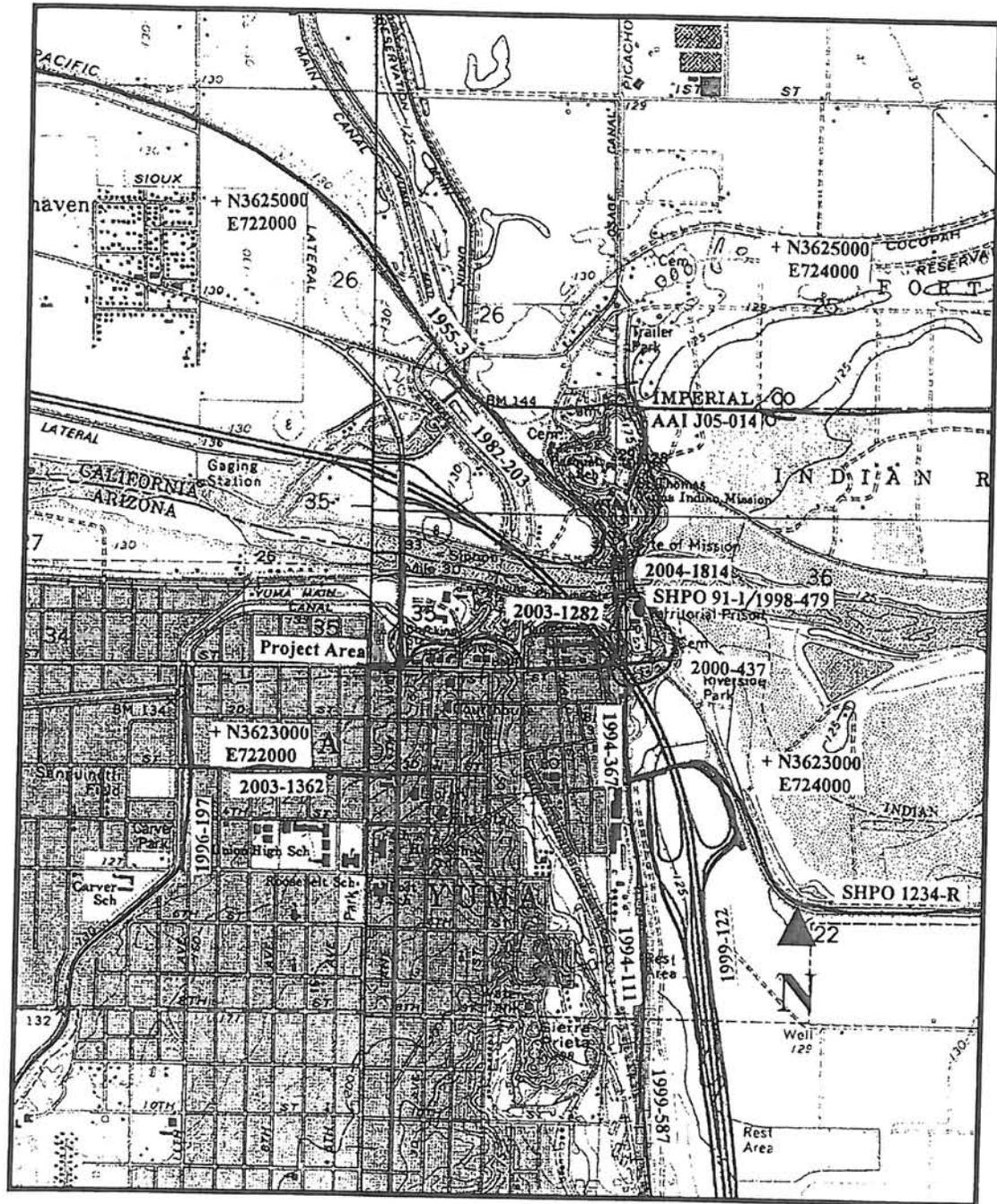


Figure 1. Locations of the project area (arrow) and previously recorded archaeological sites (U.S.G.S. Yuma West and Yuma East, Arizona-California 7.5 Minute quadrangle maps, T16S, R22E; scale = 1:24,000).

