FINAL
ENVIRONMENTAL ASSESSMENT

JOINT TASK FORCE SIX
PROPOSED FENCE, LIGHTING, ROAD REPAIR AND IMPROVEMENT PROJECT
DOUGLAS, COCHISE COUNTY, ARZONA

Prepared for:
Joint Task Force Six
Fort Bliss, Texas

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US Army Corps of Engineers®

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FINDING OF NO SIGNIFICANT IMPACT
JOINT TASK FORCE SIX
FENCE CONSTRUCTON, LIGHTING INSTALLATION, ROAD AND HYDROLOGICAL REPAIRS/IMPROVEMENTS DOUGLAS, COCHISE COUNTY, ARIZONA

The Proposed Action would involve the extension of an existing landing mat fence east of the Port of Entry (POE) for a distance of two miles, installation of permanent lighting east of the POE for a distance of 0.8 of a mile and west of the POE for a distance of one mile; repair/improvement the border road and hydrological conditions east of the POE for a distance of 4 miles and west of Whitewater Draw for a distance of 4 miles; and road maintenance west of the road repair section for a distance of eight miles near Douglas, Arizona. The primary purpose of the Proposed Action is to assist in fulfilling the U.S. Border Patrol's (USBP) mission to reduce illegal drug trafficking along the U.S.-Mexico border by maximizing the effectiveness of the USBP. Approximately two deployments of 150 U.S. Military personnel would be utilized for activities under the Proposed Action. Each deployment will last 6 to 8 weeks until completion of all proposed activities.

In addition to the Proposed Action, there were five other alternatives evaluated as part of this environmental impact analysis: 1) No-Action Alternative; 2) Alternative Fence Construction Materials; 3) Alternative Distance from the International Border; 4) Reduced Lighting Intensity; and 5) Construction of New Roads. The No-Action Alternative was carried throughout the analysis, and would be reflected in the baseline environmental conditions of the area. Under the No Action Alternative, there would be the continued socioeconomic concerns relating to the illegal drug trafficking and criminal activity. The remaining four alternatives were eliminated from further consideration without analysis because they would not assist the USBP in the accomplishment of their mission, presented a greater economic impact to the government, and allowed the same if not greater, potential for environmental concerns as the Proposed Action.

A Programmatic Environmental Impact Statement (PEIS) was prepared in 1994 to assess the activities of the Immigration and Naturalization Service (INS) and Joint Task Force Six (JTF-6), proposed activities, which facilitate drug law enforcement agencies (DLEAs) missions to reduce illegal drug activity along the southwestern border of the U.S. The PEIS addressed the cumulative effects of past, present, and reasonably foreseeable projects undertaken by JTF-6 for numerous DLEAs in the four southwestern states (Texas, New Mexico, Arizona, and California). This Environmental Assessment (EA) for the Proposed Action tiers from the 1994 PEIS (U.S. Army 1994) and considers cumulative impacts of foreseeable projects within the proposed project area. An update or Supplemental PEIS (SPEIS) is currently in preparation. Cooperating agencies involved with the Proposed Action include the U.S. Border Patrol, the INS, and JTF-6.

There would be no significant areas of environmental concern associated with the Proposed Action. Possible insignificant environmental impacts are associated with the proposed fence, permanent lighting, and repair/improvements to the surface road (i.e., air, geological resources, biological resources, cultural resources, and noise); however, these would be only temporary in nature and easily mitigated through sound engineering practices. Under the Proposed Action, there is a possible beneficial socioeconomic impact to the area in the form of a reduction in drug trafficking and related criminal activities. There would be no impact to land use, water resources, aesthetics or solid/hazardous waste generation or management as part of the Proposed Action.

Based on the results of the EA and the environmental design measures to be incorporated as part of the Proposed Action, it has been concluded that the Proposed Action will not have a significant adverse effect on the environment.

9 Feb 01

F. J. Prašek
Brigadier General, U.S. Army
Commander

Date

EXECUTIVE SUMMARY

As a result of the high rate of violent crime, the continual damage to our Nation's health and economy, and strains on vital relationship with international allies, the United States (U.S.) Congress developed the National Drug Control Strategy (NDCS) and incorporated the Department of Defense (DoD) into this new plan. The Secretary of Defense established Joint Task Force Six (JTF-6) to coordinate all DoD counter-drug support to Federal, State, and local drug law enforcement agencies (DLEAs) in an effort to curtail drug smuggling activities into the U.S. and protect national security. JTF-6 was assigned to assist DLEAs who have drug interdiction responsibilities in the southwestern U.S. by providing general operational and engineering support. In addition, the assistance would provide all or part of the mission-essential training elements for the military unit involved.

A Programmatic Environmental Impact Statement (PEIS), prepared in 1994 for the Immigration and Naturalization Service (INS) and JTF-6, addressed proposed projects that facilitate DLEA missions to reduce illegal drug activity trafficking. The PEIS addresses the cumulative effective of past and reasonably foreseeable projects undertaken by JTF-6 for numerous DLEAs in the four southwestern states (Texas, New Mexico, Arizona, and California). This Environmental Assessment (EA) tiers from the 1994 PEIS (U. S. Army 1994). An update or Supplemental PEIS is currently in preparation. Cooperating agencies involved with the Proposed Action include the U.S. Border Patrol (USBP), the INS, and JTF-6.

The purpose of the Proposed Action is to minimize the influx of illegal contraband (i.e., drugs) from entering the U.S., and to reduce crime along the border area through the use of deterrent measures and by maximizing the effectiveness of the USBP. This EA addresses the potential impacts associated with a proposed fence and road improvement project along the U.S.-Mexico border in Cochise County, Arizona. The Proposed Action includes landing mat fence extension, installation of permanent lighting, road and hydrological repairs and improvements, and road maintenance. The Proposed Action specifically addresses the extension of an existing landing mat fence east of the Port of Entry (POE) for a distance of two miles, installation of permanent lighting east of the POE for a distance of 0.8 of a mile and west of the POE for a distance of one mile; repair/improvement the border road and hydrological conditions east of the POE for a distance of 4 miles and west of Whitewater Draw for a distance of 4 miles; and road maintenance west of the road repair section for a distance of eight miles near Douglas, Arizona.

In addition to the Proposed Action, there were there were five other alternatives evaluated as part of this environmental impact analysis: 1) No-Action Alternative; 2) Alternative Fence Construction Materials; 3) Alternative Distance from the International Border; 4) Reduced Lighting Intensity; and 5) Construction of New Roads. The No-Action Alternative was carried throughout the analysis, and would be reflected in the baseline environmental conditions of the area. Under the No Action Alternative, there would be the continued socioeconomic concerns relating to the illegal drug trafficking and criminal activity. The remaining four alternatives were eliminated from further consideration because they would not assist the USBP in the

accomplishment of its mission, present a greater economic impact, and allow the same, if not greater, potential for environmental concerns as the Proposed Action.

Potential impacts for this project were classified at one of three levels: significant, insignificant (or negligible), and no impact. Significant impacts (as defined in CEQ guidelines 40 CFR 1500-1508) are effects that are most substantial, and therefore should receive the greatest attention in decision-making process. Insignificant impacts would be those impacts that result in changes to the existing environment that could not be easily detected. No-impact actions would not alter the existing environment.

There would be no significant areas of environmental concern associated with the Proposed Action. Possible insignificant environmental issues would be associated with the proposed fence and low water crossing construction, installation of the vehicle barriers, and improvements to the surface road (i.e., air, geological resources, biological resources, cultural resources, and noise); however, these would be only temporary in nature and easily mitigated through sound engineering practices. Under the Proposed Action, there is a possible beneficial socioeconomic impact to the area in the form of a reduction in drug trafficking and related criminal activities. There would be no impact to land use, water resources, aesthetics or solid/hazardous waste generation or management as part of the Proposed Action.

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1.0 INTRODUCTION

1.1 PROJECT BACKGROUND

The United States (U.S.) is experiencing high levels of drug use and ensuing elevated levels of drug-related crime. Negative impacts of widespread drug use on society continue to affect the work force, educational and medical systems, general law and order, and traditional family values and structure. As a result of these elevated levels of drug-related crime, the continual damage to our Nation's health and economy, and strains on vital relationships with international allies, the U.S. Congress developed the National Drug Control Strategy (NDCS) and incorporated the Department of Defense (DoD) in the new strategy. The Secretary of Defense established Joint Task Force Six (JTF-6) in November 1989 to coordinate all DoD counterdrug support to Federal, State, and local drug law enforcement agencies (DLEAs) in an effort to curtail drug smuggling activities into the U.S. and protect national security. As a DoD component, Joint Task Force Six (JTF-6) was assigned to assist DLEAs that have drug interdiction responsibilities in the continental U.S. by providing general operational and engineering support. In addition, this assistance would provide opportunities for mission-essential task list (METL) for the military unit involved.

This Environmental Assessment (EA) addresses site specific impacts associated with the proposed deployment of military units that would construct two miles of landing mat fence, install 1.8 miles of permanent lighting, and perform road repairs, maintenance, and hydrological improvements covering approximately 16 miles on the U.S.-Mexico border near Douglas in Cochise County, Arizona. This document is tiered from the Programmatic Environmental Impact Statement (PEIS) completed for a broad scope of JTF-6 activities along the U.S.-Mexico border (U.S. Army 1994). As specific measures are developed for exact locations, individual EAs have been prepared and tiered from the PEIS to address site-specific environmental constraints, including cumulative impacts of past, present, and foreseeable construction and operational actions. This EA supplements previous documents prepared for the Douglas area as specified in the Final EA for Infrastructure Within U.S. Border Patrol Naco-Douglas Corridor (INS 2000), JTF-6 Road Maintenance and Construction EA (U.S. Army 1996), the JTF-6 Fence and Road Construction EA (U.S. Army 1997), and the Proposed JTF-6 Light Pole Installation Mission EA (U.S. Army 1998). Because JTF-6 does not know the specific location where units might be deployed until a support request is received, it prepared the PEIS to address the environmental impacts of its actions over time. An update or Supplemental PEIS is currently in preparation. Site specific documents (tiered from the PEIS), such as this EA, are prepared by JTF-6 at the earliest possible opportunity.

1.2 LOCATION OF PROPOSED ACTION

The proposed project site is located along the U.S.-Mexico border in the vicinity of the City of Douglas, Cochise County, Arizona. The Proposed Action consists of the following:

- Install permanent lighting west of the Douglas Port of Entry (POE) for a distance of approximately 1.0 mile (Figure 1.0).
- Install permanent lighting east of the POE for a distance of 0.8 of a mile (Figure 1.0).

- Construct landing mat fence east of the POE for a distance of 2.0 miles, beginning at the terminus of the existing land mat fence (Figure 2.0).
- Perform major repairs/improvements (scarify and recompact) to the border road for approximately 4.0 miles east of the POE and 4.0 miles west of Whitewater Draw (Figure 3.0).
- Perform road maintenance (grading) continuing for approximately 8.0 miles past the road repair segment west of Whitewater Draw (Figure 3.0).
- Improve hydrological drainage (new construction of drainage structures) on the 4.0-mile section of road repair/improvement east of the POE and west of Whitewater Draw (Figure 3.0).
- Establish one or two borrow areas to provide clean fill materials for the proposed road and hydrological components.

1.3 PURPOSE AND NEED

The purpose of the Proposed Action and Alternatives is to decrease or eliminate the influx of illegal contraband (i.e., drugs, vehicles, etc.) from entering the U.S. and to reduce associated crime along the international border. The Proposed Action involves the expansion of landing mat fence, installation of pole-mounted lighting equipment, road and hydrological (drainage) repairs/improvements, and road maintenance along the international border for a combined distance of 16 miles. The majority of this area currently consists of existing roadway with adjacent undeveloped land used for grazing pasture. Photographs of the site conditions are presented in Appendix A.

Overland smuggling poses a substantial threat in these areas. Foot traffic from south to north across the border was evident in the general project area, as were vehicle tracks over the drivable portions of the area. The expansion of the landing mat fence along the border area would assist in reducing the flow of illegal entry into the U.S. and aid in the apprehension of drug traffickers. The proposed increase in permanent lighting along the border would increase the effectiveness of the USBP agents in detecting initial movement north across the border, thereby reducing illegal traffic into the southernmost neighborhoods of Douglas, Arizona.

The value and number of drug seizures along the southwestern U.S. border represent at least 95% of those made by the USBP throughout the nation. In particular, the USBP Douglas Station has experienced tremendous increases over the past five years, partially in response to successful deterrence programs in other border areas such as Naco, AZ, San Diego, CA, and El Paso, TX (Department of Justice [DOJ], INS 2000).

DOUGLAS QUADRANGLE
ARIZONA – COCHISE CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
SE/4 DOUGLAS 15' QUADRANGLE

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

4046 I NE
(DOUGLAS NE)

636 637 R. 27 E. 638 32'30" R. 28 E. 700 000 FEET 642 643000mE 644 645

LORDSBURG (N. MEX.) 96 MI.
RODEO (N. MEX.) 50 MI.

SPRINGS VALLEY

Fairgrounds
OLD RAILROAD GRADE
LESLIE CANYON RD
OLD RAILROAD GRADE
RAILROAD
BM 4052
Radio Tower KAPR
Trailer Park
4067
4100
4060
4007
4000
3960
3940

Pirtleville
Trailer Park
Radio Tower KAWT
Water Tanks
High School
15TH AVE
10TH ST
5TH ST
BM 3979
BM 3984
BM 4004
BM 4036
Water Tank
Stack
Hospital
DOUGLAS
Oil Tanks
CALVARY CEMETERY
Cemetery
4065
4000
4126
GERONIMO TRAIL
BM 4129
Airport Beacon
DOUGLAS MUNICIPAL AIRPORT
4160
4119
4033

Douglas Municipal Airport

SULPHUR SPRINGS VALLEY

4189T
4222T
4190T
4259T
4221
4253T
Well
4193T
4223
4283
4224T
4225T
4348
BM 4287
4284
4215T
4321T
D Hill
2-154
4253T
4355T
4184T

Proposed Permanent Lighting
Existing Permanent Lighting
Proposed Permanent Lighting
UNITED STATES
MEXICO
SONORA
ARIZONA
SONORA
Customhouse
POE

GN MN
0°45' 13 MILS
12° 213 MILS
GRID AND 1978 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

ARIZONA
QUADRANGLE LOCATION

SCALE 1:24 000
1 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 5 0 1 KILOMETER

Figure 1.0 Proposed Permanent Lighting East and West of the POE
Douglas, Cochise County, Arizona

DOUGLAS QUADRANGLE
ARIZONA – COCHISE CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
SE/4 DOUGLAS 15' QUADRANGLE

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Existing 1.3 miles of decorative fence

Existing 2.7 miles of landing mat fence

Proposed 1 mile of landing mat fence

Proposed 1 mile of landing mat fence

POE

SCALE 1:24000

1 MILE

7000 FEET

1 KILOMETER

QUADRANGLE LOCATION

UTM GRID AND 1978 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

Figure 2.0 Proposed Landing Mat Fence East of the POE
Douglas, Cochise County, Arizona

KILOMETERS 1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

MILES 1 0 1 2 3 4 5 6 7 8 9 10 11 12 13

625 45' 62 R 26 E 650 63 675 R 27 E 700 30' R 28 E 725 0 FEET (N. MEX.)

SULPHUR SPRINGS VALLEY

Whitewater Draw

Double Adobe

Bisbee-Douglas International Airport

Water Tank

Pumping Station

Poverty Flat

RAILROAD

OLD GRADE

Easter Sunday Mine

Black Knob

Boston

Glance Creek

Glance Mine

Marquette Mine

Paul Spur

Cochise College Airport

County Hospital

Wells

Pirtleville

Radio Tower

Douglas

Fairgrounds

Municipal Airport

D Hill

College Peaks

Perilla Mountains

Saddle Gap

Hog Can

Upper Tincup Spring

Lower Tincup Spring

Crook Tunnel

Brooks Road

Kings Highway

Calumet

Old Smelter Road

Water Tanks

Access Roads

POE

ARIZONA

ESTADO DE SONORA

UNITED STATES OF AMERICA

ESTADOS UNIDOS MEXICANOS

AGUA PRIETA

Figure 3.0 Proposed Road Repair and Improvements (scarify and recompact) and Hydrological Improvements (drainage repair) as necessary for 4 Miles East of the POE and 4 Miles West of Whitewater Draw

Proposed Road Maintenance (grading) 4-12 miles West of Whitewater Draw

Douglas, Cochise County, Arizona

The Douglas Station experienced a 488% increase in undocumented alien apprehensions and a 52% increase in marijuana seizures from fiscal year (FY) 1994 to FY 1999. The following information regarding apprehensions of undocumented aliens and marijuana seizures was obtained from the USBP, Douglas Station.

Table 1.1 Seizures and Apprehensions by the Douglas Station.

	Marijuana Seizures (approximate pounds)	**Undocumented Apprehensions** (approximate)
FY 1994	11,000	40,000
FY 1995	12,000	50,000
FY 1996	16,500	135,000
FY 1997	25,500	115,000
FY 1998	26,000	155,000
FY 1999	35,000	205,000
FY 2000	28,000	225,000

According to USBP personnel, the areas to be covered under the Proposed Action are those areas having the highest movement of illegal drugs. Additional fence and permanent lighting along the international border in these areas would reduce the ease with which illegal drugs are crossing into the U.S.

With the continued increase in illegal drug trafficking the Immigration and Naturalization Service (INS) and Congress substantially increased the number of USBP agents in an attempt to control or halt such illegal activities. In order to maximize their efforts, infrastructure elements such as fences, roads, and lighting are required.

A study conducted by the Archos Corporation (1999) found that increasing manpower alone does little to deter illegal drugs, but that combing infrastructure (fence, lights, roads) with manpower can be very effective. Additionally, a study conducted by the USACE Construction Engineering Research Laboratory (CERL 1999) concluded that DoD-funded counter-drug fencing projects have been very effective at deterring the flow of illegal drugs.

A secondary, but extremely important, objective for the DoD is to provide training opportunities for Active, Reserve, and National Guard units in deployment and redeployment, logistics and design planning, construction, and other requirements of each participating unit's METL. These activities are meant to increase and improve the readiness of the units in the event of a National emergency.

JTF-6 provides support to a DLEA only after a request for its support has been made, and only for those projects which have illegal drug control purposes. The Posse Commitatus Act (18 USC 1385) prohibits the use of Federal Active and Reserve armed services personnel from conducting police

actions (i.e., search and seizure, arrest, detention, investigation, etc). Consequently, the support provided to a DLEA involves activities that do not require the troops' direct involvement in arrests and convictions. In addition, since 1997, no units have been armed while performing JTF-6 projects. Although many of the projects are conducted in areas that pose a security threat to military units, JTF-6 relies on the USBP to provide security for the military personnel at all times.

1.4 ORGANIZATION OF THE DOCUMENT

Chapter 1.0 of this EA contains the background and location of the Proposed Action, along with the purpose and need, and applicable statutes and regulations associated with the Proposed Action. Chapter 2.0 gives a detailed analysis of the Proposed Action and all reasonable alternatives, including the No Action Alternative and those that were considered but eliminated from detailed analysis. Chapter 3.0 describes the baseline environment conditions against which the impacts of the Proposed Action and alternatives are evaluated. These environmental conditions include information on soils, air quality, land use, hydrology, biological resources, noise, cultural resources, and the current socioeconomic conditions of the area. Chapter 4.0 describes the environmental consequences of the Proposed Action and alternatives. Chapter 5.0 presents environmental design measures. Chapter 6.0 describes the public involvement for this project. Chapter 7.0 lists the preparers involved in the preparation of this document, Chapter 8.0 presents references cited and Chapter 9.0 includes a list of acronyms and abbreviations. Appendices are: (A) Site Photographs, (B) Federal Air Pollutant Standards, (C) NRCS Soils Information, (D) Threatened and Endangered Species, (E) Consultation Letters, (F) Agency Coordination and Response Letters, and (G) Storm Water Pollution Prevention Plan.

1.5 APPLICABLE ENVIRONMENTAL STATUTES AND REGULATIONS

This EA was prepared pursuant to Section 102 of the National Environmental Policy Act of 1969 (NEPA), as implemented by the regulations promulgated by the President's Council on Environmental Quality (CEQ) [40 Code of Federal Regulations (CFR) Parts 1500-1508]. This EA should provide sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI) (40 CFR 1508.9). Additionally, this EA complies with Army Regulation (AR) 200-2, Environmental Effects of Army Actions (December 23, 1988) and AR 200-4, Cultural Resources Management (October 20, 1997). Brief summaries of the Federal and State laws, regulations, executive orders (EO), and other entitlements that may be applicable to the proposed project are provided in the following sections.

1.5.1 National Environmental Policy Act

NEPA (42 United States Code [USC] 4321 et seq.), as implemented by the regulations promulgated by the President's CEQ (40 CFR Parts 1500-1508), establishes national policy, sets goals, and provides the means to prevent or eliminate damage to the environment. The principal objectives of NEPA are to ensure the careful consideration of environmental aspects of proposed actions in

Federal decision-making processes and to look at alternatives that may provide a more environmentally acceptable solution. Additionally, NEPA ensures that environmental information is made available to decision makers and the public before decisions are made and actions are taken.

1.5.2 Executive Order 11514, Protection and Enhancement of Environmental Quality

EO 11514, Protection and Enhancement of Environmental Quality, as amended by EO 11991, sets the policy for directing the Federal government in providing leadership in protecting and enhancing the quality of the nation's environment.

1.5.3 Executive Order 12898, Environmental Justice

The purpose of EO 12898 is to prevent the disproportionate placement of adverse environmental, economic, social, or health impacts from proposed Federal actions and policies on minority and low-income populations.

1.5.4 Executive Order 13007, Sacred Sites

The purpose of EO 13007 is to ensure that each executive branch agency with statutory or administrative responsibility for the management of Federal lands shall, as appropriate, promptly implement procedures for the purposes of (1) accommodating access to and ceremonial use of Indian sacred sites by Indian religious practitioners and (2) avoiding adverse effects on the physical integrity of such sacred sites. Where appropriate, agencies shall also maintain the confidentiality of sacred sites.

1.5.5 Clean Air Act

The Clean Air Act (CAA) amendments of 1990 established Federal air quality standards. According to air quality information received from Environmental Protection Agency (EPA) Region 9, Cochise County is in attainment with established national and state air quality standards for all criteria pollutants.

1.5.6 Clean Water Act

The Clean Water Act (33 USC 1251 et seq., as amended) establishes Federal limits, through the National Pollutant Discharge Elimination System (NPDES), on the amounts of specific pollutants that may be discharged to surface waters in order to restore and maintain the chemical, physical, and biological integrity of the water. Section 404 of the Clean Water Act regulates the discharge of fill material into waters of the U.S. No NPDES permit would be required for the proposed project. As the proposed project is greater than three acres in size, a stormwater pollution prevention plan has been included as Appendix G.

1.5.7 Endangered Species Act

The Endangered Species Act (16 USC 1531-1543) requires Federal agencies to determine the effects of their actions on endangered or threatened species of fish, wildlife, plants, and critical habitats, and to take steps to conserve and protect these species.

1.5.8 Cultural Resources Laws and Regulations

The National Historic Preservation Act (NHRP) of 1966 (16 USC 470 et seq., as amended) and its implementing regulation, 36 CRF Part 800, require Federal agencies to determine the effect of their actions on cultural resources, and to take certain steps to ensure these resources are located, identified, evaluated, and protected. The Archeological Resources Protection Act (16 USC 470a-11, as amended) protects archeological resources on Federal lands. If archeological resources that may be disturbed during site activities should be discovered, the NHPA would require permits for excavating and removing the resources.

1.5.9 Other Laws and Regulations

Additional Federal and State regulations which may apply to the Proposed Action and alternatives are listed below:

- American Indian Religious Freedom Act of 1978
- Arizona Native Plant Law
- Arizona Air Quality Standards
- Bald Eagle Protection Act (Public Law 90-535)
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (Public Law 96-510), as amended by the Superfund Amendments and Reauthorization Act (SARA) (Public Law 99-499), 1986
- Federal Compliance with Pollution Control Standards
- Federal Facilities Compliance Act
- Fish and Wildlife Coordination Act, as amended, USC 661, et seq.
- Hazardous Materials Transportation Act (HMTA), 1975
- Migratory Bird Treaty Act
- Resource Conservation and Recovery Act (RCRA) (Public Law 94-580), 1976
- Safe Drinking Water Act (SDWA), 1974
- Solid Waste Disposal Act, 1980
- Toxic Substances Control Act (TSCA) (Public Law 94-469)
- Watershed Protection and Flood Prevention Act, 16 USC 1101, et seq.
- Wetlands Conservation Act (Public Law 101-23)

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

This chapter describes the Proposed Action and alternatives, including the No-Action Alternative. The Proposed Action would involve fence expansion, installation of permanent lighting poles, road and hydrological repair/improvements, and road maintenance along the U.S.-Mexico border, south of Douglas, Arizona. Under the No-Action Alternative, the area would remain as it currently exists and USBP efforts to curtail illegal drug trafficking would remain unchanged. Other than the alternatives identified in this section, no other reasonable alternatives meeting JTF-6 or USBP requirements were identified.

2.1 PROPOSED ACTION

The Proposed Action consists of several components requested by the USBP: expansion of the existing landing mat fence, installation of permanent pole-mounted lights, repair and/or improvement of the border road and drainages (located along the road), construction of several low water crossings, and maintenance, as necessary, on the border road. One or two areas for borrow would need to be established. These activities are proposed along the U.S.-Mexico border, in the vicinity of Douglas, Arizona, and are further described in the sections below.

If the Proposed Action is implemented on the basis of this EA and a FONSI is issued, the proposed project may begin when a military engineering unit is available in spring or summer of 2001. The project would take approximately six to eight weeks to complete. U.S. military engineer battalion personnel would perform the proposed project installation and repairs. It is anticipated that two deployments of approximately 150 military personnel would be utilized until completion of the proposed action activities. The existing Douglas Shooting Range located near the intersection of 15th Street and Airport Road would be utilized as the bivouac site. The Douglas Shooting Range is currently owned by the State of Arizona and operated as a public shooting range. Personnel involved in the Proposed Action would be expected to work between 7:00 a.m. and 7:00 p.m., six days a week during the construction period.

Equipment to be used for the proposed action activities may include integrated tool carriers, backhoes with augers or an auger truck, backhoes with breakers, flat bed trucks, graders, water trucks, cranes, and forklifts. Equipment and construction materials would be stored at a prefabrication yard in a previously disturbed area to be identified and surveyed prior to the start of construction. Existing roads, such as Old Smelter Road and Brooks Road, would be utilized for primary transport of equipment and personnel to the proposed project area. Kings Highway would be utilized as a secondary access road to the proposed project read. Existing turnouts or previously disturbed areas would also be used by equipment during construction to minimize unnecessary impacts to resources outside of the Proposed Action area. Through an environmental briefing, all personnel would be informed about the limits of the construction area and actions permitted within and outside of that area. Additionally, construction limits would be flagged to ensure that the proposed activities stay within the construction area boundaries.

2.1.1 Construction of Landing Mat Fence

Existing iron post and landing mat fence extend east of the Douglas POE for approximately 4.0 miles, at which point a barbed-wire fence continues. The Proposed Action would extend the landing mat fence for a distance of two miles further east beginning at the terminus of the existing landing mat fence. Landing mat material used for construction would be surplus military supplies acquired by the USBP. The fence would be 10-12 feet high and posts would be approximately 15-foot long sections of drill pipe (four or five inches outside diameter) placed five feet below ground in concrete and eight feet apart. The postholes would be 16-18 inches in diameter to provide the necessary support for this structure. Landing mat sections would be welded together and attached to the posts with angle iron. The new fence would be placed two feet north of the existing barbed-wire fence. Figure 2.0 depicts the location of the proposed landing mat fence construction. Improved fencing is effective at reducing the number of individuals crossing the border illegally on foot as well as in vehicles. Ground disturbance associated with construction of the landing mat fence would be approximately 4.84 acres.

2.1.2 Installation of Permanent Lighting

The Proposed Action would include the installation of permanent lighting west of the Douglas POE for a distance of approximately 1.0 mile and east of the POE for a distance of 0.8 of one mile (in two sections; 0.3 and 0.5 mile as shown in Figure 1.0). The installation of lighting would allow for the illumination of the immediate border area, thus maximizing the USBP's ability to identify illegal entries during night time hours, which is the period of greatest activity. Pole-mounted lights can be an effective deterrent to illegal drug trafficking. Additionally, the locations proposed to receive permanent lighting are areas where the threat of personal injury or property damage (vehicles) is very high. The USBP has stated that use of such lighting along the border has proven very effective in California (U.S. Army 1997c).

The proposed light poles would continue out from existing poles located within or near the city boundaries and extend approximately 1.0 mile west and 0.8 of one mile east of the POE. Approximately 32 light poles would be installed as part of the Proposed Action. In lieu of selecting exact pole locations, a 100 percent biological and cultural resource survey was conducted along a 20-meter wide corridor, within the 60-foot right-of-way (ROW) from the international border, for the entire length of the proposed project area.

The proposed light poles would be placed within the 60-foot ROW, north of the international boundary, and installation activities would be contained within the surveyed corridor. Actual ground disturbance for installation of light poles would be less than 0.3 acres. The proposed poles would be concrete construction, approximately 40 to 45 feet in height. The poles would be placed below ground in a hole 6 to 10 feet deep, 16-18 inches in diameter and set in concrete to provide the necessary support for this structure. Illumination would be provided by four to six 1000-watt (W) high-pressure sodium floodlights protected with armored backs and side light shields. These shields direct the light toward specific areas and will protect the privacy of nearby residences. Electricity would be extended from existing power poles adjacent to the POE. To provide a continuous power

source, poles would be placed approximately 300 to 400 feet apart. Poles located nearest to the POE would not necessarily contain a light fixture, but may be used solely as a connection for the electrical supply.

2.1.3 Repair/Improve Hydrological Drainage and Border Road

The Proposed Action includes the repair and/or improvement of existing drainages and border road for approximately 4.0 miles east of the POE and 4.0 miles west of Whitewater Draw. Hydrological improvements would include sloping the road surface to encourage sheet flow into roadside drainages to reduce erosion; repairing existing roadside drainages, which are severely eroded; and stabilizing those drainages with a concrete slurry or alternative material. A drainage structure would be constructed on the segment east of the POE, in order to repair existing erosional problems. Additionally, large wash areas west of the POE will require the placement of drainage structures to correct existing and prevent future erosion. Other considerations are to be the placement of additional culverts and gabions along drainage areas. Engineering designs are available upon request.

Road improvement activities may involve the scarification and recompaction of existing road materials. Other activities may involve removing rocks, leveling and/ or grading. Roads would remain at their existing width except at the location where the culvert would be constructed. Borrow areas (to be identified and surveyed prior to start of construction) would be established in the area of the Proposed Action to provide needed fill material. Figure 3.0 depicts the areas of proposed road and drainage repairs. The site photos contained in Appendix A illustrate the need for the repairs. Surface area that would be disturbed for the major repair/improvement would be approximately 9.7 acres of existing road and roadside drainage. Upon completion of the final design, the area of disturbance may be altered to compensate for the hydrological improvements required to handle the velocity of water moving through the affected area (Q value equals the velocity times the area of water).

2.1.4 Road Maintenance

Under the Proposed Action, road maintenance is proposed for an 8.0-mile segment in the western portion of the Proposed Project Area. This 8.0-mile segment would begin at the terminus of the 4-mile major road repair segment located west of Whitewater Draw (Figure 3.0). From the end of the 4.0 mile segment, minor road maintenance will be conducted as necessary for the next 8.0 miles. Activities under this portion of the project may include grading the existing roadbeds and filling with existing materials (does not include the use of paving materials). If additional fill material is required beyond what is present within the existing roadbed, only compactable, clean material would be used from a local borrow area. The roads in this area would not be widened during any maintenance activities.

Road improvements within the proposed project area have also been addressed in previous JTF-6 EAs prepared in April 1994, August 1996, and July 1997. These improvements were consequently completed. Any road improvement work performed as part of the Proposed Action would be

maintenance or repair only and not construction of a new road; nor would these impacts exceed those described and analyzed for the previous actions.

2.2 NO-ACTION ALTERNATIVE

Under the No-Action Alternative, no improvement activities would be conducted and the border road would remain impassable during periods of inclement weather. The area would remain as it currently exists, with the existing fence and light structures only, and USBP efforts to curtail illegal drug trafficking would remain unchanged. Locations that are severely eroded would remain so, and would continue to degrade, which could lead to possible environmental impacts. Although it is unlikely that significant adverse impacts would occur, the No-Action Alternative would not support the USBP's efforts effectively reduce drug smuggling and trafficking near Douglas, Arizona. The associated violent crime would continue along the project area. Therefore, the No-Action Alternative may reduce the USBP's ability to fulfill its mission as described in Chapter 1.0.

Portable lighting is currently used in the area where the permanent lighting has been proposed for this EA. The portable lighting unit utilized by the USBP in many border areas is a Model BC4000LL, which consists of a six kilowatt (KW) diesel generator that powers four 1000 watt lights on a 15-foot mast. According to USBP personnel, the use of portable lighting systems has been marginally effective in the past. In comparison to the Proposed Action, a portable lighting system requires additional manpower. The portable lights are vulnerable to theft and vandalism; therefore, this lighting system would not be as effective a deterrent to drug trafficking activities. Power outages with a portable system are more frequent, and diesel generators required for this system would increase pollution in the project area.

2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

2.3.1 Alternative Construction Materials

This alternative would apply to the proposed fence construction materials. Alternative fencing materials such as chain-link, barbed wire, or wood have been considered in the past by the USBP. However, in many locations across the border, the fence (or what remains of it) consists of these materials. These materials are not considered to be as effective as the proposed landing mat fencing material in accomplishing the USBP's mission. Chain-link fencing requires a high level of maintenance and is not resistant to cutting and/or vandalism. Likewise, barbed wire or wooden fences also require a higher level of maintenance than is available and are easily traversed or compromised. These materials offer no level of deterrence to drug trafficking and would require constant maintenance due to vandalism and exposure to the elements. Furthermore, the environmental impacts that would result from these types of fence materials would be similar to those of the proposed landing mat fence, yet they would pose a greater economic impact on the USBP's budget. Therefore, this alternative was not carried forward for further analysis.

2.3.2 Alternative Distance from the International Border

This alternative would apply to the location of the proposed fence. At present, the existing iron post and landing mat fences are located approximately two feet north of the international border. One alternative discussed for this project included the construction of the proposed fence a further distance away from the border. Concerns with this alternative included land acquisition, disturbance in areas not previously disturbed by existing border control features, right-of-entry through private property for construction activities, and additional costs to connect to the existing fence already located at the two-foot distance. Furthermore, placement of "border" infrastructure away from the border does nothing to deter illegal entry and drug trafficking at the necessary point. Due to these constraints, this alternative was eliminated from further consideration and was not carried forward through the analysis.

2.3.3 Reduced Lighting Intensity

Under this alternative, the intensity of the lighting would have been reduced to lessen the potential to interfere with nocturnal movement of any Federally listed threatened or endangered species. The proposed lighting would be located within developed areas. Through informal consultation with U.S. Fish and Wildlife Service (USFWS), it was determined that there were no listed or threatened species located in the area of the proposed lighting. Since this alternative has the same environmental impact and is not as effective a deterrent, it was not considered further.

2.3.4 Construction of New Roads

This alternative would substitute for the proposed road improvements. Construction of new roads rather than repair of existing roads would require land and/or right-of-way clearance, as well as additional engineering planning and construction. This alternative would thus require additional time, be very costly, and would have the potential for increased environmental impacts. The surface disturbance to create new roads equivalent to the existing one would be approximately 50 acres. Although this alternative would increase the USBP's ability to perform drug interdiction activities efficiently, the additional planning, cost, and environmental impacts currently limit its feasibility. In addition to the existing border road, the USBP already utilizes public roads in the vicinity of the Proposed Action. The creation of new roads would not be deemed necessary in order for USBP to perform its mission. Therefore, this alternative was not carried forward for further analysis.

3.0 AFFECTED ENVIRONMENT

The affected environment is the baseline against which potential impacts caused by the Proposed Action and alternatives are assessed. This chapter focuses on those resources specific to the proposed project area that have the potential to be affected by activities connected with fence construction, pole installation, road and hydrological repairs/improvements, road maintenance activities, and changes in USBP activities resulting from these activities. Resources that would most likely be affected (e.g., air, soil, cultural, biological resources, and noise) by the Proposed Action or alternatives are described in more detail than those not likely to be affected (e.g., socioeconomic, and aesthetics).

3.1 AIR RESOURCES

Air resources describe the existing concentrations of various pollutants and the climatic and meteorological conditions that influence the quality of the air. Precipitation, wind direction, wind speed, and atmospheric stability are factors that determine the extent of pollutant dispersion.

3.1.1 Climate and Meteorology

Climate in the vicinity of Douglas, Arizona is characterized by mostly sunny days with hot summers and mild winters. The average summer temperature is 81° Fahrenheit (F) and winter temperatures average 44° F. Winds for most of the year generally blow from the south and east. Precipitation in the summer is due to moisture from the south, and winter precipitation is due to low pressure systems from the west. The average yearly rainfall is approximately 15 inches. Maximum rainfall occurs in the summer monsoon season (July, August, and September). During the winter months, snow accumulations range from 0 to approximately 6 inches. The average relative humidity ranges from 50 percent in the morning to 33 percent in the afternoon (U.S. Army 2000).

3.1.2 Air Quality

According to EPA's Breathing Easier 1996 publication, Region 9 has shown a substantial improvement in air quality over the last 10 years. Despite an increase in automobile travel of almost 50 percent over the past decade, air pollutant levels have decreased overall by about one-third. This decrease can be seen in both a reduction in the number of days in which the air pollutant levels exceeded national air quality standards and a reduction in the actual air pollutant concentration levels for six criteria pollutants.

The following characterization of the baseline atmospheric environment is based on the ambient air quality and applicable rules, regulations, and standards for the Douglas area. Arizona standards are identical to the National Ambient Air Quality Standards (NAAQS) published by the EPA as directed by the CAA.

Air quality in both the eastern and western sections of the proposed project area is typically very good. Prevailing meteorological conditions are not conducive to the concentration of pollutant emissions. Daily winds tend to disperse harmful air emissions. The major source of gaseous criteria pollutants is from urban activities in Douglas, while particulate matter (PM_{10}) is produced by a combination of windblown dust and uncontrolled burning and heavy industry conducted in Mexico near the U.S.-Mexico border (U.S. Army 1998).

The Arizona Department of Environmental Quality (ADEQ), Monitoring Section is responsible for monitoring air quality in the area and currently has one PM_{10} station and two MET (meteorological) stations located in Douglas, Arizona. The closest air monitoring station monitoring for the remaining priority pollutants is located in Tucson, Arizona (U.S. Army 1997b). Cochise County, Arizona is in EPA Region 9 and is currently in attainment with established National and State air quality standards for all pollutants with the exception of PM_{10} in Douglas (U.S. Army 1998) (Appendix B) (U.S. EPA 1996). However, Douglas is located on the U.S.-Mexico international border, and the ADEQ has determined that influences from Mexico are responsible for the nonattainment status of the area (U.S. Army 1998). Therefore, Douglas is classified in the 1993 Final State Implementation Plan (SIP) as a border area exception for PM_{10}.

3.2 LAND USE

The proposed project area consists mainly of undeveloped land (open space and rangeland) and border access roads. Along the existing border road, cattle guard gates have been installed to keep cattle in a particular area. The proposed project area is located along the U.S.-Mexico border, near residential areas adjacent to the POE and near the city limits for Douglas, Arizona. The proposed landing mat fence would be placed 2 feet north of an existing 4-strand barbed-wire fence. The majority of the proposed light pole sites would be located near developed areas along the existing utility pole line, approximately 60 feet from the U.S.-Mexico international border. Large scale mining operations are evident north of the proposed project area west of Whitewater Draw.

Access to those areas located adjacent to the city limits of Douglas would be provided by public roads. The proposed project areas are utilized primarily by the USBP agents, City of Douglas personnel, and local landowners.

3.3 GEOLOGICAL RESOURCES

Geological resources include physical surface and subsurface features of the earth such as topography, geology, soils, and the seismic nature of the area. These features are discussed in the following sections.

3.3.1 Geology

Southwest Arizona lies within the Basin and Range Physiographic Province and is characterized by intensely deformed and intruded strata within numerous relatively elevated and depressed fault blocks. The Basin and Range Province is subdivided into two physiographic sub-provinces, the Mexican Highlands and the Sonoran Desert. The proposed project site lies within the Mexican Highland sub-province (U.S. Army 1995). The Douglas Basin valley slopes southward, with elevations ranging from 4,350 feet above mean sea level in the hills that form the basin's northern boundary to 3,900 feet above mean sea level along the International Boundary. The adjacent mountains have elevations ranging from 6,390 feet in the Perilla Mountains to 7,185 feet in the Swisshelm Mountains.

