Environmental Assessment for the U.S. Border Patrol Station and Sector Headquarters, El Paso, Texas

FINAL

Prepared for:
Department of Homeland Security
Customs and Border Protection
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EXECUTIVE SUMMARY

The Bureau of Customs and Border Protection (CBP) is the Federal agency responsible for enforcing the laws regulating the admission of aliens into the United States (U.S.). As part of CBP, the Office of Border Patrol is responsible for maintaining control of the borders and coastlines of the U.S. and its territories. The Border Patrol's mission is to prevent the entry of those who attempt to illegally enter or smuggle persons or contraband across the border by detection, interdiction and apprehension.

The Border Patrol is proposing to build a new Border Patrol Station (BPS) and future Sector Headquarters in El Paso, Texas. The proposed facilities would integrate various mission requirements, increase the efficiency of current operations, and provide infrastructure and facilities to meet the current and projected growth of the Border Patrol

Under the Proposed Action, the Border Patrol would construct a 45-acre compound in a less developed area of El Paso, Texas. The new station would cover approximately 60 percent of the 45 acres, with 150,000 square feet of offices and buildings. Other facilities would include a sally port, dog kennels, parking, seized vehicle temporary storage area, fuel island, wash station, 100-foot communication tower, indoor firing range, and a two-bay vehicle maintenance shop. Additional space would be required to accommodate the administrative offices associated with the proposed Sector Headquarters.

The no-action alternative is the only other viable alternative to the proposed new facilities. Under the no-action alternative, construction of the new Border Patrol Station and Sector Headquarters would not occur. Current space constraints would continue to impact the operation of the Border Patrol in El Paso. Additionally, there would not be enough room at the existing facilities to support the expected continual growth of Border Patrol operations. Although there would not be any significant environmental impacts as a result of the no-action alternative, the future mission and objectives of the Border Patrol could be compromised.

No significant adverse effects to the natural or human environment are expected upon implementation of the proposed action. The total project is expected to disturb a maximum 45 acres. Although, ground disturbance would be required, it will not significantly affect land use, transportation, hazardous materials or waste, biological resources, geology and soils, water resources, air quality, socioeconomics, environmental justice, noise, cultural resources, or aesthetics.

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ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit
AIRFA	American Indian Religious Freedom Act
BPS	Border Patrol Station
CAA	Clean Air Act
CBP	Customs and Border Protection
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO	carbon monoxide
dB	decibels
dBA	A-weighted decibels
EA	Environmental Assessment
EBS	Environmental Baseline Study
EO	Executive Order
EPCWID	El Paso District County Water Improvement District
FICON	Federal Interagency Committee on Urban Noise
HELP	Hydrologic Evaluation of Landfill Performance
INS	Immigration and Naturalization Service
lb/hr (yr)	pounds per hour (year)
mg/L	milligram per liter
MPE	maximum permissible exposure
mph	miles per hour
MSL	mean sea level
N/A	not applicable
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System

ACRONYMS AND ABBREVIATIONS (cont.)

NO_X	nitrogen oxides
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
O_3	ozone
PCI	per capita income
PM_{10}	particulate matter
ppm	parts per million
ROI	region of influence
SIP	State Implementation Plan
SO_X	sulfur radicals
TCEQ	Texas Commission on Environmental Quality
TWDB	Texas Water Development Board
tpy	tons per year
TSP	total suspended particulate
TXDOT	Texas Department of Transportation
U.S.	United States
USACE	U.S. Army Corps of Engineer
USBR	US Bureau of Reclamation
USDA	United States Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	U.S. Geological Survey
VOC	volatile organic compound

1. INTRODUCTION

The United States (U.S.) Customs and Border Protection (CBP) has the responsibility to regulate and control immigration into the country. In 1924, the U.S. Congress created the U.S. Border Patrol (Border Patrol) to be the enforcement agency for the CBP (formerly known as the U.S. Immigration and Naturalization Service [INS]). The Border Patrol's mission is the detection and prevention of illegal entry of aliens and goods into the country. The Border Patrol's primary responsibility is securing those areas between ports-of-entry. Patrol agents perform these duties along, and in the vicinity of, approximately 8,000 miles of U.S. borders. Agents patrol by automobile, boat, aircraft, horseback, snowmobile, motorcycle, bicycle, and on foot. The Border Patrol uses various facilities in their daily operations for the deterrence and detection of illegal trafficking and for processing apprehended aliens (U.S. Army 2000). The El Paso sector of the Border Patrol consists of 12 stations, six permanent checkpoints, and approximately 1,100 border agents. These agents are responsible for patrolling and securing 180 miles of land border and 109 miles of river border. These agents are also responsible for the successful implementation of multiple programs that support the agency's "Prevention through Deterrence" efforts. These programs include:

- K-9 Operations – 53 canines in fiscal year 2002 were responsible for the seizure of over $121 million worth of illegal narcotics destined for our neighborhoods;
- Train Check – one of the most dangerous modes of transportation used to gain entrance to the interior of the U.S.;
- Linewatch – surveillance of the border to prevent illegal entries;
- Signcutting – the ancient art of following foot tracks to apprehend illegal aliens;
- Bike Patrol – patrolling populated traffic areas with greater mobility and neighborhood interaction;
- Horse Patrol – patrolling remote areas of the border and supporting search and rescue efforts;
- Air Support – providing air support to agent on the ground; and
- Drug Smuggling – the detection and destruction of concealed illegal narcotics.

Additionally, the El Paso Sector has developed specialized units to meet the changing mission requirements of the agency. The most notable of these units include:

- Intelligence Unit – fully staffed unit critical to the sharing of intelligence information with other local, state, federal, and international agencies;

- Liaison Unit – working to further develop relations between the U.S. and Mexico;

- Search, Trauma, and Rescue Team – assisting with the search and rescue of lost aliens and hikers; and

- Special Response Team – protecting CBP property, restoring order, and conducting special operations.

All of these functions and specialty units are key components in securing our national borders and achieving the mission requirements defined by the CBP to meet the ever-changing international climate.

The Patrol Agents in El Paso have provided an invaluable service to the local community as well as to the region and nation. In 2002, over 1,300 felony and 800 misdemeanor prosecutions were obtained by agents in El Paso. Apprehension of illegal aliens in 2002 by Border Patrol agents exceeded 94,000 individuals. In the first half of 2003 alone, agents have apprehended 44,112 individuals. Other than Mexicans, the ethnic composition of the 2003 individuals were largely South American (38 percent), Central American (36 percent), Middle Eastern (7 percent), Asian (6 percent), and Caribbean (6 percent). A smaller proportion of the individuals apprehended were European, African, and Canadian. Additionally in 2002, El Paso agents seized over $190 million dollars worth of narcotics.

To continue to meet their mission requirements in El Paso, the CBP is proposing to construct a new Border Patrol Station (BPS) and Sector Headquarters. This Environmental Assessment (EA) was developed to evaluate and address the potential environmental impacts associated with the construction and operation of a new BPS and Sector Headquarters.

1.1 PURPOSE AND NEED FOR THE PROPOSED ACTION

Over the last several years, the CBP has experienced a significant increase in workload and mission requirements. To handle this additional workload, the agency has increased its workforce by approximately 50 percent. As the CBP workforce has increased, so has the agency's need for additional workspace and support equipment. The proposed action would resolve the workforce/workspace conflict for the Border Patrol in El Paso, Texas. The current BPS and Sector Headquarters are located at the intersection of Hawkins Boulevard and Montana Avenue in a heavily congested area of El Paso. The existing facility does not provide sufficient space for current and future Border Patrol operations. Commercial development on all sides of the current compound has prevented the Border Patrol from expanding on site. Under the proposed action, the Border Patrol would construct a 45-acre compound in a less developed area of El Paso. This new location is necessary to meet mission requirements, increase efficiency, and provide for the future growth of the Border Patrol.

1.2 DESCRIPTION OF THE PROPOSED PROJECT

1.2.1 Project Location

The city of El Paso lies at the farthest western extent of Texas in El Paso County (Figure 1-1). Just north-northwest of the city lies the Texas/New Mexico border. To the south-southwest of the city is Ciudad Juarez, Mexico. The city of El Paso serves the region as the main point-of-entry into the U.S. from Mexico. The population of the El Paso Metropolitan Statistical Area was estimated at 700,000 in December 1999, while Juarez, Mexico was estimated at approximately 1.5 million (USACE 2001). Between 1990 and 1995, El Paso County's population grew by 2.4 percent, and Cuidad Juarez grew by 2.8 percent (U.S. Army 2000).

1.2.2 Project Description

The new BPS would cover approximately 60 percent of the 45 acres, with 150,000 square feet of offices and buildings. These facilities would include offices, sally port, dog kennels, parking, seized vehicle temporary storage area, fuel island, wash station, 100-foot communication tower, indoor firing range, and a two-bay vehicle maintenance shop. Additional space would be required to accommodate the administrative offices associated with the Sector Headquarters. Under the proposed action the existing detention facilities would remain at their current locations at the Paso Del Norte Bridge and on Montana Avenue (El Paso District CBP Service Processing Center). The proposed facilities would be able to accommodate up to 130 short-term (4 to 8 hours) detainees. However, detention and processing of illegal aliens would be infrequent and supplemental to the existing facilities. The El Paso District CBP Service Processing Center would continue to detain, process, and deport illegal aliens at their existing location on Montana Avenue. There would be no long-term detention of illegal aliens at the proposed facilities.

Both sites were identified in a market analysis study performed by U.S. Army Corps of Engineer (USACE)–Albuquerque District as viable alternatives for the construction of the BPS and Sector Headquarters (Figure 1-1). The market analysis is included in Appendix E of this document. Site 1 consists of approximately 45 acres located on the southeastern corner of Castner Range (near the intersection of U.S. Highway 54 and Hondo Pass Road). Site 2 is a 45-acre parcel located at the northwest corner of the intersection of U.S. Highway 54 and McCombs Street. Both sites are located within the city limits of El Paso; however, Site 2 is the northern-most site and lies beyond the current extent of utilities. Site 1 is owned by the U.S. Department of Defense, U.S. Army (Fort Bliss), while Site 2 is held by the Public Service Board of El Paso.