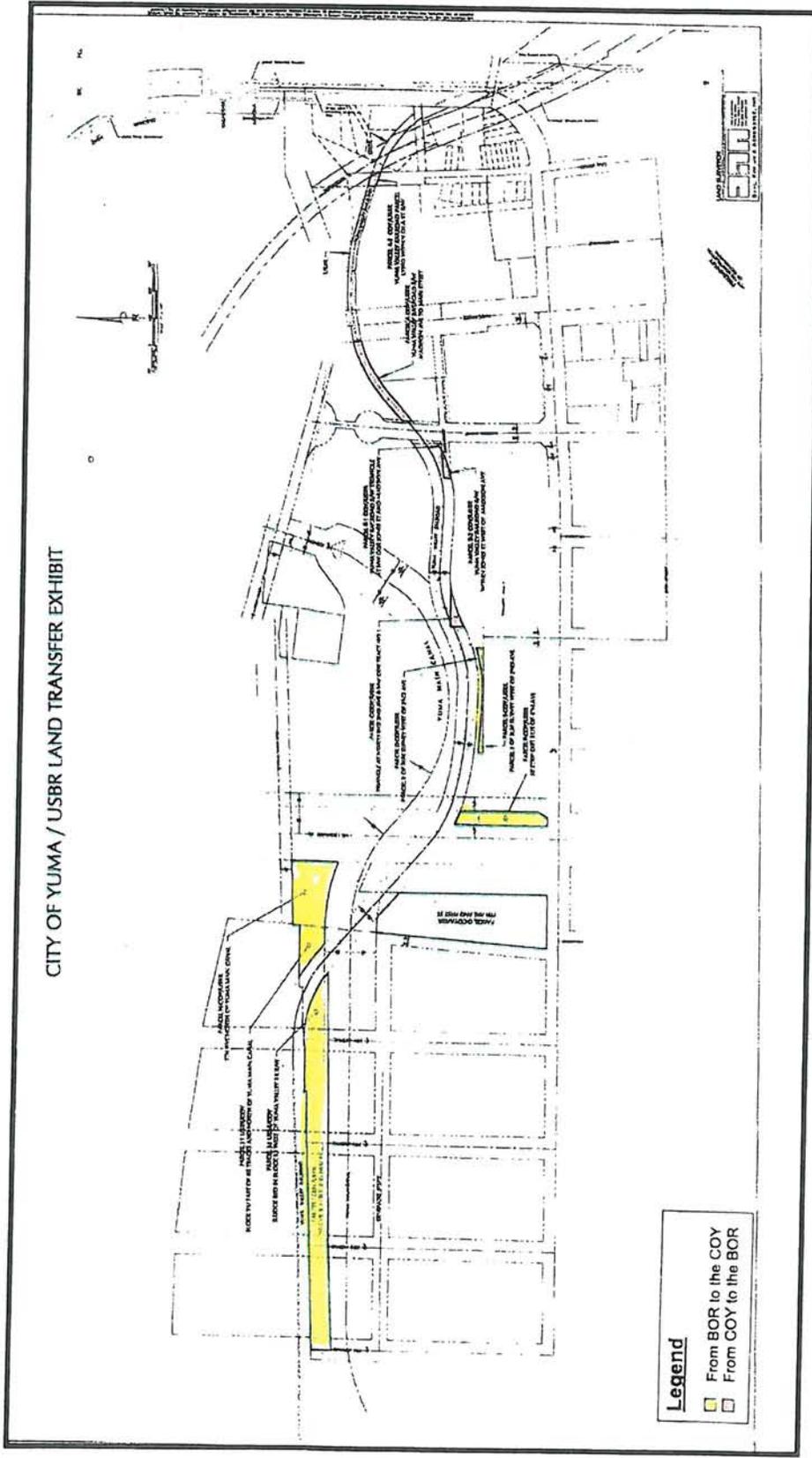


Figure 2. Locations of the eight land ownership transfer parcels in the project area.

new cultures developed that were based on a farming economy and a sedentary way of life. For more than 1,000 years, these cultures flourished in Arizona. When the first European explorers arrived in the seventeenth century, however, many regions that had been occupied by substantial populations in prehistoric times no longer were so. Permanent settlement by Euroamericans began once the Arizona territory was acquired by the United States and the U.S. Army had established an effective military presence.

Prehistoric Period

The earliest period of culture history in Arizona is that of Paleoindian, which has come to signify hunting and gathering cultures of late Pleistocene and early Holocene age. The Clovis or Llano tradition, an apparently distinct Paleoindian hunting-gathering culture that focused on the exploitation of now-extinct megafauna, has been recognized in the approximately 11,500 to 10,000 years Before Present (B.P) time range in southern Arizona. Although Clovis culture is well documented in the San Pedro River Valley in southeastern Arizona, elsewhere generally only isolated Clovis points have been found such as one found by a rancher in the Aquarius Mountains (Wright 1993). The current lack of evidence for Clovis occupation in much of Arizona may be misleading due to a number of factors, including geological preservation and the presence of later prehistoric occupations, which may be obscuring evidence for earlier cultures.