3.3.2 Soils

The main soils in the majority of the proposed project areas are the White House-Tubac-Forrest Association (Appendix C). Information on these soils obtained from the Natural Resource Conservation Service (NRCS) in Higley, Arizona, indicate White House-Tubac-Forrest soils are very deep soils that formed in fan alluvium from mixed sources. White House soils are on fan terraces and have slopes of 0 to 35 percent. These soils are well-drained with slow or medium runoff and have slow or very slow permeability. White House soils are used for rangeland and wildlife habitat. A few areas are used for homesites and other urban uses. Tubac soils are on fan terraces and basin floors and have slopes of 0 to 8 percent. These soils are well drained, have medium runoff and slow permeability. Tubac soils are used for rangeland and irrigated cropland. Forrest soils are found on basin floors, fan terraces, and fan piedmonts and have slopes of 0 to 15 percent. These soils are well drained, have slow or medium runoff and slow permeability. Forrest soils are used for rangeland and wildlife habitat.

A minor soil series found associated with the stream crossings in the western portion of the proposed project area is the Mabray Association. This association consists of shallow and very shallow, well-drained soils formed in slope alluvium from limestone. Mabray soils are well drained, have medium to rapid runoff and moderate permeability. These soils are used for rangeland and wildlife habitat.

Two additional minor soil series were found in the eastern portion of the proposed project area. These are the Kimbrough-Cave Association and the Luzena-Faraway Association. The Kimbrough series consist of soils that are very shallow to shallow to a petrocalcic horizon. They are well drained, calcareous, gravelly soils that formed in moderately fine textured eolian sediments of the Blackwater Draw Formation of Pleistocene age. These soils are typically on gently sloping plains, narrow ridges, and side slopes along draws. These soils have moderate permeability and runoff is low on slopes less than 1 percent and medium on 1 to 3 percent slopes. These soils are used nearly exclusively for rangeland. The Cave series consists of very shallow and shallow to a hardpan, well-drained soils that formed in mixed alluvium. These soils are well drained, have medium runoff and

have moderate to moderately rapid permeability. These soils are used for rangeland, wildlife habitat, and urban development.

The Luzena series consists of shallow and very shallow, well-drained soils that formed in alluvium, residuum and colluvium from volcanic rock. Luzena soils are found on mesas, hills, and mountains and have slopes of 2 to 60 percent. Runoff for these soils is medium to high and permeability is slow. Luzena soils are used for rangeland and wildlife habitat. The Faraway series consists of very shallow and shallow, well-drained soils that formed in slope alluvium from acid igneous rocks. Faraway soils are found on hills and mountains and have slopes of 8 to 80 percent. These soils have medium to rapid runoff with moderate permeability above the bedrock. These soils are used for rangeland.

3.4 WATER RESOURCES

The following sections describe the surface and groundwater sources, water quality and quantity, and surface and subsurface water movement. The hydrological cycle results in the transport of water into various media such as the air, the ground surface, and subsurface. Natural and human-induced factors determine the quality of water resources.

3.4.1 Groundwater

According to information obtained from the Arizona Department of Water Resources (ADWR), the proposed project area is located in the Douglas Basin. The basin is approximately 750 square miles and its alluvial valley is about 15 miles wide and 35 miles long. The basin is drained by Whitewater Draw which heads in the Chiricahua Mountains in the adjacent Wilcox basin. Whitewater Draw is ephemeral over nearly its entire reach in the U.S. and only flows in response to local rainfall.

Groundwater in the Douglas Basin is found in both the basin-fill and in the mountain bedrock. The main aquifer in the basin is the basin-fill sediments, which supplies water to large-capacity irrigation wells. The mountain bedrock provides relatively minor amounts of water from localized sources, usually enough for low-use stock and domestic wells. Groundwater in the basin-fill is found mostly in unconfined or water-table conditions. Unlike many groundwater basins in southeastern Arizona, the Douglas basin has no well-defined confined aquifer because there is no single, regional confining layer in the basin-fill; however, interbedded clay and silt layers in the basin-fill do result in both localized, confined conditions and perched water tables.

Water levels in the basin-fill measured in 1990 ranged from 50 feet below land surface to 296 feet below land surface (ADWR 1992). Water-level declines have occurred since the late 1940's; prior to then, groundwater pumpage was less than recharge and had little impact on basin-wide water levels. Precipitation in the mountains is the main source of groundwater recharge in the Douglas Basin. A small amount of groundwater may enter as underflow through the course of Whitewater Draw and several other ephemeral streams that flow into the basin along its northern boundary. Total recharge into the basin is estimated to be 22,000 acre-feet per year (ADWR 2000).

Most groundwater pumped in the Douglas Basin is used for irrigation. Stock and domestic pumpage is minor except near Douglas, AZ where pumpage by the City of Douglas for domestic use is significant. The basin has no surface water supplies and is totally dependent on groundwater for its water needs.

3.4.2 Surface Water

The proposed project area receives surface runoff from precipitation and snow melt in the local mountains. Surface water resources associated with this project include Whitewater Draw and several unnamed intermittent drainage channels. The Whitewater Draw Basin is part of the greater Yaqui River system. Immediately south of the international border, Whitewater Draw becomes the Agua Prieta River and continues south into Mexico as the Bavispe and Yaqui rivers. Within the Sulphur Springs Valley, the amount of surface water available is primarily determined by the magnitude of precipitation in the surrounding uplands. Due to the flash flood tendency of the washes, sediment loads are high during the monsoon season.

The U.S. Army reported Whitewater Draw as having a slight flow of water approximately 6 inches deep during two separate visits (U.S. Army 1998). Water was present in a recent site visit made to the proposed project area in September 2000; however, water may be impounding where Whitewater Draw crosses the border due to recent flow restrictions in Mexico. Surface water quality in the area is generally good, with almost all water coming from wells; however, specific instances of water quality violations within the proposed project area have occurred in the past (U.S. Army 1993).

3.4.3 Water Quality

The chemical quality of groundwater in the basin is suitable to marginal for most uses. High concentrations of fluorides occur locally, making some water marginal for domestic uses. Total dissolved solids concentrations for samples collected from the main aquifer between 1987 and 1990, ranged from 229 to 630 milligrams per liter (mg/l) and averaged 390 mg/l. The recommended secondary maximum contaminant level for total dissolved solids in drinking water is 500 mg/l (USEPA 1988). Fluoride concentrations in the samples collected ranged from 0.3 to 8.5 mg/l and averaged 1.1 mg/l. The maximum contaminant level for fluoride in drinking water is 4.0 mg/l (ADWR 2000).

3.4.4 Jurisdictional Waters of the United States

Section 404 of the Clean Water Act (CWA) of 1977 authorizes the Secretary of the Army, acting through the Chief of Engineers, to issue permits for the discharge of dredged or fill material into water of the U.S., including wetlands. Waters of the U.S. (Section 328.3[2] of the CWA) are those waters used in interstate or foreign commerce, subject to ebb and flow of tide, and all interstate waters including interstate wetlands. Waters of the U.S. are further defined as all other waters such

as intrastate lakes, rivers, streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, natural ponds, or impoundments of waters, tributaries of waters, and territorial seas. Wetlands are those areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (U. S. Army 1987). Jurisdictional boundaries for these water resources are defined in the field as the ordinary high water mark (OHWM) which is that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural lines impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Due to the dry climate of the area, most of the drainage channels are dry the majority of the year. Whitewater Draw is the feature nearest the area of the Proposed Action that would be considered as a jurisdictional water. One large wash located east of the City of Douglas has associated xeroriparian vegetation including low growing shrubs and trees occurring approximately 180 feet north of the existing roadway. This area was dry during the September 2000 site visit and was dominated by a monotypic stand of switchgrass (*Panicum virgatum).* This area lies adjacent to the road (to the north) and would incur minor impacts during the construction of a culvert.

3.5 BIOLOGICAL RESOURCES

Biological resources include native plants and animals in the region around the proposed project site. The proposed project area supports a plant community defined as semidesert grassland, a perennial grass-scrub community that is usually located between desert scrub and higher elevation plant communities (Brown 1982). This habitat type is found in southeastern Arizona, southwestern New Mexico, and northern Mexico between elevations of 4,000 and 8,000 feet and receives an annual rainfall between 11 and 17 inches per year.

3.5.1 Vegetation

Although the extreme lower and upper elevations are classified as Sonoran and Madrean, respectively, the majority of Sulphur Springs Valley is representative of the Chihuahuan Desertscrub Biogeographic Province (Brown and Lowe 1980). This is generally characterized by arid highland plains and basins bounded by extensive uplands. The Sulphur Springs Valley encompasses three principal biotic communities that roughly correspond to the basin, bajada, and upland environmental zones or settings. Individual biotic settings are somewhat mosaic in nature and include elements of the Sonoran Desertscrub. The basin zone is dominated by creosote (*Larrea divaricat)* and desert sumac *(Rhus microphylla);* white agave, Chihuahuan white-thorn *(Acacia constrictor vernicosa*), mesquite *(Prosopis juliflora)*, and ocotillo *(Fourquieria splendens)* are found within the bajada setting. Dispersed though out the drainage systems of all three zones are elements of the Sonoran Riparian community.

Vegetation observed during the September 2000 site visit was predominately desert thorn scrub with a canopy cover ranging from 40 to 75 percent, excluding roads and cleared areas. The eastern portion of the proposed project area near Airport Road contained highly disturbed areas, with up to 40 percent of the area containing dirt roads, commercial/industrial areas, and cleared lots. Further east, vegetation adjacent to the proposed fence construction and road improvement portion was less disturbed. The western portion of the proposed project area was disturbed by commercial ventures (mining, stockyards), had large areas of cleared vegetation, and was subject to growth of invasive weedy species (Johnsongrass, ragweed) in much of the area. The westernmost one mile of the proposed project area was relatively undisturbed. The dominant shrubs noted in both portions included white-thorn acacia (*Acacia constricta*) and mesquite (*Prosopis glandulosa*). Additional shrubs included snakeweed *(Gutierrezia* spp.), tarbrush (*Flourensia cernua*), desert broom (*Baccharis sarothroides*), and creosote bush (*Larrea tridentate*). Scattered grasses included Johnsongrass (*Sorghum halpense*), alkali sacaton (*Sporobolus aroids*), tobosagrass (*Hilaria mutica*), sideoats grama (*Bouteloua curtipendula*), and borrograss *(Scleropogon brevifolius*). Numerous Agaves (*Agave parryi*) and Ocotillo (*Fouquieria splendens*) were observed only in the far western section of the proposed project area.

3.5.2 Wildlife

Common reptiles that could be found within the general project area include the Couch's Spadefoot (*Scaphiopus couchi*), western green toad (*Bufo debilis insidior*), mud turtle (*Kinosternon arizonense*), desert box turtle (*Terrapene ornate luteola*), Tucson banded gecko *(Coleonyx bogerti*), zebra-tailed lizard (*Callisaurus draconoides*), southwestern greater earless lizard *(Cophosaurus texanus*), leopard lizard (*Gambelia wislizenii*), regal horned lizard (*Phrynosoma solare*), desert spiny lizard (*Sceloporus magister*), common tree lizard (*Urosaurus ornatus*), western whiptail (*Cnemidophorus tigris*), desert-grassland whiptail (*C. uniparens*), glossy snake (*Arizona elegans noctivaga*), western hook-nosed snake (*Gyalopion canum*), night snake (*Hypsiglena torquata*), common kingsnake (*Lampropeltis getulus*), coachwhip (*Masticophis flagellum*), long-nosed snake (*Rhinocheilus lecontei*), Mexican hognose snake (*Heterodon nasicus bennerlyi*), ground snake (*Sonora semiannulata*), Mexican black-headed snake (*Tantilla antriceps*), Mexican garter snake (*Thamnophis eques*), Arizona coral snake (*Micruroides euryxanthus*), western diamondback rattlesnake (*Crotalus atrox*), banded rock rattlesnake (*C. lepidus*), and the black-tailed rattlesnake (*C. molossus*) (Bebler and King, 1979).

Common mammals found in the general project area include the white-tailed deer *(Odocoelius virginianus cousii*), mule deer (*O. hemionus*), coyote (*Canis latrans*), javelina (*Dicotyles tajacu*), striped skunk (*Mephitis mephitis*), hooded skunk (*Mephitis macroura*), jaguar (*Felis onca*), mountain lion (*F. concolor*), bobcat (*F. rufus*), desert shrew (*Notiosorex crawfordi*), long-tongued bat (*Choeronycteris mexicana*), desert cottontail (*Sylvilagus audubonii*), eastern cottontail (*S. floridanus*), black-tailed jack rabbit (*Lepus californicus*), white-sided jackrabbit (*L. callotis*), spotted ground squirrel (*Spermophilus spilosoma*), rock squirrel (*S. variegatus*), Arizona gray squirrel (*Sciurus arizonensis*), desert pocket mouse (*Peromyscus penicillatus*), western harvest mouse (*Reithrodontomys megalotis*), cactus mouse (*P. eremicus*), brush mouse *(P. boylii*), southern

grasshopper mouse (*Onychomys torridus*), and the white-throated woodrat (*Neotoma albigula*) (Whitaker, 1980).

Common birds species in the general project area include the turkey vulture (*Caithartes aura*), red-tailed hawk (*Buteo jamaicensis*), American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), kestrel (*Falco sparverius*), turkey vulture (*Cathartes auro*), red-winged blackbird (*Agelaius phoeniceus*), mourning dove *(Zenaida macroura),* white-winged dove *(Z. asiatica),* common ground dove *(Callipepla passerina),* scaled quail *(C. squamata),* Gambel's quail *(C. gambelii*), greater roadrunner *(Geococcyx califiornianus*), common poorwill (*Phalaenoptilus nuttallii*), ash-throated flycatcher (*Myiarchus cinerascens*), brown-crested flycatcher (*M. tyrannulus*), cactus wren *(Campylorhynchus brunneicapillus*), rock wren (*Salpinctes obsoletus*), varied bunting (*Passerina versicolor*), white-crowned sparrow (*Zonotrichia leucophrys*), Cassin's kingbird (*Tyrannus vociferans*), western kingbird (*T. verticalis)*, and the blue grosbeak (*Passerina caerulea*) (Bull and Farrand, 1996).

Wildlife species observed during the September, 2000 site visit were black-tailed jack rabbit, red-tailed hawk, common raven, kestrel, turkey vulture, mourning dove, and great roadrunner.

3.5.3 Aquatic

Aquatic habitat is limited to small drainages or wash depressions located within the proposed project area as described in Section 3.4.2. No permanent surface water resources capable of supporting fish species were present within the proposed project location. No permanent surface water resources were located within the corridor surveyed along the proposed project site. Therefore, no amphibians or fish were observed during the September 2000 site visit.

3.5.4 Threatened and Endangered Species

Many Federally- and State-listed threatened and endangered species of plants, fish, and wildlife could occur in Cochise County. A list of these species as provided by the ANHP and the USFWS can be found in Table 3-1. No evidence of the Federally- or State-listed species threatened or endangered species was observed during the September 2000 site visit. Additional information on these species can be found in Appendix D.

Table 3-1 List of Threatened, Endangered, or Species of Concern In Cochise County

COMMON NAME	SCIENTIFIC NAME	ESA	Critical Habitat	USFWS	WSCA	NPL	NESL
Mexican Gray Wolf	*Canis lupis baileyi*	LE					
Ocelot	*Felis pardlis*	LE					
Jaguar	*Panthera Onca*	LE					
Jaguarundi	*Felis yahouaroundi tolteca*	LE					
Chiricahua Leopard Frog	*Rana chiricahuensis*	C		S	WC		
Lowland Leopard Frog	*R. Yavapaiensis*	SC		S	WC		
Baird's Sparrow	*Ammodramus bairdii*	SC		S	WC		
Ferruginous Hawk	*Buteo regalis*	C		S			Y
American Peregrine Falcon	*Falco peregrinus anatum*	LE	Y	S	WC		Y
Northern Aplomado Falcon	*F. femoralis septentrionalis*	LE					
Bald Eagle	*Haliaeetus leucocephalus*	LE					
Whooping Crane	*Grus Americana*	LE		S	WC		
Mexican Spotted Owl	*Strix occidentalis lucida*	LE					
Black-Tailed Prairie Dog	*Cynomys Ludovicianus*	C		C			
Gila Chub	*Gila Intermedia*	C					
Mountain Plover	*Charadruis montanus*	C		S	WC		
Southwestern Willow Flycatcher	*Empidonax trailliextimus*	LE					
Yaqui Chub	*Gila purpurea*	LE			WC		
Beautiful Shiner	*Cyprinella Formosa*	LT		S	WC		
Yaqui Topminnow	*Poeciliopsis occidentalis sonoriensis*	LE		S	WC		
Yaqui Catfish	*Ictaluius pricei*	LT					
Lesser Long-Nosed Bat	*Leptonycteris curasoae yerbabuenae*	LE		S	WC		
Lemmon Fleabane	*Erigeron Lemmoni*	C					
New Mexican Ridge-Nosed Rattlesnake	*Crotalus willardi obscurus*	LT					
Huachuca Springsnail	*Pyrgulopsis thompsoni*	C					
Arizona Shrew	*Sorex arizonae*	SC		S	WC		
Cochise Pincushion Cactus	*Coryphantha Robbinsorum*	LT		S		HS	
Huachuca Water Umbel	*Lilaeopsis scaffneriana var recurva*	LE		S		HS	
Canelo Hills Ladies'-Tresses	*Spiranthes delitescens*	LE		S		HS	
Sonoran Desert Tortoise	*Gopherus agassizii*	SC		S	WC		
Massasauga	*Sistrurus catenatus*	LT		S	WC		
Sonoran Tiger Salamander	*Ambystoma tigerinum stebbinsi*	LE		S			
Mexican Garter Snake	*Thamnophis eques megalops*	SC		S	WC		

C	Species of Concern
ESA	Endangered Species Act (1973 as amended).
LE	Listed Endangered: imminent jeopardy of extinction
LT	Listed Threatened
NESL	Navajo Endangered Species List (1997).
NPL	Arizona Native Plant Law, Arizona Department of Agriculture. HS – Highly safeguarded, no collection allowed. SR – Salvage restricted, collection only with permit.
S	Sensitive: those taxa occurring on National Forests in Arizona which are considered sensitive by the Regional Forester.
SC	Species of Concern. The terms "Species of Concern" or "Species at Risk" should be considered as terms-of-art that describe the entire realm of taxa whose conservation status may be of concern to the USFWS, but neither term has official status.
USFWS	U.S. Fish and Wildlife Service
WSCA/WC	Wildlife of Species Concern in Arizona. Species whose occurrence in Arizona is or may be in jeopardy, or with known or perceived threats or population declines, as described by the Arizona Game and Fish Department's listing of Wildlife of Special Concern in Arizona October 1996 Draft.
Critical Habitat Y	critical habitat has been designated.

Several Federally-listed fauna species were reported as having the potential to occur in Cochise County. The following information briefly describes the preferred habitat of these species.

The Mexican Gray Wolf prefers a chaparral, woodland, or forested habitat, but has been known to cross desert areas. Unconfirmed reports of individual wolves in the southern part of the State continue to be received; however, the majority of the wolves are believed to reside in Mexico.

The Ocelot prefers a habitat of humid tropical and sub-tropical forests, savannahs, and semi-arid thornscrub. Unconfirmed reports of individual ocelots in the southern part of the State of have been received.

The Sonoran Tiger Salamander's habitat varies from arid sagebrush plains to mountain forests, where the ground is easily burrowed. They are seen mostly at night following heavy rains and they live beneath debris near water or in mammal burrows. Known habitat for this species occurs in stock tanks and impounded cienegas in San Rafael Valley, and the Huachuca Mountains.

The Bald Eagle prefers large trees or cliffs near water with abundant prey, which are not present in the proposed project area.

The Mexican Spotted Owl nests in older forests of mixed conifer or ponderosa pine-gambel oak type, in canyons. Sites with cool microclimates appear to be of importance or are preferred.

The Northern Aplomado Falcon formerly nested in the southwestern U.S. and occurs only as an accidental. Good habitat for this species contains low ground cover and mesquite or yucca for nesting platforms. There have been no recent confirmed reports of this species in Arizona.

The American Peregrine Falcon prefers open country, especially along rivers, also near lakes and along coasts and in cities.

The Whooping Crane prefers freshwater bogs and winters on coastal prairies.

The Southwestern Willow Flycatcher prefers cottonwood/willows and tamarisk vegetation communities along rivers and streams. Critical habitat for this species exists on portions of the 100-year floodplain on the San Pedro and Verde Rivers, Wet Beaver and West Clear Creeks, including Tavasci Marsh and Ister Flat, the Colorado River, the Little Colorado River, and the west, east and south forks of the Little Colorado River.

The Yaqui Topminnow is found in small streams, springs, and cienegas vegetated shallows and has historically existed in the Santa Cruz River near Tucson.

The Yaqui Chub is found in perennial and intermittent small to moderate streams with boulders and cliffs.

The Lesser Long-Nosed Bat prefers the habitat offered by caves and mines where the mountains rise from the desert. This species day roosts in caves and abandoned tunnels and forages at night on nectar, pollen, and fruit of paniculate agaves and columnar cacti.

There are three Federally-listed plant species for Cochise County. The Cochise Pincusion cactus grows on gray limestone hills in semi-desert grassland communities with small shrubs, agave, other cacti, and grama grass. The Huachuca water umbel is typically located in cienegas, perennial low gradient streams or wetlands. This species can also be found adjacent to Sonora, Mexico. The Canelo Hills ladies-tresses are found in finely grained, highly organic, saturated soils of cienegas. Potential habitat for this species may occur in Sonora, Mexico, but no populations have been found. Although the potential exists for finding suitable habitat for the Federally-listed plant species within some portion of the project area, these three particular species are not likely to exist in the previously disturbed areas proposed for pole locations.

There are 17 Federally-listed species of concern for Cochise County. Most of these species, with the exception of the mountain plover, prefer floodplain terraces, pools, springs or streams, rivers or stock tanks. No permanent surface water resources exist within or adjacent to the proposed project location. The mountain plover typically prefers a sandy soil habitat and has historically been sighted in this area as a migratory species.

3.6 NOISE

The proposed project area is located away from noise sensitive sites such as schools, churches, hospitals, etc. The ambient noise environment within the general area is typical of rural areas with projected noise levels ranging from about 35 to 55 average-weighted decibels (dBA) day/night

noise level (Ldn). These levels may be substantially higher when the wind blows (U.S. Army 1995). Current noise in this area is generated by USBP vehicles patrolling the border and vehicles passing through the POE.

3.7 CULTURAL RESOURCES

Historic and archaeological resources are nonrenewable resources whose values may be easily diminished by physical disturbances. These resources are those items, places, or events considered important to a culture or community for reasons of history, tradition, religion, or science. The culture history of the project area is long and varied. The following chronology summarizes the human habitation of southeastern Arizona.

The following chronology has seven temporal subdivisions: the Paleo-Indian (11,000-9,000 B.C.), Archaic (8,000-300 B.C.), early Formative (300 B.C.-A.D. 800), late Formative/Preclassic (A.D.800-1150), Classic (A.D. 1150-1450), Protohistoric (A.D. 1450-1853), and Historic (A.D. 1853-1950) periods. It partially incorporates the chronological scheme initially proposed by Sayles (1945), with several major revisions. These are based on cross-dated ceramics that are temporally distinct and have been placed within the chronology using dendrochronology and radiocarbon dates. These ceramic types have stylistic correlates with locally made pottery and are often found in direct stratigraphic associations. Since temporal reference within the current study area is generally poor, radiocarbon, archaeomagnetic, and dendrochronological data in association with the stylistic correlates from outside southeastern Arizona are used.

The Paleo-Indian Period

The Paleo-Indian period is well documented in southeastern Arizona. Representing the earliest known occupation of the American continent, the Paleo-Indian period in southeastern Arizona is generally considered to cover the span of time from 11,000 to 8,000 B.C. Although the specifics that shaped cultural development are poorly understood, general patterns and processes are apparent. The archaeological record suggests that Paleo-Indian populations were small and dependent on the exploitation of megafauna and wild plants. The high degree of technological conformity and continental distribution of sites and isolated points indicate that this cultural complex was specialized, widespread, and highly mobile.

The Archaic Period

The Paleo-Indian complex gave way to numerous regional expressions assigned to the Archaic period (8,000 to 300 B.C.). Environmentally, the early and middle Archaic witnessed warmer temperatures, decreased precipitation, and the extinction of the megafauna. Adaptations to these changes initially corresponded to the use of a broader spectrum of fauna and floral resources. These generalized adaptations thus represent hunter-gatherer traditions with a high degree of residential mobility.

An expansion of the chipped stone assemblage is evidenced by refined biface production, diverse formal tool production, and the use of high-quality raw materials. A greater variety of ground stone

implements and the use of basketry are apparent. The increased use of ground stone also marks the slow transition from the mobile hunter-gatherer to the slightly more sedentary horticultural traditions. In southeastern Arizona this shift occurred earlier than in western and northern portions of the state.

The Early Formative Period

The Early Formative Period is characterized by the formation of a rather uniform cultural expression in southeast and central Arizona, as well as in southern New Mexico and northwestern Mexico, including the introduction of ceramics. Revisions of the phases are outlined by Sayles (1945). These include the Peñasco (300 B.C. to A.D. 600), Dos Cabezas (A.D. 600 to 700), and Pinaleño (A.D. 700 to 800) phases.

The Late Formative/Preclassic Period

The Late Formative/Preclassic period, which includes the Galiuro Phase (A.D. 800-950), the Early Encinas Phase (A.D. 950/1000 to 1050/1100), and the Late Encinas Phase (A.D. 1050/1100 to 1150), is defined by increased cultural differentiation throughout southeastern Arizona. It is also distinguished by the adoption of irrigation systems and changes in ceramic production and exchange, as well as in settlement patterns. This period culminates in the abandonment of large portions of the San Simon and Sulphur Springs valleys around A.D. 1150.

The Classic Period

Regionalism, agricultural intensification, and exchange/alliance networks define the Classic Period. The Classic Period includes the Ringo Phase (A.D. 1150-1300, and the Tularosa Horizon) and the Webb and Kuykendall Phases (A.D. 1300 to 1450, and the Gila Horizon). These processes above are distinguished by specific and rapid changes in ceramic production and exchange, as well as repeated reorganization of settlement patterns, the integration of upland dry-farming systems, and the adaptation of upland irrigation. This period culminates in the abandonment of most of southeastern Arizona around A.D. 1450. Critical to the temporal reconstruction of the Classic period presented below is the relationship between southeastern Arizona and the emergent regional systems in northwestern Chihuahua and northeastern Sonora.

The Protohistoric Period

The Protohistoric period can be subdivided into early (A.D. 1450 to 1535), middle (A.D. 1535 to 1700), and late (A.D. 1700 to 1853) phases. The early phase represents the aftermath of widespread regional prehistoric abandonment and population movement. The rise and decline of the Jano, Jocome, Manso, Suma, and Opata delineate the middle phase. The late Protohistoric phase is characterized by usurpation and dominance by the Athabascans.

The Historic Period

Historic occupation of the Sulphur Springs Valley began slightly later than in the Tucson Basin, which had a heavy Spanish colonial component in the 1690s with the arrival of the Jesuit missionary Eusebio Francisco Kino (Doelle 1984). The beginning of the historical period in the Tucson Basin corresponds to the latter Protohistoric period in the Sulphur Springs Valley. This

region was not as deeply affected by Spanish missionary activities like its western Tucson-region neighbors, instead, the late 1600s brought the introduction of nomadic Chihuahuan groups into the region, fleeing the results of Spanish contact in Mexico (Sheridan 1995).

In the 1700s, the Sulphur Springs Valley was affected by Apache raiding, which was carried out by the native inhabitants of the region in response to the Spanish occupation in Southern Arizona, particularly in the more heavily Spanish portion of the Tucson Basin. The raids affected every aspect of the burgeoning Anglo lifestyle in the valley, including ranching, agriculture, small boomtowns, and railroad construction. They were able to dominate the region until the late 1800s, when the dissolution of the Chircahua reservation occurred (Sheridan 1995).

Several groups formed in the developing boomtowns to serve as protection from Apache raiding and general criminal activity. The discovery of metals and minerals in the Dragoon and Mule mountains drew a wide variety of people. People interested in working in the mines and towns arrived, as well as "cowboys" - a term which became synonymous with criminals such as robbers, outlaws, and rustlers (Bailey 1999). Members of the protective groups, known as "rangers" or "guards," acted as paramilitary against "frontier lawlessness" (Bailey 1999).

The purchase of southern Arizona from Mexico in 1853 by the United States brought the arrival of a large number of Anglo settlers into the region. At this time, to protect the recent settlements and transportation networks, United States military stations were set up in order to prevent further Apache raiding. The socioeconomic system of the Apaches was further disrupted when they were barred from their traditional hunting-gathering and agricultural areas. The Chiricahua homeland was recognized in 1872, and two years after the death of Chief Cochise in 1874 the Chiricahua Apaches were moved to reservations in the San Carlos area by the United States military. This act also brought an end to the Apache raiding of the Sulphur Springs Valley area.

The main line of the Southern Pacific railroad was built through the Willcox Basin in 1880. Soon mining camps were established at Gleeson, Pearce, Bisbee, and Courtland. By the early 1900s, a smelter was built at Douglas to process the ore supplied by the nearby mines. This was followed by the construction of a series of railroad spurs by the Mexico and Colorado (M&C), an incorporation of the El Paso and Southwestern Railroad Company (EP&SW) and the Arizona and Colorado (A&C) part of the Southern Pacific Railroad Company (SP). These transportation systems were built in stages between 1902 and 1909. The stage line between the Kelton Station and Black Knob was never made operational and construction on the Naco stage was halted. A large, complex joint-use railroad station was built at Kelton to integrate these systems. With the incorporation of the EP&SW in 1924 these system were absorbed into the SP railroad network. The influence of the railroad rapidly declined between 1924 and the 1940s as several spurs were deactivated and stations closed. The last of the rail, ties, and other operational equipment, of all but one of these spurs, was removed by 1933 (Myrick 1975).

On September 13 and 15, 2000, archaeologists from SWCA, Inc. completed a supplemental archaeological survey of an approximately 2,640-foot-long, 150-foot-wide right-of-way (ROW)

corridor east of the town of Douglas in Cochise County, Arizona. The 2,640-foot-long, 150-foot-wide ROW, which includes the previously-mentioned 60-foot ROW north of the international boundary, covers the area on both sides of an existing road running along the United States-Mexico international border. This project was implemented in order to further assess the cultural resources that may be impacted by proposed maintenance and improvement of this road, including hydrological improvements where the road crosses major drainages, grading, scarifying and recompacting, and placement of permanent lighting structures. These improvements have been proposed for two areas near the town of Douglas. The western portion of the project area includes approximately 12 miles of border road to the west of Douglas, while the eastern portion of the project includes approximately seven miles extending east from the Point-of-Entry at Douglas. In addition to the survey, previously recorded sites in these areas were relocated and marked as part of this project as well.

3.8 AESTHETIC RESOURCES

Aesthetic resources consist of the natural and manmade landscape features that appear indigenous to the area and give a particular environment its visual characteristics. The current visual characteristics of the general project area is mostly of open space and low rolling hills covered by native grasses and vegetation. Both side of the international border are well populated in the areas close to the POE. Outlying areas consist of a few isolated dwellings on either side of the international border. Most of the aesthetic resources in the general area have been degraded due to existing development, border fencing, and large amounts of trash and debris scattered along both sides of the border. Background vistas outside of the city consist of distant views of the surrounding mountains.

3.9 SOLID AND HAZARDOUS WASTE

Phelps Dodge owns and utilizes a portion of the land located west of the POE in Douglas, AZ for disposal of mine tailings. The proposed activities would not be located adjacent to or disturb the land owned and operated by Phelps Dodge. Outside of the Phelps Dodge land, the Douglas USBP representatives report there is no known or suspected toxic and/or hazardous material contamination within the proposed project area. Additionally, the USBP indicated there are no other known historic land uses within the project area (such as industrial uses) that might have resulted in toxic or hazardous material contamination of the underlying soil and/or groundwater resources. However, due to the evidence of illegal and uncontrolled dumping of trash in the immediate vicinity, it is possible that potentially hazardous wastes may have been dumped.

3.10 SOCIOECONOMIC DATA

3.10.1 Population

The Region of Influence (ROI) for the proposed action includes Cochise County in southeastern Arizona. According to the Arizona Department of Economic Security and the U.S. Census Bureau,

the 1996 statistics indicated the population of Cochise County, Arizona was 110,062. Approximately 80 percent were listed as white; 5 percent as black; and the remaining 15 percent of different ethnic backgrounds. Persons of Hispanic origin, which can be of any race, make up 29 percent of the ROI population (U.S. Department of Commerce [USDC]1996).

The 1992 Economic Census for Cochise County lists approximately 5,173 firms in Cochise County. Of these firms, approximately 1,008 are listed as minority-owned firms and 1,991 are listed as women-owned firms.

In 1994, the civilian labor force for Cochise County totaled 41,770, and the county unemployment rate was 9.8 percent. Within the county, the leading employment sectors include agriculture, cattle, manufacturing, retail trade, government, and services. Approximately 48 percent of the total land in Cochise County is dedicated to farming (U.S. Census Bureau, 1996). The estimated annual median bracket household income for Cochise County is listed as ranging from $24,181 to $28,500.

The town of Douglas, Arizona is located on the International Border separating the U.S. and Mexico. In 1999, approximately 13,743 people reside in the City of Douglas, which represents an annual growth rate of 1.7 percent over the 1990 population of 12,822. The ethnic distribution of persons in Douglas is 71 percent white, 1 percent black, and the remaining 28 percent of different ethnic backgrounds. Persons of Hispanic origin make up 83 percent of the population of Douglas, which is significantly higher than the remainder of the ROI (USDC 1996).

3.10.2 Employment and Income

Total employment for the ROI in 1994 was 42,849, which represents an annual growth rate of 1.2 percent over total employment in 1990 (USDC 1994). Employment in the ROI is concentrated in the government, service, and retail trade sectors, combined these represented 77.5 percent of total employment in 1994. The largest employment sector is the government that accounts for 38.7 percent of the total. Compared to national figures, the government sector in the ROI is significantly larger than the national share of 15.0 percent, while the percentage of persons in the service industry in the ROI is less than the national average. The RIO unemployment rate in 1995 was 9.2 percent, significantly higher than the state and national averages (Arizona Department of Economic Security Research Administration 1994; U.S. Department of Labor 1994).

Total personal income for the ROI in 1994 was $1.6 billion. Per capita personal income was $14,764 in 1994, which was significantly lower than the national average of $21,696 (USDC 1994). The leading sectors for income are the same as those of employment. Government, services, and retail trade produce 79.2 percent of the income in the region. The wholesale trade industry is the fastest growth income and employment sector with annual growth rates of 13.9 percent for income and 8.2 percent for employment from 1990 to 1994. The trade industry is expected to continue to grow rapidly in the ROI as the effects of the North American Free Trade Agreement are fully realized. With regard to socioeconomics, both the U.S. and Mexico benefit from sharing occupational/economic activities in the proposed project area.

4.0 ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION

Based on discussions with USBP personnel, Federal and State agencies, and local authorities, as well as comparisons with similar USBP activities, several environmental factors potentially associated with the Proposed Action have been identified. An environmental consequence or impact is defined as a modification in the existing environment brought about by mission and support activities. Impacts can be beneficial or adverse, a primary result of an action (direct) or a secondary result (indirect), and can be permanent or long-lasting (long-term) or of short duration (short-term). Impacts can vary in degree from a slightly noticeable change to a total change in the environment.

Short-term impacts would occur along the border during and immediately after the construction of the proposed lighting project. For this project, short-term impacts are defined as those tied to the first two years following project implementation, whereas long-term impacts are those lasting more than two years.

Significant impact criteria are presented for each affected resource. These criteria are based on existing regulatory standards, scientific and environmental knowledge, and/or best professional judgment. Potential impacts for this project were classified at one of three levels: significant, insignificant (or negligible), and no impact. Significant impacts (as defined in CEQ guidelines 40 CFR 1500-1508) are effects that are most substantial, and therefore should receive the greatest attention in decision-making process. Insignificant impacts would be those impacts that result in changes to the existing environment that could not be easily detected. No-impact actions would not alter the existing environment. In the following discussions, impacts are considered adverse unless identified as beneficial.

Potential environmental consequences to each resource section include the following subcategories:

- Impacts. The level and duration of impacts that would occur as a result of the Proposed Action and the No-Action Alternative.

- Mitigation. Mitigation measures that could be applied to avoid or further reduce adverse impacts. Mitigation is discussed in Chapter 5.0.

Cumulative impacts and irreversible and irretrievable commitment of resources are discussed in separate sections following the discussions of each specific resource. Cumulative impacts are those which result from the incremental impacts of an action added to other past, present, and reasonably foreseeable actions, regardless of who is responsible for such actions. Irreversible and irretrievable impacts are permanent reductions or losses of resources that, once lost, cannot be regained.

This section of the EA will discuss only those environmental factors that would be impacted by the Proposed Action or the No-Action Alternative. Table 4-1 presents a comparison of the potential impacts by each area of concern.

Table 4-1 Comparison of Potential Impacts

Area of Impact		Proposed Action	No Action
Air Resources	ST:	Insignificant	Insignificant
	LT:	No Impact	Insignificant
Land Use	ST:	No Impact	No Impact
	LT:	Beneficial	No Impact
Geological Resources	ST:	Insignificant	Insignificant
	LT:	No Impact	Insignificant
Water Resources	ST:	No Impact	Insignificant
	LT:	No Impact	Insignificant
Cultural Resources	ST:	Insignificant	No Impact
	LT:	Insignificant	No Impact
Biological Resources	ST:	Insignificant	Insignificant
	LT:	Insignificant	Insignificant
Noise Resources	ST:	Insignificant	Insignificant
	LT:	No Impact	Insignificant
Aesthetic Resources	ST:	Insignificant	No Impact
	LT:	No Impact	No Impact
Solid/Hazardous Waste	ST:	No Impact	No Impact
	LT:	No Impact	No Impact
Socioeconomic	ST:	Beneficial	Insignificant
	LT:	Beneficial	Insignificant

ST = Short-term Impact.
LT = Long-term Impact.
Beneficial = Impact would be favorable, producing an overall benefit.
Insignificant = Perceptible, but not significant impacts.
Significant = Potential impact which requires concern.

4.1 AIR RESOURCES

4.1.1 Proposed Action

Under the Proposed Action, exhaust pollutants would be created from on-site heavy equipment used for pole placement and vehicles bringing workers and building materials to the site. A truck-mounted gasoline-powered auger would be used during installation and an excavator would be used to install the poles. Additional equipment which could be used at the project site includes: a portable generator for welding activities; a crane for pole placement; a compressor for hand-operated tools; high-reach trucks for mounting lights, forklifts for moving materials, ready-mix trucks for hauling and pouring concrete, and trucks to deliver construction materials. It is assumed that as many as four pieces of heavy equipment could be used simultaneously during the construction phase. These pieces are typically moved on-site and remain for the duration of construction.

Approximately 50 to 70 people would be required to install the poles and light equipment. In the air quality calculations, it was assumed that 60 people would commute to and from the project site for an average period of 45 days.

Such increases or impacts on ambient air quality during the construction/installation phase would be expected to be short-term and insignificant, and can be reduced further through the use of standard dust control techniques, including roadway watering and using chemical dust suppressants. Although some fugitive dust will be associated with road use, it would not be significantly greater than amounts currently produced. There would be no emissions associated with operation of the lights, and no longer-term impacts would be expected to occur.

The Proposed Action would not require any permitting action and would not create any air emissions that would jeopardize the Federal attainment status of the Air Quality Region, or cause an exceedance in the allowable Prevention of Significant Deterioration (PSD) increment for the region. Additionally, any emissions created by the Proposed Action would be within conformance of the SIP.

4.1.2 No-Action Alternative

Under this alternative, the use of the generators necessary to run the portable lighting systems will cause low amounts of air emissions. It will be necessary for these generators to run for approximately 12 hours each day, depending on the season. There will be both short-term and long-term insignificant air impacts from the operations of this alternative.