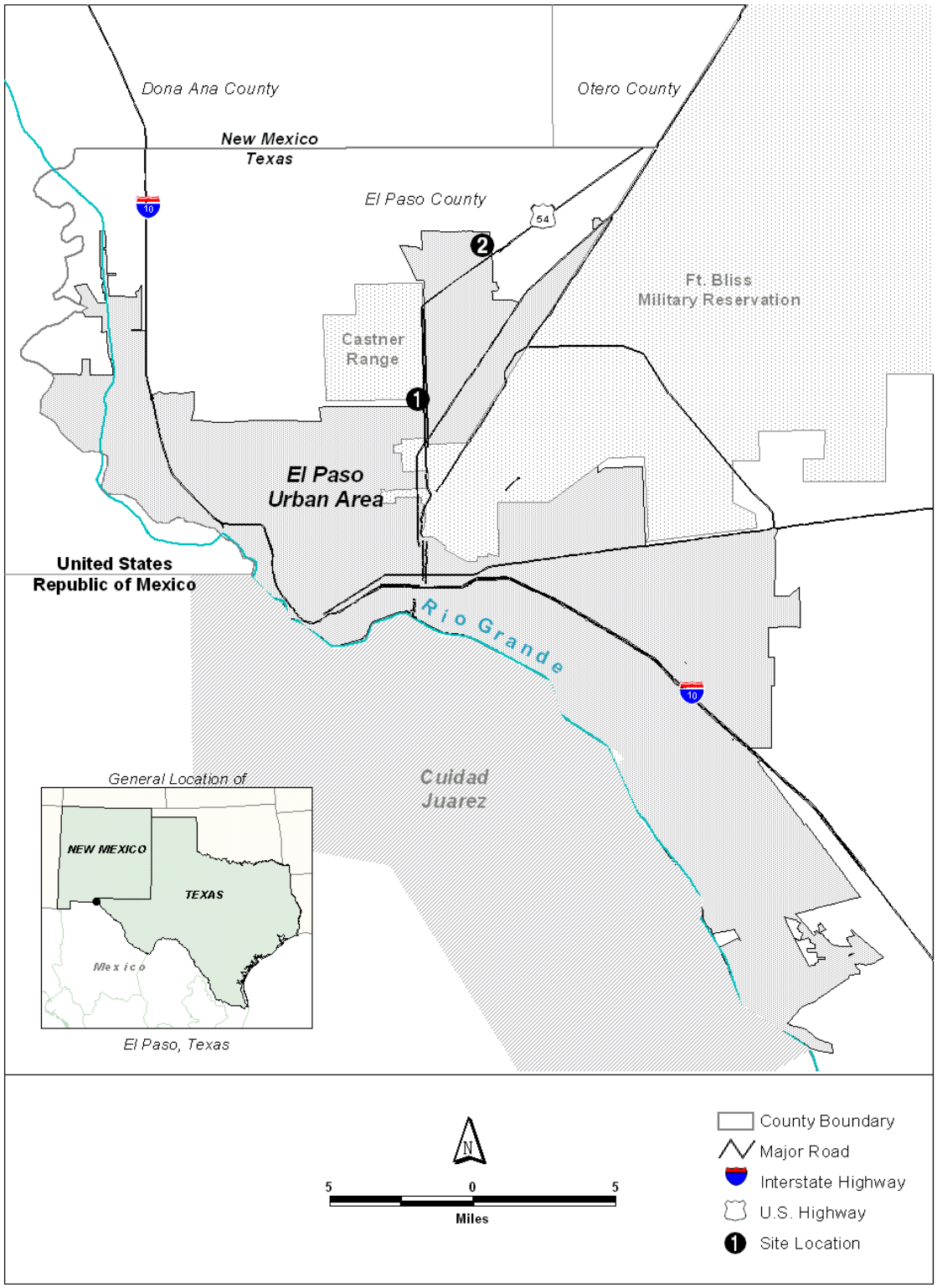

Figure 1-1
Project Location Map—El Paso, Texas

1.3 REGULATORY COMPLIANCE

This EA analyzes the potential environmental impacts associated with the implementation of the proposed action and each alternative in an effort to ensure compliance with the National Environmental Policy Act (NEPA) and CBP Procedures Relating to the Implementation of NEPA (28 CFR [Code of Federal Regulations] Part 61, Appendix A). This document will be sent to federal, state, and local agencies in accordance with the Interagency and Intergovernmental Coordination for Environmental Planning Process. The review process will be conducted to comply with the Intergovernmental Coordination Act of 1968 and Executive Order (EO) 12372. EO 12372 requires federal agencies to obtain and consider state and local views in implementing a proposed action or any reasonable alternatives. A list of the agencies and local organizations participating in this process is provided in Appendix A.

In addition to NEPA and those laws listed above, numerous federal environmental statutes, regulations, and EOs may apply to the proposed action. Adherence to these federal requirements, as well as to state and local regulations, is part of this EA. The following is a list of some of these regulatory guidelines.

- American Indian Religious Freedom Act of 1978
- Archaeological Resources Protection Act
- Bald Eagle Protection Act (Public Law 90-535)
- Clean Air Act (CAA)
- Clean Water Act
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act
- Endangered Species Act
- EO 11514, Protection and Enhancement of Environment Quality
- EO 11988, Floodplain Management
- EO 11990, Protection of Wetlands
- EO 12372, Intergovernmental Review of Federal Programs
- EO 12898, Environmental Justice
- EO 13007, Indian Sacred Sites
- Farmland Policy Protection Act (Appendix C)

- Federal Facilities Compliance Act
- Fish and Wildlife Coordination Act, as amended
- Hazardous Materials Transportation Act
- Intergovernmental Coordination Act
- National Historic Preservation Act
- Native American Graves Protection and Repatriation Act
- National Pollutant Discharge Elimination System (NPDES) Storm Water Pollution Prevention Plan
- Resource Conservation and Recovery Act
- Safe Drinking Water Act
- Solid Waste Disposal Act
- Toxic Substances Control Act
- Watershed Protection and Flood Protection Act
- Wetlands Conservation Act

1.4 PUBLIC SCOPING AND INVOLVEMENT PROCESS

As part of the environmental impact analysis process and as outlined in the Council on Environmental Quality (CEQ) regulations, the scoping process for this effort was initiated with the intent to gather public and governmental comments and input on the scope or range of environmental issues and concerns in connection with the proposed action and alternatives. Additionally, the scoping process encourages public participation in defining the extent of the environmental analysis. The scoping process for this EA was initiated on October 26, 2001 and continued through November 26, 2001. The process was implemented through the distribution of scoping letters. The scoping letters were sent to 24 private citizens and organizations, as well as governmental agencies. The list of individuals and organizations and a sample of the letter are provided in Appendix A of this document. All of the responses received during the scoping period were taken into consideration by the CBP and incorporated into the analysis portion of this effort. The numerous letters and responses received via email, facsimile, and mail are also included in Appendix A. To assist readers in locating the appropriate sections within the document that corresponds with the comment submitted, the specific section number(s) in this EA were noted in the margins of the response letters, where applicable. All comments received, regardless of the section notations, were taken under consideration (Appendix H).

As required by NEPA, the Draft EA was distributed to those individuals and organizations that either requested a copy of the document or provided substantive comments during the scoping process. The Draft EA was released to the public for review and comment on 7 September 2003. A Notice of Availability was published in the El Paso Times on 14 September 2003 (Appendix G). An extension of the end of the public comment period from 7 October 2003 to 14 October 2003 was published on 21 September 2003 in the El Paso Times as well (Appendix G). Additionally, in response to requests from private organizations in the local community an additional extension of the public comment period to 24 October 2003 was granted by CBP. All comments received during the entire public comment period (7 September 2003 through 24 October 2003) are included in Appendix H of this document. Additionally, a Comment Response Matrix has been added to the beginning of the Appendix. This matrix addresses all of the substantive comments received during the public comment period.

1.5 ORGANIZATION OF DOCUMENT

There are six chapters in this EA:

- Chapter 1 provides the purpose and need of the proposed action.
- Chapter 2 provides a description of the proposed alternatives.
- Chapter 3 describes the existing conditions of the affected environment at both sites identified.
- Chapter 4 provides the analysis of potential impacts to the resources and community characteristics as a result of the implementation of the proposed action and the no-action alternative.
- Chapter 5 provides the references cited.
- Chapter 6 provides a list of the preparers of this document.
- Appendix A provides the scoping letters received from the public.
- Appendix B provides the Cultural Resources Survey Report.
- Appendix C provides a copy of the Form AD-1006 Farmland Conversion Impact Rating Form.
- Appendix D provides the biological survey coordinates.
- Appendix E provides the site matrix and market analysis study performed by the USACE–Albuquerque District.

- Appendix F provides the questions, answers, and comments from the townhall meeting (26 June 2003).

- Appendix G provides the Notice of Availability.

- Appendix H provides comment resolution and copies of all correspondence received on the Draft EA during the comment period.

- Appendix I provides photographs of the Proposed Site (Site 1).

2. DESCRIPTION OF THE PROPOSED ALTERNATIVES

2.1 PROPOSED ACTION

The CBP is proposing to construct and operate a new BPS and Sector Headquarters to support their mission in El Paso, Texas. The new station and headquarters would provide an efficient and up-to-date working environment for up to 350 agents. The new station would encompass approximately 150,000 square feet and include such functions and features as administrative offices, vehicle and equipment maintenance and storage, temporary detention areas, and training facilities. Additional office space would be required for the Sector Headquarters.

Two sites were identified for the proposed action. Both sites are located on the eastern side of the Franklin Mountains within the city limits of El Paso. Site 1, or the proposed site, is located on the southeastern corner of the Castner Range at the northwestern corner of the intersection of U.S. Highway 54 and Hondo Pass Road. The proposed site would incorporate 45 acres between the current Texas Department of Transportation (TXDOT) compound and the Northgate Dam. Site 1 is currently held by the U.S. Department of Defense at Fort Bliss, and if selected, would be leased to the Department of Justice for CBP.

Site 2 is the northern-most site identified for the proposed action. Located at the northwest corner of the intersection of U.S. Highway 54 and McCombs Street, Site 2 would consist of a 600-foot by 2,600-foot parcel of land aligned primarily along McCombs Street. Site 2 is part of a larger parcel of land, and is currently owned by the city of El Paso (Public Service Board). If this site were selected, the CBP would have to purchase the property from the Public Service Board at fair market value.

Construction of the proposed BPS and Sector Headquarters would be completed within approximately twelve to eighteen months. This analysis focuses on the worst-case scenario of construction impacts that could occur on the entire site over this period time, as well as the worst-case scenario of potential impacts resulting from the operation of the facility.

2.1.1 Facility Description

NEPA requires that an environmental impact analysis be performed during the initial planning stages of a proposed federal action. As a result of this NEPA-defined time frame, a site-specific facility design has not been developed by the CBP for the El Paso BPS and Sector Headquarters. However, no matter which site is selected, the general specifications and design criteria established for all new stations would be consistent with CBP policy guidelines. The facilities would encompass approximately 150,000 square feet and possess the typical BPS functions and features. The functions and features that would be included in the new station and the approximate size of each are listed in Table 2-1. Specifications and features have not been defined for the Sector Headquarters at this time; however, the facility would be composed of office

space. Location-specific changes to CBP standards and requirements would be made to provide the most efficient operational compound possible. Site-specific design of the proposed BPS and Sector Headquarters would not be accomplished prior to the completion of this environmental impact analysis and the conclusion of the NEPA process.

Table 2-1
Typical Functions and Features of a New BPS

Feature	Function	Size*
Main Station	Provide administrative office space and public facilities	4,100
Special Operations	Provide operational space for unique functions and Border Patrol requirements	1,800
Patrol Command	Provide squad/muster room, communications, field support, and communications facilities	6,600
Training Facility	Provide training and exercise facilities	4,900
Detention Center	Provide temporary (short-term, 4 to 8 hours) and supplemental detention of illegal aliens	5,700
Maintenance and Physical Plant	Provide maintenance and physical plant support for the compound	2,700
Communications Tower	Approximately 100 feet high, mircrowave capable, frequencies 162 to 165 Megahertz	--
Vehicle Maintenance	Provide vehicle servicing and maintenance facilities	6,200
Kennels	Provide facilities to house and maintain canine support	800
Miscellaneous Support Facilities	Provide miscellaneous support facilities for trash and fuel storage	17,000
Indoor Firing Range	Provide training facilities for the agents	To Be Determined
Parking	Provide covered and uncovered, visitor and staff parking, and vehicle detention area	97,000
* All space given in square feet		

As part of the Border Patrol requirements, xeriscape landscaping would be implemented using native and low water-usage plants. These native plants would minimize the amount of water needed for maintaining the landscaping and would be more compatible with the surrounding environment. A conceptual or schematic layout of a typical BPS is shown in Figure 2-1.