The next period of culture history is the Archaic, which is associated with a variety of hunting-gathering, largely preceramic, and, for the most part, nonagricultural, cultures that employed milling stone technology and were ancestral to many of the better-known agricultural societies. The Archaic period may be characterized as a time of increasing sophistication in hunting and gathering techniques through both technological development and the evolution of ever more complex subsistence-settlement systems, in conjunction with a gradually increasing dependence upon floral food resources. A transition to a partial reliance on agriculture accompanied population growth and the development of more sedentary settlement patterns.

Two broad traditions have been associated with the Archaic period in Arizona: the Cochise culture, first defined in the San Pedro, Sulphur Spring, and San Simon valleys of southeastern Arizona (Sayles 1983; Sayles and Antevs 1941); and the Amargosa Complex, initially identified in the Mohave Desert of California and adjacent parts of the Great Basin (Haury 1950; Hayden 1970, 1976; Rogers 1966). The Archaic period generally is estimated at about 10,000 to 1500 years B.P. in the Southwest, although the terminal date varies considerably from one place to another.

During the subsequent Formative period, ceramic-producing, agriculturally based peoples of the prehistoric Southwest inhabited a variety of highly contrasting environments from the low deserts to the high plateaus. The Patayan of the Lower Colorado River Valley, the Hohokam of the eastern Sonoran Desert, the Mogollon of the mountain and transition zone, and the Anasazi of the Colorado Plateau each developed unique subsistence lifestyles that represented behavioral and demographic adaptations to short-term and long-term environmental fluctuations.

Of these four major cultural groups, the Patayan is the least well-known due to the paucity of major archaeological studies that have been conducted in the region, especially when compared

to areas associated with the Hohokam, Mogollon, and Anasazi cultures. As a result, few culturally independent dates are available (none of which is based on dendrochronology or archaeomagnetic dating) and very few vertically stratified sites are known. For the most part, prior work has failed to produce a significant body of data on the lowland Patayan (Cordell 1984; McGuire 1982; Schroeder 1979). Elsewhere in the upland areas of the Patayan, some *rancheria*-type sites have been investigated; however, as with the lowland areas, little is known about their cultural prehistory (Cordell 1984); however, three traditions have been identified: Prescott, Cohonina, and Cerbat. The latter branch is most closely associated with the vicinity of the project area. The Cerbat culture, which is distinguished by the presence of Tizon Brownware ceramics, probably was restricted to the desert and riverine areas bordering the Colorado River in the vicinity of the Mohave valley from about A.D. 700 to 1150 (Cordell 1984 citing Euler 1977).

Historic Period

Although the first documented European contacts in Arizona were expeditions led by Melchior Díaz in 1539, Juan de Oñate in 1604, and Padre Eusebio Francisco Kino in 1697, little European influence occurred. The first known Anglo-Americans to travel the area were fur trappers who conducted several expeditions along the Big Sandy River during the late 1820s, whereas the U.S. invasion of Mexico in 1846 brought U.S. troops into Arizona for the first time (Wagoner 1975). With the signing of the Treaty of Guadalupe Hidalgo in 1848, Mexico ceded lands north of the Gila River to the United States (Wagoner 1975). With the Gadsden Purchase of 1853, the rest of Arizona became United States territory, and a series of military forts was developed, transportation systems were improved, and Anglo-American immigration increased. While exploring along the 35th Parallel for a railroad route, Lieutenant Amiel W. Whipple became the first military explorer to travel directly along the Big Sandy River.

Between 1880 and 1900, population doubled in the Southwest, doubling once again from 1900 to 1920 (Meinig 1971). This increase in the local labor force, in conjunction with the availability of inexpensive transportation in the form of the railroads, made the mining of Arizona's large low-grade copper deposits profitable for the first time, resulting in a series of copper mining booms beginning in the 1880s (Teague 1980). However, the mining boom was relatively short-lived, lasting approximately from 1880 to 1915, with depressions occurring in 1883 and 1902 (Feil 1968).

Methodology

Tasks completed during the cultural resources inventory involved archival investigations (Class I overview) and a pedestrian survey of the project area (Class III survey).

Class I Overview

Survey and site records and maps at the Arizona State Historic Preservation Office (SHPO) were reviewed for pertinent information, a historic General Land Office map of the area was obtained from the Bureau of Land Management Public Room in Phoenix, and the AZSITE and National Register of Historic Places online databases were consulted. The AZSITE database includes records from the Arizona State Museum, Arizona State University, Museum of Northern Arizona, Bureau of Land Management, and U.S. Department of the Interior. National, State, and Local Registers of Historic Places also were reviewed at SHPO for information on historic properties or districts within the 1-mile study radius.