4.2 LAND USE

4.2.1 Proposed Action

No impacts on land use would be expected from project-related activities, considering the ongoing disturbance caused by the illegal entry of drugs, people, vehicles, and associated criminal and violent activity. The proposed landing mat fence would extend for approximately one mile. A construction zone for the fence would be approximately 20 feet wide, causing a possible disturbance of approximately 2.42 acres. The majority of this area would include the roadway, which has been previously disturbed. Installation of light and power poles would require the surface disturbance of approximately 400 square feet at each pole location (approximately 32 pole locations) or 0.30 acres of disturbance. The permanent lighting is proposed for areas that are primarily open space and heavily disturbed within the city limits. Project lighting would illuminate a larger area than that currently illuminated by the existing portable lighting systems. Additionally, less disturbance of the area is anticipated after installation of the permanent lighting system due to a reduction in the amount of maintenance necessary to care for permanent lighting systems versus portable lighting systems.

No change in land use would be expected to result from repair and improvements to the existing road and drainages. No increase in traffic is anticipated as a result of the road improvements. No increase in the road width is proposed. Areas disturbed by construction activities would be insignificant, and would return to their original state over time.

Under the Proposed Action, the overall land use adjacent to the proposed construction activities would not change. The proposed activities will not interfere with the USIBWC's ability to access, maintain, and ensure line-of-sight visibility between the boundary monuments located along with international border within the proposed project area. Additionally, due to the increased surveillance of the USBP in this area, there would be a beneficial effect as a result of an expected decrease of property damage in the City of Douglas, Arizona and surrounding areas.

4.2.2 No-Action Alternative

Under the No-Action Alternative, baseline conditions would not change. No installation of lighting, no construction of additional landing mat fence, and no repairs or improvements to the road and/or hydrological features would be conducted. The areas would continue to be breached at current levels and used for the illegal entry of drugs, people, vehicles, and associated criminal and violent activity.

No impacts on land use would be expected from the continued use of portable lighting systems, considering the ongoing disturbance caused by the illegal entry of drugs, people, vehicles, and associated criminal and violent activity. However, the quality of lighting from portable systems is not as good as that from permanent lighting systems. In addition, portable lighting is more

susceptible to vandalism and theft, and, therefore, may not be as effective a deterrent as permanent light poles.

4.3 GEOLOGICAL RESOURCES

4.3.1 Proposed Action

It is not likely that geologic hazards such as seismic events, landslides, subsidence, or increased flooding would result from implementation of the Proposed Action. Conversely, the Proposed Action is not likely to be impacted by any geologic hazard in the general project area.

The probability of any soil contamination from on-site fuel systems could result from any spills as a result of these activities would be reduced with the use of secondary containment. Additionally, no permanent sanitary facilities are planned for the project site, and any waste material generated during construction will be disposed of at an approved waste disposal site.

4.3.2 No-Action Alternative

No impacts to topography or physiography would be expected from the No-Action Alternative. It is not likely that geologic hazards such as seismic events, landslides, subsidence, or increased flooding would be impacted from the continued use of portable lighting systems. Likewise, the use of these systems would not be likely to cause a geologic hazard in the general project area.

There could be an insignificant short- and long-term impact on the soil resources of the project area from the No Action Alternative. The portable lighting systems rely on generators as a power source. Because of the fuels and lubricants associated with the generators, these systems could increase the potential for soil contamination due to maintenance concerns or vandalism. Additionally, because there is no secondary containment with these systems, an insignificant impact could result should a spill occur.

4.4 WATER RESOURCES

4.4.1 Proposed Action

The Proposed Action would have no impact to the groundwater quality or quantity, wetlands, surface water quality, or natural drainage patterns. No water usage would be expected for the operation of the Proposed Action, and only minimal water usage would be expected during the construction phase of the proposed project.

No wetlands were located within the proposed project corridor. The road and drainage improvement activities proposed for west of the POE would commence west of Whitewater Draw but would not directly impact Whitewater Draw. Repairs and improvements to the roadside drainages and road surface will benefit water quality within Whitewater Draw by decreasing erosion

in the area. Drainage channels occurring within the proposed project boundaries west of Whitewater Draw have existing concrete low water crossings (Arizona crossings); no additional low water crossings are proposed for this area. The 4 miles of road improvement proposed for east of the POE would include the construction of five low water crossings across unnamed minor drainages.

No deterioration of natural drainages, disruption of drainage patterns, or degradation of existing surface water quality is expected from project implementation. The nearest permanent surface water resource is the San Pedro River, which is located approximately 25 miles west of the proposed project site. Because the total area disturbed for this project is over 5 acres in size, a Stormwater Pollution Prevention Plan has been included as Appendix G of this document. There are no jurisdictional waters of the U.S. located within the project area; thus, a Section 404 permit for dredging or filling would not be required as a result of the Proposed Action.

4.4.2 No-Action Alternative

No change in baseline conditions would be expected from the No-Action Alternative. The continued use of portable lighting systems affects only a small portion of the Proposed Action area, and could have insignificant impact to groundwater, area natural drainages, or existing surface water resources in the project area. Only one city drainage ditch and wash area is located in the portion of the proposed project area where portable lighting is currently being used. However, some environmental concerns could result from leakage of generator fuels or oils to the ground surface. Vandalism of the portable lighting systems could result in higher than expected leakage. During periods of rainfall, water runoff could carry the leaked substances into the nearby drainage ways.

4.5 BIOLOGICAL RESOURCES

4.5.1 Proposed Action

A site visit was conducted on September 5-7 and 13-15, 2000 of the proposed project site by a Biologist from Ecological Communications Corporation accompanied by a Douglas Station USBP Agent. A 100-percent survey was conducted for a distance of 30 meters north of the International Boundary in those areas where the existing roadway was immediately adjacent to the international fence. In those areas where the roadway was not immediately adjacent to the international border, a survey of 20 meters on either side of the existing roadway was conducted. This survey was conducted in an effort to inventory biological resources at the proposed project areas, and evaluate the potential effects of the Proposed Action on these resources. Prior to the site reconnaissance, all available project-related literature was reviewed and information from the Arizona Natural Heritage Program (ANHP) and the USFWS was obtained regarding Federally and State-listed threatened and endangered species or special species of concern.

4.5.2.1 Vegetation

The majority of the Proposed Action would remain on the existing road alignment, minimizing disturbance to vegetation. Some vegetation would be removed where low water crossings or culverts would be installed. Road repair, improvement, and maintenance work, involving scarification of the old surface, recompaction, or simple grading, would not require removal of vegetation, however, the indirect effects of dust and sidecasting of surface material may have temporary adverse impacts to vegetation. Repairs and improvements to roadside drainages would have insignificant impacts to vegetation growing along the margins; the existing vegetation consists primarily of invasive species such as Johnsongrass and ragweed. Installation of the proposed permanent lighting would disturb approximately 0.29 acres (20-foot by 20-foot disturbance zone for each of the 32 sites) of land. The areas in which the permanent lighting would be located have been previously disturbed and have little or no biological value remaining. Therefore, placement of permanent lighting would have no impact on vegetation in these areas. A small amount of vegetation may be disturbed at borrow areas, turnouts, and staging areas. The turnouts to be used are existing; no new turnouts would be created. Borrow and staging areas would be selected prior to the start of any construction and would be located in previously disturbed areas, if possible, in order to avoid or minimize any further impacts to vegetation. Once identified, borrow and staging areas would be surveyed with results reported to the appropriate State or Federal agency.

Insignificant impacts to native plant species protected by the Arizona Native Plant Law may occur during the proposed construction. Protected species near the construction area would be flagged for avoidance prior to start of construction. For those individuals, which could not be avoided, coordination with the Arizona Department of Agriculture would be conducted to facilitate salvage and relocation of the specimens.

Due to the high degree of previous disturbance of the proposed project area, and the regional abundance of the Arizona native plant species, the impact from the Proposed Action would be insignificant.

4.5.2.2 Wetlands and Floodplains

There are no wetlands or floodplains that would be directly impacted by the Proposed Action. West of the POE, the proposed road and drainage repairs/improvements would begin just west of Whitewater Draw. If heavy rains occurred during the proposed construction, erosion of soils leading to sediment loading of Whitewater Draw could occur. The probability of this is low since the proposed construction would take place during dry months. The soils in this area are very sandy and highly erosive, with severe erosion already taking place during the summer monsoons. By repairing and improving the drainages and roadways (stabilizing the surfaces), the proposed construction could have an indirect, long-term beneficial impact to Whitewater Draw. The same would be true for each of the minor drainages within the proposed project area, however the beneficial impact would be insignificant.

4.5.2.3 Fish and Wildlife

The Proposed Action would have no direct impact on fish or other aquatic species because the proposed construction activities would not take place in flowing or standing water. Indirect impacts to Whitewater Draw (mentioned previously) could adversely affect aquatic species, however, the probability is low due to timing of the Proposed Action. An insignificant beneficial impact to aquatic species in Whitewater Draw could result from the reduction of erosion in the immediate area. However, this benefit would be imperceptible due to the high amount of erosion in the general project area. The only wildlife species which could be impacted from the Proposed Action would be small mammal, reptiles, and bird species. These impacts to such resources, such as foraging grass habitat and ground nesting habitat, would be insignificant due to the low amount of actual area disturbed by the Proposed Action. No long-term impacts to either small mammal, reptiles, and bird populations would be expected. Larger terrestrial wildlife movements in the proposed construction areas should not be affected due to the short duration of time anticipated to complete the Proposed Action. Additionally, construction activities would be conducted only during daylight hours, and not during the early morning hours or night-time hours when wildlife species are most active. Therefore, short-term impacts on wildlife species are expected to be insignificant.

The long-term effect of an increased photoperiod on mobile wildlife species due to the proposed permanent lighting would be expected to be insignificant. The "internal clocks" of many species maintain the species' daily rhythms regardless of the extended presence of daylight or nighttime conditions (U.S.Army 1997c). Temporary lighting is currently in use in the areas proposed for permanent lighting. Furthermore, these areas are highly disturbed and have a high volume of illegal foot traffic, making them unsuitable as wildlife habitat (USFWS 1998). Further conversation with USFWS personnel indicates that a light study to evaluate the effects on sensitive species is being considered.

4.5.2.4 Threatened and Endangered Species

Under the Endangered Species Act, formal consultation with the USFWS is required for any action that may affect Federally-listed species. Additionally, Federal agencies are required to ensure that any action authorized, funded, or carried out by such agencies would not be likely to jeopardize the continued existence of any threatened or endangered species. A copy of the consultation letters with the USFWS and Arizona Fish and Game Department is presented in Appendix E.

No Federally-listed threatened, endangered or proposed species were observed during recent pedestrian surveys of the proposed project area. Additionally, no protected species were observed during surveys conducted for EAs prepared for previous projects in the area (USACE, 1996, 1997, and 1998); therefore, there would be no direct impacts to federally listed threatened or endangered species. Specific habitat requirements for the majority of the listed species are not met in the immediate area of the Proposed Action. No designated critical habitat for Federally-listed species occurs within the area of the Proposed Action.

It is possible that the Southwestern willow flycatcher utilizes vegetation communities surrounding Whitewater Draw, which is adjacent to the proposed construction area. However, the Southwestern willow flycatcher would not be present during the winter months, when the proposed construction would likely take place. If any of the proposed construction activities were to take place from March to September, additional surveys utilizing the USFWS protocol would be necessary prior to the start of construction.

While no roosting habitat for the lesser long-nosed bat exists within the area of the proposed construction, forage for the bat (consisting of paniculate agave and culumnar cacti) does. These forage species occur at extremely low densities throughout most of the proposed construction area, but at higher densities throughout the westernmost one mile. Insignificant impacts to these forage species would result from the proposed construction because most would be avoided; the few that could not be avoided would be salvaged and relocated after consulting with the Arizona Department of Agriculture.

Based on the information provided in Section 3.5.4 for both flora and fauna species, their preferred habitats, and lack of evidence that these species occur within the project area, it would be unlikely that any Federally-listed threatened or endangered species would be found within the proposed project area, except on a transient basis. Additionally, impacts to all sensitive vegetation would be avoided or minimized. Therefore, the Proposed Action would have an insignificant indirect impact on Federally-listed threatened and endangered species.

4.5.2 No-Action Alternative

Baseline conditions would not change under the No-Action Alternative; therefore, no impacts would be expected on biological resources. The impacts to biological resources from the continued use of portable lighting systems would be similar to the installation of permanent lighting. Environmental concerns could arise from leakage of generator fuels or lubricants due to poor maintenance, normal wear and tear, or vandalism. Additionally, long-term impacts could include the impact of generator noise on wildlife species. The highest period of movement for most wildlife species occurs during night time or low daylight hours, which is consistent with the hours of continuous generator operation required for this system. However, as previously mentioned, the areas proposed for installation of permanent lighting are highly disturbed and have a high volume of illegal foot traffic; therefore, have little or no habitat value.

4.6 NOISE

4.6.1 Proposed Action

Noise naturally dissipates by atmospheric attenuation as it travels through the air. Some other factors that can affect the amount of attenuation are ground surface, foliage, topography, and humidity. For each doubling of distance from the source, the noise level can be expected to

decrease by approximately 6 decibels (dB). This method is a very conservative estimate of noise levels. A significant impact would be an increase in the ambient noise levels to a level of physical discomfort, or 120 A-weighted decibels (dBA).

Temporary construction noise impacts vary markedly because the noise intensity of construction equipment ranges widely as a function of the equipment and its level of activity. Short-term construction noise impacts tend to occur in discrete phases dominated initially by large earthmoving sources and later by hand-operated tools for finish construction. The noise produced by an assemblage of heavy equipment involved in urban, commercial, and industrial development typically ranges up to about 89 dBA at 50 feet from the source (U.S. Army 1995).

Over most of the proposed project area, receptors are located well beyond these distances. Only insignificant noise impacts are expected from the construction phase of the proposed project and no noise impacts are expected during the operation phase of the project. Additionally, given the heavy traffic noise resulting from the urban road and highway system in and around Douglas, Arizona, the noise expected from the proposed construction activities would be short in duration (less than 60 days), and would be expected to be insignificant to existing noise levels.

4.6.2 No-Action Alternative

No change in baseline conditions would be expected under the No-Action Alternative. As previously mentioned, long-term impacts to noise would include the impact of generator noise from the continued use of portable lights on wildlife species. The highest period of movement for most wildlife species occurs during night time or low daylight hours, which is consistent with the hours of continuous generator operation required for this system. The No-Action alternative would have a short- and long-term insignificant impact on the baseline noise condition within the proposed project area.

4.7 CULTURAL RESOURCES

4.7.1 Proposed Action

A thorough site file search was conducted by SWCA, Inc. (SWCA) at the Arizona State Museum prior to the current field work in order to determine the scope of recorded archaeological remains and the extent of previous fieldwork completed in the area. In 1994, 1997, and 1998, Geo-Marine, Inc. conducted archaeological surveys along the U.S.-Mexico Border in response to U.S. Border Patrol-Joint Task Force 6 needs for road improvement along the border road (Martynec et al. 1994, Browning 1997, 1998). Portions of this survey included the current project area. The 1994 project resulted in the recording or re-recording of 41 archaeological sites, of which 33 were recommended as eligible for the National Register of Historic Places (Martynec et al. 1994:iii). These sites were marked with flagging tape and monitored during the course of the 1994 project as well. In 1997, Geo-Marine, Inc. conducted an additional survey along the international boundary for continuing

road repair, related construction activities, and installation of permanent lighting structures (Browning 1997).

No new archaeological sites were recorded during the course of that survey, which also covered portions of the current project area, but three previously recorded sites were relocated. Finally, in 1998, Geo-Marine, Inc. conducted archaeological survey near Naco and Douglas, Arizona along existing and proposed roads, a water catchment area, a parking area, and a bivouac location for government personnel. Four archaeological sites were recorded as a result of this work, but none of these sites are situated within the current project area (Browning 1998). Ten of the 41 sites recorded by Geo-Marine, Inc. in 1994 were relocated within the current project area during the current fieldwork effort.

During a preliminary site visit on September 5-7, 2000, a USACE Archaeologist had identified cultural remains within the study area that appeared to be unrecorded. Upon assessment of the cultural remains that were identified by the USACE archaeologist, it was determined that these remains were in fact part of AZ FF:11:82 (ASM), or the D Hill Site, which had been recorded by Geo-Marine in 1994 (Martynec et al. 1994:65).

On September 13 and 15, 2000, archaeologists from SWCA completed an archaeological survey of an approximately 2,640-foot-long, 150-foot-wide right-of-way (ROW) corridor east of Douglas in Cochise County, Arizona. The 2,640-foot-long, 150-foot-wide ROW covers the area on both sides of an existing road running along the United States-Mexico international border. The area surveyed begins near the intersection of an access road originating near D Hill east of Douglas and the border road that was subject to the survey. It extends east from this point for 2,640 feet. The survey study area is located on the Douglas USGS 7.5' quadrangle and is located approximately 2 miles east of the Douglas POE. In order to cover the project ROW, SWCA simply walked the length of the study area and back. Following Arizona State Museum specifications for pedestrian surveys, which state that one pass by one person can adequately cover up to 20 m (66 feet) in width, the study area was intensively surveyed. Sites previously recorded by GeoMarine, Inc. were relocated and marked as part of the project as well.

One previously recorded archaeological site, AZ FF:11:82 (ASM), and one isolated artifact were found within the 2,640-foot-long, 150-foot-wide right-of-way corridor that was surveyed during the current project. As mentioned above, AZ FF:11:82 (ASM), or the D Hill Site, had been recorded by Geo-Marine in 1994. It consists of three loci containing ceramic sherds, flaked stone, and ground stone artifacts. Also noted at this site were a fire-cracked-rock feature at Locus 3, and historic trash with Locus 2 (Martynec et al. 1994:65-67). Ceramic artifacts encountered at the site indicate that the site was occupied between A.D. 1350 and 1450. Primary activities at the site appear to include lithic reduction and tool production, as well as resource processing (Martynec et al. 1994:67). One isolated artifact, a flake of white chert with unifacial retouch, was also found during the current survey.

Ten sites that had been previously recorded by Geo-Marine in 1994 (Martynec et al. 1994) within the current project area were relocated during the current project. Once a site had been relocated, its location was recorded using a Global Positioning System device in order to aid in subsequent relocation of each site.

4.7.2 No-Action Alternative

No change in baseline conditions would be expected under the No-Action Alternative. The continued use and placement of the portable lighting systems would be in areas previously disturbed, and is therefore, not likely to impact any cultural resources in the proposed project area.

4.8 AESTHETIC RESOURCES

4.8.1 Proposed Action

As noted in Section 3.7, the current visual characteristics of the general project area is mostly open space and low rolling hills covered by native grasses and low vegetation. Under the Proposed Action, aesthetic resources would have an insignificant impact due to the construction activities. However, construction activities are short-term and would not have a permanent impact on the subject areas. There would be no long-term impacts to aesthetic resources under the Proposed Action.

4.8.2 No-Action Alternative

Under the No-Action Alternative, baseline conditions would not change. Permanent lighting poles or additional landing mat fence would be installed. However, these would continue to be breached at current levels and used for the illegal entry of drugs, people, vehicles, and associated criminal and violent activity.

4.9 SOLID AND HAZARDOUS WASTES

4.9.1 Proposed Action

An accidental release or spill could occur as a result of fuels, oils, lubricants, and other hazardous or regulated materials brought on site for the proposed construction activities. A spill could result in potentially adverse impacts to on-site soils, and threaten the health of the local population, as well as wildlife and vegetation. However, the amounts of fuel and other lubricants and oils would be limited, and the equipment would be located on site to quickly limit any contamination. A spill prevention and response plan would be developed and implemented as part of the Proposed Action.

Because of the random nature of illegal dumping along the border areas, it is difficult to determine the location and quantity of hazardous waste that may be present within the general project area. If hazardous materials or wastes are present, there would be a potential for exposure during

construction activities. Construction personnel would be informed about the potential to encounter hazardous wastes that may be present on the site from dumping and the appropriate procedures to use if suspected hazardous contamination is encountered. Under the Proposed Action, it is assumed that worker-safety risks will be reduced through the implementation of standard safe practices, such as wearing hard hats, steel-toed boots, gloves, ear protection, face masks, safety vests, and other equipment, where appropriate and/or prescribed by State and/or Federal worker health and safety laws and regulations.

During construction and installation activities, fuels, oils, lubricants, and other hazardous materials will be used. A Spill Response Prevention Plan will be in-place prior to construction, and all personnel will be briefed on the implementation and responsibilities of the plan. As a result, no impact is expected from the implementation of the Proposed Action.

4.9.2 No-Action Alternative

No change in baseline conditions would be expected under the No-Action Alternative. Under the continued use of the portable lighting system, there could be an increased potential for accidental release or spills as a result of fuels, oils, lubricants used in the generators for the portable lighting systems. Such a spill could result in potentially adverse impacts to on-site soils, and threaten the health of the local population, as well as wildlife and vegetation. Additionally, there is no use of secondary containment for these systems.

4.10 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

4.10.1 Socioeconomics of Proposed Action

The Proposed Action projects would provide direct and indirect economic benefits to area companies and employees as a result of construction activities, and through economic multiplier effects. The impacts on the socioeconomic resources in the Region of Influence (ROI) such as population, employment, income, and business sales would be beneficial. The construction would be performed by military personnel deployed to the area for this project, and it would not be likely that additional hiring would occur within the local area. Additionally, the construction of the Proposed Action would not induce permanent in- or out-migration to the ROI. Therefore, overall area population would not be significantly impacted.

Direct expenditures associated with the proposed projects would have a minimal impact on employment, income, and sales within the ROI. Although most labor and some materials would be brought into the local area, some expenditures are expected to occur within the ROI. Short-term increase in local revenues for commercial establishments, trade centers, and retail sales will result from the purchase of supplies and equipment rental. Any potential impacts from the construction activities would easily be absorbed into the broader economy of the ROI.

The socioeconomic benefits resulting from the operation of the proposed lighting project would also be beneficial to the ROI. By decreasing drug trafficking and smuggling, the Proposed Action would contribute to the reduction of socioeconomic impacts and burdens that currently exist on local law enforcement and the medical community.

4.10.2 Environmental Justice of Proposed Action

EO 12898 of 11 February 1994 "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," provided that each U.S. Federal agency shall identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its program, policies, and activities on minority and low income populations in the U.S. The proposed construction sites are located in areas with similar characteristics of the broader ROI. Although some housing is located near the proposed permanent lighting sites, the area of lighting illumination would be directed away from the residences and toward the U.S.-Mexico border. As a result of this increased lighting, it would be expected that drug trafficking and associated violent crime would be reduced. Likewise, the improved condition of the roadway would maximize USBP operations along the border, positively impacting violent crime associated with drug trafficking in the Douglas area.

Additionally, installation or operation of the Proposed Action would not restrict the flow of legal visitation, trade, or immigration. Therefore, there would be no expected disproportionately high or adverse impacts on minority or low-income populations. Under the definition of EO 12898, there would be no adverse environmental justice impacts.

4.10.3 No-Action Alternative

Under the No-Action Alternative, the region would continue to experience immeasurable impacts to law enforcement agencies, medical institutions, and other socioeconomic organizations in the community as a result of continued drug trafficking, smuggling, and associated crime. This impact on environmental justice or the socioeconomic resources in the ROI would continue under the No-Action Alternative.

The continued use of portable lighting would have similar impacts to the installation of permanent lighting. However, the quality of the lighting is not as good with these units as it would be with the proposed permanent lighting. Additionally, the portable lighting is susceptible to vandalism, so that there will be increased maintenance costs to ensure the units are properly working. Due to these concerns, the portable lighting systems are considered to be less effective that permanent lighting structures.

4.11 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Irreversible and irretrievable commitments of resources would include a small amount of soil lost through wind and water erosion, a minor loss of small animal habitat due to construction activities,

loss of cultural resources mitigated through a treatment plan, loss of materials, energy and manpower expended during construction of the project, and higher level of noise generated from the construction activities.

4.12 CUMULATIVE IMPACTS

The assessment of cumulative impacts is addressed in NEPA by its reference to interrelations of all components of the natural environment. The CEQ defined cumulative impact as the incremental impact of multiple present and future actions with individually minor but collectively significant effects. Cumulative impacts can be concisely defined as the total effect of multiple land uses and developments, including their interrelationships, on the environment (Bain *et al.* 1986).

In order to evaluate cumulative effects, EAs from previous and proposed operations in the region were evaluated (USACE 1996, USACE 1997, USACE, 1998, USACE 1999, and USACE 2000). Additionally, the PEIS developed for all JTF-6 activities along the U.S.-Mexico border was evaluated. An update or Supplemental PEIS is currently in preparation. An analysis of each component of the affected environment was completed from the existing EAs in order to identify which actions would have cumulative impacts as a result of the past and proposed operations. Additional information was considered, including real estate ownership, Census Bureau growth rates, and any known projects planned for the reasonably foreseeable future. No long-term significant impacts occurred from these past projects.

Known projects in the reasonably foreseeable future include projects from JTF-6, INS, and the USBP. The following projects in both the Naco and Douglas areas.

Douglas

According to the Final EA prepared by INS for the infrastructure within the Naco-Douglas corridor (INS 2000), past INS and USBP projects for the Douglas area included:

- portable generator lights along a 25-mile corridor and
- five remote video surveillance (RVS) stations.

Proposed INS and USBP projects in the Douglas area include:

- 25 miles of road upgrades west of the POE,
- 4 miles of land mat fence west of the POE,
- 3.5 of landing mat fence east of the POE,
- 4 miles of stadium style lights on either side of the POE, and
- construction of a new USBP station.

Proposed JTF-6 projects in the Douglas area include:

- road maintenance and improvements as necessary along the border road
- construction of a bridge at Whitewater Draw to allow for year-round access, and
- extension of the landing mat fence east of the POE

Naco

According to the Final EA for infrastructure within the Naco-Douglas corridor (INS2000), past INS and USBP projects located in the Naco area included:

- 8 miles of road improvements west of the POE,
- 8 miles of landing mat fence west of the POE,
- 2.5 miles of stadium style lights both east and west of the POE,
- 2 low-water crossings (drainage structures),
- 1 miles of landing mat fence east of the POE, and
- 2.25 miles of vehicle barriers east of the POE.

Proposed INS and USBP projects in the Naco area include:

- construction of 8 RVS stations, and
- 4 alternative RVS stations.

Proposed JTF-6 activities in the Naco area include:

- a two-mile extension of landing mat fence both east and west of the POE,
- 1 miles of stadium style lights both east and west of the POE (USACE 1999)
- installation of vehicles barriers, and
- ongoing road improvements and maintenance.

The analysis revealed that for JTF-6 actions alone, land use, air quality, threatened and endangered species, and socioeconomic resources of past and proposed action areas would have insignificant cumulative impacts due to the temporary nature of construction activities. Water and biological resources (i.e., vegetation and wildlife habitat) would also be insignificantly affected cumulatively from past and proposed border construction actions. A positive cumulative impact has been realized by the additional cultural resource baseline data that has been gathered during the production of the various environmental documents, such as this environmental assessment.

Soils that are denuded during construction activities would be vulnerable to erosion. However, the vast majority of the JTF-6 road projects are planned to alleviate soil erosion; thus, the cumulative effect to soils would be beneficial. A reduction in erosional rates would have consequent beneficial results to area surface water quality by reducing turbidity and biochemical oxygen demands (USACE, 2000).

Direct cumulative impacts on economics from the JTF-6 missions would be expected to be beneficial but insignificant, depending upon the amount of local expenditures and economic multipliers in the region (USACE, 2000). However, the cumulative impact to the quality of life in Douglas could be significant and beneficial if the USBP is successful at curbing illegal drug trafficking.

The primary cumulative effect of the past and proposed action is the permanent loss of vegetation and associated wildlife habitat. As identified in the 1994 PEIS, the overall loss of vegetation falls below the projected level for the five year period, and accounts for less than 0.01 percent of the total land area along the entire U.S. – Mexico international border. Construction in the proposed project area may result in only an insignificant loss of vegetation and wildlife habitat since the total area of disturbance is relatively small and the area will re-vegetate following project implementation.

Cultural resources occur at relatively high site densities in southeastern Arizona giving them a high potential for impact (USACE, 2000). JTF-6 has, in the past, and will continue, to survey prior to each deployment, and coordinate fully with the Arizona State Historic Preservation Officer, as required by Section 106 of the National Historic Preservation Act. Future JTF-6 actions would follow the same strategy of avoidance (if possible) to cultural resources as it has used on all past missions. Based on this strategy, the cumulative impact to cultural resources in the Douglas area by JTF-6 would be insignificant.

When combined with past, present, and future projects known of in the Douglas area, it is hard to determine the exact impacts. However, Douglas occupies a relatively small area; its growth rate is low (approximately 1.7 percent annually). Much of the growth, in recent years, can be attributed to an increase in USBP activities brought on by the large influx of illegal traffic through the area. Activities associated with increase in USBP activities would have been (and will continue to be) subject to analysis under the existing laws protecting the environment. The greatest cumulative impacts (both direct and indirect) resulting from the growth of the population in Douglas would be to soils, water supply, air quality, land use, and socioeconomics. Responsible growth by the city would have insignificant cumulative impacts on biological and cultural resources. A search of the current real estate records shows that most of the land adjacent to the proposed project area is either already developed, or is held by individual or family interests. This would indicate a very low probability of industrial expansion and growth for the area. Other than ongoing and planned activities of the USBP (USACE, 2000), no large-scale development projects are known to be planned for the reasonably foreseeable future in the Douglas vicinity. The cumulative direct and indirect impacts resulting from past and future development in and around the City of Douglas (excluding mining interests) would most likely be insignificant in nature.

By far, the most important contributors to long-term cumulative impacts (direct and indirect) in the area are the mining interests. These have, however, been in operation for many years; prior to the passing of the laws protecting natural and cultural resources. The resources directly impacted by these operations are unknown; exact information regarding these losses will never be gained, and cannot be effectively evaluated with regard to cultural resources or endangered species. Direct and indirect impacts to water supply and air quality from the mines would have improved with the implementation of today's environmental laws. It would be expected that the mines (still in operation) are in compliance with applicable laws and regulations, and will continue to be so in the future.

If a FONSI is developed and implemented, the Proposed Action would result in the disturbance of approximately 14.84 total acres of vegetation. Approximately 4.84 acres would be lost during the construction of the two miles of landing mat fence (two miles x a 20 feet wide construction zone); 0.30 acres to the permanent light pole (32 pole sites x a 400 foot disturbance ; and approximately 9.7 acres for the 8 miles of major road repairs and improvements (8 miles x 10 foot construction zone either side of the road). The 8.0-mile minor road repair segment of the proposed project is not expected to cause a disturbance to surrounding vegetation. In the past, soil losses have been minimized through the implementation of erosion control measures including waterbars, gabions, reseeding, compaction, and slope control. Although the amount of soils saved is not quantifiable, JTF-6 operations have reduced existing erosion problems at numerous locations. A Stormwater Pollution Prevention Plan (SWPPP) for stormwater runoff from construction activities is required for this project and has been submitted to the USEPA.

The No Action Alternative would result in no additional direct effects to the area's resources by JTF-6, the border roads would continue to deteriorate and illegal drug trafficking would continue along the proposed project areas. Additionally, the current rate of growth for the area would most likely continue, thereby causing a possible increase in illegal drug activities.

5.0 ENVIRONMENTAL DESIGN MEASURES

This chapter describes environmental design measures that would be implemented as part of the Proposed Action to reduce or eliminate impacts from pole installation. Due to the limited nature of the Proposed Action, construction impacts are expected to be slight; therefore, mitigation measures are only described for those resources with potential for impacts.

5.1 WATER RESOURCES

Standard construction procedures would be implemented to minimize the potential for erosion and sedimentation during construction. All work would cease during heavy rains and would not resume until conditions are suitable for the movement of equipment and material. Storage or staging sites would be located at least 0.25 miles from wildlife or livestock tanks or other permanent surface water bodies to reduce potential effects of accidental spills. Conservation measures would be implemented to preclude unnecessary waste of water supplies. Discharges of grey water and other wastes to drainages or other water courses/bodies is prohibited. Portable latrines, provided and maintained by licensed contractors, would be used to the extent practicable during construction and operational support activities.

Additionally, mitigation measures, such as a Stormwater Pollution Prevention Plan (SWPPP), for stormwater runoff from construction activities will be required for this project as the total area of disturbance is greater than 5 acres. Erosion control measures such as waterbars, gabions, haybales, and reseeding will be implemented during and after construction activities in accordance with the SWPPP.

5.2 AIR QUALITY

Mitigation measures would include dust suppression methods to minimize airborne particulate matter that would be created during construction activities and installation of the poles. Additionally, all construction equipment and vehicles would be required to be kept in good operating condition to minimize exhaust emissions. Standard construction practices would be used to control fugitive dust during the construction phases of the Proposed Action.

5.3 BIOLOGICAL RESOURCES

Impacts to existing vegetation during construction activities would be minimized through avoidance. Disturbed sites would be utilized to the maximum extent practicable for construction and operational support activities. Additionally, attempts to minimize loss of vegetation may include: (1) trimming vegetation along roadsides rather than removing the entire plant; (2) requiring heavy equipment to utilize road pullouts or other such disturbed areas; and (3) considering the possibility of revegetative efforts. Native seeds or plants which are compatible with the enhancement of protected species will be used to the extent feasible, as required under Section 7(a)(1) of the Endangered Species Act.

Additional mitigation measures will include best management practices during construction to minimize or prevent erosion and soil loss. Vehicular traffic associated with engineering and operational support activities shall remain on established roads to the maximum extent practicable. Areas with highly erodible soils will be given special consideration when designing the Proposed Action activities to ensure incorporation of various compaction techniques, aggregate materials, wetting compounds, and revegetation to ameliorate the subsequent soil erosion. Borrow materials, if required, would be obtained from established borrow pits or from approved on-site sources.

5.4 NOISE

During the construction phase, noise impacts are anticipated at local human receptors. As required by Occupational Safety and Health Administration (OSHA), earplugs will be worn by employees working in environments with continuous noise levels of 8 hours per day above 90 dBA. Because of the increased noise sensitivity during quiet hours, time limits on on-site construction activities are warranted for grading and the use of heavy equipment. On-site activities should be restricted to daylight hours on Monday through Saturday, except in emergency situations, and only maintenance to equipment permitted on Sundays. Additionally, all construction equipment should possess properly working mufflers and be kept in a proper state of tune to reduce backfires. Implementation of these measures will reduce the noise impact to an insignificant level.

5.5 CULTURAL RESOURCES

According to the Geo-Marine report for the 10 sites within the current project area, sites AZ FF:10:23 and 25 (ASM) have been recommended as ineligible for the National Register of Historic Places (NRHP) (Martynec et al. 1994:116 and 117). No further work is recommended for these sites.

The remaining sites, AZ FF:9:10, AZ FF:10:22, 24, 28, 29, 31, and 32, and AZ FF:11:82 (ASM), were all recommended by Geo-Marine as eligible for the NRHP (Martynec et al. 1994:116 and 117). Archaeologists visited these sites again on January 30-31, 2001 to reassess their condition. Based on the current assessment of the sites, and discussion with SWCA archaeologists, these sites are recommended as not eligible for the NRHP, with the exception of Site AZ FF:11:82. Site AZ FF:11:82 (ASM) is eligible for the NRHP and it appears to contain significant cultural deposits, and may be impacted by the proposed hydrological and road improvement activities in this area.

In compliance with 36 CFR Part 800, the Advisory Council on Historic Preservation was notified and the AZ State Historic Preservation Officer (SHPO) and JTF-6 entered into a Memorandum of Agreement (MOA) to agree on how the adverse effects of the proposed project would be resolved. A copy of the MOA is contained in Appendix E. To mitigate these potential adverse impacts, a program of archaeology data recovery is being conducted at site AZ FF:11:82. This program is guided by a scientific research design that has been approved by the Arizona SHPO. Under this program, the site is mapped, intensively surface collected, and exposed rock features are manually

excavated. Following this manual excavation, up to 300 m of trench is mechanically excavated parallel and north of the border road. If this series of trenches exposes additional buried features, then additional features are manually excavated. As appropriate, rock and soil samples are being recovered from feature contexts to allow for dating and other interpretive assays. Following excavation, analyses of the recovered artifact assemblage, of the diversity and spatial patterning of feature types, and of the content and dating of the features will permit substantive conclusions about the key research questions of chronology, prehistoric settlement patterns and land use, and prehistoric resource exploitation, subsistence and diet.

All construction activities shall be at least two feet away from the international boundary to avoid impacts to historical boundary monuments and other demarcations. Near each permanent boundary monument, strict construction precautions would be implemented to avoid potential damage to these items. Additionally, no construction materials would be placed adjacent to these monuments.

Potential adverse impacts to other cultural resource sites shall be mitigated through site avoidance. Should any new cultural resources be noted during construction activities, all work will cease immediately in the area and the Arizona SHPO will be notified immediately.

5.6 SOLID AND HAZARDOUS WASTES

With proper handling, storage, and/or disposal of hazardous and/or regulated materials there would be no significant adverse impacts to onsite workers and neighboring flora and fauna. To minimize potential impacts from hazardous and regulated materials, all fuels, waste oils, and solvents would be collected and stored in tanks or drums within a secondary containment system that consists of an impervious floor and bermed sidewalls capable of containing the volume of the largest container stored therein.

The refueling of machinery would be completed following accepted guidelines, and all vehicles would have drip pans during storage to contain minor spills and drips. Although it would be unlikely for a major spill to occur, any spill of five gallons or more would be contained immediately within an earthen dike, and the application an absorbent (e.g., granular, pillow, sock, etc) would be used to absorb and contain the spill. Any major spill of a hazardous or regulated substance would be reported immediately to JTF-6 environmental personnel who would notify appropriate Federal and State agencies.

Additionally, all personnel would be briefed as to the correct procedures for preventing and responding to a spill. A Spill Prevention Plan would be in place prior to the start of construction, and all personnel shall be briefed on the implementation and responsibilities of this plan. Adoption and full implementation of the construction measures described above will reduce adverse hazardous/regulated substances impacts to insignificant levels.

All waste oil and solvents would be recycled if practicable. All non-recyclable hazardous and regulated wastes would be collected, characterized, labeled, stored, transported, and disposed of in accordance with all Federal, State, and local regulations, including proper waste manifesting procedures.

6.0 PUBLIC INVOLVEMENT

This chapter discusses consultation and coordination that occurred in the preparation of this document. This includes contacts made during development of the Proposed Action, elimination of alternatives, and writing of the EA. Formal and informal coordination has been conducted with the following agencies:

- U. S. Army Corps of Engineers (Fort Worth District);
- Joint Task Force Six (JTF-6);
- Immigration and Naturalization Service (INS; USBP);
- State Historic Preservation Office (SHPO);
- U.S. Fish and Wildlife Service (USFWS);
- Arizona Department of Agriculture (ADA;,
- International Boundary and Water Commission (IBWC);
- Bureau of Land Management;
- Gila River Indian Community Council;
- Ak Chin Indian Community Council;
- Hopi Tribal Council;
- Salt River Pima-Maricopa Indian Community Council;
- San Carlos Tribal Council;
- Tohono O'odham Nation; and
- White Mountain Apache Tribal Council.

The Draft EA was made available for public review and letters of coordination can be found in Appendix E. Appendix F contains agency coordination and response letters.

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9.0 LIST OF ACRONYMS AND ABBREVIATIONS

ADA	Arizona Department of Agriculture
ADEQ	Arizona Department of Environmental Quality
ADWR	Arizona Department of Water Resources
AGM	Arizona Groundwater Management
AMA	Active Management Area
ANHP	Arizona Natural Heritage Program
AR	Army Regulation
ASM	Arizona State Museum
CAA	Clean Air Act
CERL	Construction Engineering Research Laboratory
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
dB	Decibel
dBA	A-weighted decibels
DLEA	Drug Law Enforcement Agencies
DoD	Department of Defense
DOJ	Department of Justice
EA	Environmental Assessment
e.g.	for example
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
F	Fahrenheit
FCAA	Federal Clean Air Act
FIFRA	Federal Insecticides, Fungicide and Rodenticide Act
FONSI	Finding of No Significant Impact
FY	Fiscal Year
GPS	Global Positioning System
HC	Exhaust Hydrocarbons
HCHO	Aldehydes
HMTA	Hazardous Materials Transportation Act
IBWC	International Boundary and Water Commission
INS	Immigration and Naturalization Service
IO	Isolated Occurrence
JTF-6	Joint Task Force Six
Ldn	Day/Night Noise Level
MET	Meteorological
METL	Mission Essential Training List
Mph	Miles Per Hour

APPENDIX A

Site Photographs

Photo No. 1: Western portion of proposed road improvement section. Photo taken facing west.

Photo No. 2: Western portion of proposed road repair and hydrological improvement section. Photo taken facing south.