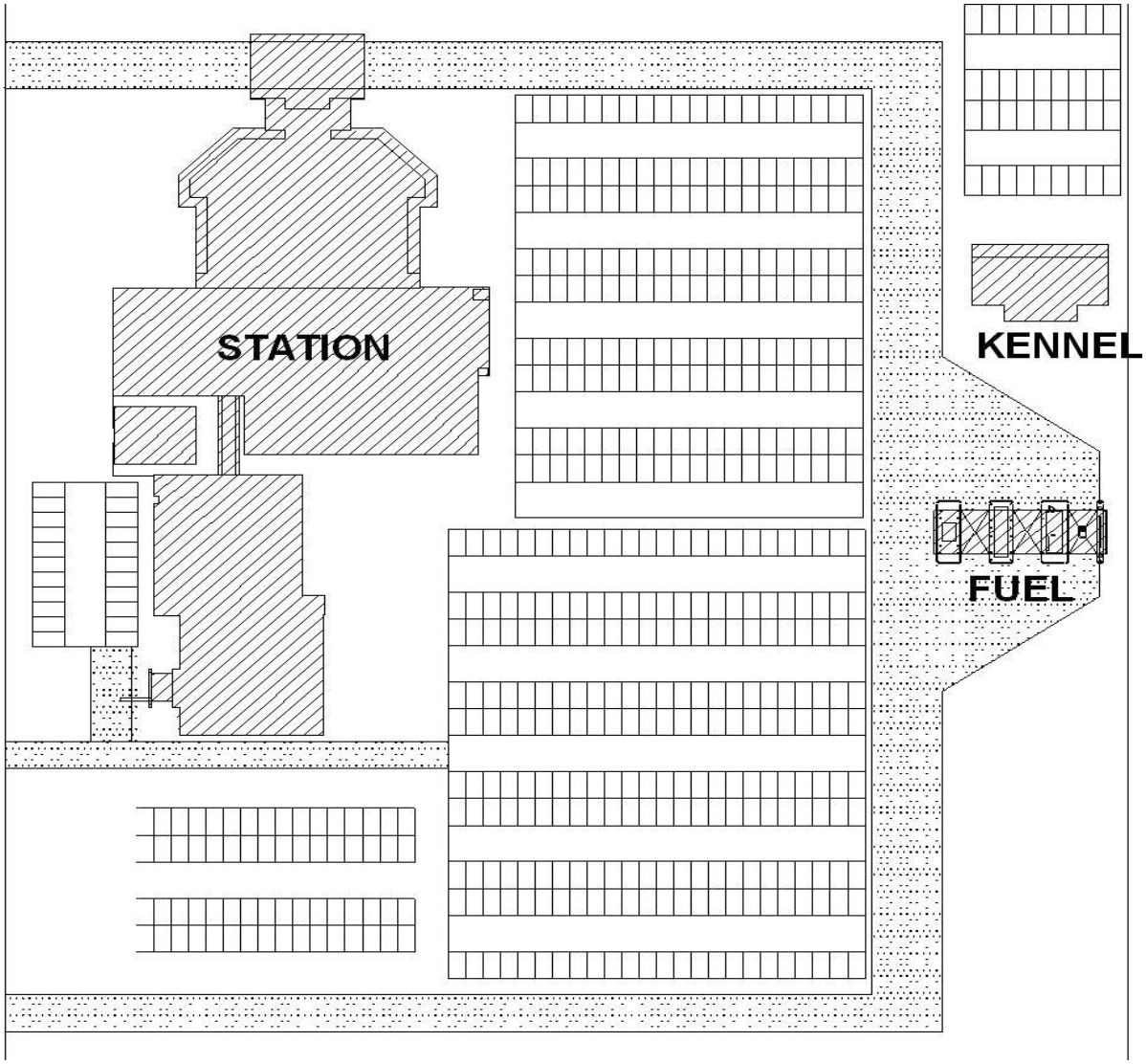

Figure 2-1
Conceptual Site Plan for
Border Patrol Station

a Typical Border Patrol Station
El Paso, TX

2.1.2 Site 1 – Castner Range Site

Site 1 is the preferred site and is located on the southeast corner of Castner Range (Figure 2-2). The 45-acre parcel would be situated between Northgate Dam (to the north-northwest) and the TXDOT compound (to the south-southeast). U.S. Highway 54 runs along the eastern boundary of the site. There is a residential community to the southwest of the proposed site along Hondo Pass Road. Access to the site can be gained from either U.S. Highway 54 (southbound access road) or Hondo Pass Road. Utility connections are present in the vicinity of Site 1. Castner Range is a former artillery firing range and is comprised of 7,040 acres of mostly mountainous terrain. The range has not been used for military training since 1966. In 1971, the U.S. Army declared Castner Range as excess and surplus property. However, disposal of the property has not occurred due to the ordnance and explosive hazards present on the range (U.S. Army 2000). As part of the proposed action and selection of the proposed site, CBP would initiate an ordnance cleanup project for the 45 acres that would be leased for the BPS and Sector Headquarters. The remaining acres of Castner Range would remain in their current state and under the ownership and control of the U.S. Army. There are no other reasonably foreseeable projects identified for any part of Castner Range by either local or federal agencies.

2.1.3 Site 2 – Northern Public Service Board Site

The second site identified as part of this effort is located along McCombs Street at the intersection of U.S. Highway 54 (Figure 2-3). This site, Site 2, is the northern-most location of the sites identified for the BPS and Sector Headquarters. While still in the city limits of El Paso, Site 2 does not have any utilities or infrastructure at the site. The 600-foot by 2,600-foot parcel is a small portion of a large tract of land (100 acres) currently held by the Public Service Board of El Paso. The Public Service Board has no plans to extend utilities to the site within the next five years. The area surrounding the site is virtually undeveloped with only a small airfield and golf course to the north and northeast, respectively. The site can be accessed from both McCombs Street and U.S. Highway 54. Currently, Site 2 is a small part of a 9,000-acre cattle lease. The lease was established and is maintained on a month-to-month basis.

2.2 NO-ACTION ALTERNATIVE

Under the no-action alternative, construction of the new BPS and Sector Headquarters would not occur. Current space constraints would continue to impact the operation of the Border Patrol in El Paso. Additionally, there would not be enough room at the existing facilities to support the expected growth of Border Patrol operations. Although there would not be any significant environmental impacts as a result of the no-action alternative, the future mission and objectives of the Border Patrol could be compromised.

Figure 2-2
Location of the Proposed Site

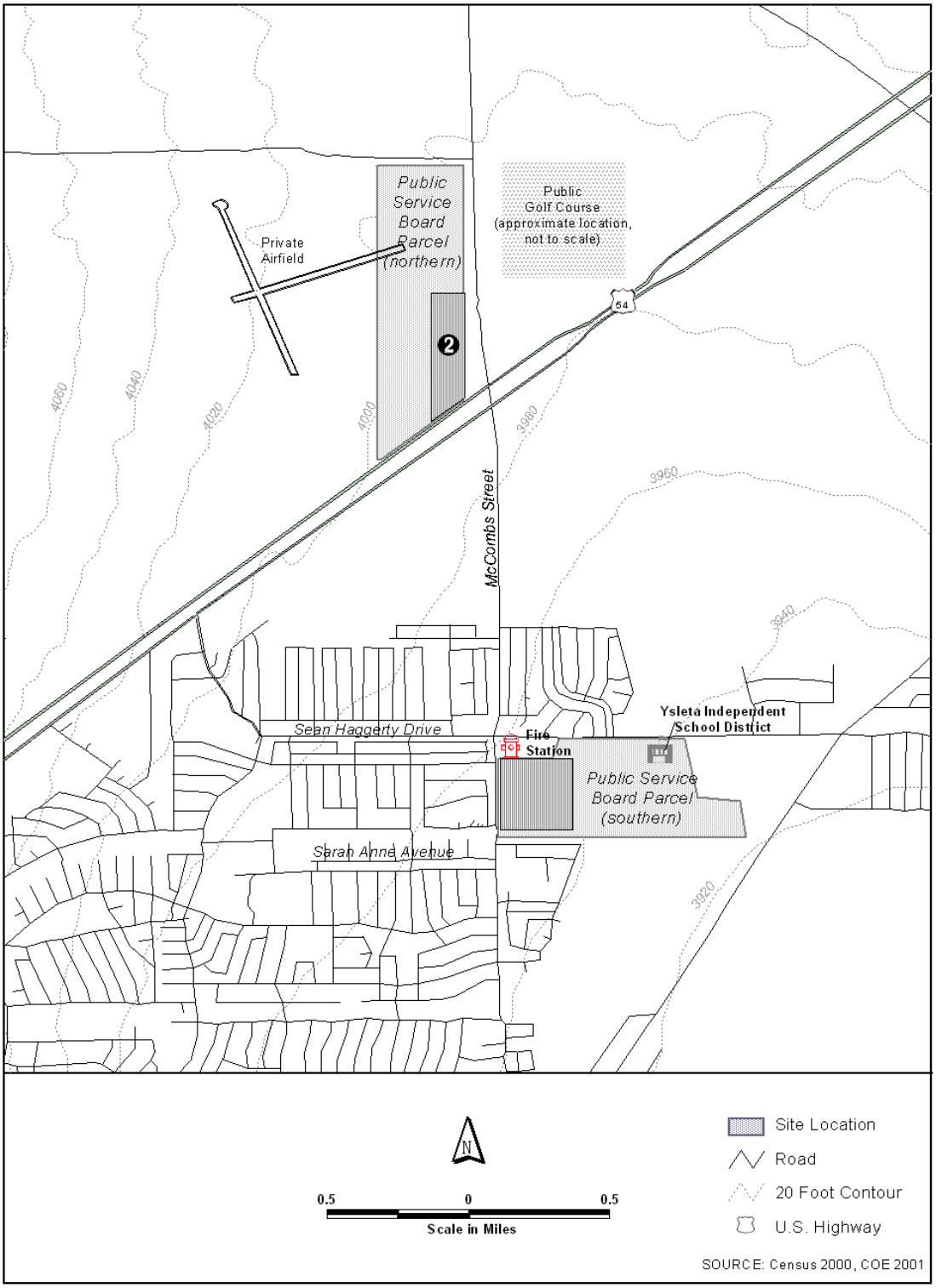

Figure 2-3
Location of the Alternative Sites

2.3 SUMMARY OF IMPACTS

No significant environmental impacts were identified during the analysis of the proposed action at Sites 1 or 2. Summaries of the impacts for each resource are listed in Table 2-2 in the order they are discussed in Chapters 3 and 4. Additionally, Chapter 4 addresses any mitigation of these impacts, as they relate to the proposed action.

2.4 ALTERNATIVE SITES NOT CARRIED FORWARD FOR FURTHER ANALYSIS

During the initial development and planning stages of this effort, 22 sites were identified around the city of El Paso that met the fundamental requirements for a new BPS and Sector Headquarters: space and availability (Appendix E). However, as a result of a Site Market Survey performed by the USACE, Albuquerque District (USACE 2001), all but two of the sites were eliminated from further consideration. These eliminated sites were located both on the eastern and western sides of the Franklin Mountains in areas that were either cost prohibitive to the Border Patrol and/or did not meet one or more of the siting criteria (distance from the border, access to a major thoroughfare, suitability for construction). Private individuals asking current market prices own most of these eliminated sites.

Table 2-2
Summary of Environmental Impacts for the Proposed Action

Category	Level of Significance	Discussion
Land Use	Both Sites Short term[1]: Insignificant	Short term: Temporary in nature and mitigated through sound engineering practices
	Site 1 Long-term[2]: Insignificant	Long term: Compatible land use with TXDOT compound and other commercial/light industrial land uses on U.S. Highway 54; no change in zoning required
	Site 2 Long-term[2]: Insignificant	Long term: Compatible with preliminary planning concepts developed by the city of El Paso
Transportation	Both Sites Short term[1]: No Impact	Short term: There would be no impacts associated with construction activities
	Site 1 Long-term[2]: No Impact	Long term: Would not diminish level of service
	Site 2 Long-term[2]: No Impact	Long term: Would not diminish level of service
Hazardous Waste	Both Sites Short term[1]: Insignificant	Short term: All waste generated during construction activities would be handled and disposed of in accordance with all local, state, and federal regulations
	Site 1 Long-term[2]: Insignificant	Long term: All waste generated during operational activities would be handled and disposed of in accordance with all local, state, and federal regulations
	Site 2 Long-term[2]: Insignificant	Long term: All waste generated during operational activities would be handled and disposed of in accordance with all local, state, and federal regulations
Biological Resources	Both Sites Short term[1]: Moderate	Short term: Temporary in nature and mitigated through the implementation of a revegetation plan
	Site 1 Long-term[2]: Moderate	Long term: Loss of habitat has potential to impact Texas lyre snake and Texas horned lizard; however, this is unlikely because habitat for these two species at the site is marginal.
	Site 2 Long-term[2]: Moderate	Long term: Loss of habitat has potential to impact Texas lyre snake and Texas horned lizard; however, this is unlikely because habitat for these two species at the site is marginal.
Geology and Soil	Both Sites Short term[1]: Insignificant	Short term: Temporary wind erosion possible, mitigated through sound engineering practices
	Site 1 Long-term[2]: Insignificant, possibly beneficial	Long term: Clean up and removal of unexploded ordnance and lead contamination would be beneficial
	Site 2 Long-term[2]: No Impact	Long term: There would be no impacts to geological resources nor would there be any impacts on the proposed action as a result of the geology and soils present at the site
Water Resources	Both Sites Short term[1]: Insignificant	Short term: Temporary erosion possible during rain events, mitigated through sound engineering practices
	Site 1 Long-term[2]: Insignificant	Long term: Potential surface water increase of less than 0.10 of a cubic foot per year; within capacity of current drainage infrastructure
	Site 2 Long-term[2]: Insignificant	Long term: Potential surface water increase of less than 0.10 of a cubic foot per year; within capacity of current drainage infrastructure
Air Quality	Both Sites Short term[1]: Insignificant	Short term: Potential temporary increase in particulate matter and heavy equipment emissions, mitigated through sound engineering practices
	Site 1 Long-term[2]: No Impact	Long term: Operation of the new Border Patrol Station would be consistent with current operation, thus there would be no net increase in air emission
	Site 2 Long-term[2]: No Impact	Long term: Operation of the new Border Patrol Station would be consistent with current operation, thus there would be no net increase in air emission

Table 2-2
Summary of Environmental Impacts for the Proposed Action (cont.)