The file research indicates that 15 surveys have been conducted within a 1-mile-radius of the project area, which has not been surveyed previously. Twenty-six sites have been recorded within that same distance. Twenty properties within 1 mile of the project area are listed on the National Register of Historic Places, and 16 are listed on the Arizona State Inventory of Historic Places. Additional information obtained during the records search, which was conducted November 17-18, 2009, is provided in Tables 1 through 4.

National Register of Historic Places

Twenty historic properties within 1 mile of the project area are listed on the National Register of Historic Places; one is a National Historic Landmark. Sixteen of the listed properties are included within the Yuma Multiple Resource Area (MRA). Information pertinent to these properties is presented in Table 3.

State Register of Historic Places

Sixteen historic properties are listed on the Arizona State Inventory of Historic Places (see Table 4). The properties are located within the Yuma MRA, but are noncontributing. Fifteen of the properties are within the Yuma Century Heights Conservancy Residential Historic District.

General Land Office Maps

Several General Land Office maps from the 1860s and 1870s were examined and no detailed information relevant to historic resources in or near Section 35 was noted.

Class III Survey

The pedestrian field survey was conducted on December 1, 2009, by Laural Myers (field director). During the survey, a 10-meter-wide transect was walked along the unpaved extent of the entire length of the right-of-way for 100-percent coverage. No problems occurred during the survey.

Table 1

Previous Archaeological Surveys Within 1 Mile of the Project Area

Agency No.	Reference	Site(s) Investigated
1955-3.ASM	Komerska, Robert, and David Breternitz 1955 Archaeological Survey for Engineering Management, Inc., Yuma & Eastward for Southern Pacific Pipeline Weekly Reports. Ms. on file, Arizona State Museum, University of Arizona, Tucson.	Fifteen sites
1982-03.ASM	Stone, Lyle M. 1982 Yuma Crossing and Associated Sites National Historic Landmark: An Archaeological Perspective. Ms. on file, Archaeological Research Services, Inc., Tempe.	None
1994-111.ASM	Mitchell, Douglas R. 1994 <i>Archaeological Survey for the Yuma Loop Line-Line Replacement Project, Yuma County, Arizona.</i> Archaeological Report No. 94-26. SWCA, Phoenix.	None
1994-367.ASM	Doak, David P. 1994 <i>Archaeological Monitoring of a Natural Gas Line Replacement Operation in Yuma, Yuma County, Arizona.</i> Archaeological Report No. 1994-149. SWCA, Tucson.	None
1996-197.ASM	Stone, Bradford 1996 Cultural Resources Survey of a Five Mile Long Segment of U.S. Bureau of Reclamation (Yuma County Water User's) Owned Land Along the East Main Canal Between 2nd and 40th Streets in Yuma. Ms. on file, Archaeological Research Services, Inc., Tempe.	None
1998-479.ASM/ SHPO 91-1	Jensen, Jackman Karolyn, Margaret Glass, and Catherine B. Johnson 1999 Salvage Excavations in the New Yard at Yuma Territorial Prison State Historic Park, Yuma, Yuma County, Arizona. Ms. on file, Archaeological Consulting Services, Ltd., Tempe.	None
1999-122.ASM	DeMaagd, Holly 1999 <i>Cultural Resources Survey Along Interstate 8 Between Mileposts 0.0 and 3.0 Yuma, Yuma County, Arizona.</i> Report No. 98-64. Archaeological Consulting Services, Tempe.	One

Table 1 (continued)

Previous Archaeological Surveys Within 1 Mile of the Project Area

Agency No.	Reference	Site(s) Investigated
1999-587.ASM	<p>Doak, David P.</p> <p>1999a <i>Archaeological Survey for a Proposed Fiber Optic Cable Line from Yuma to Phoenix, Arizona.</i> Cultural Resource Report No. 99-185. SWCA, Tucson.</p> <p>1999b <i>An Archaeological Survey in Support of Permitting for a Proposed Fiber Optic Line from Phoenix, Arizona to the Arizona/New Mexico State Line.</i> Cultural Resource Report No. 99-72. SWCA, Tucson.</p> <p>1999c <i>Archaeological Survey of the Vail Work Around Portion of a Proposed Fiber Optic Line Phoenix, to the Arizona/New Mexico State Line (Addendum).</i> Addendum to Cultural Resource Report No. 99-72. SWCA, Tucson.</p> <p>1999d <i>Addendum to An Archaeological Survey in Support of Permitting for a Proposed Fiber Optic Line from Phoenix, Arizona, to the Arizona/New Mexico State Line.</i> Second Addendum to Cultural Resource Report No. 99-72. SWCA, Tucson.</p> <p>2001 <i>Archaeological Testing and Monitoring of the Level 3 Fiber Optic Corridor, Southern Arizona.</i> Cultural Resource Report No. 99-343. SWCA, Tucson.</p>	<p>AZ T:13:12; AZ U:14:321-323; AZ AA:2:172; AZ AA:6:69; AZ AA:12:657-659; AZ BB:14:665, 672; AZ CC:10:96; AZ CC:12:44; AZ CC:13:48 (ASM)</p>
	<p>Hesse, India S.</p> <p>2000 <i>An Archaeological Survey of Eight San Carlos Irrigation Project Canal Right-of-Ways for the Coolidge Fiber Optic Work-Around, Pinal County, Arizona.</i> Cultural Resources Report No. 99-280. SWCA, Tucson.</p>	
2000-437.ASM	<p>Jackman, Carolyn J.</p> <p>2000 A Cultural Resources Survey of Lands at Yuma Territorial Prison State Park, Yuma County, Arizona. Ms. on file, Archaeological Consulting Services, Ltd., Tempe.</p>	None
2003-1362.ASM	<p>Bassett, Everett J.</p> <p>2002 <i>Cultural Resources Technical Report: Baja Norte/Yuma Fiber Optic Project.</i> Transcon Environmental Project No. T17-01. Transcon Environmental, Mesa.</p>	One site