Photo No.3: Western portion of proposed road repair and hydrological improvement section. Photo taken facing west.

Photo No. 4: Western portion of proposed road repair and hydrological improvement section. Photo taken facing east.

LIST OF ACRONYMS AND ABBREVIATIONS (CONT.)

NAAQS	National Ambient Air Quality Standards
NDCS	National Drug Control Strategy
NEPA	National Environmental Policy Act
NESL	Navajo Endangered Species List
NHPA	National Historic Preservation Act
NOA	Notice of Availability
NO_x	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
NPL	Native Plant Law
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OSHA	Occupational Safety and Health Administration
PEIS	Programmatic Environmental Impact Statement
PL	Public Law
PM_{10}	Particulates
POE	Port of Entry
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
ROI	Region of Influence
ROW	Right of Way
SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO_x	Sulfur Oxides
TSCA	Toxic Substances Control Act
U.S.	United States of America
USACE	United States Army Corps of Engineers
USBP	United States Border Patrol
USC	United States Code
USFWS	United States Fish and Wildlife Service
UTM	Universal Transverse Mercator
W	Watt
WSCA	Wildlife Species of Concern in Arizona

APPENDICES

Photo No. 5: Western portion of proposed road repairs. Photo taken facing east.

Photo No. 6: Western portion of proposed road maintenance and hydrological improvement section. Photo taken facing west.

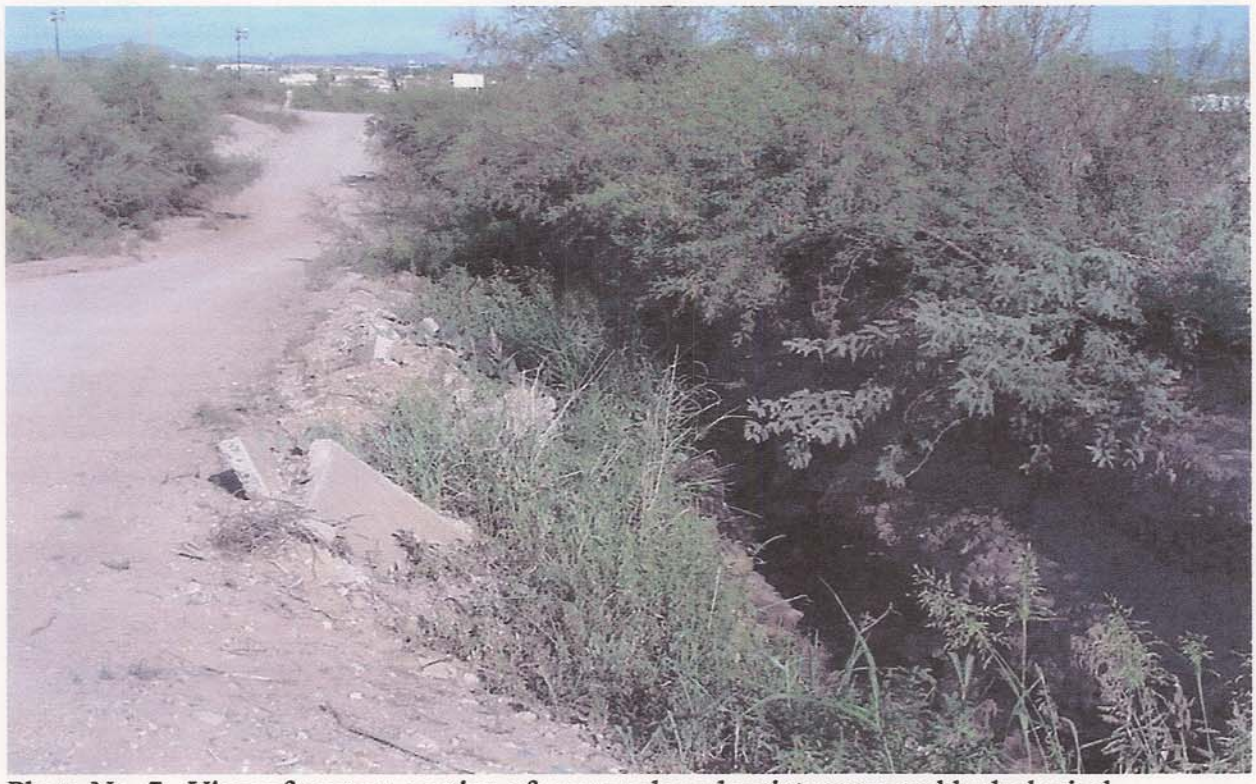


Photo No. 7: View of western portion of proposed road maintenance and hydrological improvement section. Photo taken facing east.

Photo No. 8: Eastern section of proposed road repair and maintenance section. Photo taken facing east.

APPENDIX B

Federal and State Air Pollutant Standards

National Ambient Air Quality Standards*

Air Pollutant	Type of Average	National Standards* Primary[1] ($\mu g/m^3$)	Secondary[2] ($\mu g/m^3$)
Carbon Monoxide (CO)	1-hr	40,000	---
	8-hr	10,000	---
Inhalable Particulate Matter (PM_{10})	24-hr	150	---
	AAM[3]	50	---
Lead (Pb)	Calendar Quarter 3-months	1.5	---
Nitrogen Dioxide (NO_2)	AAM[3]	100	100
Ozone (O_3)	1-hr	235	235
Sulfur Dioxide (SO_2)	30-min	---	---
	3-hr	---	1,300
	24-hr	365	---
	AAM[3]	80	---
Total Suspended Particulate Matter (TSP)	1-hr	---	---
	3-hr	---	---
Hydrogen Sulfide (H_2S)	30-min	---	---
Sulfuric Acid (H_2SO_4)	1-hr	---	---
	24-hr	---	---
Inorganic Fluoride Compounds (as HF)	3-hr	---	---
	12-hr	---	---
	24-hr	---	---
	7-day	---	---
	30-day	---	---
Beryllium	24-hr	---	---
Other Hazardous and Odorous Pollutants	30-min	---	---
	AAM[3]	---	---

1 National Primary Standards establish the level of air quality necessary to protect the public health from any known or anticipated adverse effects of a pollutant, allowing a margin of safety to protect sensitive members of the population.

2 National Secondary Standards establish the level of air quality necessary to protect the public welfare by preventing injury to agricultural crops and livestock, deterioration of materials and property, and adverse impact on the environment.

3 Annual Arithmetic Mean.

4 If it affects a residential area, business, or commercial property.

5 If it affects only a property used for other than residential, recreational, business, or commercial purpose.

* Adapted from 40 CFR 50.

APPENDIX C

NRCS Soils Information

LEGEND

SOILS OF THE VALLEY FLOOR

- A1 Gothard-Crot-Stewart Association - Shallow and deep, moderately well and somewhat poorly drained, nearly level, saline-alkali soils.
- A2 Elfrida Association - Deep, well drained, dark colored, nearly level, calcareous soils.
- A3 Karro Association - Deep, well drained, light colored, nearly level to strongly sloping, calcareous soils.
- A4 McAllister Association - Deep, well drained, brown, nearly level, calcareous soils.
- A5 Mohave Association - Deep, well drained, reddish brown, nearly level, moderately fine textured soils.
- A6 Dry Lake Association - Moderately deep, moderately well drained, nearly level to gently sloping, loamy sands over limy saline-alkali material.
- A7 Playa Association - Level or nearly level intermittent lake beds that are saline-alkali.

SOILS OF THE RIVER BOTTOMS AND ALLUVIAL FANS

- B1 Comoro-Anthony-Grabe Association - Deep, well drained, nearly level, medium and moderately coarse textured soils.
- B2 Vinton Association - Deep, well drained, nearly level to moderately sloping, coarse textured soils.
- B3 Guest Association - Deep, well drained, nearly level, fine textured soils.
- B4 Vinton-Gila Association - Deep, well drained, nearly level, medium and coarse textured soils.

SOILS OF THE VALLEY SLOPES

- C1 Sonoita Association - Deep, well drained, nearly level to moderately sloping, moderately coarse textured soils.
- C2 White House-Tubac-Forrest Association - Deep, well drained, nearly level to hilly, fine textured soils.
- C3 Eba Association - Deep, well drained, nearly level to gently sloping, gravelly and very gravelly fine textured soils.
- C4 Martinez Association - Deep, well drained, nearly level to gently sloping, very fine textured soils.
- C5 Casto Association - Deep, well drained, strongly sloping to steep, very gravelly, moderately fine textured soils.
- C6 Cruces Association - Shallow, well drained, nearly level to strongly sloping, moderately fine textured soils over a lime-cemented hardpan.
- C7 Bonita-Sontag Association - Deep, well drained, nearly level to hilly, cobbly and gravelly clay soils.

SOILS OF THE FOOTHILLS

- D1 Kimbrough-Cave Association - Shallow, well drained, nearly level to moderately steep, medium textured soils over a lime-cemented hardpan.
- D2 Hathaway-Nickel Association - Deep, well drained, nearly level to hilly, gravelly and very gravelly loamy soils.
- D3 Rilloso*-Latene Association - Deep, well drained, moderately sloping to steep, gravelly calcareous loam and sandy loam soils.
- D4 Graham-Lampshire Association - Shallow and very shallow, dark colored, moderately steep to steep, cobbly and gravelly soils over andesitic and rhyolitic bedrock.
- D5 Lampshire-Ustollic Haplargids Association - Shallow and very shallow, dark colored, moderately sloping to hilly, cobbly and gravelly soils over granite.
- D6 Mabray Association - Shallow and very shallow, dark colored, moderately steep to hilly, very cobbly and gravelly loams over limestone.
- D7 Krentz* Association - Shallow and very shallow, dark colored, moderately sloping to hilly, cobbly and gravelly loams over cinders.
- D8 Rough Broken Land-Gullied Land Association - Steep and very steep, deeply dissected land with many deep gullies.
- D9 Granite Rock Land Association - Very shallow and shallow, strongly sloping to steep, cobbly, stony and very stony soils over granite bedrock with 50 to 60 percent of the surface being rock outcrop.

SOILS OF THE MOUNTAINS

- E1 Luzena-Faraway Association - Shallow and very shallow, dark colored, steep to very steep, cobbly and gravelly soils over andesite and rhyolite.
- E2 Barkerville-Gaddes Association - Very shallow to moderately deep, steep to very steep, cobbly and gravelly, medium to moderately fine textured soils over granite.
- E3 Tortugas Association - Shallow and very shallow, dark colored, steep to very steep, cobbly and stony loams over limestone.

Small areas of Rock land

Small areas of Sand dunes

c Cinder cones

*Tentative series name subject to change in correlation .

GENERAL SOIL MAP

COCHISE COUNTY

ARIZONA

OCTOBER 1971

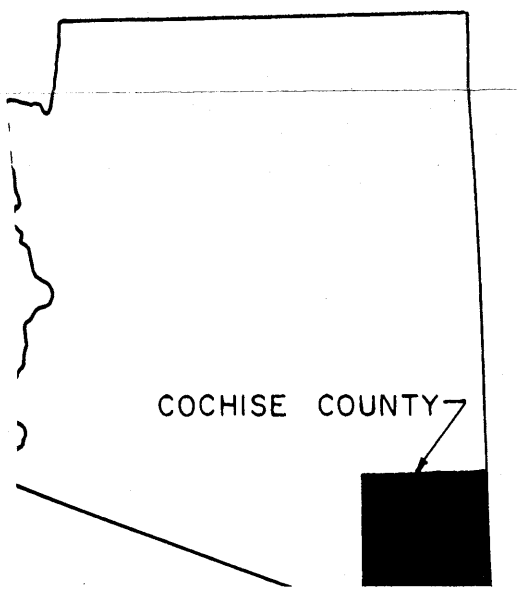
10 0 10 20 MILES

SCALE 1:500,000

ARIZONA STATE PLANE COORDINATE SYSTEM, EAST ZONE, 100,000 FT. GRID.

U. S. DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION S



This map is intended for general planning. Each delineation may contain soils different from those shown on the map. Use detailed soil maps for oper-

APPENDIX D

Threatened and Endangered Species Information

				8000-8500	
THREE FORKS SPRINGSNAIL	PYRGULOPSIS TRIVIALIS	CANDIDATE	APACHE		
ZUNI FLEABANE	ERIGERON RHIZOMATUS	THREATENED	APACHE	7,300 TO 8,000 FT	50 FR 16682; 4/26/85
MEXICAN GRAY WOLF	CANIS LUPUS BAILEYI	ENDANGERED	APACHE, COCHISE, GREENLEE, PIMA, SANTA	4,000-12,000	32 FR 4001, 03-11-
APACHE (ARIZONA) TROUT	ONCORHYNCHUS APACHE	THREATENED	APACHE, GREENLEE, GILA, GRAHAM, NAVAJO	>6000	40 FR 29864, 07-19-
BEAUTIFUL SHINER	CYPRINELLA FORMOSA	THREATENED	COCHISE	<4500	49 FR 34490, 8-31-
LEMMON FLEABANE	ERIGERON LEMMONII	CANDIDATE	COCHISE	1500-6000	
NEW MEXICAN RIDGE-NOSED RATTLESNAKE	CROTALUS WILLARDI OBSCURUS	THREATENED	COCHISE	5000-6800	43 FR 34479, 04-04-
WHOOPING CRANE	GRUS AMERICANA	ENDANGERED	COCHISE	4500	32 FR 4001, 03-11-
YAQUI CATFISH	ICTALURUS PRICEI	THREATENED	COCHISE	4000-5000	49 FR 34490, 08-31-
YAQUI TOPMINNOW	POECILIOPSIS OCCIDENTALIS SONORIENSIS	ENDANGERED	COCHISE	<4500	32 FR 4001, 03-11-
YAQUI CHUB	GILA PURPUREA	ENDANGERED	COCHISE (AZ), MEXICO	4000-6000	49 FR 34490, 08-31-
COCHISE PINCUSHION CACTUS	CORYPHANTHA ROBBINSORUM	THREATENED	COCHISE AND SONORA, MEXICO	>4200	51 FR 952, 1-9-1986
BLACK-TAILED PRAIRIE DOG	EYNOMYS LUDOVICIANUS	CANDIDATE	COCHISE, GRAHAM, AND GREENLEE	APPROX. 5,000 FT	
LESSER LONG-NOSED BAT	LEPTONYCTERIS CURASOAE YERBABUENAE	ENDANGERED	COCHISE, PIMA, SANTA CRUZ, GRAHAM, PINAL,	<8000	53 FR 38456, 09-30-
CANELO HILLS LADIES' TRESSES	SPIRANTHES DELITESCENS	ENDANGERED	COCHISE, SANTA CRUZ	about 5000	62 FR 665, 01-06-97
HUACHUCA SPRINGSNAIL	PYRGULOPSIS THOMPSONI	CANDIDATE	COCHISE, SANTA CRUZ	4500-6000	
NORTHERN APLOMADO FALCON	FALCO FEMORALIS SEPTENTRIONALIS	ENDANGERED	COCHISE, SANTA CRUZ	3500-9000	51 FR 6686, 01-25-86
BRADY PINCUSHION CACTUS	PEDIOCACTUS BRADYI	ENDANGERED	COCONINO	3850-4500	44 FR 61784, 10-26-
KANAB AMBERSNAIL	OXYLOMA HAYDENI KANABENSIS	ENDANGERED	COCONINO	2,900	57 FR 13857, 04-17-
SAN FRANCISCO PEAKS GROUNDSEL	SENECIO FRANCISCANUS	THREATENED	COCONINO	10900+	48 FR 52743, 11-22-
SENTRY MILK-VETCH	ASTRAGALUS CREMNOPHYLAX VAR CREMNOPHYLAX	ENDANGERED	COCONINO	>4000	55 FR 50184, 12-5-
WELSHS MILKWEED	ASCLEPIAS WELSHII	THREATENED	COCONINO	VARIES	52 FR 41435, 10-28-
BLACK-FOOTED FERRET	MUSTELA NIGRIPES	ENDANGERED	COCONINO, APACHE, NAVAJO	<10,500	32 FR 4001, 03-11-87
LITTLE COLORADO SPINEDACE	LEPIDOMEDA VITTATA	THREATENED	COCONINO, APACHE, NAVAJO	4000-8000	62 FR 36054
FICKEISEN PINCUSHION CACTUS	PEDIOCACTUS PEEBLESIANUS FICKEISENIAE	CANDIDATE	COCONINO, MOHAVE	4000-5000	
HUMPBACK CHUB	GILA CYPHA	ENDANGERED	COCONINO, MOHAVE	<4000	32 FR 4001, 03-11-
NAVAJO SEDGE	CAREX SPECUICOLA	THREATENED	COCONINO, NAVAJO, APACHE	5700-8000	50 CFR 19373, 5-8-85
GILA TROUT	ONCORHYNCHUS GILAE	ENDANGERED	GILA	6000-10000	32 FR 4001, 03-11-
GILA TOPMINNOW	POECILIOPSIS OCCIDENTALIS OCCIDENTALIS	ENDANGERED	GILA, PINAL, GRAHAM, YAVAPAI, SANTA CRUZ,	<4500	32 FR 4001, 03-11-
COLORADO PIKEMINNOW	PTYCHOCHEILUS LUCIUS	ENDANGERED	GILA, YAVAPAI	<4000	32 FR 4001, 03-11-
ARIZONA AGAVE	AGAVE ARIZONICA	ENDANGERED	GILA, YAVAPAI, MARICOPA	3000-8000	49 FR 21055, 05-18-
MOUNT GRAHAM RED SQUIRREL	TAMIASCIURUS HUDSONICUS GRAHAMENSIS	ENDANGERED	GRAHAM	>8000	52 FR 20994, 06-03-
ARIZONA CLIFFROSE	PURSHIA SUBINTEGRA	ENDANGERED	GRAHAM YAVAPAI MARICOPA MOHAVE	<4000	49 FR 22326 5-29-84
SPIKEDACE	MEDA FULGIDA	THREATENED	GRAHAM, PINAL, GREENLEE, YAVAPAI, APACHE*	<6000	51 FR 23769,07-01-
RAZORBACK SUCKER	XYRAUCHEN TEXANUS	ENDANGERED	GREENLEE, MOHAVE, PINAL, YAVAPAI, YUMA, LA	<8000	55 FR 21154, 05-22-
BROWN PELICAN	PELECANUS OCCIDENTALIS	ENDANGERED	LA PAZ YUMA	VARIES	35 FR 16047, 10-13-
DESERT PUPFISH	CYPRINODON MACULARIUS	ENDANGERED	LA PAZ, PIMA, GRAHAM, MARICOPA, PINAL,	<5000	51 FR 10842, 03-31-
ARIZONA HEDGEHOG CACTUS	ECHINOCEREUS TRIGLOCHIDIATUS ARIZONICUS	ENDANGERED	MARICOPA, GILA, PINAL	3700-5200	44 FR 61556,10-15-
CACTUS FERRUGINOUS PYGMY-OWL	GLAUCIDIUM BRASILIANUM CACTORUM	ENDANGERED	MARICOPA, YUMA, SANTA CRUZ, GRAHAM,	<4000	62 FR 10730, 3-10-97
DESERT TORTOISE, MOHAVE POPULATION	GOPHERUS AGASSIZII [XEROBATES]	THREATENED	MOHAVE	500-5100	55 FR 12178, 04-02-
HOLMGREN MILK-VETCH	ASTRAGALUS HOLMGRENIORUM	PROPOSED ENDANGERED	MOHAVE	2700-2800	85 FR 19728
HUALAPAI MEXICAN VOLE	MICROTUS MEXICANUS HUALPAIENSIS	ENDANGERED	MOHAVE	3500-7000	52 FR 38778, 10-01-
JONES' CYCLADENIA	CYCLADENIA HUMILIS VAR JONESII	THREATENED	MOHAVE	4390-6000	51 FR 16530
VIRGIN RIVER CHUB	GILA SEMINUDA	ENDANGERED	MOHAVE (AZ), WASHINGTON (UT), AND CLARK	< 4,500 ft.	54 FR 35305, 08-24-
WOUNDFIN	PLAGOPTERUS ARGENTISSIMUS	ENDANGERED	MOHAVE (AZ), WASHINGTON (UT), AND CLARK	<4500	35 FR 16047, 10-13-
SILER PINCUSHION CACTUS	PEDIOCACTUS SILERI	THREATENED	MOHAVE COCONINO	2800-5400	44 FR 61788, 11-28-
MEXICAN SPOTTED OWL	STRIX OCCIDENTALIS LUCIDA	THREATENED	MOHAVE, COCONINO, NAVAJO, APACHE,	4100-9000	56 FR 14678, 04-11-
BONYTAIL CHUB	GILA ELEGANS	ENDANGERED	MOHAVE, LA PAZ	<4000	45 FR 27710, 04-23-
PEEBLES NAVAJO CACTUS	PEDIOCACTUS PEEBLESIANUS VAR PEEBLESIANUS	ENDANGERED	NAVAJO	5400-5600	44 FR 61922, 10-26-
KEARNEY'S BLUE STAR	AMSONIA KEARNEYANA	ENDANGERED	PIMA	3800-3800	54 FR 2131, 01-19-
MASKED BOBWHITE	COLINUS VIRGINIANUS RIDGEWAYI	ENDANGERED	PIMA	1000-4000	35 FR 4001, 03-11-
SONOYTA MUD TURTLE	KINOSTERNON SONORIENSE LONGIFEMORALE	CANDIDATE	PIMA	1,100 FEET	
PIMA PINEAPPLE CACTUS	CORYPHANTHA SCHEERI ROBUSTISPINA	ENDANGERED	PIMA, SANTA CRUZ	2300-5000	57 FR 14374, 04-20-
HUACHUCA WATER UMBEL	LILAEOPSIS SCHAFFNERIANA ssp RECURVA	ENDANGERED	PIMA, SANTA CRUZ, COCHISE	3500-6500	62 FR 665, 01-06-97
SONORAN PRONGHORN	ANTILOCAPRA AMERICANA SONORIENSIS	ENDANGERED	PIMA, YUMA, MARICOPA	2000-4000	32 FR 4001, 03-11-87
LOACH MINNOW	TIAROGA COBITIS	THREATENED	PINAL, GRAHAM, GREENLEE, GILA, APACHE,	<8000	51 FR 39468, 10-28-
ACUNA CACTUS	ECHINOMASTUS ERECTOCENTRUS ACUNENSIS	CANDIDATE	PINAL, PIMA	1300-2000	
NICHOL'S TURK'S HEAD CACTUS	ECHINOCACTUS HORIZONTHALONIUS VAR NICHOLII	ENDANGERED	PINAL, PIMA	2400-4100	44 FR 61927, 10-26-
SONORA CHUB	GILA DITAENIA	THREATENED	SANTA CRUZ	3900	51 FR 18042, 04-30-
CHIRICAHUA LEOPARD FROG	RANA CHIRICAHUENSIS	PROPOSED	SANTA CRUZ, APACHE, GILA, PIMA, COCHISE,	3300-8900	65 FR 37343, 6-14-
SONORA TIGER SALAMANDER	AMBYSTOMA TIGRINUM STEBBINSI	ENDANGERED	SANTA CRUZ, COCHISE	4000-6300	62 FR 665, 01-06-97
GILA CHUB	GILA INTERMEDIA	CANDIDATE	SANTA CRUZ, GILA, GREENLEE, PIMA, COCHISE,	2000 - 3500	
OCELOT	LEOPARDUS (=FELIS) PARDALIS	ENDANGERED	SANTA CRUZ, PIMA, COCHISE	<8000	47 FR 31870; 07-21-
PAGE SPRINGSNAIL	PYRGULOPSIS MORRISONI	CANDIDATE	YAVAPAI	3300-3800	
SOUTHWESTERN WILLOW FLYCATCHER	EMPIDONAX TRAILLII EXTIMUS	ENDANGERED	YAVAPAI, GILA, MARICOPA, MOHAVE,	<8500	60 FR 10694, 02-27-
MOUNTAIN PLOVER	CHARADRIUS MONTANUS	PROPOSED THREATENED	YUMA, PIMA, COCHISE, PINAL, APACHE	VARIABLE	64 FR 7587; 02-16-
YUMA CLAPPER RAIL	RALLUS LONGIROSTRIS YUMANENSIS	ENDANGERED	YUMA, LA PAZ, MARICOPA, PINAL, MOHAVE	<4500	32 FR 4001, 03-11-
BALD EAGLE	HALIAEETUS LEUCOCEPHALUS	THREATENED	YUMA, LA PAZ, MOHAVE, YAVAPAI, MARICOPA,	VARIES	60 FR 35999, 07-12-

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: COCHISE

1/14/99

1)LISTED

TOTAL= 21

NAME: CANELO HILLS LADIES' TRESSES *SPIRANTHES DELITESCENS*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: No CFR: 62 FR 665, 01-06-97

DESCRIPTION: SLENDER ERECT MEMBER OF THE ORCHID FAMILY (ORCHICACEAE). FLOWER: STALK 50 CM TALL. MAY CONTAIN 40 WHITE FLOWERS SPIRALLY ARRANGED ON THE FLOWERING STALK. ELEVATION RANGE: about 5000 FT.

COUNTIES: COCHISE, SANTA CRUZ

HABITAT: FINELY GRAINED, HIGHLY ORGANIC, SATURATED SOILS OF CIENEGAS

POTENTIAL HABITAT OCCURS IN SONORA, MEXICO, BUT NO POPULATIONS HAVE BEEN FOUND.

NAME: COCHISE PINCUSHION CACTUS *CORYPHANTHA ROBBINSORUM*

STATUS: THREATENED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 51 FR 952, 1-9-1986

DESCRIPTION: A SMALL UNBRANCHED CACTUS WITH NO CENTRAL SPINES AND 11-17 WHITE RADIAL SPINES. THE BELL-SHAPED FLOWERS ARE BORNE ON THE ENDS OF TUBERCULES (Protrusions). FLOWERS: BELL SHAPED. PALE YELLOW-GREEN. FRUITS. ORANGE-RED TO RED ELEVATION RANGE: >4200 FT.

COUNTIES: COCHISE AND SONORA, MEXICO

HABITAT: SEMIDESERT GRASSLAND WITH SMALL SHRUBS, AGAVE, OTHER CACTI, AND GRAMA GRASS.

GROWS ON GRAY LIMESTONE HILLS.

NAME: HUACHUCA WATER UMBEL *LILAEOPSIS SCHAFFNERIANA ssp RECURVA*

STATUS: ENDANGERED CRITICAL HAB Yes RECOVERY PLAN: No CFR: 62 FR 665, 01-06-97

DESCRIPTION: HERBACEOUS, SEMI-AQUATIC PERENNIAL IN THE PARSLEY FAMILY (UMBELLIFERAE) WITH SLENDER ERECT, HOLLOW, LEAVES THAT GROW FROM THE NODES OF CREEPING RHIZOMES. FLOWER: 3 TO 10 FLOWERED UMBELS ARISE FROM ROOT NODES. ELEVATION RANGE: 3500-6500 FT.

COUNTIES: PIMA, SANTA CRUZ, COCHISE

HABITAT: CIENEGAS, PERENNIAL LOW GRADIENT STREAMS, WETLANDS

AND IN ADJACENT SONORA, MEXICO. WEST OF THE CONTINENTAL DIVIDE. POPULATIONS ALSO ON FORT HUACHUCA MILITARY RESERVATION. PROPOSED CRITICAL HABITAT IN COCHISE AND SANTA CRUZ COUNTIES (63 FR 71838)

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: COCHISE

1/14/99

NAME: NEW MEXICAN RIDGE-NOSED RATTLESNAKE *CROTALUS WILLARDI OBSCURUS*

STATUS: THREATENED CRITICAL HAB Yes RECOVERY PLAN: Yes CFR. 43 FR 34479, 04-04-1978

DESCRIPTION: SMALL 12-24 INCHES, SECRETIVE GRAYISH-BROWN WITH DISTINCT RIDGE ON THE END OF THE SNOUT. THE DORSAL SURFACE HAS OBSCURE, IRREGULARLY SPACED WHITE CROSSBARS EDGED WITH BROWN (NOT A BOLD PATTERN).

ELEVATION RANGE 5600-9000 FT.

COUNTIES: COCHISE

HABITAT: PRESUMABLY CANYON BOTTOMS IN PINE-OAK & PINE-FIR COMMUNITIES WITH ALDER, MAPLE, OAK, & BOX ELDER

THE SUBSPECIES HAS NOT BEEN DOCUMENTED IN ARIZONA. HOWEVER, IT HAS BEEN OBSERVED NEAR THE ARIZONA BORDER IN THE PELONCILLO MOUNTAINS AND LIKELY OCCURS IN THE ARIZONA PORTION OF THAT RANGE AS WELL. ANOTHER SUBSPECIES, (CROTALUS WILLARDI WILLARDI), IS AN ARIZONA STATE CANDIDATE.

NAME: JAGUAR, UNITED STATES POPULATION *PANTHERA ONCA*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: No CFR: 62 FR 39147, 7-22-97

DESCRIPTION: MUSCULAR CAT WITH RELATIVELY SHORT, MASSIVE LIMBS AND A DEEP-CHESTED BODY. CINNAMON-BUFF IN COLOR WITH BLACK SPOTS.

ELEVATION RANGE: <8000 FT.

COUNTIES: COCHISE, PIMA

HABITAT: IN ARIZONA, RANGED WIDELY THROUGHOUT A VARIETY OF HABITATS FROM SONORAN DESERT TO CONIFER FORESTS

MOST RECORDS ARE FROM THE MADREAN EVERGREEN-WOODLAND, SHRUB-INVADED SEMI-DESERT GRASSLAND, AND ALONG RIVERS. HISTORIC RANGE IS CONSIDERED TO HAVE EXTENDED BEYOND THE COUNTIES LISTED ABOVE. REPORTS OF INDIVIDUALS IN THE SOUTHERN PART OF THE STATE CONTINUE TO BE RECEIVED. THE MOST RECENT RECORDS OF A JAGUAR IN THE U.S. ARE FROM THE NEW MEXICO/ARIZONA BORDER AREA AND IN SOUTHCENTRAL ARIZONA, BOTH IN 1996, AND CONFIRMED THROUGH PHOTOGRAPHS. UNCONFIRMED SIGHTINGS AND TRACKS CONTINUE TO BE REPORTED. THIS SPECIES HAS A SIGNED CONSERVATION AGREEMENT IN PLACE, BUT THE DEVELOPMENT OF THE AGREEMENT WAS NOT SUFFICIENT TO REMOVE THE NEED TO LIST THIS SPECIES

NAME: JAGUARUNDI *FELIS YAGOUAROUNDI TOLTECA*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: No CFR. 41 FR 24064; 06-14-76

DESCRIPTION: SMALL CAT WITH SHORT LEGS; SLENDER, ELONGATE BODY; AND LONG TAIL. HEAD SMALL & FLATTENED WITH SHORT ROUNDED EARS. REDDISH-YELLOW OR BLACKISH TO BROWN-GRAY IN COLOR AND WITHOUT SPOTS.

ELEVATION RANGE: 3500-6000 FT.

COUNTIES: SANTA CRUZ, PIMA, COCHISE

HABITAT: CAN BE FOUND IN A VARIETY OF HABITATS (SEE BELOW)

SEMI-ARID THORNY FORESTS, DECIDOUS FORESTS, HUMID PRE-MONTANE FORESTS, UPLAND DRY SAVANNAHS, SWAMPY GRASSLANDS, RIPARIAN AREAS, AND DENSE BRUSH. UNCONFIRMED REPORTS OF INDIVIDUALS IN THE SOUTHERN PART OF THE STATE CONTINUE TO BE RECEIVED. NO SPECIMENS HAVE BEEN COLLECTED IN ARIZONA.

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: COCHISE

1/14/99

NAME: LESSER LONG-NOSED BAT *LEPTONYCTERIS CURASOAE YERBABUENAE*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 53 FR 38456. 09-30-88

DESCRIPTION: ELONGATED MUZZLE. SMALL LEAF NOSE. AND LONG TONGUE. YELLOWISH BROWN OR GRAY ABOVE AND CINNAMON BROWN BELOW. TAIL MINUTE AND APPEARS TO BE LACKING. EASILY DISTURBED.

ELEVATION RANGE: <6000 FT.

COUNTIES: COCHISE, PIMA. SANTA CRUZ. GRAHAM. PINAL, MARICOPA

HABITAT: DESERT SCRUB HABITAT WITH AGAVE AND COLUNMNAR CACTI PRESENT AS FOOD PLANTS

DAY ROOSTS IN CAVES AND ABANDONED TUNNELS. FORAGES AT NIGHT ON NECTAR. POLLEN. AND FRUIT OF PANICULATE AGAVES AND COLUMNAR CACTI. THIS SPECIES IS MIGRATORY AND IS PRESENT IN ARIZONA . USUALLY FROM APRIL TO SEPTMBER AND SOUTH OF THE BORDER THE REMAINDER OF THE YEAR.

NAME: MEXICAN GRAY WOLF *CANIS LUPUS BAILEYI*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 32 FR 4001. 03-11-67; 43 FR 1912. 03-09-78

DESCRIPTION: LARGE DOG-LIKE CARNIVORE WITH VARYING COLOR. BUT USUALLY A SHADE OF GRAY. DISTINCT WHITE LIP LINE ARCUND MOUTH. WEIGH 60-80 POUNDS.

ELEVATION RANGE 4,000-12,00:FT.

COUNTIES: APACHE, COCHISE, GREENLEE. PIMA. SANTA CRUZ

HABITAT: CHAPPARAL WOODLAND, AND FORESTED AREAS. MAY CROSS DESERT AREAS.

HISTORIC RANGE IS CONSIDERED TO BE LARGER THAN THE COUNTIES LISTED ABOVE. UNCONFIRMED REPORTS OF INDIVIDUALS IN THE SOUTHERN PART OF THE STATE (COCHISE. PIMA. SANTA CRUZ) CONTINUE TO BE RECEIVED. INDIVIDUALS MAY STILL PERSIST IN MEXICO. EXPERIMENTAL NONESSENTIAL POPULATION INTRODUCED IN THE BLUE PRIMITIVE AREA OF GREENLEE AND APACHE COUNTIES.

NAME: OCELOT *FELIS PARDALIS*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 47 FR 31670; 07-21-82

DESCRIPTION: MEDIUM-SIZED SPOTTED CAT WHOSE TAIL IS ABOUT 1/2 THE LENGTH OF HEAD AND BODY. YELLOWISH WITH BLACK STREAKS AND STRIPES RUNNING FROM FRONT TO BACK. TAIL IS SPOTTED AND FACE IS LESS HEAVILY STREAKED THAN THE BACK AND SIDES.

ELEVATION RANGE <8000 FT.

COUNTIES: SANTA CRUZ, PIMA, COCHISE

HABITAT: HUMID TROPICAL & SUB-TROPICAL FORESTS. SAVANNAHS. AND SEMI-ARID THORNSCRUB.

MAY PERSIST IN PARTLY-CLEARED FORESTS. SECOND-GROWTH WOODLAND. AND ABANDONED CULTIVATION REVERTED TO BRUSH. UNIVERSAL COMPONENT IS PRESENCE OF DENSE COVER. UNCONFIRMED REPORTS OF INDIVIDUALS IN THE SOUTHERN PART OF THE STATE CONTINUE TO BE RECEIVED.

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: **COCHISE**

1/14/99

NAME: BEAUTIFUL SHINER *CYPRINELLA FORMOSA*

STATUS: THREATENED CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 49 FR 34490, 8-31-1984

DESCRIPTION: SMALL (2.5 INCHES) SHINY MINNOW AND VERY SIMILAR TO RED SHINER. MALES COLORFUL DURING BREEDING (YELLOW-ORANGE OR ORANGE ON CAUDAL AND LOWER FINS AND BLUISH BODY.

ELEVATION RANGE: <4500 FT.

COUNTIES: COCHISE

HABITAT: SMALL TO MEDIUM SIZED STREAMS AND PONDS WITH SAND, GRAVEL, AND ROCK BOTTOMS.

VIRTUALLY EXTIRPATED IN THE UNITED STATES, WITH THE EXCEPTION OF A FEW ISOLATED POPULATIONS ON NATIONAL WILDLIFE REFUGES AND IN MEXICO. SAME CRITICAL HABITAT AS YAQUI CHUB AND CATFISH (SEE 49 FR 34490, 08-31-1984).

NAME: YAQUI CATFISH *ICTALURUS PRICEI*

STATUS: THREATENED CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 49 FR 34490, 08-31-1984

DESCRIPTION: SIMILAR TO CHANNEL CATFISH (*Ictalurus punctatus*) EXCEPT ANAL FIN BASE IS SHORTER AND THE DISTAL MARGIN OF THE ANAL FIN IS BROADLY ROUNDED WITH 23-25 SOFT RAYS. BODY USUALLY PROFUSELY SPECKLED.

ELEVATION RANGE: 4000-5000 FT.

COUNTIES: COCHISE

HABITAT: MODERATE TO LARGE STREAMS WITH SLOW CURRENT OVER SAND AND ROCK BOTTOMS

CRITICAL HABITAT ALL AQUATIC HABITATS IN THE MAIN PORTION OF SAN BERNADINO NATIONAL WILDLIFE REFUGE

NAME: YAQUI CHUB *GILA PURPUREA*

STATUS: ENDANGERED CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 49 FR 34490, 08-31-1984

DESCRIPTION: MEDIUM SIZED MINNOW (<6 INCHES) DARK COLORED, LIGHTER BELOW. DARK TRIANGULAR CAUDAL SPOT

ELEVATION RANGE: 4000-6000 FT.

COUNTIES: COCHISE (AZ), MEXICO

HABITAT: DEEP POOLS OF SMALL STREAMS, POOLS, OR PONDS NEAR UNDERCUT BANKS.

CRITICAL HABITAT INCLUDES ALL AQUATIC HABITATS OF THE MAIN PORTION SAN BERNADINO NATIONAL WILDLIFE REFUGE.

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: COCHISE

1/14/99

NAME: YAQUI TOPMINNOW *POECILIOPSIS OCCIDENTALIS SONORIENSIS*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 32 FR 4001, 03-11-1967

DESCRIPTION: SMALL (2 INCHES) TOPMINNOW GUPPY-LIKE. LIVE BEARING. LACKING DARK SPOTS. BREEDING MALES JET BLACK WITH YELLOW FINS.

ELEVATION RANGE: <4500 FT.

COUNTIES: COCHISE

HABITAT: SMALL TO MODERATE SIZED STREAMS, SPRINGS, & CIENEGAS GENERALLY IN SHALLOWS

NAME: AMERICAN PEREGRINE FALCON *FALCO PEREGRINUS ANATUM*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 35 FR 16047, 10-13-70; 35 FR 8495, 05-02-70

DESCRIPTION: A RECLUSIVE, CROW-SIZED FALCON SLATY BLUE ABOVE WHITISH BELOW WITH FINE DARK BARRING. THE HEAD IS BLACK AND APPEARS TO BE MASKED OR HELMETED. WINGS LONG AND POINTED. LOUD WAILING CALLS ARE GIVEN DURING BREEDING PERIOD.

ELEVATION RANGE: 3500-9000 FT

COUNTIES: MOHAVE COCONINO NAVAJO APACHE SANTA CRUZ MARICOPA COCHISE YAVAPAI GILA PINAL PIMA GREENLEE GRAHAM

HABITAT: CLIFFS AND STEEP TERRAIN USUALLY NEAR WATER OR WOODLANDS WITH ABUNDANT PREY

THIS IS A WIDE-RANGING MIGRATORY BIRD THAT USES A VARIETY OF HABITATS. BREEDING BIRDS ARE YEAR-ROUND RESIDENTS. OTHER BIRDS WINTER AND MIGRATE THROUGH ARIZONA. SPECIES IS ENDANGERED FROM REPRODUCTIVE FAILURE FROM PESTICIDES. SPECIES HAS BEEN PROPOSED FOR DELISTING (63 FR 45446) BUT STILL RECEIVES FULL PROTECTION UNDER ESA

NAME: BALD EAGLE *HALIAEETUS LEUCOCEPHALUS*

STATUS: THREATENED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 60 FR 35999, 07-12-95

DESCRIPTION: LARGE, ADULTS HAVE WHITE HEAD AND TAIL. HEIGHT 28 - 36": WINGSPAN 66 - 96". 1-4 YRS DARK WITH VARYING DEGREES OF MOTTLED BROWN PLUMAGE. FEET BARE OF FEATHERS.

ELEVATION RANGE: VARIES FT.