Category	Level of Significance	Discussion
Socioeconomics	Both Sites Short term[1]: Insignificant	Short term: There would be no significant increase or decrease in the population, ethnicity of the population, income, or unemployment as a result of the proposed action
	Site 1 Long-term[2]: No Impact	Long term: Operation of the new Border Patrol Station would be consistent with current operation, thus there would be no impact to socioeconomic factors
	Site 2 Long-term[2]: No Impact	Long term: Operation of the new Border Patrol Station would be consistent with current operation, thus there would be no impact to socioeconomic factors
Environmental Justice	Both Sites Short term[1]: No Impact	Short term: There would be no disproportionate impact to minority or low-income neighborhoods or groups as a result of the construction activities
	Site 1 Long-term[2]: No Impact	Long term: There would be no disproportionate impact to minority or low-income neighborhoods or groups as a result of the construction activities
	Site 2 Long-term[2]: No Impact	Long term: There would be no disproportionate impact to minority or low-income neighborhoods or groups as a result of the construction activities
Noise	Both Sites Short term[1]: Insignificant	Short term: Potential temporary increase in noise levels associated with heavy equipment operations, mitigated through sound engineering practices
	Site 1 Long-term[2]: No Impact	Long term: Operation of the new Border Patrol Station would be consistent with current operation, thus there would be no increase in noise levels in the surrounding area
	Site 2 Long-term[2]: No Impact	Long term: Operation of the new Border Patrol Station would be consistent with current operation, thus there would be no increase in noise levels in the surrounding area
Cultural Resources	Both Sites Short term[1]: No Impact	Short term: Potential to encounter archeological resources, mitigated through consultation with the local and state agencies and interested parties
	Site 1 Long-term[2]: No Impact	Long term: Consultation with all local and state agencies and interested parties and mitigation of any potential impacts
	Site 2 Long-term[2]: No Impact	Long term: Consultation with all local and state agencies and interested parties and mitigation of any potential impacts
Aesthetics	Both Sites Short term[1]: Insignificant	Short term: Temporary in nature and mitigated through professional standards and practices
	Site 1 Long-term[2]: Insignificant	Long-term: The dominant aesthetic features at the site are the Franklin Mountains and Northgate Dam. Given the scale of the mountains, vastness of Castner Range and the presence of Northgate Dam, the facilities would not diminish the view of the area from U.S. Highway 54.
	Site 2 Long-term[2]: Insignificant	Long term: Given the scale of the Franklin Mountains and the vast undeveloped area, the facilities would not diminish the view of the surrounding area

[1] Short term impacts are those impacts and conditions that would be associated with the construction phase of the proposed action.
[2] Long term impacts are those impacts and conditions that would be associated with the operation of the Border Patrol Station and Sector Headquarters

TXDOT Texas Department of Transportation

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3. BASELINE CONDITIONS

Chapter 3 describes the existing environmental conditions for ten resource categories. The affected environment is the baseline against which potential impacts caused by the proposed action and alternatives are assessed. This chapter focuses on resources specific to the region and immediate areas that have the potential to be affected by the construction and operation of the BPS and Sector Headquarters.

3.1 LAND USE, TRANSPORTATION, AND HAZARDOUS MATERIAL/WASTE

This section provides the baseline condition associated with the existing land use, transportation features, and hazardous material/waste characteristics at the proposed project sites and in surrounding areas. Specifically, it reviews applicable city ordinances for compatibility, provides a discussion of transportation, and addresses the use of hazardous materials and the generation of hazardous wastes.

3.1.1 Land Use

3.1.1.1 Site 1 – Castner Range Site

Site 1 is located in the southeastern corner of Castner Range, which has been classified by the U.S. Army as a closed artillery training area. As such, the remaining 7,000 acres of Castner Range to the north and northwest of the site is primarily undeveloped. The U.S. Army due to the unexploded ordnance hazards on the former artillery range restricts access to the area. However, the range is heavily trespassed by recreational users from the surrounding community. The boundaries are well posted with warning signs in both English and Spanish, warning of the dangers of ordnance and explosive hazards (U.S. Army 2000). A current Master Plan for Franklin Mountains State Park conceptually incorporates Castner Range into the Park's long-range recreational plan. However, given the costs associated with the cleanup of the area, the operational status of the range, and the lack of funds to initiate a comprehensive cleanup program of the unexploded ordnance, no decisions have been made on the possible future uses and disposal of the land (U.S. Army 2000). Additionally, the December 2000 *Fort Bliss, Texas and New Mexico Mission and Master Plan Environmental Impact Statement* did not identify any potential federal, state or local uses of Castner Range; and the city of El Paso has not identified any immediate or long range development plans for Castner Range.

Immediately adjacent to Site 1, along the northwest boundary, is Northgate Dam (Figure 3-1). The 60-foot high, flood control dam is a strong landscape feature of the area, secondary only to the Franklin Mountains. The flood control dam was constructed in 1973 from materials brought onto and borrowed from the site. Along the northeast boundary of Site 1 lies U.S. Highway 54. On the far side of U.S. Highway 54 lies the Army National Guard Armory and a Department of Public Safety Office. Adjacent to the southwest corner of Site 1 is a TXDOT compound. The compound is an enclosed area that is accessed from Hondo Pass Road. There are some commercial activities (i.e., church, car wash, and small lumber yard) along the southern edge of the site. Across Hondo Pass Road and further to the west of the site is a residential area. The closest edge of the Franklin Mountains State Park is located approximately two miles from the proposed site.

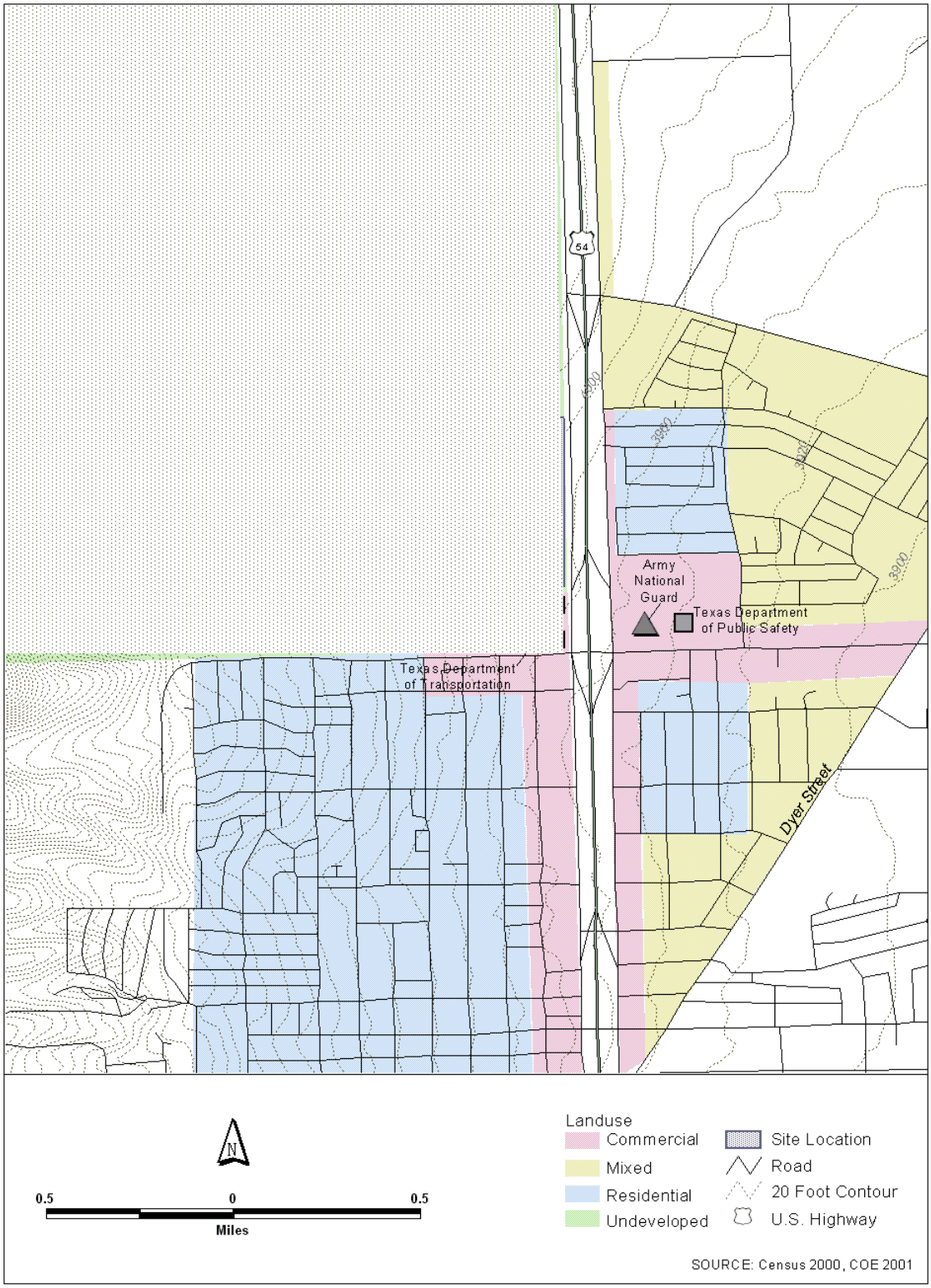


Figure 3-1
Land Use Adjacent to the Proposed Site

3.1.1.2 Site 2 – Northern Public Service Board Site

Site 2 is the northern-most location of the sites addressed in this EA. The site is located on the northwest corner of the intersection of U.S. Highway 54 and McCombs Street (Figure 3-2). The site and area surrounding it are virtually undeveloped. The 600-foot by 2,600-foot parcel is oriented along McCombs Street with access gained from either U.S. Highway 54 or McCombs Street. North of the site is a small privately owned airfield. On the far side of McCombs Street, northeast of the site is a public golf course; and along the southern edge of the site is a large stormwater drainage culvert that is part of the city's drainage system.

As a result of the undeveloped nature of the area surrounding Site 2, the Public Service Board of El Paso does not have any plans to extend utilities out to the site within the next five years. Currently, the Public Service Board of El Paso owns approximately 22,000 acres of undeveloped land in northeast El Paso. In the late 1980s the Board developed a *Draft Master Development Plan for Northeast El Paso*. While city management never formally agreed upon the plan, the draft document provides a conceptual land use pattern for the property held by the Public Service Board. In the draft plan, Site 2 would be located in a commercial land use area, as would the area immediately surrounding the site. Some medium- and low-density residential land use could occur beyond the commercial land use areas to the northwest of the site (PSB 1985).

3.1.2 Transportation

3.1.2.1 Site 1 – Castner Range Site

Site 1 is located near the intersection of U.S. Highway 54 and Hondo Pass Road. Access to the site could be gained from either the southbound access road on U.S. Highway 54 or from Hondo Pass Road. In recent studies performed by the Texas Department of Transportation in September 2003, U.S. Highway 54 at Loop 375 handles approximately 49,000 average cars annually, while at Dyer Street the highway handles approximately 57,000 average cars annually (TXDOT 2003). Traffic flow on Hondo Pass Road supports the neighboring residential community and provides access to U.S. Highway 54.