Table 1 (continued)

Previous Archaeological Surveys Within 1 Mile of the Project Area

Agency No.	Reference	Site(s) Investigated
2003-1282.ASM	O'Mack, Scott, and Scott Thompson 2003 <i>Archaeological and Historical Evaluation of Contaminated Soil Removal Area in Yuma, Arizona</i> . Technical Report No. 02-01. Statistical Research, Tucson.	One
2004-1814.ASM	Blythe, Ashley, Nancy Pearson, and Tina Clark 2005 Cultural Resources Survey of Yuma Gateway Park City of Yuma, Yuma County, Arizona. Ms. on file, Western Archaeological Conservation Center, Tucson.	None
AAI J08-006	Slawson, Laurie V. 2008 <i>A Cultural Resources Inventory for a Fiber Optic Cable Installation at 4th Avenue and 1st Street in Yuma, Arizona</i> . Technical Report No. 2008-06. Aztlan Archaeology, Tucson.	None
AAI J08-008	Slawson, Laurie V. 2008 <i>A Cultural Resources Inventory for a Fiber Optic Cable Installation at 1st Street and Penitentiary Avenue in Yuma, Arizona</i> . Technical Report No. 2008-07. Aztlan Archaeology, Tucson.	None
SHPO 1234-R	Anonymous 1975 No title available. Ms. on file, Museum of Northern Arizona, Flagstaff.	None

Results

No previously unrecorded archaeological sites or isolated occurrences were identified during the field survey of the property. No extant historic buildings or structures are in the immediate vicinity of the right-of-way.

Table 2

Previously Recorded Archaeological Sites Within 1 Mile of the Project Area

Site Number	Site Type	Location
AZ FF:9:17 (ASM)	Historic U.S. Highway 80; constructed in the early 1920s; one of the first transcontinental roadways in the United States	Across Southern Arizona
AZ X:6:1 (ASM)	Historic Yuma Territorial Prison and Yuma Quartermaster Depot; also known as Yuma Crossing; listed on National Register	Section 35 (T8S, R23W)
AZ X:6:2 (ASM)	Historic Headquarters Complex at Fort Yuma	Section 35 (T8S, R23W)
AZ X:6:4 (ASM)	Historic Gandolfo Theater; constructed in 1917; listed on National Register	Section 21 (T8S, R23W)
AZ X:6:12 (ASM)	Historic Yuma Territorial Prison and Yuma Crossing; also known as site AZ X:6:1; listed on National Register	Section 36 (T8S, R23W)
AZ X:6:15 (ASM)	Historic Valley Levee; earthen levee with sloping sides and blanketed by rocks; extends from Yuma along the east bank of the Colorado River to the U.S.-Mexico boundary	Sections 26-29, 31, and 36 (T16S, R22E)
AZ X:6:16 (ASM)	Historic West Main Canal/Bifurcation Works East	Section 20 (T8S, R23W)
AZ X:6:17 (ASM)	Historic Parshall Flume at Bifurcation	Section 20 (T8S, R23W)
AZ X:6:18 (ASM)	Historic turnout/check near 3rd Street Bridge; stamped CCC 1941	Section 20 (T8S, R23W)
AZ X:6:19 (ASM)	Historic 3rd Street bridge over East Main Canal	Section 20 (T8S, R23W)
AZ X:6:29 (ASM)	Historic Magnolia Street bridge	Section 21 (T8S, R22E)
AZ X:6:40 (ASM)	Historic Colorado River Siphon	Section 20 (T8S, R23W)
AZ X:6:43 (ASM)	Historic Yuma Valley Railroad; includes AZ X:5:127 (ASM); standard gauge tracks extend for 18 miles from Yuma to Somerton	Sections 21 and 22 (T8S, R22W)