COUNTIES: YUMA, LA PAZ, MOHAVE, YAVAPAI, MARICOPA, PINAL, COCONINO, NAVAJO, APACHE, SANTA CRUZ, PIMA, GILA, GRAHAM, COCHISE

HABITAT: LARGE TREES OR CLIFFS NEAR WATER (RESERVOIRS, RIVERS AND STREAMS) WITH ABUNDANT PREY

SOME BIRDS ARE NESTING RESIDENTS WHILE A LARGER NUMBER WINTERS ALONG RIVERS AND RESERVOIRS. AN ESTIMATED 200 TO 300 BIRDS WINTER IN ARIZONA. ONCE ENDANGERED (32 FR 4001, 03-11-1967; 43 FR 6233, 02-14-78) BECAUSE OF REPRODUCTIVE FAILURES FROM PESTICIDE POISONING AND LOSS OF HABITAT, THIS SPECIES WAS DOWN LISTED TO THREATENED ON AUGUST 11, 1995. ILLEGAL SHOOTING, DISTURBANCE, LOSS OF HABITAT CONTINUES TO BE A PROBLEM.

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: COCHISE

1/14/99

NAME: CACTUS FERRUGINOUS PYGMY-OWL *GLAUCIDIUM BRASILIANUM CACTORUM*

STATUS: ENDANGERED CRITICAL HAB Yes RECOVERY PLAN: No CFR: 62 FR 10730, 3-10-97

DESCRIPTION: SMALL (APPROX. 7"). DIURNAL OWL REDDISH BROWN OVERALL WITH CREAM-COLORED BELLY STREAKED WITH REDDISH BROWN. SOME INDIVIDUALS ARE GRAYISH BROWN

ELEVATION RANGE: <4000 FT.

COUNTIES: MARICOPA, YUMA, SANTA CRUZ, GRAHAM, GREENLEE, PIMA, PINAL, GILA, COCHISE

HABITAT: MATURE COTTONWOOD/WILLOW, MESQUITE BOSQUES, AND SONORAN DESERTSCRUB

RANGE LIMIT IN ARIZONA IS FROM NEW RIVER (NORTH) TO GILA BOX (EAST) TO CABEZA PRIETA MOUNTAINS (WEST). ONLY A FEW DOCUMENTED SITES WHERE THIS SPECIES PERSISTS ARE KNOWN. ADDITIONAL SURVEYS ARE NEEDED. LISTING EFFECTIVE APRIL 9, 1997. PROPOSED CRITICAL HABITAT IN PIMA, COCHISE, PINAL, AND MARICOPA COUNTIES (64 FR 71821).

NAME: MEXICAN SPOTTED OWL *STRIX OCCIDENTALIS LUCIDA*

STATUS: THREATENED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 56 FR 14678, 04-11-91

DESCRIPTION: MEDIUM SIZED WITH DARK EYES AND NO EAR TUFTS. BROWNISH AND HEAVILY SPOTTED WITH WHITE OR BEIGE.

ELEVATION RANGE: 4100-9000 FT.

COUNTIES: MOHAVE, COCONINO, NAVAJO, APACHE, YAVAPAI, GRAHAM, GREENLEE, COCHISE, SANTA CRUZ, PIMA, PINAL, GILA, MARICOPA

HABITAT: NEST3 IN CANYONS AND DENSE FORESTS WITH MULTI-LAYERED FOLIAGE STRUCTURE

GENERALLY NESTS IN OLDER FORESTS OF MIXED CONIFER OR PONDERSA PINE/GAMBEL OAK TYPE. IN CANYONS, AND USE VARIETY OF HABITATS FOR FORAGING. SITES WITH COOL MICROCLIMATES APPEAR TO BE OF IMPORTANCE OR ARE PREFERED.

NAME: NORTHERN APLOMADO FALCON *FALCO FEMORALIS SEPTENTRIONALIS*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 51 FR 6686, 01-25-86

DESCRIPTION: RUFOUS UNDERPARTS, GRAY BACK, LONG BANDED TAIL AND A DISTINCT BLACK AND WHITE FACIAL PATTERN. SMALLER THAN PEREGRINE LARGER THAN KESTREL. BREEDS BETWEEN MARCH- JUNE ELEVATION RANGE: 3600-9000 FT.

COUNTIES: COCHISE, SANTA CRUZ

HABITAT: GRASSLAND AND SAVANNAH

SPECIES FORMERLY NESTED IN SOUTHWESTERN US. NOW OCCURS AS AN ACCIDENTAL. GOOD HABITAT HAS LOW GROUND COVER AND MESQUITE OR YUCCA FOR NESTING PLATFORMS. CONTINUED USE OF PESTICIDES IN MEXICO ENDANGERS THIS SPECIES. NO RECENT CONFIRMED REPORTS FOR ARIZONA.

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: COCHISE

1/14/99

NAME: SOUTHWESTERN WILLOW FLYCATCHER *EMPIDONAX TRAILLII EXTIMUS*

STATUS: ENDANGERED CRITICAL HAB Yes RECOVERY PLAN: No CFR: 60 FR 10694, 02-27-95

DESCRIPTION: SMALL PASSERINE (ABOUT 6") GRAYISH-GREEN BACK AND WINGS, WHITISH THROAT, LIGHT OLIVE-GRAY BREAST AND PALE YELLOWISH BELLY. TWO WINGBARS VISIBLE. EYE-RING FAINT OR ABSENT. ELEVATION RANGE: <8500 FT.

COUNTIES: YAVAPAI, GILA, MARICOPA, MOHAVE, COCONINO, NAVAJO, APACHE, PINAL, LA PAZ, GREENLEE, GRAHAM, YUMA, PIMA, COCHISE, SANTA CRUZ

HABITAT: COTTONWOOD/WILLOW & TAMARISK VEGETATION COMMUNITIES ALONG RIVERS & STREAMS

MIGRATORY RIPARIAN OBLIGATE SPECIES THAT OCCUPIES BREEDING HABITAT FROM LATE APRIL TO SEPTEMBER. DISTRIBUTION WITHIN ITS RANGE IS RESTRICTED TO RIPARIAN CORRIDORS. DIFFICULT TO DISTINGUISH FROM OTHER MEMBERS OF THE EMPIDONAX COMPLEX BY SIGHT ALONE. TRAINING SEMINAR REQUIRED FOR THOSE CONDUCTING FLYCATCHER SURVEYS. CRITICAL HABITAT ON PORTIONS OF THE 100-YEAR FLOODPLAIN ON SAN PEDRO AND VERDE RIVERS; WET BEAVER AND WEST CLEAR CREEKS, INCLUDING TAVASCI MARSH AND ISTER FLAT; THE COLORADO RIVER, THE LITTLE COLORADO RIVER, AND THE WEST, EAST, AND SOUTH FORKS OF THE LITTLE COLORADO RIVER. REFERENCE 60 CFR:62 FR 39129, 7/22/97.

NAME: WHOOPING CRANE *GRUS AMERICANA*

STATUS: ENDANGERED CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 32 FR 4001, 03-11-1967; 43 FR 20938, 05-15-73

DESCRIPTION: TALLEST AMERICAN BIRD (UP TO 5 FEET) SNOWY WHITE, LONG NECK AND LEGS, BLACK WING TIPS, RED CROWN, AND BLACK WEDGE SHAPED PATCH OF FETHERS BEHIND ITS EYE. ELEVATION RANGE: 4500 FT

COUNTIES: COCHISE

HABITAT: MARSHES, PRAIRIES, RIVER BOTTOMS

BIRDS IN THE ROCKY MOUNTAIN POPULATION ARE OCCASIONAL VISITORS IN ARIZONA DURING MIGRATION USUALLY NEAR WILCOX PLAYA.

NAME: SONORA TIGER SALAMANDER *AMBYSTOMA TIGRINUM STEBBINSI*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: No CFR: 62 FR 665, 01-06-97

DESCRIPTION: 2.8 TO 4.9" SNOUT-VENT LENGTH WITH LIGHT-COLORED BANDS ON A DARK BACKGROUND. AQUATIC LARVAE ARE UNIFORM DARK COLOR WITH PLUME-LIKE GILLS AND TAIN FINS. ELEVATION RANGE: 4000-6300 FT.

COUNTIES: SANTA CRUZ, COCHISE

HABITAT: STOCK TANKS AND IMPOUNDED CIENEGAS IN SAN RAFAEL VALLEY, HUACHUCA MOUNTAINS

ALSO OCCURS IN THE FOOTHILLS OF THE EAST SLOPE OF THE PATAGONIA AND HUACHUCA MOUNTAINS. POPULATIONS ALSO ON FORT HUACHUCA.

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: COCHISE

1/14/99

2) PROPOSED

TOTAL=1

NAME: BLUMER'S DOCK (CHIRICAHUA) *RUMEX ORTHONEURUS*

STATUS: PROPOSED CRITICAL HAB No RECOVERY PLAN: No CFR:

DESCRIPTION: LARGE LONG-LIVED PERENNIAL PLANT IN THE BUCKWHEAT FAMILY THAT CAN REACH 1.2-2.0 METERS. LARGE BROAD, OVAL SEMI-SUCCULENT LEAVES ARE BRIGHT GREEN. CONSPICOUS SECONDARY VEINS AT RIGHT ANGLES TO THE MIDVEIN ELEVATION RANGE: 6500-9000 FT

COUNTIES: APACHE, COCHISE, GILA, GRAHAM, NAVAJO

HABITAT: MID TO HIGH ELEVATION SPRINGS, STREAMS, & WETLANDS WITH MOIST ORGANIC SOILS OR SHADED CANYONS

SPECIES FOUND IN CHIRICAHUA, PINALENO, HUACHUCA, SIERRA ANCHA, AND WHITE MOUNTAINS. SPECIES FOUND ON CORONADO, A-S, TONTO, SOME ON AND COCONINO. SPECIES ALSO FOUND IN WESTERN AND NORTHERN NEW MEXICO (GILA, SANTA FE, AND CARSON NF).

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: COCHISE

1/14/99

3) CANDIDATE TOTAL=5

NAME: LEMMON FLEABANE *ERIGERON LEMMONII*

STATUS: CANDIDATE CRITICAL HAB No RECOVERY PLAN: No CFR:

DESCRIPTION: A PROSTRATE PERENNIAL IN THE SUNFLOWER FAMILY. STEMS AND LEAVES ARE DENSELY HAIRY. FLOWERS LOOK LIKE SMALL DELICATE DAISIES WITH WHITE TO LIGHT PURPLE OUTER PETALS AND YELLOW INNER PETALS.

ELEVATION RANGE: 1500-6000 FT.

COUNTIES: COCHISE

HABITAT: GROWS IN DENSE CLUMPS IN CREVICES, LEDGES, AND BOULDERS IN CANYON BOTTOMS IN PINE-OAK WOODLAND

ONE SITE ON FORT HUACHUCA MILITARY RESERVATION

NAME: GILA CHUB *GILA INTERMEDIA*

STATUS: CANDIDATE CRITICAL HAB No RECOVERY PLAN: No CFR:

DESCRIPTION: DEEP COMPRESSED BODY, FLAT HEAD, DARK OLIVE-GRAY COLOR ABOVE, SILVER SIDES, ENDEMIC TO GILA RIVER BASIN.

ELEVATION RANGE 2000 - 3500 FT.

COUNTIES: SANTA CRUZ, GILA, GREENLEE, PIMA, COCHISE, GRAHAM, YAVAPAI

HABITAT: POOLS, SPRINGS, CIENEGAS, AND STREAMS

MULTIPLE PRIVATE LANDOWERS, INCLUDING THE NATURE CONSERVANCY, THE AUDUBON SOCIETY, AND OTHERS. ALSO FT. HUACHUCA. SPECIES ALSO FOUND IN SONORA, MEXICO.

NAME: HUACHUCA SPRINGSNAIL *PYRGULOPSIS THOMPSONI*

STATUS. CANDIDATE CRITICAL HAB No RECOVERY PLAN: No CFR:

DESCRIPTION: VERY SMALL (1.7-3.2mm) CONICAL SHELL. IDENTIFICATION MUST BE VERIFIED BY CHARARCTERISTICS OF REPRODUCTIVE ORGANS.

ELEVATION RANGE 4500-6000 FT.

COUNTIES: COCHISE, SANTA CRUZ

HABITAT: AQUATIC AREAS, SMALL SPRINGS WITH VEGETATION SLOW TO MODERATE FLOW

INDIVIDUALS FOUND ON FIRM SUBSTANCES (ROOTS, WOOD, AND ROCKS) OTHER POPULATIONS FOUND ON FORT HUACHUCA MILITARY PROPERTY

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: COCHISE

1/14/99

NAME: MOUNTAIN PLOVER *CHARADRIUS MONTANUS*

STATUS: CANDIDATE CRITICAL HAB No RECOVERY PLAN: No CFR:

DESCRIPTION: WADING BIRD; COMPACTLY BUILT; IN BREEDING SEASON WITH WHITE FOREHEAD AND LINE OVER THE EYE; CONTRASTING WITH DARK CROWN; NONDESCRIPT IN WINTER. VOICE IS LOW, VARIABLE WHISTLE. ELEVATION RANGE: VARIABLE FT.

COUNTIES: YUMA, SANTA CRUZ, PIMA, COCHISE, PINAL, APACHE

HABITAT: OPEN ARID PLAINS, SHORT-GRASS PRAIRIES, AND SCATTERED CACTUS.

AZ PROVIDES WINTERING HABITAT ONLY. SPECIES PRIMARILY FOUND IN ROCKY MOUNTAIN STATES FROM CANADA TO MEXICO

NAME: CHIRICAHUA LEOPARD FROG *RANA CHIRICAHUENSIS*

STATUS: CANDIDATE CRITICAL HAB No RECOVERY PLAN: No CFR:

DESCRIPTION: CREAM COLORED TUBERCULES (spots) ON A DARK BACKGROUND ON THE REAR OF THE THIGH, DORSOLATERAL FOLDS THAT ARE INTERRUPTED AND DEFLECTED MEDIALLY, AND A CALL GIVEN OUT OF WATER DISTINGUISH THIS SPOTTED FROG FROM OTHER LEOPRD ELEVATION RANGE: 3000-8300 FT.

COUNTIES: SANTA CRUZ, APACHE, GILA, PIMA, COCHISE, GREENLEE, GRAHAM, YAVAPAI, COCONINO, NAVAJO

HABITAT: STREAMS, RIVERS, BACKWATERS, PONDS, AND STOCK TANKS THAT ARE FREE FROM INTRODUCED FISH AND BULLFROGS

REQUIRE PERMANENT OR NEARLY PERMANENT WATER SOURCES. POPULATIONS NORTH OF THE GILA RIVER ARE THOUGHT TO BE CLOSELY-RELATED, BUT DISTINCT, UNDESCRIBED SPECIES. SPECIES ALSO FOUND ON FORT HUACHUCA

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: COCHISE

1/14/99

CONSERVATION AGREEMENT TOTAL= 1

NAME: RAMSEY CANYON LEOPARD FROG *RANA SUBAQUAVOCALIS*

STATUS: NONE CRITICAL HAB No RECOVERY PLAN, No CFR:

DESCRIPTION: BROWN OR GREEN FROG, 2.5 TO 4 INCHES LONG; SPOTS ROUNDED WITH LIGHT BORDERS; DORSOLATERAL FOLDS ARE INTERRUPTED POSTERIORLY AND DEFLECTED MEDIALLY; YELLOWISH PIGMENTATION ON THE GROIN WHICH MAY EXTEND INTO THE POSTERIOR VENTER ELEVATION RANGE: 5,000 FT FT.

COUNTIES: COCHISE

HABITAT: STTREAM AND PONDED AQUATIC HABITATS

CONSERVATION AGREEMENT BETWEEN THE SERVICE, ARIZONA GAME AND FISH DEPARTMENT, THE NATURE CONSERVANCY, BUREAU OF LAND MANAGEMENT, CORONADO NATIONAL FOREST, THE US ARMY INTELLIGENCE CENTER AND FORT HUACHUCA, AND A PRIVATE LANDOWNER WAS FINALIZED JULY 1998

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A. Highly Safeguarded Protected Native Plants

The following list includes those species of native plants and parts of plants, including the seeds and fruit, whose prospects for survival in Arizona are in jeopardy or which are in danger of extinction.

AGAVACEAE Agave Family (including Nolinaceae)
- *Agave arizonica* Gentry & Weber–Arizona agave
- *Agave delamateri* Hodgson & Slauson
- *Agave murpheyi* Gibson–Hohokam agave
- *Agave parviflora* Torr.–Santa Cruz striped agave, Small-flowered agave
- *Agave schottii* Engelm. var. *treleasei* (Toumey) Kearney & Peebles

APIACEAE Parsley Family. [= Umbelliferae]
- *Lilaeopsis schaffneriana* (Schlecht.) Coult. & Rose ssp. *recurva* (A. W. Hill) Affolter-Cienega false rush, Huachuca water umbel.
- Syn.: *Lilaeopsis recurva* A. W. Hill

APOCYNACEAE Dogbane Family
- *Amsonia kearneyana* Woods.–Kearney's bluestar
- *Cycladenia humilis* Benth. var. *jonesii* (Eastw.) Welsh & Atwood–Jones'cycladenia

ASCLEPIADACEAE Milkweed Family
- *Asclepias welshii* N. & P. Holmgren–Welsh's milkweed

ASTERACEAE Sunflower Family [= Compositae]
- *Erigeron lemmonii* Gray–Lemmon fleabane
- *Senecio franciscanus* Greene–San Francisco Peaks groundsel
- *Senecio huachucanus* Gray–Huachuca groundsel

BURSERACEAE Torch Wood Family
- *Bursera fagaroides* (H.B.K.) Engler–Fragrant bursera

CACTACEAE Cactus Family

- *Carnegiea gigantea* (Engelm.) Britt. & Rose–Saguaro: 'Crested' or 'Fan-top' form only
- Syn.: *Cereus giganteus* Engelm.
- *Coryphantha recurvata* (Engelm.) Britt. & Rose–Golden-chested beehive cactus
- Syn.: *Mammillaria recurvata* Engelm.
- *Coryphantha robbinsorum* (W. H. Earle) A. Zimmerman–Cochise pincushion cactus Robbin's cory cactus.
- Syn.: *Cochiseia robbinsorum* W.H. Earle
- *Coryphantha scheeri* (Kuntze) L. Benson var. *robustispina* (Schott) L. Benson–Scheer's strong-spined cory cactus.
- Syn.: *Mammillaria robustispina* Schott
- *Echinocactus horizonthalonius* Lemaire var. *nicholii* L. Benson–Nichol's Turk's heac cactus
- *Echinocereus triglochidiatus* Engelm. var. *arizonicus* (Rose ex Orcutt) L. Benson–Arizona hedgehog cactus
- *Echinomastus erectocentrus* (Coult.) Britt. & Rose var. *acunensis* (W.T.Marshall) L.Benson–Acuna cactus
- Syn.: *Neolloydia erectocentra* (Coult.) L. Benson var. *acunensis* (W. T. Marshall) L. Benson
- *Pediocactus bradyi* L. Benson–Brady's pincushion cactus
- *Pediocactus paradinei* B. W. Benson–Paradine plains cactus
- *Pediocactus peeblesianus* (Croizat) L. Benson var. *fickeiseniae* L. Benson
- *Pediocactus peeblesianus* (Croizat) L. Benson var. *peeblesianus* Peebles' Navajo cactus, Navajo plains cactus
- Syn.: *Navajoa peeblesiana* Croizat
- *Pediocactus sileri* (Engelm.) L. Benson–Siler pincushion cactus
- Syn.: *Utahia sileri* (Engelm.) Britt. & Rose

COCHLOSPERMACEAE Cochlospermum Family
- *Amoreuxia gonzalezii* Sprague & Riley

CYPERACEAE Sedge Family
- *Carex specuicola* J. T. Howell–Navajo sedge

FABACEAE Pea Family [=Leguminosae]
- *Astragalus cremnophylax Barneby var. cremnophylax Sentry milk vetch*
- *Astragalus holmgreniorum* Barneby–Holmgren milk-vetch
- *Dalea tentaculoides* Gentry–Gentry indigo bush

LENNOACEAE Lennoa Family
- *Pholisma arenarium* Nutt.–Scaly-stemmed sand plant
- *Pholisma sonorae* (Torr. ex Gray) Yatskievych–Sandfood, sandroot
- Syn.: *Ammobroma sonorae* Torr. ex Gray

LILIACEAE Lily Family
- *Allium gooddingii* Ownbey–Goodding's onion

ORCHIDACEAE Orchid Family

- *Cypripedium calceolus* L. var. *pubescens* (Willd.) Correll–Yellow lady's slipper
- *Hexalectris warnockii* Ames & Correll–Texas purple spike
- *Spiranthes delitescens* C. Sheviak

POACEAE Grass Family [=Gramineae]
- *Puccinellia parishii A.S. Hitchc.–Parish alkali grass*

POLYGONACEAE Buckwheat Family
- *Rumex orthoneurus* Rech. f.

PSILOTACEAE Psilotum Family
- *Psilotum nudum* (L.) Beauv. Bush Moss, Whisk Ferm

RANUNCULACEAE Buttercup Family
- *Cimicifuga arizonica* Wats.–Arizona bugbane
- *Clematis hirsutissima* Pursh var. *arizonica* (Heller) Erickson–Arizona leatherflower.

ROSACEAE Rose Family
- *Purshia subintegra* (Kearney) J. Hendrickson–Arizona cliffrose, Burro Creek cliffrose
- Syn.: *Cowania subintegra* Kearney

SALICACEAE Willow Family
- *Salix arizonica* Dorn–Arizona willow

SCROPHULARIACEAE Figwort Family
- *Penstemon discolor* Keck–Variegated beardtongue

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B. Salvage Restricted Protected Native Plants

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The following list includes those species of native plants that are not included in the highly safeguarded category but are subject to damage by theft or vandalism. In addition to the plants listed under Agavaceae, Cactaceae, Liliaceae, and Orchidaceae all other species in these families are salvage restricted protected native plants.

AGAVACEAE Agave Family (including Nolinaceae)

- *Agave chrysantha* Peebles
- *Agave deserti* Engelm. ssp. *simplex* Gentry–Desert agave
- *Agave mckelveyana* Gentry
- *Agave palmeri* Engelm.
- *Agave parryi* Engelm. var. *couseii* (Engelm. ex Trel.) Kearney & Peebles
- *Agave parryi* Engelm. var. *huachucensis* (Baker) Little ex L. Benson
  Syn.: *Agave huachucensis* Baker
- *Agave parryi* Engelm. var. *parryi*
- *Agave schottii Engelm. var. schottii – Shindigger*
- *Agave toumeyana* Trel. ssp. *bella* (Breitung) Gentry
- *Agave toumeyana* Trel. ssp. *toumeyana*
- *Agave utahensis* Engelm. spp. *kaibabensis* (McKelvey) Gentry
- Syn.: *Agave kaibabensis* McKelvey
- *Agave utahensis* Engelm. var. *utahensis*
- *Dasylirion wheeleri* Wats.–Sotol, desert spoon
- *Nolina bigelovii* (Torr.)Wats.–Bigelow's nolina
- *Nolina microcarpa* Wats.–Beargrass, sacahuista
- *Nolina parryi* Wats.–Parry's nolina
- *Nolina texana* Wats. var. *compacta* (Trel.) Johnst.–Bunchgrass
- *Yucca angustissima* Engelm. var. *angustissima*
- *Yucca angustissima* Engelm. var. *kanabensis* (McKelvey) Reveal
- Syn.: *Yucca kanabensis* McKelvey
- *Yucca arizonica* McKelvey
- *Yucca baccata* Torr. var. *baccata*–Banana yucca
- *Yucca baccata* Torr. var. *vespertina* McKelvey
- *Yucca baileyi* Woot. & Standl. var. *intermedia* (McKelvey) Reveal
- Syn.: *Yucca navajoa* Webber
- *Yucca brevifolia* Engelm. var. *brevifolia*–Joshua tree
- *Yucca brevifolia* Engelm. var. *jaegeriana* McKelvey
- *Yucca elata* Engelm. var. *elata*–Soaptree yucca, palmilla
- *Yucca elata* Engelm var. *utahensis* (McKelvey) Reveal

- Syn.: *Yucca utahensis* McKelvey
- *Yucca elata* Engelm. var. *verdiensis* (McKelvey) Reveal
- Syn.: *Yucca verdiensis* McKelvey
- *Yucca harrimaniae* Trel.
- *Yucca schidigera* Roezl.–Mohave yucca, Spanish dagger
- *Yucca schottii* Engelm.–Hairy yucca
- *Yucca thornberi* McKelvey
- *Yucca whipplei* Torr. var. *whipplei*–Our Lord's candle
- Syn.: *Yucca newberryi* McKelvey

AMARYLLIDACEAE Amaryllis Family
- *Zephyranthes longifolia* Hemsl.–Plains Rain Lily

ANACARDIACEAE Sumac Family
- *Rhus kearneyi* Barkley–Kearney Sumac

ARECACEAE Palm Family [=Palmae]
- *Washingtonia filifera* (Linden ex Andre) H. Wendl–California fan palm

ASTERACEAE Sunflower Family [=Compositae]
- *Cirsium parryi* (Gray) Petrak ssp. *mogollonicum* Schaak
- *Cirsium virginensis* Welsh–Virgin thistle
- *Erigeron kuschei* Eastw.–Chiricahua fleabane
- *Erigeron piscaticus* Nesom–Fish Creek fleabane
- *Flaveria macdougalii* Theroux, Pinkava & Keil
- *Perityle ajoensis* Todson–Ajo rock daisy
- *Perityle cochisensis* (Niles) Powell–Chiricahua rock daisy
- *Senecio quaerens* Greene–Gila groundsel

BURSERACEAE Torch-Wood Family
- *Bursera microphylla* Gray–Elephant tree, torote

CACTACEAE Cactus Family
- *Carnegiea gigantea* (Engelm.) Britt. & Rose–Saguaro
- Syn.: *Cereus giganteus* Engelm.
- *Coryphantha missouriensis* (Sweet) Britt. & Rose
- *Coryphantha missouriensis* (Sweet) Britt. & Rose var. *marstonii* (Clover) L. Benson
- *Coryphantha scheeri* (Kuntze) L. Benson var. *valida* (Engelm.) L. Benson
- *Coryphantha strobiliformis* (Poselger) var. *orcuttii* (Rose) L. Benson
- *Coryphantha strobiliformis* (Poselger) var. *strobiliformis*
- *Coryphantha vivipara* (Nutt.) Britt. & Rose var. *alversonii* (Coult.) L. Benson
- *Coryphantha vivipara* (Nutt.) Britt. & Rose var. *arizonica* (Engelm.) W. T. Marshall
- Syn.: *Mammillaria arizonica* Engelm.
- *Coryphantha vivipara* (Nutt.) Britt. & Rose var. *bisbeeana* (Orcutt) L. Benson
- *Coryphantha vivipara* (Nutt.) Britt. & Rose var. *deserti* (Engelm.) W. T. Marshall
  Syn.: *Mammillaria chlorantha* Engelm.
- *Coryphantha vivipara* (Nutt.) Britt. & Rose var. *rosea* (Clokey) L. Benson
- *Echinocactus polycephalus* Engelm. & Bigel. var. *polycephalus*
- *Echinocactus polycephalus* Engelm. & Bigel. var. *xeranthemoides* Engelm. ex Coult
  Syn.: *Echinocactus xeranthemoides* Engelm. ex Coult.

- *Echinocereus engelmannii* (Parry ex Engelm.) Lemaire var. *aciculans* L. Benson
- *Echinocereus engelmannii* (Parry ex Engelm.) Lemaire var. *armatus* L. Benson
- *Echinocereus engelmannii* (Parry ex Engelm.) Lemaire var. *chrysocentrus* L. Benson
- *Echinocereus engelmannii* (Parry ex. Engelm.) Lemaire var. *engelmannii*
- *Echinocereus engelmannii* (Parry) Lemaire var. *variegatus* (Engelm.) Engelm. ex Rümpler
- *Echinocereus fasciculatus* (Engelm. ex B. D. Jackson) L. Benson var. fasciculatus
  Syn.: *Echinocereus fendleri* (Engelm.) Rümpler var. *fasciculatus* (Engelm. ex B. D. Jackson) N. P. Taylor, *Echinocereus fendleri* (Engelm.) Rümpler var. *robusta* L. Benson; *Mammillaria fasciculata* Engelm.
- *Echinocereus fasciculatus* (Engelm. ex B. D. Jackson) L. Benson var. *bonkerae* (Thornber & Bonker) L. Benson.
  Syn.: *Echinocereus boyce-thompsonii* Orcutt var. *bonkerae* Peebles; *Echinocereus fendleri* (Engelm.) Rümpler var. *bonkerae* (Thornber & Bonker) L. Benson
- *Echinocereus fasciculatus* (Engelm. ex B. D. Jackson) L. Benson var. *boyce-thompsonii* (Orcutt) L. Benson
  Syn.: *Echinocereus boyce-thompsonii* Orcutt
- *Echinocereus fendleri* (Engelm.) Rümpler var. *boyce-thompsonii* (Orcutt) L. Benson
- *Echinocereus fendleri* (Engelm.) Rümpler var. *fendleri*
- *Echinocereus fendleri* (Engelm.) Rümpler var. *rectispinus* (Peebles) L. Benson
- *Echinocereus ledingii* Peebles
- *Echinocereus nicholii* (L. Benson) Parfitt.
  Syn.: *Echinocereus engelmannii* (Parry ex Engelm.) Lemaire var. *nicholii* L. Benson
- *Echinocereus pectinatus* (Scheidw.) Engelm. var. *dasyacanthus* (Engelm.) N. P. Taylor
  Syn.: *Echinocereus pectinatus* (Scheidw.) Engelm. var. *neomexicanus* (Coult.) L. Benson
- *Echinocereus polyacanthus* Engelm. (1848) var. *polyacanthus*
- *Echinocereus pseudopectinatus* (N. P. Taylor) N. P. Taylor
  Syn.: *Echinocereus bristolii* W. T. Marshall var. *pseudopectinatus* N. P. Taylor, *Echinocereus pectinatus* (Scheidw.) Engelm. var. *pectinatus sensu* Kearney and Peebles, Arizona Flora, and L. Benson, The Cacti of Arizona and The Cacti of the United States and Canada.
- *Echinocereus rigidissimus* (Engelm.) Hort. F. A. Haage.
  Syn.: *Echinocereus pectinatus* (Scheidw.) Engelm. var. *rigidissimus* (Engelm.) Engelm. ex Rümpler–Rainbow cactus
- *Echinocereus triglochidiatus* Engelm. var. *gonacanthus* (Engelm. & Bigel.) Boiss.
- *Echinocereus triglochidiatus* Engelm. var. *melanacanthus* (Engelm.) L. Benson
  Syn.: *Mammillaria aggregata* Engelm.
- *Echinocereus triglochidiatus* Engelm. var. *mojavensis* (Engelm.) L. Benson
- *Echinocereus triglochidiatus* Engelm. var. *neomexicanus* (Standl.) Standl. ex W. T. Marshall.
  Syn.: *Echinocereus triglochidiatus* Engelm. var. *polyacanthus* (Engelm. 1859 non 1848) L. Benson
- *Echinocereus triglochidiatus* Engelm. var. *triglochidiatus*
- *Echinomastus erectocentrus* (Coult.) Britt. & Rose var. *erectocentrus*
  Syn.: *Neolloydia erectocentra* (Coult.) L. Benson var. *erectocentra*
- *Echinomastus intertextus* (Engelm.) Britt. & Rose
  Syn.: *Neolloydia intertexta* (Engelg.) L. Benson
-

Syn.: *Neolloydia johnsonii* (Parry) L. Benson
- *Epithelantha micromeris* (Engelm.) Weber ex Britt. & Rose
- *Ferocactus cylindraceus* (Engelm.) Orcutt var. *cylindraceus*–Barrel cactus
  Syn.: *Ferocactus acanthodes* (Lemaire) Britt. & Rose var. *acanthodes*
- *Ferocactus cylindraceus* (Engelm.) Orcutt var. *eastwoodiae* (Engelm.) N. P. Taylor
  Syn.: *Ferocactus acanthodes* (Lemaire) Britt. & Rose var. *eastwoodiae* L. Benson; Ferocactus eastwoodiae (L. Benson) L. Benson
- *Ferocactus cylindraceus* (Engelm.) Orcutt. var. *lecontei* (Engelm.) H. Bravo
  Syn.: *Ferocactus acanthodes* (Lemaire) Britt. & Rose var. *leconti* (Engelm.) Lindsay
  Ferocactus lecontei (Engelm.) Britt. & Rose
- *Ferocactus emoryi* (Engelm.) Orcutt–Barrel cactus
  Syn.: *Ferocactus covillei* Britt. & Rose
- *Ferocactus wislizenii* (Engelm.) Britt. & Rose–Barrel cactus
- *Lophocereus schottii* (Engelm.) Britt. & Rose–Senita
- *Mammillaria grahamii* Engelm. var. *grahamii*
- *Mammillaria grahamii* Engelm. var. *oliviae* (Orcutt) L. Benson
  Syn.: *Mammillaria oliviae* Orcutt
- *Mammillaria heyderi* Mühlenpf. var. *heyderi*
  Syn.: *Mammillaria gummifera* Engelm. var. *applanata* (Engelm.) L. Benson
- *Mammillaria heyderi* Mühlenpf. var. *macdougalii* (Rose) L. Benson
  Syn.: *Mammillaria gummifera* Engelm. var. *macdougalii* (Rose) L. Benson; *Mammillaria macdougalii* Rose
- *Mammillaria heyderi* Mühlenpf. var. *meiacantha* (Engelm.) L. Benson
  Syn.: *Mammillaria gummifera* Engelm. var. *meiacantha* (Engelm.) L. Benson
- *Mammillaria lasiacantha* Engelm.
- *Mammillaria mainiae* K. Brand.
- *Mammillaria microcarpa* Engelm.
- *Mammillaria tetrancistra* Engelm.
- *Mammillaria thornberi* Orcutt
- *Mammillaria viridiflora* (Britt. & Rose) Bödeker.
  Syn.: *Mammillaria orestra* L. Benson
- *Mammillaria wrightii* Engelm. var. *wilcoxii* (Toumey ex K. Schumann) W. T. Marshall
  Syn.: *Mammillaria wilcoxii* Toumey
- *Mammillaria wrightii* Engelm. var. *wrightii*
- *Opuntia acanthocarpa* Engelm. & Bigel. var. *acanthocarpa*–Buckhorn cholla
- *Opuntia acanthocarpa* Engelm. & Bigel. var. *coloradensis* L. Benson
- *Opuntia acanthocarpa* Engelm. & Bigel. var. *major* L. Benson
  Syn.: *Opuntia acanthocarpa* Engelm. & Bigel var. *ramosa* Peebles
- *Opuntia acanthocarpa* Engelm. & Bigel. var. *thornberi* (Thornber & Bonker) L. Benson
  Syn.: *Opuntia thornberi* Thornber & Bonker
- *Opuntia arbuscula* Engelm.–Pencil cholla
- *Opuntia basilaris* Engelm. & Bigel. var. *aurea* (Baxter) W. T. Marshall–Yellow beavertail
  Syn.: *Opuntia aurea* Baxter
- *Opuntia basilaris* Engelm. & Bigel. var. *basilaris*–Beavertail cactus
- *Opuntia basilaris* Engelm. & Bigel. var. *longiareolata* (Clover & Jotter) L. Benson
- *Opuntia basilaris* Engelm. & Bigel. var. *treleasei* (Coult.) Toumey
- *Opuntia bigelovii* Engelm.–Teddy-bear cholla
- *Opuntia campii* ined.

- *Opuntia canada* Griffiths (*O. phaeacantha* Engelm. var. *laevis X major* and *O. gilvescens* Griffiths).
- *Opuntia chlorotica* Engelm. & Bigel.–Pancake prickly-pear
- *Opuntia clavata* Engelm.–Club cholla
- *Opuntia curvospina* Griffiths
- *Opuntia echinocarpa* Engelm. & Bigel–Silver cholla
- *Opuntia emoryi* Engelm.–Devil cholla
  Syn.: *Opuntia stanlyi* Engelm. ex B. D. Jackson var. *stanlyi*
- *Opuntia engelmannii* Salm-Dyck ex Engelm. var. *engelmannii*–Engelmann's prickly-pear
  Syn.: *Opuntia phaeacantha* Engelm. var. *discata* (Griffiths) Benson & Walkington
- *Opuntia engelmannii* Salm-Dyck ex Engelm. var. *flavospina* (L.Benson) Parfitt & Pinkava
  Syn.: *Opuntia phaeacantha* Engelm. var. *flavispina* L. Benson
- *Opuntia erinacea* Engelm. & Bigel. var. *erinacea*–Mohave prickly-pear
- *Opuntia erinacea* Engelm. & Bigel. var. *hystricina* (Engelm. & Bigel.) L. Benson
  Syn.: *Opuntia hystricina* Engelm. & Bigel.
- *Opuntia erinacea* Engelm. & Bigel. var. *ursina* (Weber) Parish–Grizzly bear prickly-pear
  Syn.: *Opuntia ursina* Weber
- *Opuntia erinacea* Engelm. & Bigel. var. *utahensis* (Engelm.) L. Benson
  Syn.: *Opuntia rhodantha* Schum.
- *Opuntia fragilis* Nutt. var. *brachyarthra* (Engelm. & Bigel.) Coult.
- *Opuntia fragilis* Nutt. var. *fragilis*–Little prickly-pear
- *Opuntia fulgida* Engelm. var. *fulgida*–Jumping chain-fruit cholla
- *Opuntia fulgida* Engelm. var. *mammillata* (Schott) Coult.
- *Opuntia imbricata* (Haw.) DC.–Tree cholla
- *Opuntia X kelvinensis* V. & K. Grant pro sp.
  Syn.: *Opuntia kelvinensis* V. & K. Grant
- *Opuntia kleiniae* DC. var. *tetracantha* (Toumey) W. T. Marshall
  Syn.: *Opuntia tetrancistra* Toumey
- *Opuntia kunzei* Rose.
  Syn.: *Opuntia stanlyi* Engelm. ex B. D. Jackson var. *kunzei* (Rose) L. Benson; *Opuntia kunzei* Rose var. *wrightiana* (E. M. Baxter) Peebles; *Opuntia wrightiana* E. M. Baxter
- *Opuntia leptocaulis* DC.–Desert Christmas cactus, Pencil cholla
- *Opuntia littoralis* (Engelm.) Cockl. var. *vaseyi* (Coult.) Benson & Walkington
- *Opuntia macrocentra* Engelm.–Purple prickly-pear
  Syn.: *Opuntia violacea* Engelm. ex B. D. Jackson var. *macrocentra* (Engelm.) L. Benson; *Opuntiaviolacea* Engelm. ex B. D. Jackson var. *violacea*
- *Opuntia macrorhiza* Engelm. var. *macrorhiza*–Plains prickly-pear
  Syn.: *Opuntia plumbea* Rose
- *Opuntia macrorhiza* Engelm. var. *pottsii* (Salm-Dyck) L. Benson
- *Opuntia martiniana* (L. Benson) Parfitt
  Syn.: *Opuntia littoralis* (Engelm.) Cockerell var. *martiniana* (L. Benson) L. Benson; *Opuntia macrocentra* Engelm. var. *martiniana L. Benson*
- *Opuntia nicholii* L. Benson–Navajo Bridge prickly-pear
- *Opuntia parishii* Orcutt.
  Syn.: *Opuntia stanlyi* Engelm. ex B. D. Jackson var. *parishii* (Orcutt) L. Benson
- *Opuntia phaeacantha* Engelm. var. *laevis* (Coult.) L. Benson

- *Opuntia phaeacantha* Engelm. var. *major* Engelm.
- *Opuntia phaeacantha* Engelm. var. *phaeacantha*
- *Opuntia phaeacantha* Engelm. var. *superbospina* (Griffiths) L. Benson
- *Opuntia polyacantha* Haw. var. *juniperina* (Engelm.) L. Benson
- *Opuntia polyacantha* Haw. var. *rufispina* (Engelm.) L. Benson
- *Opuntia polyacantha* Haw. var. *trichophora* (Engelm. & Bigel.) L. Benson
- *Opuntia pulchella* Engelm.–Sand cholla
- *Opuntia ramosissima* Engelm.–Diamond cholla
- *Opuntia santa-rita* (Griffiths & Hare) Rose–Santa Rita prickly-pear
  Syn.: *Opuntia violacea* Engelm. ex B. D. Jackson var. *santa-rita* (Griffiths & Hare) L. Benson
- *Opuntia spinosior* (Engelm.) Toumey–Cane cholla
- *Opuntia versicolor* Engelm.–Staghorn cholla
- *Opuntia vivipara* Engelm
- *Opuntia whipplei Engelm. & Bigel. var. multigeniculata (Clokey) L. Benson*
- *Opuntia whipplei Engelm. & Bigel. var. whipplei–Whipple cholla*
- *Opuntia wigginsii L. Benson*
- *Pediocactus papyracanthus (Engelm.) L. Benson Grama grass cactus*
  Syn.: Toumeya papyracanthus (Engelm.) Britt. & Rose
- Pediocactus simpsonii (Engelm.) Britt & Rose var. simpsonii
- Peniocereus greggii (Engelm.) Britt. & Rose var. greggii–Night-blooming cereus
  Syn.: Cereus greggii Engelm
- Peniocereus greggii (Engelm.) Britt & Rose var. transmontanus–Queen-of-the-Nigh
- Peniocereus striatus (Brandegee) Buxbaum.
  Syn.: Neoevansia striata (Brandegee) Sanchez-Mejorada; Cereus striatus Brandegee; Wilcoxia diguetii (Webber) Peebles
- Sclerocactus parviflorus Clover & Jotter var. intermedius (Peebles) Woodruff & L. Benson
  Syn.: Sclerocactus intermedius Peebles
- Sclerocactus parviflorus Clover & Jotter var. parviflorus
  Syn.: Sclerocactus whipplei (Engelm. & Bigel.) Britt. & Rose var. roseus (Clover) L. Benson
- Sclerocactus pubispinus (Engelm.) L. Peebles
- Sclerocactus spinosior (Engelm.) Woodruff & L. Benson
  Syn.: Sclerocactus pubispinus (Engelm.) L. Benson var. sileri L. Benson
- Sclerocactus whipplei (Engelm. & Bigel.) Britt. & Rose
- Stenocereus thurberi (Engelm.) F. Buxbaum–Organ pipe cactus
  Syn.: Cereus thurberi Engelm.; Lemairocereus thurberi (Engelm.) Britt. & Rose

CAMPANULACEAE Bellflower Family
- *Lobelia cardinalis* L. ssp. *graminea* (Lam.) McVaugh–Cardinal flower
- *Lobelia fenestralis* Cav.–Leafy lobelia
- *Lobelia laxiflora* H. B. K. var. *angustifolia* A. DC.