3.1.2.2 Site 2 – Northern Public Service Board Site

Site 2 is located at the intersection of U.S. Highway 54 and McCombs Street. The site can be accessed from either Highway 54 or a spur from McCombs Street. The intersection is located along U.S. Highway 54 after the limited-access highway changes to a divided four-lane road. McCombs Street in the vicinity of Site 2 is a two-lane road with turning lanes. Given the undeveloped nature of the area surrounding Site 2, traffic crossing through the intersection is light to moderate.

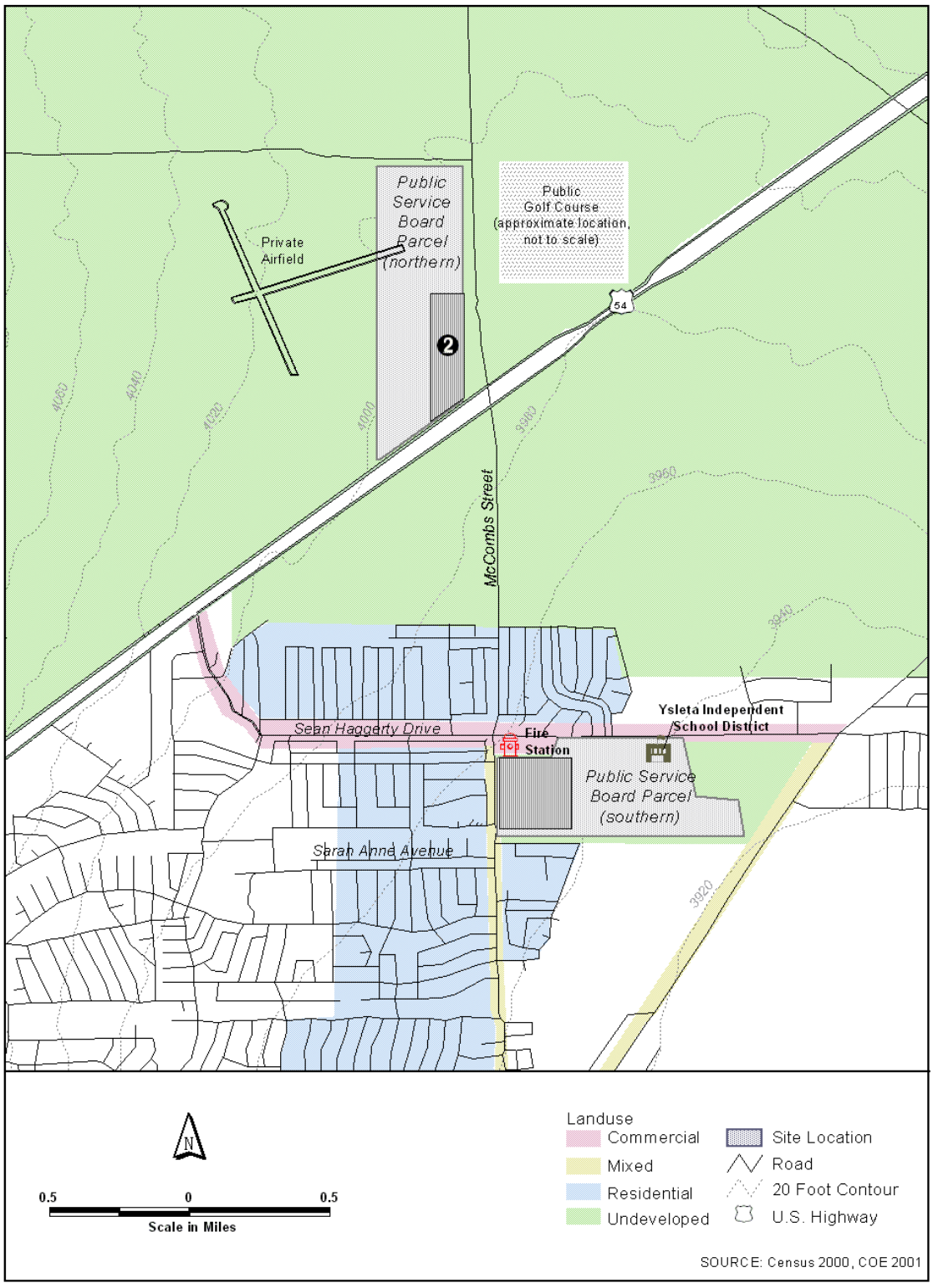


Figure 3-2
Land Use Observed in the Vicinity of the Alternative Sites

3.1.3 Hazardous Materials/Waste

3.1.3.1 Site 1 – Castner Range Site

Site 1 is located on a former artillery firing range; as such the site has the potential to possess unexploded ordnance hazards, as well as residual lead contamination in the soil. Prior to the implementation of the proposed action or alternatives, a Phase I and II Environmental Baseline Survey (EBS) would be conducted on the site. The Phase I portion of the analysis would be a non-intrusive study of the environmental baseline conditions on site. The Phase II portion of the analysis would be an intrusive study of the site to determine the extent of any potential areas of concern. During the Phase II analysis, soil samples would be taken at the site, and any information gained would be incorporated into the planning and design portion of the project.

As part of the proposed action the Border Patrol would construct a 100-foot communications tower on site near the equipment room. The tower would be microwave capable and at a frequency of 162 to 165 Megahertz.

3.1.3.2 Site 2 - Northern Public Service Board Site

Site 2 is currently being used for cattle grazing under a month-to-month lease agreement. Given the undeveloped nature of the area, it is unlikely that any hazardous or regulated wastes or materials would have been used, stored, or managed on the site. Additionally, a Phase I EBS would be conducted to determine if there is a potential for hazardous or regulated wastes to be present on site.

As part of the proposed action the Border Patrol would construct a 100-foot communications tower on site near the equipment room. The tower would be microwave capable and at a frequency of 162 to 165 Megahertz.

3.2 BIOLOGICAL RESOURCES

The description of biological resources in the area of both sites is based on the field surveys conducted on October 17 and 18, 2001 and the much more detailed biological studies conducted by Fort Bliss representatives. The results of these studies appear in: 1) numerous reports submitted to the Fort Bliss Directorate of Environment, 2) the Fort Bliss Mission and Master Plan Environmental Impacts Statement (U.S. Army 1999a), and 3) a summary report of field surveys on McGregor Range given the approximate location of the range in relationship to Castner Range (U.S. Army 1999b). Additional information on biological resources was obtained from other literature and natural resource agency personnel. Information regarding federal and state sensitive species that may occur in the area of the sites was obtained from the U.S. Fish and Wildlife Service (USFWS) (USFWS 2001) and Texas Parks and Wildlife Department (2001). Additional information regarding sensitive species that occur in the area of the sites was obtained from the U.S. Army (U.S. Army 1999a).

3.2.1 Upland Vegetation

The two sites are in the Trans Pecos region of west Texas that covers an estimated 38,000 square miles, based on the ecoregion classification system of the State of Texas. Elevation ranges from about 2,500 to 8,500 feet above mean sea level (MSL). It is a region of diverse plant communities varying from desert valley and plateaus to wooded mountain slopes. Within the Trans Pecos region, the sites are in the mesquite (*Prosopis glandulosa*) – sandsage (*Artemisia filifolia*) scrub general plant community type (McMahan 1984). More detailed descriptions and mapping of the plant communities at and in the area of the sites was performed on Fort Bliss (U.S. Army 1999a). These results, as well as observations made during the brief reconnaissance surveys, are used to describe the general vegetation characteristics at the sites.

3.2.1.1 Site 1 – Castner Range Site

Site 1 is on Castner Range. The site is on one of the few remaining alluvial fans of the Franklin Mountains that has not been disturbed by recent human development (Corral 2001). The plant community is defined as foothill-desert shrublands dominated by lechugilla (*Agave lechuguilla*). Other common plant species observed were croesotebush (*Larrea tridentate*), prickly pear cactus (*Opuntia* sp.), sotol (*Dasylirion wheeleri*), and broom snakeweed (*Gutierrezia sarothrae*). Less common woody species were mesquite, ocotilla (*Fourquieria splendens*), Mormon tea (*Ephedra* sp.), and barrel cactus (*Ferocactus* sp.). Grass cover in the area was sparse. Typical species in this type of grass cover include sideoats grama (*Bouteloua curtipendula*), black grama (*B. eriopoda*), and dropseed (*Sporobolus* sp.). Hedgehog cacti (*Echinocereus* spp.) were common throughout the area. The foothill-desert shrublands plant community typically supports 100 to 150 species of plants (Corral 2001). The foothill-desert shrublands cover an estimated 68,000 acres or six percent of Fort Bliss that would include part of Castner Range (U.S. Army 1999a). The lechuguilla series within the foothill-desert shrublands is widespread in the Chihuahuan Desert. The lechuguilla series reaches the northern extent of its range on the Franklin Mountains in Texas (including Site 1), and the Hueco Mountains (Fort Bliss) in Texas and New Mexico (U.S. Army 1997).

From February to May the Mexican Gold Poppy (*Eschscholzia californica* ssp. *mexicana*) occurs in the area northwest of the proposed site. Depending on the amount of winter rains in the area, the Mexican Gold Poppy can be seen in great abundanceduring the spring. This subspecies of *Eschscholzia californica* occupies open gravelly desert slopes and outwash fans from southeast California to the western tip of Texas, and into northern Mexico (ENature 2004).

3.2.1.2 Site 2 - Northern Public Service Board Site

Site 2 is on fairly flat land in the Chihuahuan desert shrubland with sandy soil. Vegetative cover consists of the honey mesquite-fourwing saltbush plant community that is found in southern New Mexico, west Texas, and extends into Mexico (U.S. Army 1997). It contains few plant species, with mesquite being the most abundant

species observed followed by creosotebush, soaptree yucca (*Yucca elata*), fourwing saltbush (*Artemisia canescens*), and broom snakeweed. Small dunes form around the mesquite and to a lesser extent the creosotebush. The ground between the shrubs is mostly bare. This land type may support 20 to 25 species of plants (Corral 2001). It is likely that much of this mesquite- and creosotebush-dominated land near Fort Bliss was once grasslands, because shrublands have replaced grasslands over large areas in the last century (Buffington 1965). It is believed that the expansion of mesquite-dominated areas is related to cattle grazing and drought. As a result, there has been a reduction in plant species diversity and is considered a step in the desertification process (Buffington 1965, Schlesinger 1990, Huenneke 1995).

3.2.2 Wetlands and Arroyo Riparian Drainage Systems

No wetlands or perennial bodies of water were observed at or in the area of the two sites. Arroyo-riparian drainage systems are considered in terms of 1) potential for providing valuable wildlife habitat given the habitat characteristics described above, and 2) USACE jurisdiction over waters of the U.S.

Cockman (Cockman 1996) and U.S. Army (U.S. Army 1991) studied arroyo-riparian drainage systems on Fort Bliss and determined that these drainage systems had the following characteristics in relation to upland areas.

- Species richness of shrubs, trees, grasses, and forbs are higher in the main channel than other locations.
- Heights of shrubs along the main channel are nearly twice that of shrubs in the uplands.
- Obligate species such as desert willow (*Chilopsis linearis*) tended to be taller than non-drainage species.
- Obligate species at one elevation may occur outside of the drainage at another elevation. For example, Apache plume (*Fallugia paradoxa*) is obligate in the submesa drainages but occurs outside the drainages in the foothill. Species such as little-leaf (*Rhus microphylla*) and big-leaf sumac (*R. trilobata*) which occur at many locations in the foothill and submesa drainages may be obligate species in the desert floor of the Tularosa Basin (Cockman 1996).

3.2.2.1 Site 1 – Castner Range Site

There are no wetlands or waters of the U.S. on Castner Range (U.S. Army 1999a). Eight drainages occur on the Castner Range site. All of these drainages originate at the base of Northgate Dam and traverse the site in an east to southeast direction. The largest drainage terminates at Hondo Pass Drive while the remaining seven terminate at U.S. highway 54.