Table 2 (continued)

Previously Recorded Archaeological Sites Within 1 Mile of the Project Area

Site Number	Site Type	Location
AZ X:6:44 (ASM)	Historic Second Avenue bridge wooden guardrail; constructed in April 1912	Section 35 (T16S, R22E)
AZ X:6:45 (ASM)	Historic Fifth Street residences; five adjacent one-story, front gable-roofed frame residences and outbuildings	Section 21 (T8S, R22E)
AZ X:6:63 (ASM)	Historic West Main Canal; also known as site AZ X:5:8 (ASM)	Sections 34 and 35 (T16S, R23W) and Sections 20 and 21 (T8S, R23W)
AZ X:6:65 (ASM)	Historic East Main Canal; also known as site AZ X:5:8 (ASM)	Sections 29 and 32 (T8S, R23W)
AZ X:6:67 (ASM)	Historic Yuma/California Main Canal	Section 20 (T8S, R23W)
AZ X:6:68 (ASM)	Historic Yuma Waterworks and Powerplant; remains of residences and associated features dating from 1890 to 1940	Section 15 (T8S, R23W)
AZ X:6:71 (ASM)	Consists of a half-city block that contains the remains of foundations of 10 dwellings and a commercial building	Section 21 (T8S, R23W)
AZ X:6:70 (ASM)	Remains of 20+ residential features and businesses dating from the late 1870s to the mid-1970s	Section 36 (T16S, R22E)
AZ X:6:90 (ASM)	Yuma Territorial Prison Historic Park; trash dump and adobe	Section 36 (T16S, R22E)
AZ X:6:94 (ASM)	Former water tower with associated historic trash	Section 36 (T16S, R22E)
AZ X:6:96 (ASM)	Patayan I limited activity locus with possible buried features	Section 36 (T16S, R22E)
AZ X:6:97 (ASM)	Historic Lot 11 of Block 13 in downtown Yuma	Section 21 (T8S, R23W)
AZ X:6:99 (ASM)	Historic homestead; concrete slab house foundation and associated artifacts; dates from 1920s to 1960s	Section 35 (T16S, R22E)

Table 3
National Register-Listed Properties Within 1 Mile of the Project Area

Historic Property	Location	NRHP Criteria
Balsz House ¹	475 2nd Avenue	C
Connor House ¹	281 South 1st Avenue	C
Dressing Apartments ¹	146 1st Avenue	C
Ewing, Frank, House ¹	700 2nd Avenue	C
Fredley Apartments ¹	406 2nd Avenue	C
Fredley House ¹	408 2nd Avenue	C
Hotel del Ming ¹	300 Gila Street	A, C
Methodist Episcopal Church ¹	256 South 1st Avenue	A, C
Ming, A. B., House ¹	468 Orange Avenue	C
Pancrazi House ¹	432 South Madison Avenue	B, C
Pauley Apartments ¹	490 West 1st Street	C
Smith, J. Homer, House ¹	600 5th Avenue	B, C
Southern Pacific Freight Depot ¹	On Main Street	A, C
Southern Pacific Railroad Depot ¹	On Gila Street	A, C
Southern Pacific Railroad Passenger Coach Car S.P. X7	201 North 4th Avenue	A, C
Yuma Century Heights Conservancy Residential Historic District	Roughly bounded by 4th Avenue, 8th Street, 1st Avenue, and Orange Avenue	A, C
Yuma City Hall ¹	181 West 1st Street	A, C
Yuma County Courthouse ¹	168 South 2nd Avenue	A, C

¹Yuma MRA

Table 3 (continued)

National Register-Listed Properties Within 1 Mile of the Project Area

Historic Property	Location	NRHP Criteria
Yuma Crossing and Associated Site (National Historic Landmark)	Located along Colorado River between Madison Avenue and Ocean to Ocean Bridge	A
Yuma Main Street Historic District	170-387 South Main Street and 10-29 West 3rd Street	A

Summary and Recommendations

No National Register-eligible cultural resources will be adversely affected by the proposed undertaking, and archaeological clearance is recommended for the project area. However, if any unknown cultural resources are found during future construction, it is recommended that work temporarily stop in the immediate vicinity of the find(s) and a qualified archaeologist be contacted to assess significance and determine appropriate mitigation procedures.