CAPPARACEAE Cappar Family [=Capparidaceae]
- *Cleome multicaulis* DC.–Playa spiderflower

CHENOPODIACEAE Goosefoot Family
- *Atriplex hymenelytra* (Torr.) Wats.

CRASSULACEAE Stonecrop Family
- *Dudleya arizonica* (Nutt.) Britt. & Rose
- Syn.: *Echeveria pulverulenta* Nutt. ssp. *arizonica* (Rose) Clokey
- *Dudleya saxosa* (M.E. Jones) Britt. & Rose ssp. *collomiae* (Rose) Moran
- Syn.: *Echeveria collomiae* (Rose) Kearney & Peebles
- *Graptopetalum bartramii* Rose
- Syn.: *Echevaria bartramii* (Rose) K. & P.
- *Graptopetalum bartramii* Rose–Bartram's stonecrop, Bartram's live-forever
- Syn.: *Echeveria bartramii* (Rose) Kearney & Peebles
- *Graptopetalum rusbyi* (Greene) Rose
- Syn.: *Echeveria rusbyi* (Greene) Nels. & Macbr.
- *Sedum cockerellii* Britt.
- *Sedum griffithsii* Rose
- *Sedum lanceolatum* Torr.
- Syn.: *Sedum stenopetalum* Pursh
- *Sedum rhodanthum* Gray
- *Sedum stelliforme* Wats.

CROSSOSOMATACEAE Crossosoma Family
- *Apacheria chiricahuensis* C. T. Mason–Chiricahua rock flower

CUCURBITACEAE Gourd Family
- *Tumamoca macdougalii* Rose–Tumamoc globeberry

EUPHORBIACEAE Spurge Family
- *Euphorbia plummerae* Wats.–Woodland spurge
- *Sapium biloculare* (Wats.) Pax–Mexican jumping-bean

FABACEAE Pea Family [=Leguminosae]
- *Astragalus corbrensis* Gray var. *maguirei* Kearney
- *Astragalus cremnophylax* Barneby var. *myriorraphis* Barneby–Cliff milk-vetch
- *Astragalus hypoxylus* Wats.–Huachuca milk-vetch
- *Astragalus nutriosensis* Sanderson–Nutrioso milk-vetch
- *Astragalus xiphoides* (Barneby) Barneby–Gladiator milk-vetch
- *Cercis occidentalis* Torr.–California redbud
- *Errazurizia rotundata* (Woot.) Barneby
- Syn.: *Parryella rotundata* Woot.
- *Lysiloma microphylla* Benth. var. *thornberi* (Britt. & Rose) Isely–Feather bush
- Syn.: *Lysiloma thornberi* Britt. & Rose
- *Phaseolus supinus* Wiggins & Rollins

FOUQUIERIACEAE Ocotillo Family
- *Fouquieria splendens* Engelm.–Ocotillo, coach-whip, monkey-tail

GENTIANACEAE Gentian Family
- *Gentianella wislizenii* (Engelm.) J. Gillett
- Syn.: *Gentiana wislizenii* Engelm.

LAMIACEAE Mint Family
- *Hedeoma diffusum* Green–Flagstaff pennyroyal
- *Salvia dorrii* ssp. *mearnsii*
- *Trichostema micranthum* Gray

LILIACEAE Lily Family
- *Allium acuminatum* Hook.
- *Allium bigelovii* Wats.
- *Allium biseptrum* Wats. var. *palmeri* (Wats.) Cronq.
- Syn.: *Allium palmeri* Wats.
- *Allium cernuum* Roth. var. *neomexicanum* (Rydb.) Macbr.–Nodding onion
- *Allium cernuum* Roth. var. *obtusum* Ckll.
- *Allium geyeri* Wats. var. *geyeri*
- *Allium geyeri* Wats. var. *tenerum* Jones
- *Allium kunthii* Don
- *Allium macropetalum* Rydb.
- *Allium nevadense* Wats. var. *cristatum* (Wats.) Ownbey
- *Allium nevadense* Wats. var. *nevadense*
- *Allium parishii* Wats.
- *Allium plummerae* Wats.
- *Allium rhizomatum* Woot. & Standl. Incl.: *Allium glandulosum* Link & Otto *sensu* Kearney & Peebles
- *Androstephium breviflorum* Wats.–Funnel-lily
- *Calochortus ambiguus* (Jones) Ownbey
- *Calochortus aureus* Wats.
- Syn.: *Calochortus nuttallii* Torr. & Gray var. *aureus* (Wats.) Ownbey
- *Calochortus flexuosus* Wats.–Straggling mariposa
- *Calochortus gunnisonii* Wats.
- *Calochortus kennedyi* Porter var. *kennedyi*–Desert mariposa
- *Calochortus kennedyi* Porter var. *munzii* Jeps.
- *Dichelostemma pulchellum* (Salisbi) Heller var. *pauciflorum* (Torr.) Hoover
- *Disporum trachycarpum* (Wats.) Benth. & Hook. var. *subglabrum* Kelso
- *Disporum trachycarpum* (Wats.) Benth. & Hook. var. *trachycarpum*
- *Echeandia flavescens* (Schultes & Schultes) Cruden
- Syn.: *Anthericum torreyi* Baker
- *Eremocrinum albomarginatum* Jones
- *Fritillaria atropurpurea* Nutt.
- *Hesperocallis undulata* Gray–Ajo lily
- *Lilium parryi* Wats.–Lemon lily
- *Lilium umbellatum* Pursh
- *Maianthemum racemosum* (L.) Link. ssp. *amplexicaule* (Nutt.) LaFrankie
- Syn.: *Smilacina racemosa* (L.) Desf. var. *amplexicaulis* (Nutt.) Wats.
- *Maianthemum racemosum* (L.) Link ssp. *racemosum*–False Solomon's seal
- Syn.: *Smilacina racemosa* (L.) Desf. var. *racemosa*; *Smilacina racemosa* (L.) Desf. var. *cylindrata* Fern.
- *Maianthemum stellatum* (L.) Link
- Syn.: *Smilacina stellata* (L.) Desf.–Starflower
- *Milla biflora* Cav.–Mexican star
- *Nothoscordum texanum* Jones

- *Polygonatum cobrense* (Woot. & Standl.) Gates
- *Streptopus amplexifolius* (L.) DC.–Twisted stalk
- *Triteleia lemmonae* (Wats.) Greene
- *Triteleiopsis palmeri* (Wats.) Hoover
- *Veratrum californicum* Durand.–False hellebore
- *Zephyranthes longifolia* Hemsl.–Plains rain lily
- *Zigadenus elegans* Pursh–White camas, alkali-grass
- *Zigadenus paniculatus* (Nutt.) Wats.–Sand-corn
- *Zigadenus virescens* (H. B. K.) Macbr.

MALVACEAE Mallow Family
- *Abutilon parishii* Wats.–Tucson Indian mallow
- *Abutilon thurberi* Gray–Baboquivari Indian mallow

ONAGRACEAE Evening Primrose Family
- *Camissonia exilis* (Raven) Raven

ORCHIDACEAE Orchid Family
- *Calypso bulbosa* (L.) Oakes var. *americana* (R. Br.) Luer
- *Coeloglossum viride* (L.) Hartmann var. *virescens* (Muhl.) Luer
- Syn.: *Habenaria viridis* (L.) R. Br. var. *bracteata* (Muhl.) Gray
- *Corallorhiza maculata* Raf.–Spotted coral root
- *Corallorhiza striata* Lindl.–Striped coral root
- *Corallorhiza wisteriana* Conrad–Spring coral root
- *Epipactis gigantea* Douglas ex Hook.–Giant helleborine
- *Goodyera oblongifolia* Raf.
- *Goodyera repens* (L.) R. Br.
- *Hexalectris spicata* (Walt.) Barnhart–Crested coral root
- *Listera convallarioides* (Swartz) Nutt.–Broad-leaved twayblade
- *Malaxis corymbosa* (S. Wats.) Kuntze
- *Malaxis ehrenbergii* (Reichb. f.) Kuntze
- *Malaxis macrostachya* (Lexarza) Kuntze–Mountain malaxia
- Syn.: *Malaxis soulei* L. O. Williams
- *Malaxis tenuis* (S. Wats.) Ames
- *Platanthera hyperborea* (L.) Lindley var. *gracilis* (Lindley) Luer
- Syn.: *Habenaria sparsiflora* Wats. var. *laxiflora* (Rydb.) Correll
- *Platanthera hyperborea* (L.) Lindley var. *hyperborea*–Northern green orchid
- Syn.: *Habenaria hyperborea* (L.) R. Br.
- *Platanthera limosa* Lindl.–Thurber's bog orchid
- Syn.: *Habenaria limosa* (Lindley) Hemsley
- *Platanthera sparsiflora* (Wats.) Schlechter var. *ensifolia* (Rydb.) Luer
- *Platanthera sparsiflora* (Wats.) var. *laxiflora* (Rydb.) Correll
- *Platanthera sparsiflora* (Wats.) Schlechter var. *sparsiflora*–Sparsely-flowered bog orchid
- Syn.: *Habenaria sparsiflora* Wats.
- *Platanthera stricta* Lindl.–Slender bog orchid
- Syn.: *Habenaria saccata* Greene; *Platanthera saccata* (Greene) Hulten
- *Platanthera viridis* (L.) R. Br. var. *bracteata* (Muhl.) Gray–Long-bracted habenaria
- *Spiranthes michaucana* (La Llave & Lex.) Hemsl.
- *Spiranthes parasitica* A. Rich. & Gal.

- *Spiranthes romanzoffiana* Cham.–Hooded ladies tresses

PAPAVERACEAE Poppy Family
- *Arctomecon californica* Torr. & Frém.–Golden-bear poppy, Yellow-flowered desert poppy

PINACEAE Pine Family
- *Pinus aristata* Engelm.–Bristlecone pine

POLYGONACEAE Buckwheat Family
- *Eriogonum apachense* Reveal
- *Eriogonum capillare* Small
- *Eriogonum mortonianum* Reveal–Morton's buckwheat
- *Eriogonum ripleyi* J. T. Howell–Ripley's wild buckwheat, Frazier's Well buckwheat
- *Eriogonum thompsonae* Wats. var. *atwoodii* Reveal–Atwood's buckwheat

PORTULACEAE Purslane Family
- *Talinum humile* Greene–Pinos Altos flame flower
- *Talinum marginatum* Greene
- *Talinum validulum* Greene–Tusayan flame flower

PRIMULACEAE Primrose Family
- *Dodecatheon alpinum* (Gray) Greene ssp. *majus* H. J. Thompson
- *Dodecatheon dentatum* Hook. ssp. *ellisiae* (Standl.) H. J. Thompson
- *Dodecatheon pulchellum* (Raf.) Merrill
- *Primula hunnewellii* Fern.
- *Primula rusbyi* Greene
- *Primula specuicola* Rydb.

RANUNCULACEAE Buttercup Family
- *Aquilegia caerulea* James ssp. *pinetorum* (Tidest.) Payson–Rocky Mountain Columbine
- *Aquilegia chrysantha* Gray
- *Aquilegia desertorum* (Jones) Ckll.–Desert columbine, Mogollon columbine
- *Aquilegia elegantula* Greene
- *Aquilegia longissima* Gray–Long Spur Columbine
- *Aquilegia micrantha* Eastw.
- *Aquilegia triternata* Payson

ROSACEAE Rose Family
- *Rosa stellata* Woot.–ssp. *abyssa* A. Phillips Grand Canyon rose
- *Vauquelinia californica* (Torr.) Sarg. ssp. *pauciflora* (Standl.) Hess & Henrickson–Few-flowered Arizona rosewood

SCROPHULARIACEAE Figwort Family

- *Castilleja mogollonica* Pennell
- *Penstemon albomarginatus* Jones
- *Penstemon bicolor* (Brandeg.) Clokey & Keck ssp. *roseus* Clokey & Keck
- *Penstemon clutei* A. Nels.
- *Penstemon distans* N. Holmgren–Mt. Trumbull beardtongue
- *Penstemon linarioides* spp. maguirei

SIMAROUBACEAE Simarouba Family
- *Castela emoryi* (Gray) Moran & Felger–Crucifixion thorn
- Syn.: *Holacantha emoryi* Gray

STERCULIACEAE Cacao Family
- *Fremontodendron californicum* (Torr.) Coville–Flannel bush

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DEPARTMENT OF AGRICULTURE

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C. Salvage Assessed Protected Native Plants

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The following list includes those species of native plants that are not included in either the highly safeguarded or salvage restricted category but have a sufficient value if salvaged to support the cost of salvage.

BIGNONIACEAE Bignonia Family
- *Chilopsis linearis* (Cav.) Sweet var. *arcuata* Fosberg–Desert-willow
- *Chilopsis linearis* (Cav.) Sweet var. *glutinosa* (Engelm.) Fosberg

FABACEAE Pea Family [=Leguminosae]
- *Cercidium floridum* Benth.–Blue palo verde
- *Cercidium microphyllum* (Torr.) Rose & Johnst.–Foothill palo verde
- *Olneya tesota* Gray–Desert ironwood
- *Prosopis glandulosa* Torr. var. *glandulosa*–Honey mesquite
- Syn.: *Prosopis juliflora* (Swartz) DC. var. *glandulosa* (Torr.) Ckll.
- *Prosopis glandulosa* Torr. var. *torreyana* (Benson) M. C. Johnst.–Western honey mesquite
- Syn.: *Prosopis juliflora* (Swartz) DC. var. *torreyana* Benson
- *Prosopis pubescens* Benth.–Screwbean mesquite
- *Prosopis velutina* Woot.–Velvet mesquite
- Syn.: *Prosopis juliflora* (Swartz) DC. var. *velutina* (Woot.) Sarg.
- *Psorothamnus spinosus* (Gray) Barneby–Smoke tree.
- Syn.: *Dalea spinosa* Gray

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D. Harvest Restricted Protected Native Plants

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The following list includes those species of native plants that are not included in the highly safeguarded category but are subject to excessive harvesting or overcutting because of their intrinsic value.

AGAVACEAE Agave Family (including Nolinaceae)

- *Nolina bigelovii* (Torr.) Wats.–Bigelow's nolina
- *Nolina microcarpa* Wats.–Beargrass, sacahuista
- *Nolina parryi* Wats.–Parry's nolina
- *Nolina texana* Wats. var. *compacta* (Trel.) Johnst.–Bunchgrass
- *Yucca baccata* Torr. var. *baccata*–Banana yucca
- *Yucca schidigera* Roezl.–Mohave yucca, Spanish dagger

FABACEAE Pea Family [=Leguminosae]

- *Olneya tesota* Gray–Desert ironwood
- *Prosopis glandulosa* Torr. var. *glandulosa*–Honey mesquite
- Syn.: *Prosopis juliflora* (Swartz) DC. var. *glandulosa* (Torr.) Ckll.
- *Prosopis glandulosa* Torr. var. *torreyana* (Benson) M. C. Johnst.–Western honey mesquite
- Syn.: *Prosopis juliflora* (Swartz) DC. var. *torreyana* Benson
- *Prosopis pubescens* Benth.–Screwbean mesquite
- *Prosopis velutina* Woot.–Velvet mesquite
- Syn.: *Prosopis juliflora* (Swartz) DC. var. *velutina* (Woot.) Sarg.

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APPENDIX E

Consultation Letters

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

January 18, 2001

Environmental Division

Subject: Adverse Effect Determination on Site AZ FF:11:82 (ASM) and the disposition of that historic property in regard to the Joint Task Force-Six Douglas Phase I/II Fence, Lighting and Road Improvement Project

Mr. Don L. Klima, Director
Advisory Council on Historic Preservation
Western Office of Project Review
ATTN: Mr. Alan Stanfill
12136 West Bayaud Avenue, Suite 330
Lakewood, CO 80226

Dear Mr. Klima:

In our letter to you dated December 1, 2000, the Fort Worth District, U.S. Army Corps of Engineers (COE) acting on behalf of Joint Task Force-Six in regard to the above-mentioned project forwarded documentation in accordance with 36 CFR Part 800.11(e).

Enclosed is a copy of the signed MOA regarding Site AZ FF:11:82 (ASM) and other documentation in accordance with 36 CFR Part 800.11(f). There were no changes or revisions to the mitigation plan. We had responses from the Hopi Tribe regarding all phases of the project. No other comments have been received.

Should you require further information on these matters, please contact Patience Patterson of the Fort Worth District Corps of Engineers at (817) 978-6390.

Sincerely,

William Fickel, Jr., Chief
Environmental Division

Enclosures

Copy furnished w/o enclosures

Mr. James Garrison, State Historic Preservation Officer
ATTN: Ms. Joanne Miller
Arizona State Parks
1300 West Washington
Phoenix, Arizona 85007

Mr. Milton Blankenship
Joint Task Force-Six
Building 11603, Biggs Army Air Field
Fort Bliss, Texas 79918-0058

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

November 21, 2000

Environmental Division

U.S. Fish and Wildlife Service
Ecological Services
ATTN: Mr. David L. Harlow, Field Supervisor
2321 West Royal Palm, Suite 103
Phoenix, Arizona 85021-4951

Dear Mr. Harlow

The U.S. Army Corps of Engineers (USACE), Fort Worth District, has prepared the enclosed Draft Environmental Assessment (DEA) for proposed fence, lighting and road repair improvements by Joint Task Force Six (JTF-6) near Douglas, Arizona. The EA supplements previous National Environmental Policy Act (NEPA) documents, which were prepared by USACE for JTF-6 for work done in the Douglas, Arizona area during 1996, 1997, and 1998. The DEA addresses impacts specifically associated with the proposed fence, lighting, and road improvements.

The proposed project would be located adjacent to the U.S.-Mexico international border almost entirely within previously cleared or disturbed areas and consist of the following construction activities:

- Installation of permanent lighting west of the Douglas Port of Entry (POE) for a distance of approximately 1 mile
- Installation of permanent lighting east of the POE for a distance of 8 tenths of one mile
- Construction of landing mat fence east of the POE for a distance of 2 mile, beginning at the terminus of the existing landing mat fence
- Repair/improvements (scarify and recompact) of border road for approximately 4 miles east of the POE and 4 miles west of White Water Draw
- Road maintenance (grading) for 8 miles continuing west from the road repair west of White Water Draw
- Hydrological improvements (drainage repair) as needed on the 4 mile sections of road improvement east and west of the POE

We appreciate Mr. Mike Coffeen, of your office, accompanying JTF-6 and USACE representatives on their most recent site visit. We would like to continue this informal consultation and would appreciate a review of the enclosed document. We will consider any additional comments that we receive from you by the close of the comment period as indicated on the Notice of Availability. If you require any additional information at this time please contact Mr. Glenn Bixler of my staff at 817/978-8315.

Sincerely,

William Fickel, Jr.
Chief, Environmental Division

Copy Furnished:

U.S. Fish and Wildlife Service
Michael Coffeen
2321 West Royal Palm, Suite 103
Phoenix, AZ 85021-4951

Bixler/8-3815
PAXTON, CESWF-EV-EE
HATHORN, CESWF-EV-E
FICKEL, CESWF-EV

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

November 22, 2000

Environmental Division

Arizona Game and Fish Department
Sabre Schwartz
2221 West Greenway Road
Phoenix, AZ 85023-4399

Dear Ms. Schwartz:

The U.S. Army Corps of Engineers, Fort Worth District, in coordination with Joint Task Force Six (JTF-6), has prepared a Draft Environmental Assessment (EA) for proposed fence, lighting and road repair improvements by JTF-6 near Douglas, Arizona.

The proposed project would be located adjacent to the U.S.-Mexico international border almost entirely within previously cleared or disturbed areas and consist of the following construction activities:

- Installation of permanent lighting west of the Douglas Port of Entry (POE) for a distance of approximately 1 mile
- Installation of permanent lighting east of the POE for a distance of 8 tenths of one mile
- Construction of landing mat fence east of the POE for a distance of 2 mile, beginning at the terminus of the existing landing mat fence
- Repair/improvements (scarify and recompact) of border road for approximately 4 miles east of the POE and 4 miles west of White Water Draw
- Road maintenance (grading) for 8 miles continuing west from the road repair west of White Water Draw
- Hydrological improvements (drainage repair) as needed on the 4 mile sections of road improvement east and west of the POE

We would appreciate a review of the enclosed document. We will consider any additional comments that we receive from you by the close of the comment period as

indicated on the Notice of Availability. If you require any additional information at this time please contact Mr. Glenn Bixler of my staff at 817/978-8315.

Sincerely,

William Fickel, Jr.
Chief, Environmental Division

Enclosure

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

November 22, 2000

Environmental Division

International Boundary Water Commission
Environmental Management. Division
Silvia A. Waggoner
4171 N. Mesa, Suite C-310
El Paso, Texas 79902

Dear Ms. Waggoner:

The U.S. Army Corps of Engineers, Fort Worth District, in coordination with Joint Task Force Six (JTF-6), has prepared a Draft Environmental Assessment (EA) for proposed fence, lighting and road repair improvements by JTF-6 near Douglas, Arizona.

The proposed project would be located adjacent to the U.S.-Mexico international border almost entirely within previously cleared or disturbed areas and consist of the following construction activities:

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- Hydrological improvements (drainage repair) as needed on the 4 mile sections of road improvement east and west of the POE

We would appreciate a review of the enclosed document. We will consider any additional comments that we receive from you by the close of the comment period as

indicated on the Notice of Availability. If you require any additional information at this time please contact Mr. Glenn Bixler of my staff at 817/978-8315.

Sincerely,

William Fickel, Jr.
for Chief, Environmental Division

Enclosure

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

November 22, 2000

Environmental Division

Arizona Department of Agriculture
James McGinnis
Native Plant & Cultural Resource Protection
1688 West Adams
Phoenix, AZ 85007

Dear Mr. McGinnis:

The U.S. Army Corps of Engineers, Fort Worth District, in coordination with Joint Task Force Six (JTF-6), has prepared a Draft Environmental Assessment (EA) for proposed fence, lighting and road repair improvements by JTF-6 near Douglas, Arizona.

The proposed project would be located adjacent to the U.S.-Mexico international border almost entirely within previously cleared or disturbed areas and consist of the following construction activities:

- Installation of permanent lighting west of the Douglas Port of Entry (POE) for a distance of approximately 1 mile
- Installation of permanent lighting east of the POE for a distance of 8 tenths of one mile
- Construction of landing mat fence east of the POE for a distance of 2 mile, beginning at the terminus of the existing landing mat fence
- Repair/improvements (scarify and recompact) of border road for approximately 4 miles east of the POE and 4 miles west of White Water Draw
- Road maintenance (grading) for 8 miles continuing west from the road repair west of White Water Draw
- Hydrological improvements (drainage repair) as needed on the 4 mile sections of road improvement east and west of the POE

We would appreciate a review of the enclosed document. We will consider any additional comments that we receive from you by the close of the comment period as

indicated on the Notice of Availability. If you require any additional information at this time please contact Mr. Glenn Bixler of my staff at 817/978-8315.

Sincerely,

William Fickel, Jr.
Chief, Environmental Division

Enclosure

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

November 22, 2000

Environmental Division

Arizona State Parks
James Garrison, SHPO
ATTN: Joanne Miller
1300 W. Washington
Phoenix, AZ 85007

Dear Ms. Miller:

The U.S. Army Corps of Engineers, Fort Worth District, in coordination with Joint Task Force Six (JTF-6), has prepared a Draft Environmental Assessment (EA) for proposed fence, lighting and road repair improvements by JTF-6 near Douglas, Arizona.

The proposed project would be located adjacent to the U.S.-Mexico international border almost entirely within previously cleared or disturbed areas and consist of the following construction activities:

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indicated on the Notice of Availability. If you require any additional information at this time please contact Mr. Glenn Bixler of my staff at 817/978-8315.

Sincerely,

William Fickel, Jr.
Chief, Environmental Division

Enclosure

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

November 22, 2000

Environmental Division

Bureau of Land Management
Mr. Bill Childress, Assistant Field Manager
Tucson Field Office
1763 Paseo San Luis
Sierra Vista, Arizona 85635

Dear Mr. Childress:

The U.S. Army Corps of Engineers, Fort Worth District, in coordination with Joint Task Force Six (JTF-6), has prepared a Draft Environmental Assessment (EA) for proposed fence, lighting and road repair improvements by JTF-6 near Douglas, Arizona.

The proposed project would be located adjacent to the U.S.-Mexico international border almost entirely within previously cleared or disturbed areas and consist of the following construction activities:

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We would appreciate a review of the enclosed document. We will consider any additional comments that we receive from you by the close of the comment period as indicated on the

Notice of Availability. If you require any additional information at this time please contact Mr. Glenn Bixler of my staff at 817/978-8315.

Sincerely,

for William Fickel, Jr.
Chief, Environmental Division

Enclosure

ECOLOGICAL COMMUNICATIONS CORPORATION
Environmental Services

November 21, 2000

Mr. Brian Segee
Center for Bio Diversity
P.O. Box 710
Tucson, AZ 85702

Dear Mr. Segee:

Enclosed please find a copy of the Draft Environmental Assessment for a Joint Task Force Six Proposed Action near Douglas, Cochise County, Arizona. The proposed project would consist of extending the existing land mat fence for a distance of two miles east of the Port of Entry (POE), installing 1.8 miles of permanent lighting, performing major road repairs and hydrological improvements for a distance of 4.0 miles east of the POE and 4.0 miles west of Whitewater Draw, and performing minor road improvements for a distance of 8.0 miles further west of Whitewater Draw.

The document will be available for a 30-day public review/comment period beginning Monday, November 27, 2000. It is available for public review in the Douglas Public Library located at 560 10th Street in Douglas, Arizona. Please return any comments regarding this document to:

Mr. Glenn Bixler
U.S. Army Corps of Engineers
Fort Worth District
Attn: CESWF-EV-EE, Room 3A14
819 Taylor Street
Fort Worth, Texas 76102-0300

Should you need additional information or have any questions, please feel free to contact me at (512) 329-0031 or Mr. Bixler at (817) 978-3815.

Sincerely,
Ecological Communications Corporation

Jill S. Madden
Vice President

Enclosure

901 S. MoPac Expy., Barton Oaks Plaza Two, Suite 170
Austin, Texas 78746

Tel: (512) 329-0031 Fax: (512) 329-0096

ECOLOGICAL COMMUNICATIONS CORPORATION
Environmental Services

November 21, 2000

Mr. Joseph Lamphear
Environmental Officer, FAE
INS Administrative Center
24000 Avila Road
Laguna Niguel, CA 92667

Dear Mr. Lamphear:

Enclosed please find a copy of the Draft Environmental Assessment for a Joint Task Force Six Proposed Action near Douglas, Cochise County, Arizona. The proposed project would consist of extending the existing land mat fence for a distance of two miles east of the Port of Entry (POE), installing 1.8 miles of permanent lighting, performing major road repairs and hydrological improvements for a distance of 4.0 miles east of the POE and 4.0 miles west of Whitewater Draw, and performing minor road improvements for a distance of 8.0 miles further west of Whitewater Draw.

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U.S. Army Corps of Engineers
Fort Worth District
Attn: CESWF-EV-EE, Room 3A14
819 Taylor Street
Fort Worth, Texas 76102-0300

Should you need additional information or have any questions, please feel free to contact me at (512) 329-0031 or Mr. Bixler at (817) 978-3815.

Sincerely,
Ecological Communications Corporation

Jill S. Madden
Vice President

901 S. MoPac Expy., Barton Oaks Plaza Two, Suite 170
Austin, Texas 78746

Tel: (512) 329-0031 Fax: (512) 329-0096

ECOLOGICAL COMMUNICATIONS CORPORATION
Environmental Services

November 21, 2000

Mr. Manny Rodriguez
Facilities Planning
INS Headquarters
425 I Street NW, Room 2030
Washington, D.C. 20536

Dear Mr. Rodriguez:

Enclosed please find two copies of the Draft Environmental Assessment for a Joint Task Force Six Proposed Action near Douglas, Cochise County, Arizona. The proposed project would consist of extending the existing land mat fence for a distance of two miles east of the Port of Entry (POE), installing 1.8 miles of permanent lighting, performing major road repairs and hydrological improvements for a distance of 4.0 miles east of the POE and 4.0 miles west of Whitewater Draw, and performing minor road improvements for a distance of 8.0 miles further west of Whitewater Draw.

The document will be available for a 30-day public review/comment period beginning Monday, November 27, 2000. It is available for public review in the Douglas Public Library located at 560 10th Street in Douglas, Arizona. Please return any comments regarding this document to:

Mr. Glenn Bixler
U.S. Army Corps of Engineers
Fort Worth District
Attn: CESWF-EV-EE, Room 3A14
819 Taylor Street
Fort Worth, Texas 76102-0300

If you need further information, please contact Mr. Bixler at (817) 978-3815.

Sincerely,
Ecological Communications Corporation

Jill S. Madden
Vice President

Enclosure

901 S. MoPac Expy., Barton Oaks Plaza Two, Suite 170
Austin, Texas 78746

Tel: (512) 329-0031

Fax: (512) 329-0096

ECOLOGICAL COMMUNICATIONS CORPORATION
Environmental Services

November 21, 2000

Mr. Eric Verwers
Assistant Director
INS A-E Resource Center
819 Taylor Street
Attn: CESWF-PM-INS, Room 3A28
Fort Worth, Texas 76102-0300

Dear Eric:

Enclosed please find a copy of the Draft Environmental Assessment for a Joint Task Force Six Proposed Action near Douglas, Cochise County, Arizona. The proposed project would consist of extending the existing land mat fence for a distance of two miles east of the Port of Entry (POE), installing 1.8 miles of permanent lighting, performing major road repairs and hydrological improvements for a distance of 4.0 miles east of the POE and 4.0 miles west of Whitewater Draw, and performing minor road improvements for a distance of 8.0 miles further west of Whitewater Draw.

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Mr. Glenn Bixler
U.S. Army Corps of Engineers
Fort Worth District
Attn: CESWF-EV-EE, Room 3A14
819 Taylor Street
Fort Worth, Texas 76102-0300

Should you need additional information or have any questions, please feel free to contact me at (512) 329-0031 or Mr. Bixler at (817) 978-3815.

Sincerely,
Ecological Communications Corporation

Jill S. Madden
Vice President

901 S. MoPac Expy., Barton Oaks Plaza Two, Suite 170
Austin, Texas 78746

Tel: (512) 329-0031 Fax: (512) 329-0096

ECOLOGICAL COMMUNICATIONS CORPORATION
Environmental Services

December 1, 2000

Mr. Brian Gerber
OSJA FORSCOM
1301 Anderson Way SW
Fort McPherson, GA 30330-1096

Dear Mr. Gerber:

Pursuant to instruction from Mr. Milton Blankenship with the Joint Task Force Six (JTF-6) Operation at Fort Bliss, Texas, I have enclosed a copy of the Draft Environmental Assessment for a proposed action near Douglas, Cochise County, Arizona. Mr. Blankenship requests that this copy be forwarded to the environmental lawyer for review. The proposed project would consist of extending the existing land mat fence for a distance of two miles east of the Port of Entry (POE), installing 1.8 miles of permanent lighting, performing major road repairs and hydrological improvements for a distance of 4.0 miles east of the POE and 4.0 miles west of Whitewater Draw, and performing minor road improvements for a distance of 8.0 miles further west of Whitewater Draw.

The document will be available for a 30-day public review/comment period beginning Monday, November 27, 2000. It is available for public review in the Douglas Public Library located at 560 10th Street in Douglas, Arizona. Should you have any questions, please contact Mr. Blankenship at (915) 568-8253

Sincerely,
Ecological Communications Corporation

Jill S. Madden
Vice President

Enclosure

901 S. MoPac Expy., Barton Oaks Plaza Two, Suite 170
Austin, Texas 78746

Tel: (512) 329-0031 Fax: (512) 329-0096

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

September 14, 2000

Environmental Division

SUBJECT: Proposed JTF-6 Activities near Douglas, Arizona

Mr. James Garrison, State Historic Preservation Officer
ATTN: Ms. Joanne Miller
Arizona State Parks
1300 West Washington
Phoenix, Arizona 85007

Dear Mr. Garrison:

The U.S. Army Corps of Engineers, Fort Worth District, is preparing a Draft Supplemental Environmental Assessment (DSEA) for proposed construction activities by Joint Task Force Six (JTF-6) near Douglas, Arizona. The EA will supplement previous National Environmental Policy Act (NEPA) documents, which were prepared for JTF-6 projects in the Douglas, Arizona area in 1996, 1997, and 1998. The DSEA will address impacts specifically associated with activities of a military deployment to take place between October 2000 and March 2001 (actual date unknown at this time).

The proposed project would consist of the following construction activities:

- Installation of permanent lighting west of the Douglas Port of Entry (POE) for a distance of approximately 1 mile
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- Repair/improvements (scarify and re-compact) of border road for approximately 4 miles east of the POE and 4 miles west of White Water Draw
- Road maintenance (grading) for 8 miles continuing west from the road repair west of White Water Draw.
- Hydrological improvements (drainage repair) as needed on the 4 mile sections of road improvement east and west of the POE

The proposed action would occur adjacent to the U.S.-Mexico international border as shown in enclosed Figures 1 and 2, and would be located almost entirely within previously cleared or disturbed areas. Military personnel involved with this project

would bivouac in the Douglas area for the duration of the construction period. The action is proposed to begin in the fall or winter of 2000.

We are contacting your office to advise you of the proposed project. Archaeological surveys have been conducted in the past on this border segment. On those lands west of the POE which have known archaeological sites adjacent to the project area have been relocated and flagged so that at the proposed time for construction, archaeological monitoring will be accomplished so the known sites will not be impacted. One previously recorded archaeological site, F:11:82, is in an area located east of the POE and will be impacted by the proposed construction in that area. An archaeological reconnaissance has been accomplished, and the site relocated. You will receive a copy of the reconnaissance report shortly. Other issues regarding site F:11:82 will be dealt with in accordance with 36 CFR § 800.5(a) and we will be contacting you regarding the disposition of that site.

A copy of the draft EA will be forwarded to your office upon completion. We are expediting our documentation in order to accommodate requests for this action by federal, state and local officials and, therefore, request that if you wish to respond regarding this proposed work, please do so within 10 calendar days. If you require any additional information at this time please contact Ms. Patience Patterson of my staff at (817) 978-6390.

Sincerely,

William Fickel, Jr.
Chief, Environmental Division

Enclosures

Copy Furnished w/o enclosures:

Mr. Milton Blankenship
Joint Task Force-Six
Building 11603, Biggs Army Air Field
Fort Bliss, Texas 79918-0058

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

September 14, 2000

Environmental Division

SUBJECT: Proposed JTF-6 Activities Near Douglas, Arizona

Mr. Max Witkind, Archaeologist
Bureau of Land Management
Tucson Field Office
12661 East Broadway
Tucson, Arizona 85748

Dear Mr. Witkind:

The U.S. Army Corps of Engineers, Fort Worth District, is preparing a Draft Supplemental Environmental Assessment (DSEA) for proposed construction activities by Joint Task Force Six (JTF-6) near Douglas, Arizona. The EA will supplement previous National Environmental Policy Act (NEPA) documents, which were prepared for JTF-6 projects in the Douglas, Arizona area in 1996, 1997, and 1998. The DSEA will address impacts specifically associated with activities of a military deployment to take place between October 2000 and March 2001 (actual date unknown at this time).

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for the duration of the construction period. The action is proposed to begin in the fall or winter of 2000.

We are contacting your office to advise you of the proposed project. Archaeological survey has been conducted in the past on this border segment. On those lands west of the POE which are under your jurisdiction, the known archaeological sites will be relocated and flagged so that at the proposed time for construction, archaeological monitoring will be accomplished so the known sites will not be impacted.

A copy of the draft EA will be forwarded to your office upon completion. We are expediting our documentation in order to accommodate requests for this action by federal, state and local officials and, therefore, request that if you wish to respond regarding this proposed work, please do so within 10 calendar days. If you require any additional information at this time please contact Ms. Patience Patterson of my staff at (817) 978-6390.

Sincerely,

William Fickel, Jr.
Chief, Environmental Division

Enclosures

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

September 18, 2000

Environmental Division

SUBJECT: Proposed JTF-6 Activities Near Douglas, Arizona

Honorable Donald R. Antone, Governor
Gila River Indian Community Council
P.O. Box 97
Sacaton, AZ 85247

Dear Governor Antone:

We are contacting your office to advise you, and initiate consultation with the Tribe concerning this project.

The U.S. Army Corps of Engineers, Fort Worth District, is preparing a Draft Supplemental Environmental Assessment (DSEA) for proposed construction activities by Joint Task Force Six (JTF-6) near Douglas, Arizona. The EA will supplement previous National Environmental Policy Act (NEPA) documents, which were prepared for JTF-6 projects in the Douglas, Arizona area in 1996, 1997, and 1998. The DSEA will address impacts specifically associated with activities of a military deployment to take place between October 2000 and March 2001 (actual date unknown at this time).

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The proposed action would occur adjacent to the U.S.-Mexico international border as shown in enclosed Figures 1 and 2, and would be located almost entirely within previously cleared or disturbed areas. Military personnel involved with this project would bivouac in the Douglas area

for the duration of the construction period. The action is proposed to begin in the fall or winter of 2000.

If you, or the Tribal Historic Preservation Officer, or other tribal members have any knowledge of areas of particular interest to your tribe in the immediate project area or any particular sites, they may contact Ms. Patience Patterson of the Cultural Resources Section at (817) 978-6390 no later than September 25, 2000.

A copy of the draft EA will be forwarded to your office upon completion. We are expediting our documentation in order to accommodate requests for this action by federal, state and local officials and, therefore, request that if you wish to respond regarding this proposed work, please do so within 10 calendar days.

We will be happy to supply as much information as possible on the project and will be grateful for any information you may have regarding your concerns about the project area.

Sincerely,

Gordon M. Wells
Colonel, Corps of Engineers
District Engineer

Enclosures

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

September 18, 2000

Environmental Division

SUBJECT: Proposed JTF-6 Activities Near Douglas, Arizona

Honorable Delia Carlyle, Chairperson
Ak Chin Indian Community Council
42507 W. Peters & Nall Road
Maricopa, AZ 85239

Dear Chairperson Carlyle:

We are contacting your office to advise you, and initiate consultation with the Tribe concerning this project.

The U.S. Army Corps of Engineers, Fort Worth District, is preparing a Draft Supplemental Environmental Assessment (DSEA) for proposed construction activities by Joint Task Force Six (JTF-6) near Douglas, Arizona. The EA will supplement previous National Environmental Policy Act (NEPA) documents, which were prepared for JTF-6 projects in the Douglas, Arizona area in 1996, 1997, and 1998. The DSEA will address impacts specifically associated with activities of a military deployment to take place between October 2000 and March 2001 (actual date unknown at this time).

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for the duration of the construction period. The action is proposed to begin in the fall or winter of 2000.