The largest drainage on-site is 60 feet wide in some areas. It exhibited some changes in vegetation typical of arroyo-riparian drainage systems (Cockman 1996a,

U.S. Army 1991). Relatively large mesquite shrubs were more common than in the surrounding uplands and species such as Apache plume, desert willow, and little-leaf sumac were scattered along the drainage area. These species are atypical of the upland flora. This drainage ends at a rock-lined berm that directs the stormwater flow to a culvert under Hondo Pass Drive at the southern end of Site 1. The remaining seven drainages are much smaller, most having distinct active channel bottoms ranging from one to five feet wide, with low gently sloping banks resulting in a total width of 10 to 30 feet. In most cases, there was no obvious change in vegetation structure or species composition typical of arroyo-riparian drainages relative to the surrounding upland vegetation.

3.2.2.2 Site 2 - Northern Public Service Board Site

Two small drainages enter the site from the west and end on the east side of the site at McComb Road. Drainage One has an active channel bottom five to six feet wide. It has low, gently sloping banks with a total width ranging from eight to 12 feet. Two other drainages of approximately the same size run parallel to this drainage and are located 15 and 25 feet from Drainage One, respectively. There was no apparent change in vegetation structure of plant species diversity within these drainages relative to the surrounding areas. The drainages on this site have the potential to be classified as waters of the U.S.

3.2.3 Wildlife

All wildlife species detected during the reconnaissance surveys in October 2001 were recorded (Table 3-1). However, detailed wildlife surveys were not conducted at the two sites. Detailed wildlife surveys were conducted recently on Fort Bliss (U.S. Army 1999a, 1999b), and the results of these surveys were used to characterize the wildlife species that would likely occur at the sites.

This section also addresses the neotropical migrant landbirds and other bird species of conservation concern that have the potential to occur at both sites. Neotropical migrants are species that breed in temperate North America and winter in the tropics. These birds have become the focal point of much of the ornithological research, management, and conservation concern (Hagan and Johnston 1992; Finch and Stangel 1993). Forest fragmentation on the breeding grounds and the elimination of optimum wintering habitat in the tropics are likely the two major reasons for the declines these species (Flather and Sauer 1996; Sheery and Holmes 1996). Additionally, the loss of important stopover habitat used during migration may also affect the survival of neotropical migrants (Moore et al. 1993).

EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds, was issued on January 10, 2001. This EO recognized the ecological and economic importance of migratory birds to this and other countries. It requires federal agencies to evaluate the effects of their actions and plans on migratory birds with an emphasis on species of conservation concern in their NEPA documents. Species of conservation concern are those identified in 1) "Migratory Nongame Birds of Management Concern in the U.S."

(USFWS 1995); 2) priority species identified by established plans such as those prepared by Partners in Flight; and 3) listed species in 50 CFR Part 17.11. Migratory bird species of concern are addressed below using information from the USFWS (USFWS 2002 which replaced USFWS 1995), Partners in Flight, and other sources. Listed migratory bird species are addressed in Section 3.2.4 Sensitive Species.

Table 3-1
Wildlife Observed during 2001 Survey
El Paso County, Texas

Species		Sites		Comments
Common name	**Scientific name**	**1**	**2**	
Lizard sp.				
Whiptail lizard	*Cnemidophorus* sp.			
Hawk sp.	*Buteo* sp.		1	Flushed from power pole
Gambel's quail	*Callipepla gambelii*	1		One heard calling
Mourning dove	*Zenaida macroura*	25		All in or near drainage system 1, Site 1.
Loggerhead shrike	*Lanius ludovicianus*		1	Perched on top of a yucca
Raven sp.	*Corvus* sp.	2		Flew over head
Cactus wren	*Campylorhynchus brunneicapillus*	1	3	Singing and observed
Rock wren	*Salpinctes obsoletus*	3		
Northern mockingbird	*Mimus polyglottos*	1		One heard singing
Canyon towhee	*Pipilo fuscus*	1		
Vesper sparrow	*Pooecetes gramineus*	1		
Meadowlark sp.	*Stuenella sp.*	1		
House finch	*Carpodacus mexicanus*	6	5	
Desert cottontail	*Sylvilagus audobonii*	4	1	
Black-tailed jackrabbit	*Lepus californicus*	3	2	
Coyote[a]	*Canis latrans*	-	-	

[a] Signs observed only
Survey performed on 17 and 18 October 2001

3.2.3.1 Site 1 – Castner Range Site

Although only eight species of amphibians and 39 species of reptiles have been observed on Fort Bliss, there is the potential that 19 additional species could occur. Amphibians consist of one salamander and eight species of toads. These species were generally captured near ephemeral or permanent bodies of water. Given the dry nature of Site 1 and the surrounding area, it is expected that the occurrence of amphibians would be limited. The most diverse group of reptiles is lizards. Twenty species were recorded, including species that may be common in the shrubland habitat of Site 1.

These species include the side-blotched lizard (*Uta stansburiana*), striped whiptail (*Cnemidophorus inornatus*), and marbled whiptail (*C. marmoratus*). Eighteen species of snakes have been detected on Fort Bliss and common species in the shrubland habitat include the western diamondback rattlesnake (*Cortalus atrox*), gopher snake (*Pituophis catenifer*), night snake (*Hypsiglena torquata*), plains black-headed snake (*Tantilla nigriceps*), and ground snake (*Sonora semiannulata*) (U.S. Army 1999a).

Detailed bird surveys in the foothill-desert shrubland habitat on McGregor Range on Fort Bliss from 1996 through 1998 resulted in the detection of 70 species of birds. Of the over 6,200 birds detected, the black-throated sparrow (*Amphispiza bilineata*) was the most common species (27 percent) followed by the northern mockingbird (*Mimus polyglottos*) (11 percent), mourning dove (*Zenaida macroura*) (7 percent), Scott's oriole (*Icterus parisorum*) (7 percent), ash-throated flycatcher (*Myiarchus cinerascens*) (6 percent), and house finch (*Carpodacus mexicanus*) (7 percent) (U.S. Army 1998a, 1999a). Three of these species (northern mockingbird, mourning dove, and house finch) were detected during the reconnaissance surveys (Table 3-1). Breeding bird surveys conducted in June 1997 in the Hueco Mountains across the Tularosa Basin from the study site documented the black-throated sparrow as the most common species (27 percent). Other common species were the northern mockingbird (10 percent), mourning dove (6 percent), and house finch (6 percent) as recorded on McGregor Range. In addition, the cactus wren (*Campylorhynchus brunneicapillus*) (7 percent), canyon towhee (*Pipilo fuscus*) (6 percent), and scaled quail (*Callipepla squamata*) (5 percent) were also common (U.S. Army 1999b).

Seven bird species of conservation concern were recorded in the foothill-desert shrubland habitat on Fort Bliss and could occur at Site 1 (Table 3-2). Based on this information, species such as Scott's oriole, scaled quail, and black-tailed gnatcatcher (*Polioptila melanura*) would have a greater chance of occurring on or near Site 1, while other species such as the crissal thrasher (*Toxostoma crissale*), Cassin's sparrow (*Aimophilia cassinii*), and curve-billed thrasher (*Toxostoma curvirostre*) would be less likely to occur. These species, as well as most other breeding birds, would likely occur at lower densities on Site 1 then the foothill-desert shrublands sampled on McGregor Range. This is because Site 1 is bordered by residential developments on the south, and by industrial and residential development and a busy highway on the east. However, foothill-desert shrublands do extend north and west of Site 1. Although not formally observed during any biological survey, Golden Eagles, Red-tailed Hawks, Swainson's Hawks, and American Kestrels are regularly found in northeast El Paso near Site 1 (TPWD 2003). However, no nesting sites have ever been observed on site (TPWD 2003).

The importance of perennial-riparian habitat for breeding and migrating birds has been documented (Krueper 1993). Recent surveys on Fort Bliss have shown that arroyo-riparian habitat is also an important habitat for migrating birds including neotropical migrants (Kozma 1995, Kozma 1997, U.S. Army 1999a). These studies have shown that numerous neotropical land birds are found in the arroyo-riparian habitat during migrations while few were detected in the adjacent uplands. As indicated in Section 3.2.2, arroyo-riparian habitat is characterized by increased vegetation structure

and species diversity relative to adjacent uplands. Only one drainage on Site 1 exhibited these characteristics. This drainage would be expected to provide better habitat for neotropical migrants than the adjacent uplands.

Mammals observed on Site 1 were the desert cottontail (*Sylvilagus audobonii*) and black-tailed jackrabbit (*Lepus californicus*) as well as coyote signs (*Canis latrans*) (Table 3-1). Detailed small mammals surveys in the foothill-desert shrublands dominated by acacia performed in 1997 and 1998 on Fort Bliss resulted in the capture of 13 species totaling 297 individuals during three trapping periods. The rock pocket mouse (*Chaetodipus intermedius*) (26 percent), Merriam's kangaroo rat (*Dipodomys merriami*) (18 percent), cactus mouse (*P. eremicus*) (18 percent), Chihuahan pocket mouse (*Chastodipus* eremicus) (13 percent), deer mouse (*Peromyscus maniculatus*) (10 percent), and white-throated woodrat (*Neotoma albigula*) (8 percent) were the most abundant species. Species such as the mule deer (*Odocoileus hemionus*), javelina (*Dicotyles tajacu*), and bobcat (*Lynx rufus*) may also occur on this site.

Table 3-2
Bird species of Conservation Concern That Have the Potential to Occur at the Project Sites

Species	Viscid acacis (Site 1)		Mesquite (Site 2)	
	Number[a]	Percent[b]	Number	Percent
Scott's oriole	140	6.8	120	5.5
Crissal thrasher	18	0.9	52	2.4
Logger-head shrike	8	0.4	5	0.2
Scaled quail	78	3.8	46	2.1
Black-tailed gnatcatcher	36	1.7	73	3.4
Cassin's sparrow	9	0.4	0	0.0
Curve-billed thrasher	9	0.4	10	0.5
Other Non-species of Concern	1,771	85.6	1,871	85.9
Total birds	**2,069**	**100**	**2,177**	**100**

Source: PIF 2002, NAS 2002, U. S. Army 1998a, 1999a

[a] Average number of birds tallied during 1996, 1997, and 1998 survey periods.

[b] Percent of average of total birds tallied during the 1996, 1997, and 1998 survey periods.

3.2.3.2 Site 2 - Northern Public Service Board Site

Species of reptiles that would occur at this site would be similar to Site 1. However, the overall species diversity would likely be less, because the plant species diversity and the complexity of habitat structure at this site are less then at Site 1.

Detailed bird studies took place in the mesquite-dominated shrublands on Fort Bliss from 1996 through 1998. The species that are likely to nest at Site 2 would be similar to those

recorded during this study. A total of 66 species were detected comprising over 6,500 individuals. The black-throated sparrow was by far the most common nesting species (35 percent). Other common breeding species found were the pyrrhuloxia (*Cardinalis sinuatus*), (9 percent), western kingbird (*Tyrannus verticalis*) (8 percent), Scott's oriole (6 percent), cactus wren (5 percent) and ash-throated flycatcher (4 percent) (U.S. Army 1998a, 1999a). There was no arroyo-riparian habitat in Site 2 that would support migrating neotropical land birds.

Six bird species of conservation concern were recorded in the mesquite-shrubland habitat on Fort Bliss. These species could also occur at Site 2 (Table 3-2). Based on this information, species such as Scott's oriole, crissal thrasher, scaled quail, and black-tailed gnatcatcher would have greater chance of occurring on or near Site 2, while other species such as the loggerhead shrike (*Lanius ludovicianus*) and curve-billed thrasher would be less likely to occur. These species, as well as most other breeding birds, may occur at densities comparable to the mesquite habitat sampled on McGregor Range. This is because, although there is some human development and activity in the area, Site 2 is situated in relatively open country and is surrounded by desert-shrubland habitat.