Laurie V. Slawson, Ph.D., RPA
Principal Investigator

Table 4
Other Historic Properties

SHPO No.	Historic Property Designation	Street Address
55	Molina, J. M., Office	29 West 3rd Street
67	207 South Gila Street ¹	207 South Gila Street
67	221-217 South Gila Street ¹	221-217 South Gila Street
67	452 South Maiden Lane ¹	452 South Maiden Lane
MPAEXP3260	Sturms Apartments ¹	201-239 2nd Street and 504-512 5th Street
MPAEXP3207	House ¹	148 North 2nd Street
MPAEXP3311	House ¹	616 South 1st Avenue
MPAEXP3313	House ¹	669 South 1st Avenue
MPAEXP3322	539-543 South Orange Avenue ¹	539-543 South Orange Avenue
MPAEXP3325	257-267 South 5th Avenue ¹	257-267 South 5th Avenue
MPAEXP3334	House ¹	569 South 2nd Avenue
MPAEXP3338	141-173 5th Avenue ¹	141-172 5th Avenue
MPAEXP9822	Wellington Hotel ¹	233 South Gila Street
MPAEXP9825	Railroad Express Office ¹	195 South Gila Street
MPAEXP9826	House ¹	119 South Gila Street
MPAEXP9827	House ¹	113 South Gila Street

¹Yuma Century Heights Conservancy Residential Historic District

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**Appendix C: Profile of General Demographic
Characteristics: 2007 U.S. Census bureau American
Community Survey (ACS)**

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U.S. Census Bureau
American FactFinder

FACT SHEET

Yuma County, Arizona

2006-2008 American Community Survey 3-Year Estimates - what's this?

Data Profile Highlights:

NOTE: Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities and towns and estimates of housing units for states and counties.

Social Characteristics - show more >>	Estimate	Percent	U.S.	Margin of Error	
Average household size	2.65	(X)	2.61	+/-0.06	map
Average family size	3.07	(X)	3.20	+/-0.09	
Population 25 years and over	116,945			+/-260	
High school graduate or higher	(X)	72.1	84.5%	(X)	map
Bachelor's degree or higher	(X)	12.6	27.4%	(X)	map
Civilian veterans (civilian population 18 years and over)	20,014	15.2	10.1%	+/-1,019	map
With a Disability	(X)	(X)	(X)	(X)	
Foreign born	46,070	24.3	12.5%	+/-2,027	map
Male, Now married, except separated (population 15 years and over)	42,849	60.2	52.2%	+/-1,318	
Female, Now married, except separated (population 15 years and over)	41,603	56.8	48.2%	+/-1,318	
Speak a language other than English at home (population 5 years and over)	80,815	46.6	19.6%	+/-2,003	map
Household population	183,661			+/-1,300	
Group quarters population	(X)	(X)	(X)	(X)	

Economic Characteristics - show more >>	Estimate	Percent	U.S.	Margin of Error	
In labor force (population 16 years and over)	77,302	54.7	65.2%	+/-1,541	map
Mean travel time to work in minutes (workers 16 years and over)	19.0	(X)	25.3	+/-0.7	map
Median household income (in 2008 inflation-adjusted dollars)	40,079	(X)	52,175	+/-1,188	map
Median family income (in 2008 inflation-adjusted dollars)	43,377	(X)	63,211	+/-1,307	map
Per capita income (in 2008 inflation-adjusted dollars)	18,599	(X)	27,466	+/-507	
Families below poverty level	(X)	16.8	9.6%	(X)	
Individuals below poverty level	(X)	20.0	13.2%	(X)	map

Housing Characteristics - show more >>	Estimate	Percent	U.S.	Margin of Error	
Total housing units	86,582			+/-500	
Occupied housing units	69,432	80.2	88.0%	+/-1,586	
Owner-occupied housing units	48,658	70.1	67.1%	+/-1,356	
Renter-occupied housing units	20,774	29.9	32.9%	+/-1,455	
Vacant housing units	17,150	19.8	12.0%	+/-1,523	
Owner-occupied homes	48,658			+/-1,356	map
Median value (dollars)	147,400	(X)	192,400	+/-7,116	map
Median of selected monthly owner costs					
With a mortgage (dollars)	1,156	(X)	1,508	+/-42	map
Not mortgaged (dollars)	278	(X)	425	+/-10	

ACS Demographic Estimates - show more >>	Estimate	Percent	U.S.	Margin of Error	
Total population	189,682			*****	
Male	94,644	49.9	49.3%	+/-389	
Female	95,038	50.1	50.7%	+/-389	
Median age (years)	34.9	(X)	36.7	+/-0.1	map
Under 5 years	16,434	8.7	6.9%	+/-4	
18 years and over	135,641	71.5	75.5%	*****	
65 years and over	34,853	18.4	12.6%	+/-201	