If you, or the Tribal Historic Preservation Officer, or other tribal members have any knowledge of areas of particular interest to your tribe in the immediate project area or any particular sites, they may contact Ms. Patience Patterson of the Cultural Resources Section at (817) 978-6390 no later than September 25, 2000.

A copy of the draft EA will be forwarded to your office upon completion. We are expediting our documentation in order to accommodate requests for this action by federal, state and local officials and, therefore, request that if you wish to respond regarding this proposed work, please do so within 10 calendar days.

We will be happy to supply as much information as possible on the project and will be grateful for any information you may have regarding your concerns about the project area.

Sincerely,

Gordon M. Wells
Colonel, Corps of Engineers
District Engineer

Enclosures

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF

September 18, 2000

Environmental Division

SUBJECT: Proposed JTF-6 Activities Near Douglas, Arizona

Honorable Wayne Taylor, Jr., Chairman
Hopi Tribal Council
P.O. Box 123
Kykotsmovi, AZ 86039

Dear Chairman Taylor:

We are contacting your office to advise you, and initiate consultation with the Tribe concerning this project.

The U.S. Army Corps of Engineers, Fort Worth District, is preparing a Draft Supplemental Environmental Assessment (DSEA) for proposed construction activities by Joint Task Force Six (JTF-6) near Douglas, Arizona. The EA will supplement previous National Environmental Policy Act (NEPA) documents, which were prepared for JTF-6 projects in the Douglas, Arizona area in 1996, 1997, and 1998. The DSEA will address impacts specifically associated with activities of a military deployment to take place between October 2000 and March 2001 (actual date unknown at this time).

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for the duration of the construction period. The action is proposed to begin in the fall or winter of 2000.

If you, or the Tribal Historic Preservation Officer, or other tribal members have any knowledge of areas of particular interest to your tribe in the immediate project area or any particular sites, they may contact Ms. Patience Patterson of the Cultural Resources Section at (817) 978-6390 no later than September 25, 2000.

A copy of the draft EA will be forwarded to your office upon completion. We are expediting our documentation in order to accommodate requests for this action by federal, state and local officials and, therefore, request that if you wish to respond regarding this proposed work, please do so within 10 calendar days.

We will be happy to supply as much information as possible on the project and will be grateful for any information you may have regarding your concerns about the project area.

Sincerely,

Gordon M. Wells
Colonel, Corps of Engineers
District Engineer

Enclosures

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

September 18, 2000

Environmental Division

SUBJECT: Proposed JTF-6 Activities Near Douglas, Arizona

Honorable Ivan Makil, President
Salt River Pima-Maricopa Indian Community Council
10005 E. Osborn
Scottsdale, AZ 85256

Dear President Makil:

We are contacting your office to advise you, and initiate consultation with the Tribe concerning this project.

The U.S. Army Corps of Engineers, Fort Worth District, is preparing a Draft Supplemental Environmental Assessment (DSEA) for proposed construction activities by Joint Task Force Six (JTF-6) near Douglas, Arizona. The EA will supplement previous National Environmental Policy Act (NEPA) documents, which were prepared for JTF-6 projects in the Douglas, Arizona area in 1996, 1997, and 1998. The DSEA will address impacts specifically associated with activities of a military deployment to take place between October 2000 and March 2001 (actual date unknown at this time).

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for the duration of the construction period. The action is proposed to begin in the fall or winter of 2000.

If you, or the Tribal Historic Preservation Officer, or other tribal members have any knowledge of areas of particular interest to your tribe in the immediate project area or any particular sites, they may contact Ms. Patience Patterson of the Cultural Resources Section at (817) 978-6390 no later than September 25, 2000.

A copy of the draft EA will be forwarded to your office upon completion. We are expediting our documentation in order to accommodate requests for this action by federal, state and local officials and, therefore, request that if you wish to respond regarding this proposed work, please do so within 10 calendar days.

We will be happy to supply as much information as possible on the project and will be grateful for any information you may have regarding your concerns about the project area.

Sincerely,

Gordon M. Wells
Colonel, Corps of Engineers
District Engineer

Enclosures

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

September 18, 2000

Environmental Division

SUBJECT: Proposed JTF-6 Activities Near Douglas, Arizona

Honorable Raymond Stanley, Jr., Chairman
San Carlos Tribal Council
P.O. Box 0
San Carlos, AZ 85550

Dear Chairman Stanley:

We are contacting your office to advise you, and initiate consultation with the Tribe concerning this project.

The U.S. Army Corps of Engineers, Fort Worth District, is preparing a Draft Supplemental Environmental Assessment (DSEA) for proposed construction activities by Joint Task Force Six (JTF-6) near Douglas, Arizona. The EA will supplement previous National Environmental Policy Act (NEPA) documents, which were prepared for JTF-6 projects in the Douglas, Arizona area in 1996, 1997, and 1998. The DSEA will address impacts specifically associated with activities of a military deployment to take place between October 2000 and March 2001 (actual date unknown at this time).

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b. Installation of permanent lighting east of the POE for a distance of 8 tenths of one mile
c. Construction of landing mat fence east of the POE for a distance of 1 mile, beginning at the terminus of the existing landing mat fence
d. Repair/improvements (scarify and re-compact) of border road for approximately 4 miles east of the POE and 4 miles west of White Water Draw
e. Road maintenance (grading) for 8 miles continuing west from the road repair west of White Water Draw.
f. Hydrological improvements (drainage repair) as needed on the 4-mile sections of road improvement east and west of the POE.

The proposed action would occur adjacent to the U.S.-Mexico international border as shown in enclosed Figures 1 and 2, and would be located almost entirely within previously cleared or disturbed areas. Military personnel involved with this project would bivouac in the Douglas area

for the duration of the construction period. The action is proposed to begin in the fall or winter of 2000.

If you, or the Tribal Historic Preservation Officer, or other tribal members have any knowledge of areas of particular interest to your tribe in the immediate project area or any particular sites, they may contact Ms. Patience Patterson of the Cultural Resources Section at (817) 978-6390 no later than September 25, 2000.

A copy of the draft EA will be forwarded to your office upon completion. We are expediting our documentation in order to accommodate requests for this action by federal, state and local officials and, therefore, request that if you wish to respond regarding this proposed work, please do so within 10 calendar days.

We will be happy to supply as much information as possible on the project and will be grateful for any information you may have regarding your concerns about the project area.

Sincerely,

Gordon M. Wells
Colonel, Corps of Engineers
District Engineer

Enclosures

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

September 18, 2000

Environmental Division

SUBJECT: Proposed JTF-6 Activities Near Douglas, Arizona

Honorable Edward Manuel, Chairman
Tohono O'odham Nation
P.O. Box 837
Sells, AZ 85634

Dear Chairman Manuel:

We are contacting your office to advise you, and initiate consultation with the Tribe concerning this project.

The U.S. Army Corps of Engineers, Fort Worth District, is preparing a Draft Supplemental Environmental Assessment (DSEA) for proposed construction activities by Joint Task Force Six (JTF-6) near Douglas, Arizona. The EA will supplement previous National Environmental Policy Act (NEPA) documents, which were prepared for JTF-6 projects in the Douglas, Arizona area in 1996, 1997, and 1998. The DSEA will address impacts specifically associated with activities of a military deployment to take place between October 2000 and March 2001 (actual date unknown at this time).

The proposed project would consist of the following construction activities:

a. Installation of permanent lighting west of the Douglas Port of Entry (POE) for a distance of approximately 1 mile
b. Installation of permanent lighting east of the POE for a distance of 8 tenths of one mile
c. Construction of landing mat fence east of the POE for a distance of 1 mile, beginning at the terminus of the existing landing mat fence
d. Repair/improvements (scarify and re-compact) of border road for approximately 4 miles east of the POE and 4 miles west of White Water Draw
e. Road maintenance (grading) for 8 miles continuing west from the road repair west of White Water Draw.
f. Hydrological improvements (drainage repair) as needed on the 4-mile sections of road improvement east and west of the POE.

The proposed action would occur adjacent to the U.S.-Mexico international border as shown in enclosed Figures 1 and 2, and would be located almost entirely within previously cleared or disturbed areas. Military personnel involved with this project would bivouac in the Douglas area

for the duration of the construction period. The action is proposed to begin in the fall or winter of 2000.

If you, or the Tribal Historic Preservation Officer, or other tribal members have any knowledge of areas of particular interest to your tribe in the immediate project area or any particular sites, they may contact Ms. Patience Patterson of the Cultural Resources Section at (817) 978-6390 no later than September 25, 2000.

A copy of the draft EA will be forwarded to your office upon completion. We are expediting our documentation in order to accommodate requests for this action by federal, state and local officials and, therefore, request that if you wish to respond regarding this proposed work, please do so within 10 calendar days.

We will be happy to supply as much information as possible on the project and will be grateful for any information you may have regarding your concerns about the project area.

Sincerely,

Gordon M. Wells
Colonel, Corps of Engineers
District Engineer

Enclosures

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF

September 18, 2000

Environmental Division

SUBJECT: Proposed JTF-6 Activities Near Douglas, Arizona

Honorable Dallas Massey, Sr., Chairman
White Mountain Apache Tribal Council
P.O. Box 700
Whiteriver, AZ 85941

Dear Chairman Massey:

We are contacting your office to advise you, and initiate consultation with the Tribe concerning this project.

The U.S. Army Corps of Engineers, Fort Worth District, is preparing a Draft Supplemental Environmental Assessment (DSEA) for proposed construction activities by Joint Task Force Six (JTF-6) near Douglas, Arizona. The EA will supplement previous National Environmental Policy Act (NEPA) documents, which were prepared for JTF-6 projects in the Douglas, Arizona area in 1996, 1997, and 1998. The DSEA will address impacts specifically associated with activities of a military deployment to take place between October 2000 and March 2001 (actual date unknown at this time).

The proposed project would consist of the following construction activities:

a. Installation of permanent lighting west of the Douglas Port of Entry (POE) for a distance of approximately 1 mile
b. Installation of permanent lighting east of the POE for a distance of 8 tenths of one mile
c. Construction of landing mat fence east of the POE for a distance of 1 mile, beginning at the terminus of the existing landing mat fence
d. Repair/improvements (scarify and re-compact) of border road for approximately 4 miles east of the POE and 4 miles west of White Water Draw
e. Road maintenance (grading) for 8 miles continuing west from the road repair west of White Water Draw.
f. Hydrological improvements (drainage repair) as needed on the 4 mile sections of road improvement east and west of the POE.

The proposed action would occur adjacent to the U.S.-Mexico international border as shown in enclosed Figures 1 and 2, and would be located almost entirely within previously cleared or disturbed areas. Military personnel involved with this project would bivouac in the Douglas area

for the duration of the construction period. The action is proposed to begin in the fall or winter of 2000.

If you, or the Tribal Historic Preservation Officer, or other tribal members have any knowledge of areas of particular interest to your tribe in the immediate project area or any particular sites, they may contact Ms. Patience Patterson of the Cultural Resources Section at (817) 978-6390 no later than September 25, 2000.

A copy of the draft EA will be forwarded to your office upon completion. We are expediting our documentation in order to accommodate requests for this action by federal, state and local officials and, therefore, request that if you wish to respond regarding this proposed work, please do so within 10 calendar days.

We will be happy to supply as much information as possible on the project and will be grateful for any information you may have regarding your concerns about the project area.

Sincerely,

Gordon M. Wells
Colonel, Corps of Engineers
District Engineer

Enclosures

APPENDIX F

Agency Coordination and Response Letters

ECOLOGICAL COMMUNICATIONS CORPORATION
DOCUMENTATION OF CONTACT

Person contacted: Mike Coffeen

Affiliation: U.S. Fish and Wildlife Service, Phoenix, New Mexico

Telephone number: (602) 242-0210 Date: Feburary 22, 2001 Time:3:00 p.m.

Purpose: To solicit comments regarding the JTF-6 Draft Environmental Assessment for the construction of landing mat fence, installation of permanent lighting fixtures, road and hydrological improvements, and road maintenance located near Douglas, Cochise County, Arizona.

Agency Comment from U.S. Fish and Wildlife Service:
Concerning the Draft Supplemental EA for the JTF-6 Proposed Fence, Lighting, Road Repair and Improvement Project for Douglas, Cochise County, AZ, I am in agreement that the impacts from this project will be insignificant for any listed species at the immediate project area of Douglas.

I do remain concerned that the increased interdiction efforts at Douglas and Naco, Arizona, will indirectly affect the traffic of illegals thru the riparian areas along the San Pedro River which contain a number of listed species and their habitats. I hope that in the near future we can start discussions with the land management agencies and the Border Patrol to address the situation on the San Pedro River.

Michael P. Coffeen
Wildlife Biologist, AESFO
602-242-0210(x251), fax-2513
mike_coffeen@fws.gov

Response from JTF-6: JTF-6 appreciates input and concurrence to this document from the U.S. Fish and Wildlife Service and appreciates their efforts in joint field visits (8 Nov 2000) and the review process. The intent of this project is not to indirectly affect any threatened or endangered species or their habitats and we always strive to protect the San Pedro River Valley during any project activities. JTF-6 recognizes the importance of the San Pedro River Basin and the concern for the concentration of listed species and their habitats in the area. We at JTF-6 are encouraged and interested in coordinating with the Bureau of Land Management (BLM), the U.S. Fish Wildlife Service (USFWL), and the U.S. Border Patrol (USBP) to address this situation along the San Pedro River.

Milton Blankenship
Environmental Specialist
Joint Task Force Six
(915) 568-8253
Milton.Blankenship@JTF6.bliss.army.mil

Jill S. Madden, Vice President
Ecological Communications Corporation
(printed name)

JSMadden
(Signature)

Advisory Council On Historic Preservation

The Old Post Office Building
1100 Pennsylvania Avenue, NW, #809
Washington, DC 20004

Reply to: 12136 West Bayaud Avenue, #330
Lakewood, Colorado 80226

January 21, 2001

Mr. William Fickel, Jr., Chief
Department of the Army
Fort Worth District, Corps of Engineers
P.O. Box 17300
Fort Worth, TX 76102-0300

REF: *JTF-6, Douglas Phase I/II Fence, Lighting, and Road Improvement Project, AZ.*

Dear Mr. Fickel:

On December 11, 2000, the Council received from you a Memorandum of Agreement (MOA) for the referenced project. In accordance with Section 800.6(b)(1) of the Council's regulations, "Protection of Historic Properties" (36 CFR Part 800), the Council acknowledges receipt of the MOA, along with the supporting project documentation, executed by the Corps of Engineers and the Arizona State Historic Preservation Officer.

The filing of the MOA completes the requirements of Section 106 of the National Historic Preservation Act and the Council's regulations. Please provide copies of the signed document to all consulting parties for their records.

If we can be of any additional assistance, please contact me at (303) 969-5110, or by eMail at astanfill@achp.gov

Sincerely,

Nancy Kochan
for

Alan Stanfill
Program Analyst
Western Office of Planning and Review

Arizona® State Parks

Jane Dee Hull
Governor

State Parks
Board Members

Chair
Vernon Roudebush
Safford

Walter D. Armer, Jr.
Benson

Suzanne Pfister
Phoenix

Joseph H. Holmwood
Mesa

John U. Hays
Yarnell

Sheri J. Graham
Sedona

Michael E. Anable
State Land
Commissioner

Kenneth E. Travous
Executive Director

Arizona State Parks
1300 W. Washington
Phoenix, AZ 85007

Tel & TTY: 602.542.4174
www.pr.state.az.us

800.285.3703
from (520) area code

General Fax:
602.542.4180

Director's Office Fax:
602.542.4188

January 3, 2001

Blaine W. Hyten
Colonel, U.S. Air Force
Chief of Staff
Joint Task Force Six
Fort Bliss, TX 79918-0058

RE: Memorandum of Agreement;
Phase I/II Fence, Lighting, and Road Improvement Project, Douglas, AZ
Joint Task Force Six
SHPO-2000-2317 (4493)

Dear Colonel Hyten:

Enclosed is the original Memorandum of Agreement (MOA) for the conduct of archaeological investigations at AZ FF:11:82(ASM) as mitigation for the adverse effects of the above referenced project. James Garrison, Arizona State Historic Preservation Officer signed the MOA on January 3, 2001. The document should be filed with the Advisory Council according to 36 CFR § 800.6(b)(iv).

We appreciate your continuing cooperation with our office in complying with the requirements of the National Historic Preservation Act. Please contact me at (602) 542-7142 or by e-mail at jmiller@pr.state.az.us if you have any questions or concerns.

Sincerely,

Jo Anne Miller
Compliance Specialist/Archaeologist
State Historic Preservation Office

Enclosure

Cc: Patience Patterson
U.S. Army Corps of Engineers
P. O. Box 17300
Fort Worth, Texas 76102-0300 ((with enclosure)

MEMORANDUM OF AGREEMENT
BETWEEN JOINT TASK FORCE-SIX AND THE
ARIZONA STATE HISTORIC PRESERVATION OFFICE
FOR RECOVERY OF SIGNIFICANT INFORMATION
FROM ARCHEOLOGICAL SITE AZ FF:11:82 (ASM)
WITHIN THE JOINT TASK FORCE-SIX PHASE I/II
FENCE, LIGHTING AND ROAD IMPROVEMENT PROJECT
DOUGLAS, ARIZONA

Whereas, in accordance with 36 CFR Part 800, Department of Defense, Joint Task Force-Six (JTF-6) acknowledges and accepts the advice and conditions outlined in the Council's "Recommended Approach for Consultation on the Recovery of Significant Information from Archeological Sites," published in the Federal Register on May 18, 1999; and

Whereas, the U.S. Army Corps of Engineers, Fort Worth District (FWCOE), is acting on behalf of Joint Task Force Six in this proposed undertaking, JTF-6 has invited FWCOE to be a concurring party to this agreement; and

Whereas, JTF-6 and AZ SHPO agree that recovery of significant information from the archeological site listed above may be done in accordance with the published guidance; and

Whereas, JTF-6 has prepared a Historic Properties Treatment Plan (Data Recovery Plan for AZ FF:11:82 (ASM)) in consultation with the Arizona State Historic Preservation Office (SHPO) to resolve the adverse effects of the Undertaking; and

Whereas, JTF-6 and AZ SHPO agree that it is in the public interest to expend funds to implement this project through the recovery of significant information from archeological sites to mitigate the adverse effects of the project; and

Whereas, JTF-6 and AZ SHPO agree that Native American Tribes that may attach religious or cultural importance to the affected property have been consulted and have raised no objection to the work proposed; and

Whereas, to the best of our knowledge and belief, no human remains, associated or unassociated funerary objects or sacred objects, or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (25 U.S.C. 3001), are expected to be encountered in the archeological work;

Now, therefore, Joint Task Force-Six shall ensure that the following terms and conditions, including the appended Archeological Data Recovery Plan, will be implemented in a timely manner and with adequate resources in compliance with the National Historic Preservation Act of 1966 (16 U.S.C. 470).

STIPULATIONS

A. JTF-6 will ensure that all archaeological reports resulting from actions pursuant to this MOA are submitted in draft to the SHPO for review and comment. SHPO will have 30 days following receipt of the draft report to submit any comments to JTF-6. JTF-6 will modify the draft report in accordance with any comments received, and will provide a copy of the final archaeological report to SHPO and pertinent Native American tribes upon completion. Failure of SHPO to comment within the review time frame specified herein (thirty (30) days) shall be deemed by JTF-6 to constitute acceptance of the draft report and shall not preclude JTF-6 from issuing the report in final form. If JTF-6 objects to revising the draft report in accordance with SHPO comments, JTF-6 will proceed in accordance with Stipulation E, below, pertaining to the resolution of disputes.

B. The Data Recovery Plan is consistent with the Secretary of the Interior's Standards and Guidelines for Archaeological Documentation (48 FR 44734-37) and takes into account the Advisory Council on Historic Preservation (the Council) guidance, "Recommended Approach for Consultation on Recovery of Significant Information From Archaeological Sites", effective as of June 17, 1999.

C. JTF-6 will ensure, following final report acceptance, the report, project records, photographs, maps, filed notes, nonartifactual samples, and reports will be submitted to the Arizona State Museum (ASM) for curation. Any artifacts resulting from this archaeological data recovery project will be curated at ASM, unless the private landowner wishes to keep the collection.

D. The signatories shall accomplish modification, amendment, or termination of this agreement as necessary in the same manner as the original agreement.

E. The signatories shall resolve disputes regarding the completion of the terms of this agreement. If the signatories cannot agree regarding a dispute, any one of the signatories may request the participation of the Council to assist in resolving the dispute.

F. If either JTF-6 or the SHPO believes that the terms of this MOA cannot be carried out, that party shall immediately consult with the other to reconsider the terms of the MOA and to develop amendments in accordance with 36 CFR 800.6(c)(7) and 36 CFR 800.6(c)(8). If this MOA is not amended as provided for in this stipulation, either JTF-6 or the SHPO may terminate it, whereupon JTF-6 will proceed in accordance with 36 CFR 800(c)(8).

G. Unless terminated pursuant to Stipulation F, above, this MOA will be in effect through JTF-6's implementation of the stipulations of this MOA, and will terminate and have no further force or effect when JTF-6 in consultation with the SHPO, determines that the terms of this MOA have been fulfilled in a satisfactory manner. JTF-6 will provide the SHPO with written notice of its determination and of termination of this MOA.

H. A plan for the treatment of properties discovered during implementation of the Undertaking. If JTF-6 determines after construction has commenced that the Undertaking will affect a previously unidentified property that may be eligible for inclusion in the NRHP or affect a known historic property in an unanticipated manner, JTF-6 will address the discovery or unanticipated effect in accordance with 36 CFR § 800.13(b)(3). JTF-6 may assume the discovered property to be eligible for the NRHP, in accordance with 36 CFR § 800.13(c).

EXECUTION of this Memorandum of Agreement by JTF-6, Fort Worth District Corps of Engineers and the SHPO, its transmittal to the Council, and subsequent implementation of its terms, evidence that JTF-6 has afforded the Council an opportunity to comment on the Undertaking and its effects on historic properties, that JTF-6 has taken into account the effects on historic properties of implementation of the Douglas, AZ Phase I/II Fence, Lighting and Road Project and that JTF-6 has satisfied its responsibilities under Section 106 of the National Historic Preservation Act and applicable implementing regulations.

SIGNATORY PARTIES:

JOINT TASK FORCE-SIX

By: Blaine W. Hyten Date: 18 Dec 00
Blaine W. Hyten, Colonel, U.S. Air Force, Chief of Staff

ARIZONA STATE HISTORIC PRESERVATION OFFICER

By: James Garrison Date: 1/3/01
James Garrison, State Historic Preservation Officer

CONCURRING PARTY:

U.S. ARMY CORPS OF ENGINEERS, FORT WORTH DISTRICT

By: Gordon M. Wells Date: 15 Dec. 00
Gordon M. Wells, Colonel, District Engineer

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

OFFICE OF THE COMMISSIONER
UNITED STATES SECTION

DEC 27 2000

Mr. William Fickel, Jr.
Chief, Environmental Division
Department of the Army
Fort Worth District, Corps of Engineers
P.O. Box 17300
Fort Worth, Texas 76102-0300

Dear Mr. Fickel:

Thank you for the opportunity to review and comment on the November 2000 Draft Environmental Assessment (EA) for the proposed Joint Task Force Six (JTF-6) Fence, Lighting, Road Repair, and Improvement Project near Douglas, Cochise County, AZ. The draft EA states that the proposed action consists of: 1) installation of 1.8 miles of permanent lighting east and west of the Douglas, AZ port of entry (POE); 2) construction of a 2-mile extension of the existing landing mat fence located east of the POE; 3) repair and improvements to 4 miles of existing dirt roads east of the POE and 4 miles west of Whitewater Draw; 4) hydrological improvements (drainage repair) as needed in the 4-mile sections of road improvements east and west of the POE; 5) maintenance (grading) of 8 miles of roads west of the POE, past the road repair segment; and 6) establishment of one or two borrow areas to provide clean fill materials. It is stated that the proposed work will be located adjacent to the U.S./Mexico international border almost entirely within previously cleared or disturbed areas.

The draft Finding of No Significant Impact (FONSI) and the executive summary state that there would be no significant areas of environmental concern associated with the above proposed actions, including "installation of the vehicle barriers." Please clarify whether construction of vehicle barriers is proposed with this project or if this statement applies to the landing mat fence. Upon review of Figure 3.0, using the scale provided, it appears that the road improvements will involve more than 4 miles east and west of the POE. Please verify whether 4.0 miles or approximately 6.5 miles east of the POE will be repaired/improved; and whether 4.0 miles or approximately 5.25 miles west of Whitewater Draw will be repaired/improved. This comment also applies to the identified hydrological drainage improvements. It also appears that the road maintenance will be continued for approximately 9.25 miles past the road repair segment west of Whitewater Draw, rather than 8.0 miles. If necessary, please recalculate the acreage/surface area of disturbed vegetation for these proposed activities. Please identify and provide information on the location(s) of the one or two proposed borrow areas. We have provided a copy of revised EPA Form 3510-6 (attachment 1) for your information in the preparation of the Notice of Intent (NOI) for Construction Activity and the Stormwater Pollution Prevention Plan(SWPPP).

The United States Section of the International Boundary and Water Commission, United States and Mexico (USIBWC), observes that the proposed constructed works have the potential to negatively impact on our duty to access, maintain, and utilize the international boundary monuments in the Douglas area. The USIBWC is charged with these duties through various treaties and agreements which are currently in force between the United States and Mexico. The proposed works are located in the vicinity of International Boundary Monuments No. 84, 84A, 85, 85A, 86, 87, and 88. The proposed works must not affect the permanence (disturb the foundations) of existing boundary monuments nor impede access for their maintenance. In addition, the proposed construction must allow for "line of sight" visibility between each of the boundary monuments.

The USIBWC therefore requests that engineering drawings be submitted to the USIBWC for review and approval prior to beginning the proposed fence construction, which show the location of the fence in relation to the international boundary and the boundary monuments. This drawing should reflect the USIBWC requirement that all structures be offset from the international boundary by a minimum of 2 feet, and maintain a clear line-of-sight between affected boundary monuments. Additionally, all structures constructed adjacent to the international monuments must maintain a 10-foot off-set around the monument (attachment 2).

The USIBWC also observes that the proposed project will involve road improvements (scarifying and recompacting) and maintenance (grading), and construction of five low-water crossings and possibly one culvert associated with the road improvements east of the POE. Through agreements with the Mexican Section of the International Boundary and Water Commission (MxIBWC), the USIBWC is charged with ensuring that these proposed activities are accomplished in a manner that does not change historic surface runoff characteristics at the border. This requirement is intended to ensure that developments in one country cause no damage to lands in the other country. Accordingly, the USIBWC requires that engineering drawings and any necessary supporting calculations be submitted for review and approval prior to beginning work, which show that the proposed activities and construction will not change historic surface runoff characteristics. We also request that you assure that structures constructed along the U.S./Mexico border are maintained in an adequate manner and that liability issues created by these structures are addressed.

Please submit two copies of all drawings and supporting calculations necessary to demonstrate that no boundary monument or transboundary drainage impacts will occur to USIBWC Division Engineer James M. Robinson. After performing our review, the USIBWC must provide your submittal to the MXIBWC for their review. Should valid technical concerns be raised by either the USIBWC or the MXIBWC, you will be advised of these comments so that they may be addressed prior to beginning construction.

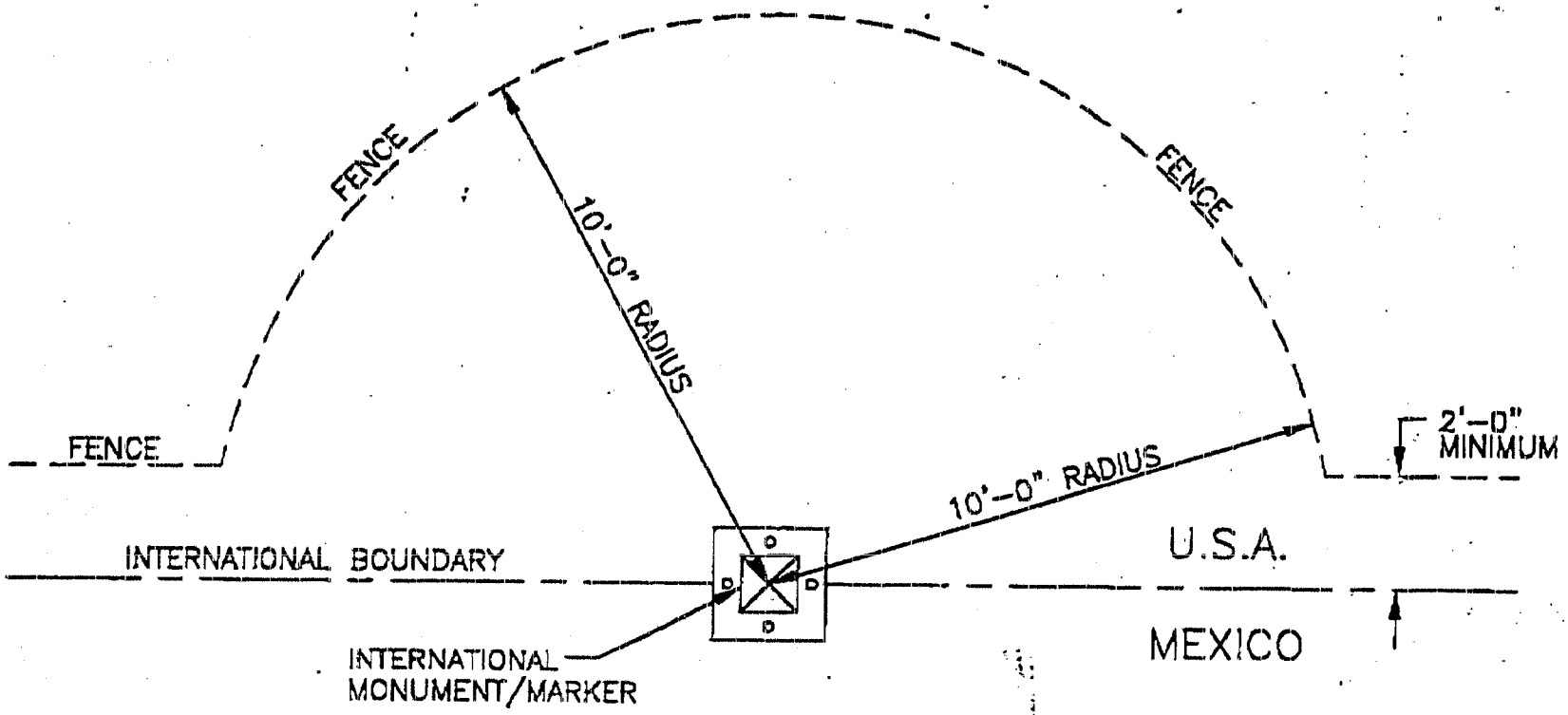
Thank you for the opportunity to review and comment on the draft EA for the proposed fence, lighting, road repair, and improvement project near Douglas, AZ. If you have any questions regarding these comments, please call me at (915) 832-4740.

Sincerely,

Sylvia A. Waggoner

Sylvia A. Waggoner
Division Engineer
Environmental Management Division

Enclosures: (2)
As stated



LOCATION OF FENCE NEAR INTERNATIONAL MONUMENTS/MARKERS

N.T.S.

NOTES:

1. FENCES AND ASSOCIATED GATES MUST BE CONSTRUCTED IN A WAY AS NOT TO INTERFERE WITH LINE-OF-SIGHT BETWEEN INTERNATIONAL MONUMENTS OR ACCESS TO THESE MONUMENTS.
2. FENCE OFFSETS FROM THE INTERNATIONAL BOUNDARY LINE MUST BE AT LEAST TWO FEET (2'); HOWEVER, LARGER OFFSET DISTANCES MAY BE REQUIRED AT SPECIFIC SITES.
3. THE CONSTRUCTION OF GOVERNMENT OR PRIVATE FACILITIES (BUILDINGS, UTILITIES, WALLS, STORM DRAINS, ETC.) IN THE VICINITY OF UNITED STATES/MEXICO INTERNATIONAL BOUNDARY MUST NOT DESTABILIZE THE INTERNATIONAL MONUMENTS OR MARKERS.

REV.	DESCRIPTION	RECOMM'D. BY	DATE

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO
UNITED STATES SECTION

INTERNATIONAL MONUMENTS

DRAWN C.R.		CHECKED C.M.	
DESIGNED C.R.		APPROVED C.V.	
1 OF 1	EL PASO, TEXAS	MAY 1999	25099

Figure 1.

SHELDON R. JONES
Director

JACK PETERSON
Associate Director

Arizona Department of Agriculture

1688 West Adams, Phoenix, Arizona 85007
(602) 542-3578 FAX (602) 542-0466

ENVIRONMENTAL SERVICES DIVISION

September 25, 2000

Mr. William Fickel, Jr.
Chief, Environmental Division
Department of the Army
Fort Worth District, Corps of Engineers
P.O. Box 17300
Fort Worth, Texas 76102-0300

Re: Proposed JTF-6 Activities – Douglas, Arizona

Dear Ms. Donahue:

The Arizona Department of Agriculture has reviewed the referenced letter dated September 12, 2000.

Based on the information provided, the projects are not expected to have any significant adverse impact on Arizona protected native plant species. The Department recommends that if any protected plants do exist on site, they be avoided or transplanted, preferably on site.

The Department is concerned with the potential of exotic invasive species becoming established and spreading to surrounding habitats. If any ground disturbance occurs along existing or new ROWs, the Department recommends ground disturbance is minimized and disturbed areas be replanted with native vegetation from local sources.

The further establishment of exotic invasive species, such as Lehmann lovegrass (*Eragrostis lehmanniana*) or buffelgrass (*Cenchrus ciliaris*), provide additional seed sources to spread these species. While some exotic invasive species may already exist within the ROW, the Department does not consider this a reason to avoid mitigation for long-term and cumulative impacts related to the proposed activities.

We appreciate the opportunity to review the proposed action. If you need additional information, please contact me at 602/542-3292, or e-mail at jim.mcginnis.agric.state.az.us.

Sincerely,

James McGinnis
Office of Review & Investigations
Native Plant & Cultural Resource Protection

THE HOPI TRIBE

Wayne Taylor, Jr.
CHAIRMAN

Phillip R. Quochytewa, Sr.
VICE-CHAIRMAN

September 25, 2000

Colonel Gordon M. Wells, District Engineer
Department of the Army
Fort Worth District, Corps of Engineers
P.O. Box 17300
Fort Worth, Texas 76102-0300

Dear Colonel Wells,

Thank you for your correspondence to Chairman Wayne Taylor, Jr., dated September 18, 2000, regarding the Corps of Engineers, Fort Worth District preparing a Draft Supplemental Environmental Assessment for proposed construction activities by Joint Task Force Six near Douglas, Arizona. In prehistoric times, Hopi clans migrated through the Douglas area. Therefore, the Hopi Tribe appreciates your solicitation our input and your efforts to address our concerns.

Because the proposed actions are located within previously cleared or disturbed areas, and the Hopi Cultural Preservation is unaware of areas of particular interest to the Hopi Tribe in this project area, we concur that this project is unlikely to have adverse effects on cultural resources in the project area, and that historic properties are unlikely to be adversely effected by this project.

We look forward to receiving a copy of the Draft Environmental Assessment. Thank you again for consulting with the Hopi Tribe.

Respectfully,

Leigh J. Kuwanwisiwma, Director
Cultural Preservation Office

xc: Office of the Chairman

P.O. BOX 123 — KYKOTSMOVI, AZ. — 86039 — (520) 734-3000

APPENDIX G

Storm Water Pollution Prevention Plan

STORM WATER POLLUTION PREVENTION PLAN

FOR

JTF-6 BORDER FENCE, LIGHTING, ROAD AND HYDROLOGICAL REPAIR/IMPROVEMENT PROJECT

COCHISE COUNTY
DOUGLAS, ARIZONA

October, 2000

OWNER CERTIFICATION FOR
DOUGLAS, ARIZONA
JTF-6 FENCE, LIGHTING, ROAD AND HYDROLOGICAL
REPAIRS /IMPROVEMENT PROJECT
COCHISE COUNTY, ARIZONA

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Date Certified

U.S. Border Patrol
Douglas Station

TABLE OF CONTENTS

ATTACHMENTS

LIST OF FIGURES

1.0 INTRODUCTION

The Douglas, Arizona (AZ) JTF-6 Lighting, Fence, Road and Hydrological Repair/Improvement Project is located in southern Cochise County, AZ. The proposed landing fence project would extend east approximately one mile past the existing landing mat fence east of the Port of Entry (POE). The proposed permanent lighting would extend approximately one mile west of the POE and 0.08 of a mil east of the POE. The road and hydrological repair/improvements would extend four miles east of the POE and four miles west of Whitewater Draw (west of the POE). The proposed road maintenance would begin at the end of the road repairs and extend another eight miles to the west. All proposed projects would be located adjacent to the U.S./Mexico International Border south of Douglas, AZ. Figure 1.0 shows the proposed permanent lighting section. Figure 2.0 shows the proposed landing mat fence portion, and Figure 3.0 shows the proposed areas for road and hydrological repair/improvements and road maintenance.

Owner Address: U.S. Border Patrol
Douglas Station
1051 Lawrence
Douglas, AZ 85607

1.1 Description

The Proposed Action would include the installation of permanent lighting west of the Douglas POE for a distance of approixmately 1.0 mile and east of the POE for a distance of eight-tenths of one mile (in two sections 0.3 and 0.5 mile as shown in Figure 1.0). The installation of lighting would allow for the illumination of the immediate border area, thus maximizing the USBP's ability to identify illegal entries during the night time hours, which is the period of greatest activity. The proposed light poles would continue out from the existing poles located within or near the city boundaries and extend aproximately 1.0 mile west and 0.8 of one mile east of the POE. Approximately 32 light poles would be installed as part of the Proposed Action. The light poles would be placed within the 60 foot ROW, north of the international boundary. The proposed poles would be concrete construction, approximately 40 to 45 feet in height. The poles would be placed below ground in a hole 6 to 10 feet deep, 16-18 inches in diameter and set in concrete to provide the necessary support for the struction. Illumination would be provided by four to six 1000-watt high-pressure sodium floodlights protected with armored backs and side light sheilds. To provide a continuous power source, poles would be placed approximately 300 to 400 feet apart.

The project would consist of construction of landing mat fence beginning at the terminus of the existing landing mat fence east of the POE and extending one mile further east (Figure 2.0). The height of the proposed landing mat fence would be approximately 12 feet with the top two feet angled 35 degrees to the north. The landing mat fence would be constructed of surplus military supplies, previously used for the construction of aircraft landing fields. The proposed fence would consist of one buried section of mat and six above ground sections placed horizontally. The fence would be approximately 12 feet in height, with the landing mat sections welded together and attached to- posts with angle iron. The proposed vehicle barrier

would also be constructed of surplus materials and would be a four-foot high barrier of vertical posts spaced approximately five to eight feet apart,topped with horizontally aligned railroad rails. Construction activities would require leveling of spoil material currently existing along the fence. This spoil material consists of soil and miscellaneous household waste. Graded soil along the fence would either be utilized during project completion, placed along the fence as an additional deterrent, or disposed of by a private contractor.