Mammals observed on the site were the desert cottontail and black-tailed jackrabbit plus coyote signs and the trails of various species of small mammals in the sandy soil. Detailed small mammal studies in mesquite-dominated coppice dune habitat in 1997 and 1998 on McGregor Range on Fort Bliss resulted in the trapping of six species and the detection of an additional three species. A total of 77 animals were captured and Marriam's kangaroo rat accounted for 86 percent of the captures. Other species captured two to four times were the Chihuahuan pocket mouse, Ord's kangaroo rat (*Dipodomys ordii*), and rock pocket mouse (U.S. Army 1999a). Larger mammals such as the mule deer and javelina would not be expected to occur at this site.

3.2.4 Sensitive Species

Lists of the sensitive species that have the potential to occur at both sites were obtained from the USFWS (USFWS 2001) and the Texas Parks and Wildlife Department (Table 3-3). Scientific names for these species are provided in Table 3-3. None of the six federally listed and proposed species occur in the region at or near the sites because of the lack of appropriate habitat. The mountain plover occurs in grassland habitat that generally includes areas of bare ground created by livestock, fire, and prairie dogs or by other means (Knopf 1994, Sager 1996), but such habitat does not occur in the area of the sites. The interior least tern nests along rivers and other aquatic habitat, and the closest breeding population to the sites is at Bitter Lakes National Wildlife Refuge (Whitman 1988) well away from the project area. The northern aplomado falcon occurs in grassland habitat (Ligon 1961, Montoya 1997), and such habitat is not in or near the sites. The Mexican spotted owl generally nests and roosts in mixed conifer forests (Ganey 1989, Zwank 1995), and such habitat is many miles from the project area. The southwestern willow flycatcher nests and migrates through riparian habitat (Sferra 1997, Sogge 1997), which does not occur in the sites.

Table 3-3
Federal and State Sensitive Species
with Potential to Occur in the Study Areas

Species		Status[a]	Distribution in Area
Common Name	**Scientific Name**		
Federally Listed Species			
Sneed pincushion cactus	*Coryphantha sneedii* var. *sneedii*	FE, SE	Known from the Franklin Mountains in Texas.
Mountain plover	*Charadrius montanus*	FPT	Rare migrant in grassland habitat in region.
Interior least tern	*Sterna antillarum*	FE, SE	Closest breeding population at Bitter Lakes National Wildlife Refuge along the Pecos River.
Mexican spotted owl	*Strix occidentalis lucida*	FT, ST	Closest breeding population in mixed conifer forest of the Sacramento Mountains.
Northern aplomado falcon	*Falco femoralis septentrionalis*	FE, SE	Closest known occurrence in desert grassland habitat of Otero Mesa.
Southwestern willow flycatcher	*Empidonax traillii extimus*	FE, SE	Occurs in riparian habitat during migration and the breeding season.
Federal Candidate Species and Species of Concern			
Sand prickly pear	*Opuntia arenaria*	SC	Known from the Rio Grande corridor but not recorded in the Tularosa Basin on Fort Bliss.
Night-blooming cereus	*Peniocereus greggii var. greggii*	SC	Known from the desert grasslands and Chihuahuan Desert shrublands on Fort Bliss.
Texas horned lizard	*Phrynosoma cornutum*	SC, ST	Widespread in desert shrublands on Fort Bliss.
Ferruginous hawk	*Buteo regalis*	SC	Winters and migrates through grasslands habitat in region.
Western burrowing owl	*Athene cunicularia*	SC	Nesting species mostly in desert grasslands in region.
Loggerhead shrike	*Lanius ludovicianus*	SC	Breeding and wintering species in shrubland habitat in region.
Baird's sparrow	*Ammodramus barirdii*	SC	Migrates through and winters in dense grasslands in region.
Spotted bat	*Euderma maculatum*	SC, ST	Distribution in region unknown.
Black-tailed prairie dog	*Cynomys ludovicianus*	C	Occurs in grassland habitat in region.
State Only Sensitive Species			
Mountain short-horned lizard	*Phrynosoma hernandesi*	ST	Occurs in desert grasslands and pinyon pine-juniper woodlands in region.
Texas lyre snake	*Trimorphodon biscutatus vilkinsoni*	ST	Known from rocky habitat in the Franklin Mountains.
Zone-tailed hawk	*Buteo albonotatus*	ST	Is a rare migrant in the region.

[a] FE = federal endangered, SE = state endangered, FPT = federal proposed threatened, FT = federal threatened, ST = state threatened, SC = federal species of concern, C = federal candidate species.

Sneed pincushion cactus occurs in the Franklin Mountains in Texas and New Mexico, also bishops cap occurs north of the Franklin Mountains in Doña Ana County, New Mexico. It grows in cracks and on vertical ledges as well as on horizontal benches in habitat dominated by lechugilla, sotol, ocotillo, and mariola (*Parthenium incanum*). It appears to be substrate-specific. This species has not been observed on Castner Range, because it is believed that the required substrate is lacking on the range (Corral 2001). Therefore, Sneed pincushion cactus is not believed to occur on or near Site 1 or Site 2.

Nine federal species of concern (two of which are also state threatened species) have the potential to occur in the area. However, the Ferruginous hawk, western burrowing owl, Baird's sparrow, and black-tailed prairie dog are not believed to occur at or in the vicinity of the sites because they are all essentially desert grassland species (Finch 1992, DeSmet 1989, U.S. Army 1999a). The occurrence of the spotted bat in the area of both sites is unlikely given its use of rocky ledge and cliff habitat. Golden Eagles, Red-tailed Hawks, Swainson's Hawks, and American Kestrels have been observed at Site 2 (TPWD 2003). The site is located in an area often referred to as "Hawk Alley" by local bird watchers. Golden Eagles, Red-tailed Hawks, and Swainson's Hawks have been known to nest on Site 2 and are considered permanent residents of the area (TPWD 2003).

The sandy prickly pear is a "cholla-type" cactus that typically stands less than one foot high, but can form clumps up to five feet in diameter. It occurs among semi-stabilized sand dunes in the Chihuahuan Desert Shrublands, often with mesquite and sparse grass cover (NMRPTC 1999). It has been found in sand dunes, floodplains, and foothill in the Rio Grande corridor between Las Cruces, New Mexico and El Paso, Texas (USFWS 1997). A small population is known to occur about 0.8 mile west of Fort Bliss on Bureau of Land Management land in Doña Ana County, New Mexico. The sand prickly pear has not been recorded during species-specific surveys or during other extensive plant surveys on Fort Bliss (U.S. Army 1999a). The night-blooming cereus is found in silty gravely soil in desert grassland and Chihuahuan Desert Shrublands. It is often found growing through and being supported by shrubs such as creosotebush and mesquite (NMRPTC 1999). This species occurs in southern New Mexico, West Texas, and Mexico. One small population is known to occur on Fort Bliss (U.S. Army 1999a).

The Texas horned lizard is common and widespread in desert grassland and shrubland habitats on Fort Bliss, where it has been found in areas of sparse vegetation with loose sandy or loamy soils that facilitate its burrowing activities (U.S. Army 1998, 1999a). It is likely that this species occurs at Site 2 because of the sparse vegetative cover and loose sandy soil. It would be much less likely to be found at Site 1 due to the shallow soil.

The loggerhead shrike is uncommon but widespread in the desert grassland and shrubland habitats on Fort Bliss. It comprised 0.4, 0.2, and 0.7 percent of the birds recorded in the foothill-desert, mesquite, and creosotebush shrublands, respectively, on Fort Bliss (Table 3-2) (U.S. Army 1998a, 1999a). It comprised about 1 percent of the birds detected in the foothill-desert shrublands in the Hueco Mountains on Fort Bliss (U.S. Army 1999b). The loggerhead shrike is a likely breeding and wintering species in the shrubland habitat at the both sites. One shrike was observed at Site 2 during the October 2001 field surveys (Table 3-1).

Three species are listed by the state (Table 3-3). The mountain short-horned lizard occupies a variety of habitats from semi-desert shrublands to mixed conifer forests. It is most common in open habitat in ponderosa pine (*Pinus ponderosa*) and pinyon pine-juniper woodlands (Degenhardt 1996). This species was captured in the grasslands habitat on Otero Mesa in New Mexico but not in the desert shrublands in the Tularosa Basin on Fort Bliss

(U.S. Army 1999a). It is assumed that this species is unlikely to occur in the desert shrubland habitat at the sites.

The Texas lyre snake also occurs in a variety of habitats from desert shrublands to conifer forests. It inhabits steep rocky terrain and has been found in the Franklin Mountains including Castner Range (Degenhardt 1996, U.S. Army 1999a). It has the potential to occur at Site 1 but not Site 2 because of the lack of suitable rocky habitat.

The final state-listed species is the zone-tailed hawk. It occurs in southern New Mexico and south-central Texas, and typically inhabits steep canyons and nests in riparian and conifer forests. It ranges widely over desert shrublands. It has not been recorded as a nesting species on Fort Bliss although occasional migrants have been detected (U.S. Army 1999a). It may be a rare migrant in the vicinity of the sites.

3.3 GEOLOGY AND SOILS

This section describes the geology and the soils in the area of the Castner Range. Erodibility, permeability, slope, suitability for construction and other soil characteristics that might be affected or might affect implementation of the proposed action are discussed. The information on geology provides background to evaluate the site.

Castner Range is located in the Basin and Range physiographic province, along the eastern slope of the Franklin Mountains. Elevations range from 3,900 feet MSL in the eastern boundary to 4,050 feet along the western boundary of the Castner Range area. The site is located in the Chihuahuan Desert and most of the topography consists of short, linear mountain ranges separated by intervening valleys (U.S. Army 2000).

3.3.1 Regional Geology

The surficial geology in the area around Castner Range consists primarily of Precambrian and Paleozoic crust in the Franklin Mountains with Quaternary alluvium in the lower elevations off the mountain slopes. The area is dominated by the Rio Grande Rift Valley, which trends roughly north-south. This rift valley has numerous faults, generally trending north-south. The East Franklin Mountain Fault is a segment of a large fault system that extends from El Paso northward into New Mexico. The fault extends along the Franklin, Organ, and San Andres Mountains for about 120 miles. The East Franklin Mountain fault is an east-facing normal fault controlling the Tularosa-Hueco half graben in which approximately 9,000 feet of basin-fill sediments were deposited (Witcher 1997). The Tularosa and Hueco Bolson developed during the second phase of the Rio Grade Rift (pull-apart) from 10 million years ago to present. The fault system shows significant Pleistocene to recent movement, and represents one of the large Quaternary fault systems in the interior US (Machette 1987 and Collins 1991). The fault system shows evidence of cutting the basin-fill sediments with 3 to 28 meters of offset (Seager 1980). Earthquakes in the area are common, but generally low in magnitude and confined to areas north of the subject sites (U.S. Army 2000).

3.3.2 Site Specific Geology/Topography

Surface geology at Site 2 consists of young Quaternary deposits of the Holocene epoch. Site 1 consists of lacustrine and fluvial deposits of clay, silt, sand and gypsum occurring in bolsons. Surface elevations at Site 1 range from approximately 3,985 feet above MSL at the east boundary to 4,050 feet above MSL at the west boundary of the site. Surface elevations at Site 2 range from approximately 3,980 feet above MSL at the south boundary to 4,002 feet above MSL at the north boundary of the site. Surficial geology at Site 2 consists of deposits found in colluvium and fans (USGS 1993).

3.3.3 Soils

Soils at Site 1 are within two soil series: the Chipotle, an extremely gravelly, sandy clay loam and the Missile, a very gravelly, fine sandy loam. Soils at Site 2 consist of the Elizario Series, formed in eolian sands over alluvium. Detailed descriptions of the soils at each site follow.

3.3.3.1 Site 1 – Castner Range Site

The northern portion of Site 1 lies within the Chipotle extremely gravelly sandy clay loam soil map unit. It is very deep, well drained, and formed from alluvium derived from tuff that is found on inset fans of the fan piedmont. Slopes in this mapping unit are nearly level, ranging from 0 to 3 percent. The surface consists of about 60 percent gravel and 10 percent cobbles. Permeability is moderately slow at approximately 0.2 to 0.6 inch per hour, with medium runoff. Due to the overall site topography, flood hazard is minimal with little or no ponding. It is nonsaline, and the available water capacity is very low (USDA 2001). Given the past use of the area, Castner Range is not expected to be classified as Prime or Important Farmlands.