One race	185,426	97.8	97.8%	+/-886	
White	138,364	72.9	74.3%	+/-2,998	map
Black or African American	3,565	1.9	12.3%	+/-555	map
American Indian and Alaska Native	2,565	1.4	0.8%	+/-419	map
Asian	1,838	1.0	4.4%	+/-201	map
Native Hawaiian and Other Pacific Islander	94	0.0	0.1%	+/-114	map
Some other race	39,000	20.6	5.8%	+/-2,912	map
Two or more races	4,256	2.2	2.2%	+/-886	map
Hispanic or Latino (of any race)	104,566	55.1	15.1%	*****	

Source: U.S. Census Bureau, 2006-2008 American Community Survey

Explanation of Symbols:

***** - The median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.

***** - The estimate is controlled. A statistical test for sampling variability is not appropriate.

'N' - Data for this geographic area cannot be displayed because the number of sample cases is too small.

'(X)' - The value is not applicable or not available.

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FACT SHEET

Yuma city, Arizona
2006-2008 American Community Survey 3-Year Estimates - what's this?
Data Profile Highlights:

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Social Characteristics - show more >>	Estimate	Percent	U.S.	Margin of Error
Average household size	2.64	(X)	2.61	+/-0.07
Average family size	3.09	(X)	3.20	+/-0.10
Population 25 years and over	58,504			+/-1,268
High school graduate or higher	(X)	74.7	84.5%	(X)
Bachelor's degree or higher	(X)	14.9	27.4%	(X)
Civilian veterans (civilian population 18 years and over)	9,541	14.1	10.1%	+/-874
With a Disability	(X)	(X)	(X)	(X)
Foreign born	21,413	21.1	12.5%	+/-1,554
Male, Now married, except separated (population 15 years and over)	21,408	58.5	52.2%	+/-1,091
Female, Now married, except separated (population 15 years and over)	20,952	53.6	48.2%	+/-1,071
Speak a language other than English at home (population 5 years and over)	41,310	45.3	19.6%	+/-2,020
Household population	98,189			+/-2,365
Group quarters population	(X)	(X)	(X)	(X)

Economic Characteristics - show more >>	Estimate	Percent	U.S.	Margin of Error
In labor force (population 16 years and over)	45,810	62.0	65.2%	+/-1,534
Mean travel time to work in minutes (workers 16 years and over)	16.8	(X)	25.3	+/-0.8
Median household income (in 2008 inflation-adjusted dollars)	42,095	(X)	52,175	+/-1,923
Median family income (in 2008 inflation-adjusted dollars)	45,202	(X)	63,211	+/-2,153
Per capita income (in 2008 inflation-adjusted dollars)	19,266	(X)	27,466	+/-703
Families below poverty level	(X)	15.8	9.6%	(X)
Individuals below poverty level	(X)	18.6	13.2%	(X)

Housing Characteristics - show more >>	Estimate	Percent	U.S.	Margin of Error
Total housing units	43,331			+/-814
Occupied housing units	37,162	85.8	88.0%	+/-1,091
Owner-occupied housing units	22,837	61.5	67.1%	+/-930
Renter-occupied housing units	14,325	38.5	32.9%	+/-1,139
Vacant housing units	6,169	14.2	12.0%	+/-890
Owner-occupied homes	22,837			+/-930
Median value (dollars)	164,000	(X)	192,400	+/-4,847
Median of selected monthly owner costs				
With a mortgage (dollars)	1,262	(X)	1,508	+/-69
Not mortgaged (dollars)	321	(X)	425	+/-20

ACS Demographic Estimates - show more >>	Estimate	Percent	U.S.	Margin of Error
Total population	101,370			+/-2,413
Male	50,107	49.4	49.3%	+/-1,488
Female	51,263	50.6	50.7%	+/-1,334
Median age (years)	30.3	(X)	36.7	+/-0.8
Under 5 years	10,097	10.0	6.9%	+/-735
18 years and over	70,810	69.9	75.5%	+/-1,523
65 years and over	14,289	14.1	12.6%	+/-892

One race	98,921	97.6	97.8%	+/-2,546
White	70,102	69.2	74.3%	+/-2,568
Black or African American	2,724	2.7	12.3%	+/-589
American Indian and Alaska Native	925	0.9	0.8%	+/-321
Asian	1,639	1.6	4.4%	+/-236
Native Hawaiian and Other Pacific Islander	94	0.1	0.1%	+/-114
Some other race	23,437	23.1	5.8%	+/-2,221
Two or more races	2,449	2.4	2.2%	+/-616
Hispanic or Latino (of any race)	55,646	54.9	15.1%	+/-2,347

Source: U.S. Census Bureau, 2006-2008 American Community Survey

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