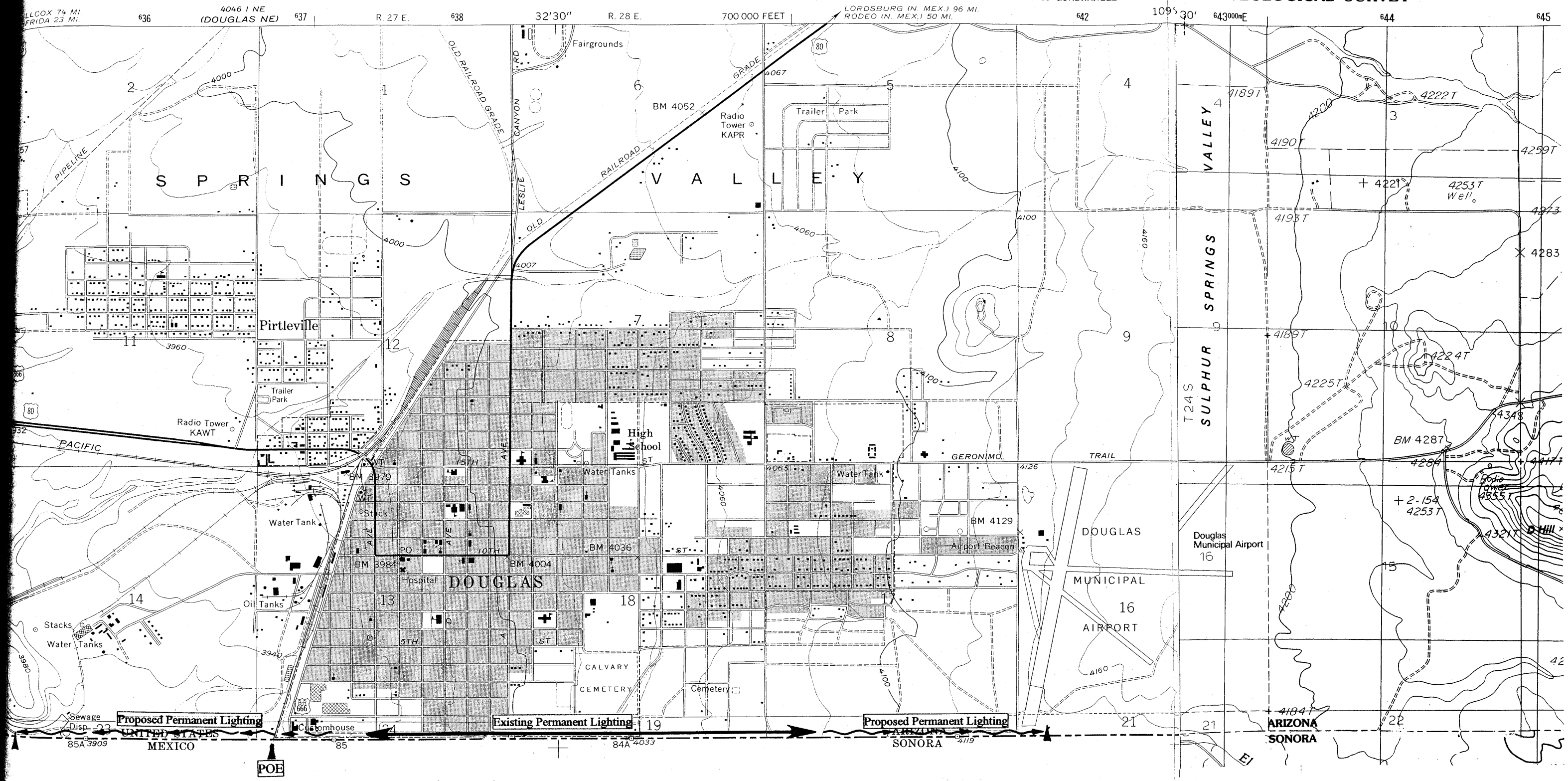
The Proposed Action also includes repair and/or improvements to existing drainages and border road for approximately 4 miles east o the POE and 4 miles west of Whitewater Draw (west of the POE) as shown in Figure 3.0. Hydrological improvements would include sloping the road surface to encourage sheet flow into roadside drainages to reduce erosion, repairing existing roadside drainages, which are severely eroded, and stabilizing those drainages with a concrete slurry or alternative material. Several low water crossings would be constructed on the segment east of the POE, in order to repair existing erosional problems. Additionall, one large wash area east of the POE may require the placement of a culvert to correct existing and prevent future erosion. Other considersationa may be the placement of culverts and gabions along wash areas.

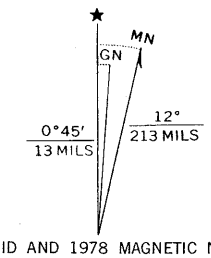
Road improvement activities may involve the scarification and recompaction of existing road materials. Other activities may involve removing rocks, leveling, and /or grading. Roads would remain at their exsiting width except at the location where the culvert would be constructed. Borrow areas would be established in the area of the Proposed Acion to provide needed fill material.

Road maintenance would be performed continuing for approximately 8 miles past the road repair segment west of Whitewater Draw. Road maintenance will be conducted as necessary in this section of the Proposed Project area. Activities under maintenance may include grading the existing roadbeds and filling with existing materials. If additional fill material is required beyond what is present within the existing roadbed, only compactable, clean material would be used from a local borrow area. The roads in this area would not be widened during any maintenance activities.

DOUGLAS QUADRANGLE
ARIZONA – COCHISE CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
SE/4 DOUGLAS 15' QUADRANGLE

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY





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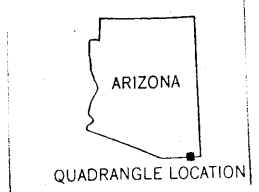

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 5 0 1 KILOMETER

Figure 1.0 Proposed Permanent Lighting East and West of the POE
Douglas, Cochise County, Arizona

DOUGLAS QUADRANGLE
ARIZONA – COCHISE CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
SE/4 DOUGLAS 15' QUADRANGLE

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

637 R 27 E 638 32'30" R 28 E 700 000 FEET LORDSBURG 80 MI. N. MEX. 96 W. RODEO 10 MI. N. MEX. 80 W. 642 109°30' 643000mE 644

Existing 1.3 miles of decorative fence

Existing 2.7 miles of landing mat fence

Proposed 1 mile of landing mat fence

Proposed 1 mile of landing mat fence

SCALE 1:24 000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 5 0 1 KILOMETER

ARIZONA

RANGLE LOCATION

Figure 2.0 Proposed Landing Mat Fence East of the POE
Douglas, Cochise County, Arizona

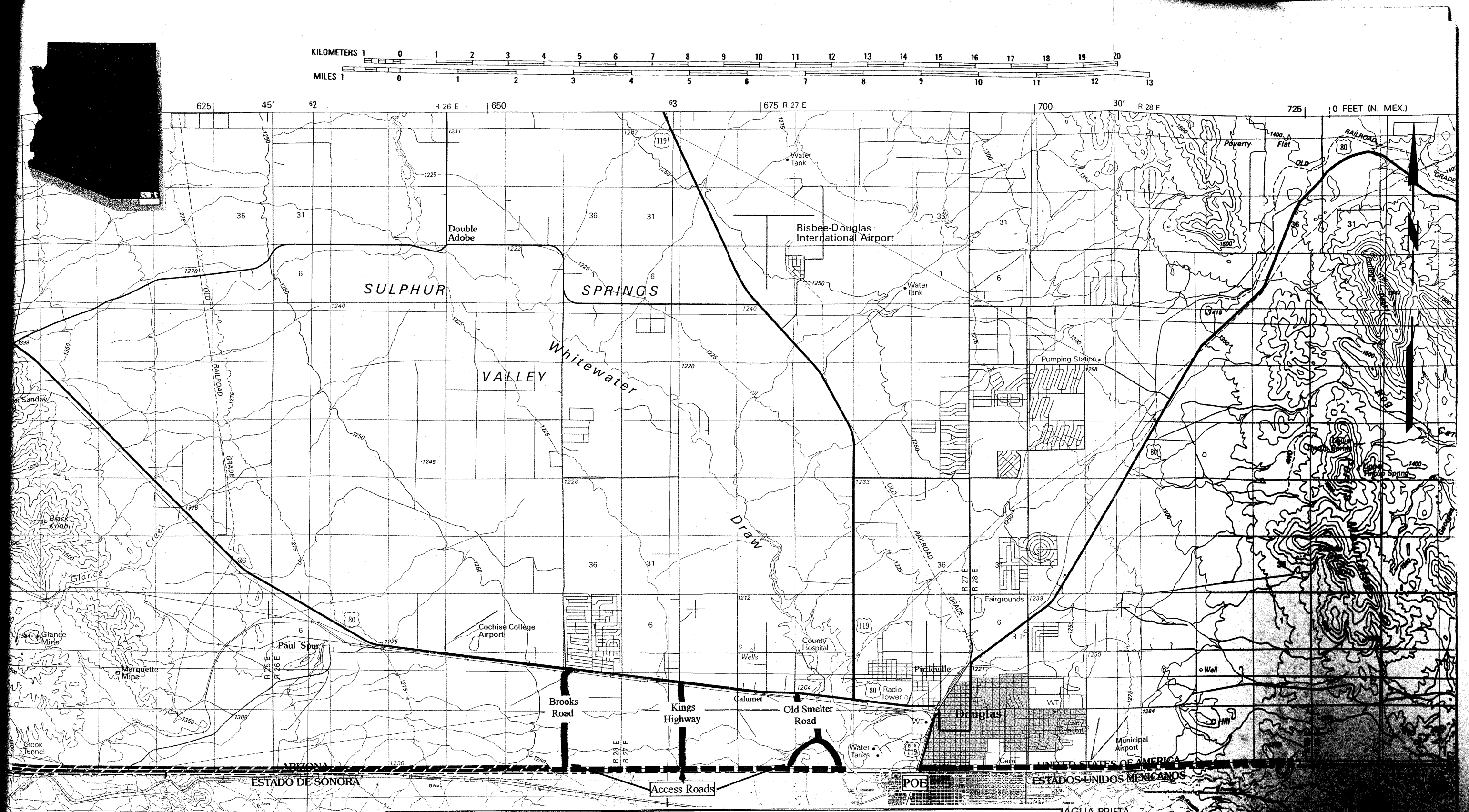

Figure 3.0 Proposed Road Repair and Improvements (scarify and recompact) and Hydrological Improvements (drainage repair) as necessary for 4 Miles East of the POE and 4 Miles West of Whitewater Draw

Proposed Road Maintenance (grading) 4-12 miles West of Whitewater Draw

Douglas, Cochise County, Arizona

1.1.1 Soils and Soil Properties

Southeast Arizona lies within the Basin and Range Physiographic Province and is characterized by intensely deformed and intruded strata within numerous relatively elevated and depressed fault blocks. The Basin and Range Province is subdivided into two physiographic sub-provinces, the Mexican Highlands and the Sonoran Desert. The proposed project site lies within the Mexican Highland sub-province.

The project area is located in the Douglas Basin, which contains approximately 750 square miles. The basin's alluvial valley is about 15 miles wide and 35 miles long. The valley slopes southward, with elevations ranging from 4,350 feet above mean sea level in the hills that form the basin's northern boundary to 3,900 feet above mean sea level along the International Boundary. The adjacent mountains have elevations ranging from 6,390 feet in the Perilla Mountains to 7,185 feet in the Swisshelm Mountains.

The main soil association in the proposed project area is the Tubac-Sonoita Grabe Association. Information on these soils was obtained from the Natural Resource Conservation Service (NRCS) in Tucson Arizona (NRCS, 1974). This association consists of well-drained soils on valley plains and wide floodplains in the Santa Cruz, Sulphur Springs, and San Simon valleys. The soils formed in mixed old and recent alluvium derived mostly from igneous rocks. Tubac and the similar Continental soils make up about 50 percent of the association. Sonoita soils are approximately 20 percent, and Grabe soils are 20 percent with minor soils making up approximately 10 percent.

Good yields of cotton, grain sorghum, alfalfa, small grain and vegetables are produced when the soils of this association are irrigated. The native vegetation is mostly grass in the higher elevations and desert shrubs and cacti at the lower elevations. Principal grasses are gramas, plains lovegrass, tobosa and annuals. Shrubs are mesquite, whitethorn, catclaw, burroweed, wolfberry, and cacti. Paloverde and ironwood occur at lower elevations. Under good management, these soils have fair to good potential for the production of livestock forage. Many areas are in poor condition from overgrazing due to their easy accessibility.

Factors limiting the potential of these areas for development of homesites and other community uses are slow permeability and clayey subsoils in the Tubac and Continental soils and the possibility of flooding of Grabe soils. Sonoita soils are well suited for community uses.

1.1.2 Site Area

The proposed landing mat fence would extend approximately one mile from the existing landing mat fence to the east. The construction zone for this proposed would be approximately 20 feet wide, causing a possible disturbance of approximately 2.42 acres. The majority of this area would include the existing roadway which has been previuosly disturbed. Installation of light and power poles would require the surface disturbance of approximately 400 square feet at each ole location (approximately 32 pole locations) or 0.30 ares of disturbance. The proposed permanent lighting is located in areas that are primarily open space and heavily disturbed within

the city limits. The proposed road and hydrological repairs and improvements are planned for approximately 8 miles (4 miles east of the POE and 4 miles west of Whitewater Draw). The majority of this area has been previously disturbed during originial road construction and road maintenance activities. The remaining project segment is proposed for 8 miles for road improvements to the west of the road repair segment in the western portion of the project. Again, the majority of this area has been previously disturbed from road construction or maintenance activities. Construction activities would use existing roads, however, a small amount of vegetation may be disturbed at borrow areas, turnouts, and staging areas. The turnouts to be used are existing, no new turnouts would be created. Borrow and staging areas would be selected prior to the start of any construction and would be located in previuosly disturbed areas, if ossible, in order to avoid or minimize any further impacts to vegetation.

1.1.3 Name of Receiving Waters

There are no receiving waters located in or adjacent to the proposed project site. Drainage from the proposed sites would be along the existing dirt road north of the fence line. It is likely that water generated from construction activities would evaporate before reaching a surface water source. As such, there is no specific point discharge location or any non-point water discharge location.

Improvements to the natural drainages and drainage patterns are proposed for this project. As such, no degradation to existing surface water quality is expected from project implementation. Any improvements such as a constructed crossing would not likely impact flow in the drainage patterns, as they would be constructed to allow water to flow over them. Additionally, there are no waters of the U.S. located within the project area; thus, a Section 404 permit for dredging or filling would not be required as a result of the Proposed Action.

1.1.4 Stormwater Storage Structures

No stormwater will be retained from the construction or implementation of the proposed projects; therefore, no storage structures will be required or utilized.

2.0 SEQUENCE OF MAJOR ACTIVITIES

The following major activities will be implemented to reduce sediment and other pollutants in storm water discharges:

- No sensitive areas containing unique habitats, rare and endangered plants and animals, and wetlands were identified prior to the start of construction. If any are discovered during construction activities, they will be staked and flagged as areas possibly not to be further disturbed by repair and/or construction activities.
- Those cultural resource site identified in the EA will be addressed and mitigated prior to the start of construction activities.
- Road construction or improvement and filling with commercially purchased soil would be accomplished using motorized equipment.
- Straw bale check dams and/or siltation fencing would be installed at points of water conveyance to reduce slope erosion on the fence construction areas and reduce sediment leaving the area. Figure 4 shows an example of erosion and sediment controls.

2.1 Controls

2.1.1 Erosion Sediment Controls

Storm Water Management: Road maintenance would include grading within existing road beds and filled with commercially purchased soil. This material would be compacted to provide an almost impenetrable surface to reduce susceptibility to erosion. Bales of straw and/or a siltation fence would be staked in low areas to control surface water and sedimentation at points of conveyance and to reduce velocity of waters discharged (Figure 4).

2.1.2 Waste Disposal Controls

Waste Materials: All non-hazardous construction waste materials (brush, paper, cloth, etc.) would be collected daily, stored in containers and disposed in an approved manner or at a state-approved landfill facility. The trash storage containers would meet all local and state solid waste management regulations. Containers would have secure, tight-fitting lids and will be emptied as needed. All personnel participating in construction activities would be instructed on the procedure for waste disposal.

Hazardous Waste: All hazardous waste would be transported, handled, stored, and used in strict accordance with local, state, and Federal regulations and manufacturers' recommendations.

Sanitary Waste: All sanitary waste would be collected in portable units by a licensed contractor and would be disposed at a state-approved facility in accordance with local and state regulations.

Off-Site Vehicle Tracking: Excess mud, dirt, or rock tracked on the public roadways would be removed daily. Excavated material would not be removed from the site.

2.2 Timing and Controls/Measures

All clearing, grubbing, and control measures for storm water runoff would be done contemporaneously with construction activities.

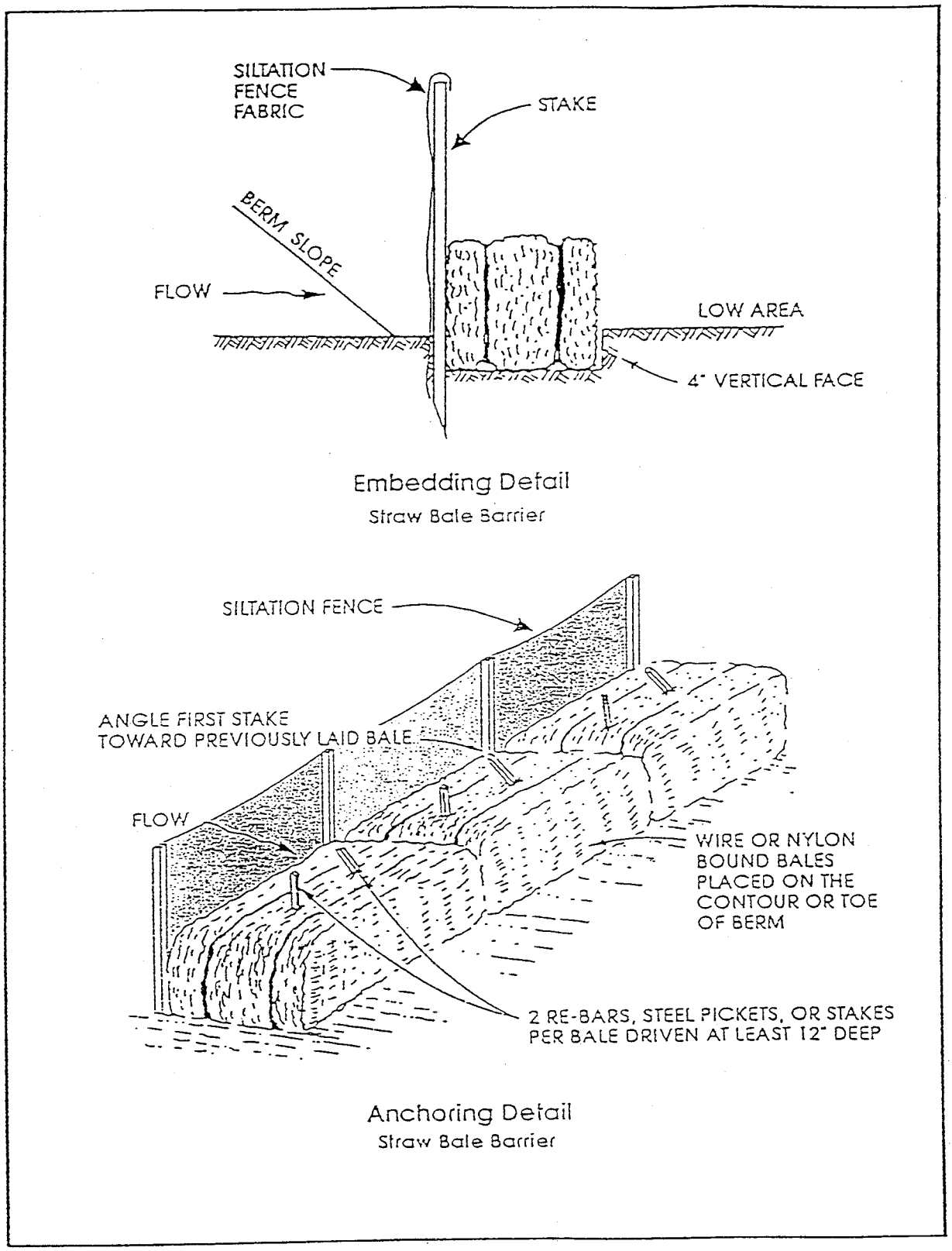

Figure 4.0. Erosion and Sediment Controls

3.0 MAINTENANCE AND INSPECTION PROCEDURES

A blank Notice of Intent (NOI) form is included as Attachment 1. This form is to be completed and submitted to the Environmental Protection Agency (EPA).

EPA
Storm Water Notice of Intent
P.O. Box 1251
Newington, VA 22122

A copy of this Plan should also be sent to the Storm Water Coordinator, Arizona Department of Environmental Quality; and to the local agency that approves the construction plans. The owner of the site is to submit the NOI prior to the commencement of construction. The completed form is to be inserted as Attachment 1 and is thereafter considered to be a part of this Storm Water Pollution Prevention Plan (SWPPP). Given that the annual rainfall is less than 20 inches, all pollution prevention measures would need to be inspected once a month to identify areas that might contribute to runoff, and evaluate whether the existing SWPPP measures are still adequate to reduce pollutant loadings (Attachment 2).

The inspector would thoroughly understand the requirements of the SWPPP and have a basic knowledge of engineering aspects on controlling storm water and reducing runoff pollution. Areas being regraded would be inspected for erosion and soil loss from the site. Discharge points will be inspected for signs of erosion or sediment associated with the discharge. Built up sediment will be removed when it has reached one-third the height of the siltation fence. Locations where vehicles enter and leave the site will be checked for signs of off-site sediment tracking. Best Management Practices (BMPs) and pollution control maintenance procedures will be inspected for adequacy. The SWPPP will be revised as necessary during the construction period (Attachments 2 and 3), and construction records will be maintained on the project site. Additionally, upon completion of the construction, a Notice of Termination must be submitted to both EPA and the Arizona Department of Environmental Quality (Attachment 4).

3.1 Inventory for Storm Water Pollution Prevention Plan

The following materials have the potential to be onsite during construction of the fence or road improvement activities:

- Diesel Fuel
- Hydraulic Fluid
- Gasoline
- Transmission Fluid
- Oil
- Marking Paint
- Lubricants

3.2 Spill Prevention

3.2.1 Best Management Practices

The following management practices would be implemented to reduce the risk of spills and accidental exposure of materials and substances to storm water runoff.

- Good Housekeeping: No fuel and/or maintenance materials would be stored on-site after working hours. All fuel, fluids, oil and lubricants would be stored aboard designated and specially manufactured service vehicles and removed from the site after working hours.

- Hazardous Materials Storage: All hazardous products would be stored in or aboard designated and specially manufactured service vehicles. The service vehicles would be present only during the time equipment is in operation and will be removed from the site after working hours.

Products would be kept in original sealed containers. Surplus materials would be removed daily after working hours.

3.2.2 Product-Specific Practices

The following product-specific practices would be implemented:

Petroleum Products: All vehicles would be stored, repaired, and refueled on site. All vehicles will be monitored for leaks during regularly scheduled, preventive maintenance actions. All products would be kept in original sealed containers during periods of use. All empty containers would be disposed in an approved manner. Spill containment areas would be established at staging areas throughout the construction project, and all equipment would be refueled and repaired within the staging areas. All spills would be promptly cleaned up and reported to applicable regulatory agencies. Equipment would be kept within the spill containment sites to prevent spilled material from reaching and polluting drainage ways. All personnel would be briefed on spill prevention, control, and clean-up procedures. Petroleum products would not be stored on site after working hours.

4.0 CERTIFICATION OF COMPLIANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS

The Storm Water Pollution Prevention Plan was prepared in accordance with guidelines published in the Federal Register, Volume 57, Number 175, September 9, 1992. After construction, an U.S. Environmental Protection Agency (USEPA) storm water permit for industrial operations would not be required.

ATTACHMENTS

ATTACHMENT NO. 1

NOTICE OF INTENT (NOI)
FOR CONSTRUCTION ACTIVITY

NPDES Form 3510-6

United States Environmental Protection Agency
Washington, DC 20460

Form Approved
OMB No. 2040-0086

Notice of Intent for Storm Water Discharges Associated with INDUSTRIAL ACTIVITY Under the Multi-sector NPDES General Permit

Submission of this completed Notice of Intent (NOI) constitutes notice that the entitiy in Section B intends to be authorized to discharge pollutants to waters of the United States, from the facility or site identified in Section C, under EPA's Storm Water Multi-sector General Permit (MSGP). Submission of the NOI also constitutes notice that the party identified in Section B of this form has read, understands, and meets the eligibility conditions of Part I of the MSGP; agrees to comply with all applicable terms and conditions of the MSGP; understands that continued authorization under the MSGP is contigent on maintaining eligibility for coverage, and that implementation of the permittee's pollution prevention plan is required two days after a complete NOI is mailed. In order to be granted coverage, all information required on this form must be completed. Please read and make sure you comply with all permit requirements, including the requirement to prepare and implement a storm water pollution prevention plan.

A. Permit Selection

Permit number assigned to your facility under the previous permit: |_|_|_|_|_|_|_|_|

New Permit Number (EPA Use Only) |_|_|R05|_|_|_|_|

B. Facility Operator Information

1. Name: |_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_| 2. Phone: |_|_|_|_|_|_|_|_|_|_|

3. Mailing Address: a. Street or P.O. Box: |_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|

b. City: |_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_| c. State: |_|_| d. Zip Code: |_|_|_|_|–|_|_|_|_|

C. Facility/Site Information

1. Facility/Site Name: |_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|

2. Location Address: a. Street: |_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|

b. City: |_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_| c. County: |_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|

d. State: |_|_| e. Zip Code: |_|_|_|_|–|_|_|_|_|

3.a. Latitude: |_|_|°|_|_|'|_|_|" b. Longitude: |_|_|°|_|_|'|_|_|"

4.a. Permit Applicant: ☐ Federal ☐ State ☐ Tribal ☐ Private ☐ Other public entity

b. Is the facility located on Indian Country Lands? ☐ Yes ☐ No

5. Does the facility discharge storm water into:

a. Receiving water(s)? ☐ Yes ☐ No If yes, name(s) of receiving water(s): |_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|

b. A municipal separate storm sewer system (MS4)? ☐ Yes ☐ No

If yes, name of the MS4 operator: |_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|

6. The 4-digit Standard Industrial Classification (SIC) codes or the 2-letter Activity Codes that best represent the principal products produced or services rendered by your facility and major co-located activities:

Primary: |_|_|_|_| Secondary (if applicable): |_|_|_|_|

7. Applicable sector(s) of industrial activity, as designated in Part 1.2.1 of the MSGP, that include associated discharges that you seek to have covered under this permit (choose up to three):

☐ Sector A	☐ Sector F	☐ Sector K	☐ Sector P	☐ Sector U	☐ Sector Z
☐ Sector B	☐ Sector G	☐ Sector L	☐ Sector Q	☐ Sector V	☐ Sector AA
☐ Sector C	☐ Sector H	☐ Sector M	☐ Sector R	☐ Sector W	☐ Sector AB
☐ Sector D	☐ Sector I	☐ Sector N	☐ Sector S	☐ Sector X	☐ Sector AC
☐ Sector E	☐ Sector J	☐ Sector O	☐ Sector T	☐ Sector Y	☐ Sector AD

8. Additional Facility/Site Requirements:

a. Based on the instructions provided in Addendum A of the MSGP, have the eligibility criteria for "listed species" and critical habitat been met? ☐ Yes ☐ No

b. Based on the instructions provided in Addendum B of the MSGP, have the eligibility criteria for protection of historic properties been met? ☐ Yes ☐ No

D. Certification

Do you certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted? Based on your inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, do you certify that the information submitted is, to the best of your knowledge and belief, true, accurate, and complete? Do you certify that you are aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations?

Print Name: |_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|

Signature: _____ Date: |_|_|_|_|_|_|

Instructions for Completing the Notice of Intent for Storm Water Discharges Associated with INDUSTRIAL ACTIVITY Under the Multi-sector General Permit

Who Must File a Notice of Intent?

Under the provisions of section 402(p) of the Clean Water Act (CWA) and regulations at 40 CFR Part 122, Federal law prohibits "point source" discharges of storm water associated with industrial activity to waters of the U.S. without a National Pollutant Discharge Elimination System (NPDES) permit. If you operate a facility which is described in Part 1.2.1. of the Multi-sector General Permit (MSGP) or if you have been designated as needing permit coverage for your storm water discharges by your NPDES permitting authority, and you meet the eligibility requirements in Part 1 of the permit, you may satisfy your CWA obligation for permit coverage by submitting a completed NOI to obtain coverage under the MSGP. If you have questions about whether you need a permit under the NPDES Storm Water Program, contact your NPDES permitting authority (i.e., your EPA Regional storm water coordinator or your State water pollution control agency).

One NOI must be submitted for each facility or site for which you are seeking permit coverage. Only one NOI need be submitted to apply for coverage for all of your activities at each facility (e.g., you do not need to submit a separate NOI for each type of industrial activity located at a facility or industrial complex, provided your storm water pollution prevention plan covers each area for which you are an operator). Finally, the NOI must be submitted in accordance with the deadlines established in Part 2.1 of the MSGP.

When to File the NOI Form

DO NOT FILE THE NOI UNTIL YOU HAVE OBTAINED A COPY OF THE MULTI-SECTOR GENERAL PERMIT. You will need it to determine your eligibility, prepare your storm water pollution prevention plan, and correctly answer all questions on the NOI form — all of which must be done before you can sign the certification statement on the NOI in good faith (and without risk of committing perjury).

If you have a new facility or are the new operator of an existing facility, this form must be postmarked at least 48 hours before you need permit coverage. If your facility was covered under the 1995 Multi-sector General Permit or if you are currently operating without a permit, see Part 2.1 of the MSGP for your deadlines. CAUTION: You must allow enough lead time to gather the information necessary to complete the NOI (especially that related to determining eligibility with regards to endangered species and historic properties) and prepare the pollution prevention plan required by Part 4 of the MSGP prior to submitting your NOI.

Where to File the NOI Form

NOIs must be sent to the following address (do not send Storm Water Pollution Prevention Plans (SWPPPs) to this address):

Storm Water Notice of Intent (4203)
U.S. EPA
1200 Pennsylvania Avenue, NW
Washington, DC 20460

(For overnight/express delivery of NOIs, add the phone number (202) 260-9541)

NOTE: While not currently available, EPA is exploring the possibility of offering the option to complete the NOI form electronically online via the Internet. If this option does become available, directions will be posted on EPA's web site. To check on the availability of the alternative Online NOI, please visit http://www.epa.gov/ow/sw. If the Online NOI is not available, you must file the NOI at the above address.

If your facility discharges through a municipal separate storm sewer system (MS4) that is permitted as a medium or large MS4 under the NPDES Storm Water Program, you must also submit a signed copy of the NOI to the operator of that MS4, in accordance with the deadlines established in Part 2.1 of the permit.

Completing the NOI Form

To complete this form, type or print, using uppercase letters, in the appropriate areas only. Please place each character between the marks (abbreviate if necessary to stay within the number of characters allowed for each item). Use one space for breaks between words. Please make sure you have addressed all applicable questions and have made a photocopy for your records before sending the completed form to the address above.

Section A. Permit Selection

You must indicate the NPDES storm water general permit under which you are applying for coverage. Find the generic permit "number" in Part 1.1 of the permit that covers the area where your facility is located. For example, if you are located in New Mexico (except Indian Country lands), the generic number would be NMR05*###. If you are located on Navajo lands in New Mexico, the generic permit number would be AZR05*##1. CAUTION: You must use the correct permit number or your permit coverage will be invalid since you are not located within the coverage area for that permit.

Section B. Facility Operator Information

1. Provide the legal name of the person, partnership, co-partnership, firm, company, corporation, association, joint stock company, trust, estate, governmental entity, or other legal entity that operates the facility or site described in this application. The name of the operator may or may not be the same as the name of the facility. The responsible party is the legal entity that controls the facility's operation, rather than the plant or site manager.
2. Provide the telephone number of the facility operator.
3. Provide the mailing address of the facility operator. Include the street address or P.O. Box, city, state, and zip code. All correspondence regarding the permit will be sent to this address, not the facility address in Section C.
4. Indicate the legal status of the facility operator as a Federal, State, Tribal private, or other public entity (other than Federal or State). This refers only to the operator, not the owner or the land the facility or site is located upon.

Section C. Facility/Site Information

1. Enter the official or legal name of the facility or site.
2. Enter the complete street address (if no street address exists, provide a geographic description [e.g., Intersection of Routes 9 and 55]), city county, state, and zip code. Do not use a P.O. Box.
3. Enter the latitude and longitude of the approximate center of the facility or site in degrees/minutes/seconds. Latitude and longitude can be obtained from U.S. Geological Survey (USGS quadrangle or topographic maps, by using a GPS unit, by calling 1-(888) ASK-USGS, by searching for your facility's address on several commercial "map" sites on the Internet, or by accessing EPA's web site at http://www.epa.gov/owm/sw/industry/index.htm and selecting Latitude and Longitude Finders under the Resources/Permit section.
4. Indicate whether the facility is located on Indian Country lands (e.g., a federally recognized reservation, etc.).
5. Indicate whether the facility or site discharges storm water into a receiving water(s) and/or a municipal separate storm sewer system (MS4). Enter the name(s) of the closest receiving water(s) and/or the MS4 (An MS4 is defined as a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that is owned or operated by a state, city, town, borough, county, parish, district, association, or other public body and is designed or used for collecting or conveying storm water.)
6. List your primary and secondary four 4-digit Standard Industrial Classification (SIC) codes or 2-character Activity Codes that best describe the principal products or services provided at the facility or site identified in Section C of this application. For industrial activities defined in 40 CFR 122.26(b)(14)(i)-(ix) and (xi) that do not have SIC codes that accurately describe the principal products produced or services provided, use the following 2-character Activity Codes:
   HZ = Hazardous waste treatment, storage, or disposal facilities, including those that are operating under interim status or a permit under subtitle C of RCRA [40 CFR 122.26(b)(14)(iv)];
   LF = Landfills, land application sites, and open dumps that receive or have received any industrial wastes, including those that are subject to regulation under subtitle D of RCRA [40 CFR 122.26(b)(14)(v)];
   SE = Steam electric power generating facilities, including coal handling sites [40 CFR 122.26(b)(14)(vii)];
   TW = Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage [40 CFR 122.26(b)(14)(ix)]; or
   Alternatively, if your facility or site was specifically designated by your NPDES permitting authority (EPA), enter "**AD**."

Section D. Certification

Certification statement and signature. (CAUTION: An unsigned or undated NOI form will prevent the granting of permit coverage.) Federal statutes provide for severe penalties for submitting false information on this application form. Federal regulations require this application to be signed as follows:

For a corporation: by a responsible corporate officer, which means:
(i) president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions for the corporation, or
(ii) the manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

For a partnership or sole proprietorship: by a general partner or the proprietor; or

For a municipal, State, Federal, or other public facility: by either a principal executive or ranking elected official.

Paperwork Reduction Act Notice

Public reporting burden for this certification is estimated to average 3.7 hours per certification, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose to provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding the burden estimate, any other aspect of the collection of information, or suggestions for improving this form, including any suggestions which may increase or reduce this burden to: Director, Office of Environmental Information Services, Collection Services Division (2823), USEPA, 1200 Pennsylvania Avenue, NW, Washington, DC 20460. Include the OMB control number of this form on any correspondence. Do not send the completed NOI form to this address.

ATTACHMENT NO. 2

INSPECTION AND MAINTENANCE REPORT FORM (RAINFALL EVENT)

STORM WATER POLLUTION PREVENTION

INSPECTION AND MAINTENANCE REPORT

Report to be completed:

- If the annual rainfall of an area is greater than 20 inches, inspection shall be inspected every 7 days and within 24 hours of a rainfall event of 0.5 inches or more; or
- If the annual rainfall of an area is less than 20 inches, inspection shall be inspected once a month.

INSPECTOR: _____ DATE: _____

INSPECTOR'S QUALIFICATIONS:

_____

_____

_____

_____

DAYS SINCE LAST RAINFALL: _____ AMOUNT OF LAST RAINFALL: _____

STABILIZATION MEASURES

AREA	DATE SINCE LAST DISTURBED	DATE OF NEXT DISTURBANCE	STABILIZED (YES/NO)	STABILIZED WITH	CONDITION

STABILIZATION REQUIRED:

_____

_____

_____

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

ATTACHMENT NO. 3

INSPECTION AND MAINTENANCE REPORT FORM (CHANGES)

INSPECTION AND MAINTENANCE REPORT
CHANGES

CHANGES REQUIRED TO THE POLLUTION PREVENTION PLAN:

_____

_____

_____

_____

REASONS FOR CHANGES:

_____

_____

_____

I certify under penalty of law that this document and all attachments were prepared under my direction of supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

SIGNATURE: _____ DATE: _____

ATTACHMENT NO. 4

NOTICE OF TERMINATION (NOT) FOR CONSTRUCTION

THIS FORM REPLACES PREVIOUS FORM 3510-7 (8-92)
Please See Instructions Before Completing This Form

Form Approved. OMB No. 2040-0086
Approval expires: 8-31-98

NPDES FORM

EPA

United States Environmental Protection Agency
Washington, DC 20460

Notice of Termination (NOT) of Coverage Under a NPDES General Permit for Storm Water Discharges Associated with Industrial Activity

Submission of this Notice of Termination constitutes notice that the party identified in Section II of this form is no longer authorized to discharge storm water associated with industrial activity under the NPDES program. ALL NECESSARY INFORMATION MUST BE PROVIDED ON THIS FORM.

I. Permit Information

NPDES Storm Water General Permit Number: _____

Check Here if You are No Longer the Operator of the Facility: ☐

Check Here if the Storm Water Discharge is Being Terminated: ☐

II. Facility Operator Information

Name: _____ Phone: _____

Address: _____

City: _____ State: _____ ZIP Code: _____

III. Facility/Site Location Information

Name: _____

Address: _____

City: _____ State: _____ ZIP Code: _____

Latitude: _____ Longitude: _____ Quarter: _____ Section: _____ Township: _____ Range: _____

IV. Certification

I certify under penalty of law that all storm water discharges associated with industrial activity from the identified facility that are authorized by a NPDES general permit have been eliminated or that I am no longer the operator of the facility or construction site. I understand that by submitting this Notice of Termination, I am no longer authorized to discharge storm water associated with industrial activity under this general permit, and that discharging pollutants in storm water associated with industrial activity to waters of the United States is unlawful under the Clean Water Act where the discharge is not authorized by a NPDES permit. I also understand that the submittal of this Notice of Termination does not release an operator from liability for any violations of this permit or the Clean Water Act.

Print Name: _____ Date: _____

Signature: _____

Instructions for Completing Notice of Termination (NOT) Form

Who May File a Notice of Termination (NOT) Form

Permittees who are presently covered under an EPA-issued National Pollutant Discharge Elimination System (NPDES) General Permit (including the 1995 Multi-Sector Permit) for Storm Water Dicharges Associated with Industrial Activity may submit a Notice of Termination (NOT) form when their facilities no longer have any storm water discharges associated with industrial activity as defined in the storm water regulations at 40 CFR 122.26(b)(14), or when they are no longer the operator of the facilities.

For construction activities, elimination of all storm water discharges associated with industrial activity occurs when disturbed soils at the construction site have been finally stabilized and temporary erosion and sediment control measures have been removed or will be removed at an appropriate time, or that all storm water discharges associated with industrial activity from the construction site that are authorized by a NPDES general permit have otherwise been eliminated. Final stabilization means that all soil-disturbing activities at the site have been completed, and that a uniform perennial vegetative cover with a density of 70% of the cover for unpaved areas and areas not covered by permanent structures has been established, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

Where to File NOT Form

Send this form to the the following address:

Storm Water Notice of Termination (4203)
401 M Street, S.W.
Washington, DC 20460

Completing the Form

Type or print, using upper-case letters, in the appropriate areas only. Please place each character between the marks. Abbreviate if necessary to stay within the number of characters allowed for each item. Use only one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. If you have any questions about this form, telephone or write the Notice of Intent Processing Center at (703) 931-3230.

Instructions - EPA Form 3510-7
Notice of Termination (NOT) of Coverage Under The NPDES General Permit for Storm Water Discharges Associated With Industrial Activity

Section I Permit Information

Enter the existing NPDES Storm Water General Permit number assigned to the facility or site identified in Section III. If you do not know the permit number, telephone or write your EPA Regional storm water contact person.

Indicate your reason for submitting this Notice of Termination by checking the appropriate box:

If there has been a change of operator and you are no longer the operator of the facility or site identified in Section III, check the corresponding box.

If all storm water discharges at the facility or site identified in Section III have been terminated, check the corresponding box.

Section II Facility Operator Information

Give the legal name of the person, firm, public organization, or any other entity that operates the facility or site described in this application. The name of the operator may or may not be the same name as the facility. The operator of the facility is the legal entity which controls the facility's operation, rather than the plant or site manager. Do not use a colloquial name. Enter the complete address and telephone number of the operator.

Section III Facility/Site Location Information

Enter the facility's or site's official or legal name and complete address, including city, state and ZIP code. If the facility lacks a street address, indicate the state, the latitude and longitude of the facility to the nearest 15 seconds, or the quarter, section, township, and range (to the nearest quarter section) of the approximate center of the site.

Section IV Certification

Federal statutes provide for severe penalties for submitting false information on this application form. Federal regulations require this application to be signed as follows:

For a corporation: by a responsible corporate officer, which means: (i) president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions, or (ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

For a partnership or sole proprietorship: by a general partner or the proprietor; or

For a municipality, State, Federal, or other public facility: by either a principal executive officer or ranking elected official.

Paperwork Reduction Act Notice

Public reporting burden for this application is estimated to average 0.5 hours per application, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate, any other aspect of the collection of information, or suggestions for improving this form, including any suggestions which may increase or reduce this burden to: Chief, Information Policy Branch, 2136, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460, or Director, Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.