The southern portion of Site 1 is composed of Missile very gravelly fine sandy loam that formed in alluvium derived from mixed igneous material found on fan piedmonts. This soil map unit consists of well-drained soil that is shallow to a restrictive petrocalcic horizon. Slopes range from 3 to 15 percent. The surface layer consists of approximately 15 percent cobbles and 25 percent gravel. Permeability is moderately slow, and there are no flooding or ponding hazards. The soils are slightly to moderately alkaline, nonsaline, and the available water capacity is very low (0.4 inches) (USDA 2001).

Chipotle and Missile soils found at Site 1 are suited to suburban development but are severely limiting for septic systems due to their restricted permeability, poor filtering capability, and content of large stones. The risk of corrosion to concrete is low and the risk of corrosion to uncoated steel is moderate. Limitations for construction of buildings and roads are slight with the exception of a severe limitation for shallow excavations due to the potential for collapsing side slopes in excavated areas. Because the soils are droughty and high in gravel and large stones content, landscaping is best suited to desertic herbaceous plants without extensive irrigation. Missile series soils are moderately erodible due to wind erosion with an average annual erosion rate of 48 tons per acre per year on unprotected soils (USDA 2001).

3.3.3.2 Soils at Site 2

Soils at Site 2 lie within the Elizario soil series, which consists of very deep, well drained soils formed in eolian sands over alluvium. Surface fragments consist of approximately 2 percent gravel. Its permeability is moderately slow, with clay content in the subsoil ranging from 20 to 27 percent. These nearly level to gently sloping soils overlay slightly depressed alluvial flats of basin floors. Slopes range from 2 to 5 percent. The soils have moderately slow permeability. The soils are very slightly saline and available water capacity is high at 9.6 inches. There are no flooding or ponding hazards (USDA 2001).

Elizario series soils found at Site 2 are suited to suburban development but are severely limiting for septic systems due to their restricted permeability. The risk of corrosion to concrete is low, and the risk of corrosion to uncoated steel is moderate. Limitations for construction of buildings and roads are slight with the exception of a severe limitation for shallow excavations due to the potential for collapsing side slopes in excavated areas. Because the soils are droughty and sandy, landscaping is poorly suited, with the exception of desertic herbaceous plants. Elizario series soils are highly erodible due to wind erosion, with an average annual erosion rate of 220 tons per acre per year on unprotected soils (USDA 2001).

3.4 WATER RESOURCES

The following sections describe the groundwater and surface water sources, surface and subsurface water movement, and water quality and quantity. The hydrological cycle results in the transport of water into various media such as air, ground surface, and subsurface. Natural and human-induced factors determine the quality of water resources. The information used for this water resources section was adapted from the *Final Fort Bliss, Texas and New Mexico Mission and Master Plan Programmatic Environmental Impact Statement* (U.S. Army 2000).

The majority of the metropolitan El Paso area lies in the Hueco Bolson between the Hueco and the Franklin Mountains and in the Rio Grande Valley (south of the Franklin Mountains). The extreme western part of the area lies in the lower (southern) Mesilla Bolson, a large intermontane basin west of the Franklin and Organ mountains.

3.4.1 Groundwater

3.4.1.1 Hueco Bolson

The Hueco Bolson is an intermontane basin, incised by the Rio Grande Valley. That part of the basin north of the Rio Grande is referred to as the upper Hueco Bolson. The bedrock that underlies the bolson deposits and makes up the surrounding mountains is relatively impermeable and will not supply large quantities of water to wells. Caliche occurs nearly everywhere beneath the surface of the bolson and is relatively effective as a barrier to infiltration of rainfall. The caliche beds are partially or completely missing beneath depressions in the bolson, and recharge to the underlying aquifer takes place

when water collects in the depressions during periods of heavy rainfall (U.S. Army 2000).

The principal area of recharge is along the eastern edge of the Franklin and Organ mountains, where runoff from the mountains infiltrates into the coarse gravel of alluvial fans. As part of the Hueco Bolson Groundwater Availability Model, the Texas Water Development Board (TWDB) identified the areas of recharge for the aquifer. Most of these areas lie to the northwest of Site 1 and Site 2, with two recharge areas located to the southwest of Site 1 (Figure 3-3) (TWDB 2003).

The U.S. Geological Survey (USGS) modeling efforts indicated natural recharge from infiltration of 5,600 acre-feet per year. Most of the Rio Grande channel through the El Paso metropolitan area has been lined since 1968, virtually eliminating infiltration to the aquifer from the river in that area. Since 1985, the Fred Harvey water reclamation plant has recharged the basin artificially through injection of effluent into the aquifer. In 1996, 3,669 acre-feet of effluent were injected (U.S. Army 2000).

Most of the fresh water in the aquifer lies along the eastern front of the Franklin Mountains. The major fresh water deposit in the basin underlies Fort Bliss and northeast El Paso. Eastward the fresh water thins until only brackish water is present. Small pockets of fresh water occur along the front of the Hueco Mountains and serve as a water supply for commercial and residential users. Fresh water in the aquifer is generally of the sodium bicarbonate type. USGS models show that discharge to the bolson occurs by pumpage from wells and naturally as groundwater seeps into the Rio Grande alluvium (U.S. Army 2000).

Groundwater withdrawals by the city of El Paso from the Hueco Bolson in 1950 totaled 12,550 acre-feet. In 1996, municipal pumpage from the basin was 56,702 acre-feet (Sperka 1997). Groundwater withdrawals from the Hueco Bolson by military wells in Texas during the late 1980s were slightly more than 5,000 acre-feet. In 1996, Fort Bliss wells pumped 5,172 acre-feet of groundwater. Water at the main post, William Beaumont Army Medical Center, Logan Heights, and Biggs Army Airfield is supplied from the on-post well fields. The city of El Paso supplies water to McGregor Range and the North Hills Housing Area. The major source of water to Fort Bliss and related military facilities is groundwater from the Hueco Bolson that is pumped from the Main Post, Tobin, and Biggs well fields. Within the last 2 years, the Utilities Division at Fort Bliss has been removing the post from the El Paso water system (U.S. Army 2000).

Groundwater withdrawals from the Hueco Bolson by Ciudad Juarez, Mexico, were about 15,000 acre-feet per year in the late 1950s and throughout the 1960s, but in the early 1970s, water use began to increase sharply to the extent that withdrawals in 1984 amounted to 66,000 acre-feet per year. Present pumpage from the Hueco Bolson by Ciudad Juarez probably exceeds 100,000 acre-feet per year (U.S. Army 2000).

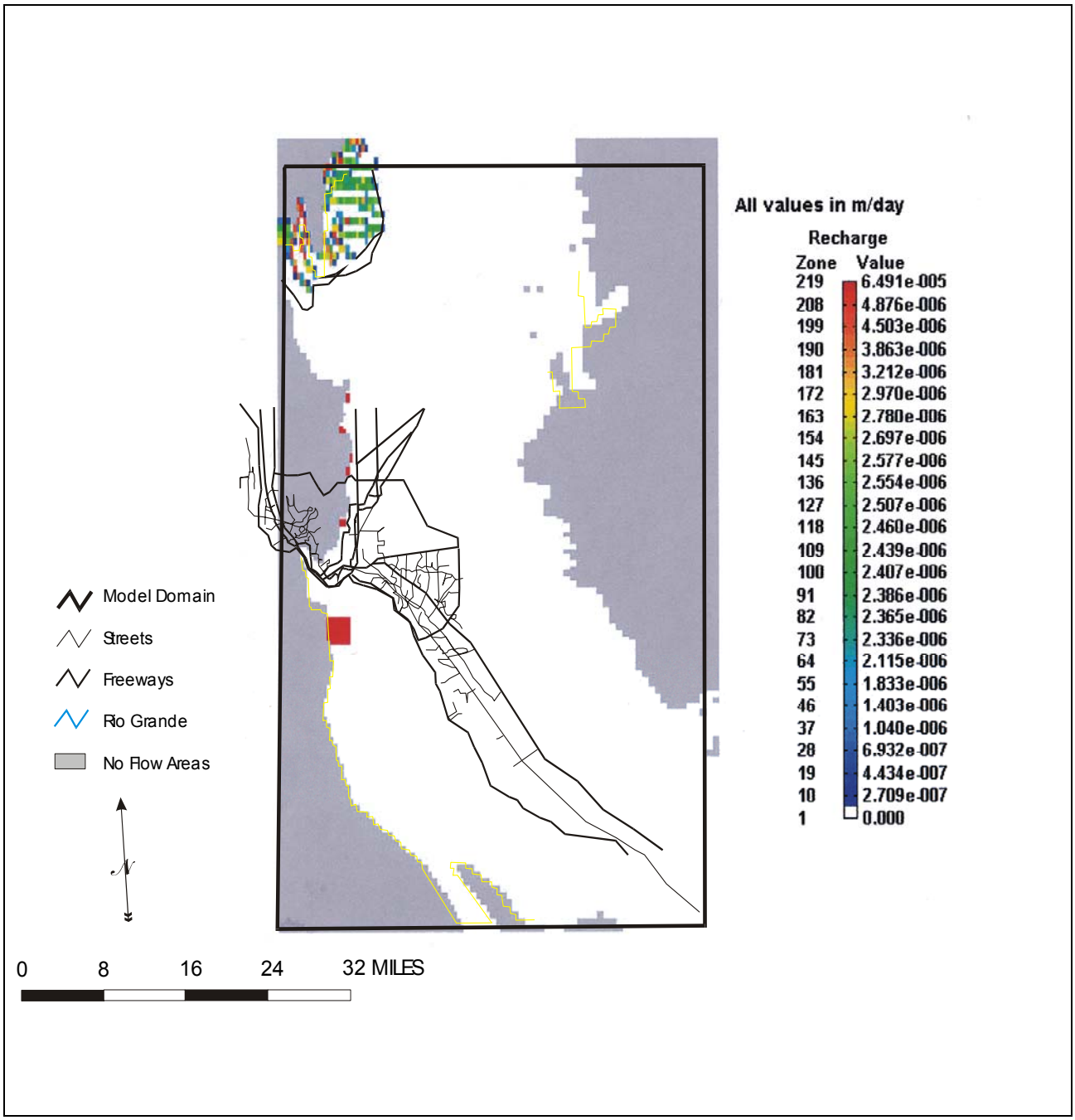


Figure 3-3
Aquifer Recharge Areas

The water in the Hueco Bolson aquifer underlying La Noria Mesa is unconfined and is generally of good quality. Water levels in the aquifer have been affected by extensive withdrawals that have caused major water-level declines. Two large cones of depression (one in the lower valley and one on the mesa) have formed around centers of large withdrawals of groundwater. Depth to water ranges from more than 350 feet near pumping centers to less than 100 feet elsewhere. The decline of water levels from 1903 to 1994 in the El Paso area ranged from less than 10 to 150 feet. The lowering of water levels in the bolson deposits has permitted the infiltration of salt water into the fresh water zones in those areas. Dissolved-solids concentrations in the early 1980s ranged from less than 500 to more than 1,500 milligram/liter (mg/L). A water quality survey indicated an average dissolved solids concentration of 642 mg/L in samples from wells in the United States and 736 mg/L from wells in Ciudad Juarez (U.S. Army 2000).

3.4.1.2 The Mesilla Bolson and Rio Grande Alluvium

The Rio Grande originates at 12,000 feet above MSL at the Continental Divide in the San Juan Mountains in Colorado. The river then runs through New Mexico to the western-most edge of Texas at the cities of El Paso, Texas and Cuidad Juarez, Chihuahua, Mexico. As the international border, the Rio Grande runs along the western and southern border of Texas, emptying into the Gulf of Mexico. Depending on the year and given the movement of the river, the length of the Rio Grande can vary greatly. An official measurement of the river in the 1980s by the Internationals Boundary and Water Commission identified the length of the Rio Grande at 1,896 miles (Metz 2002).

The Mesilla Bolson, a large intermontane basin, occupies the Rio Grande Valley west of the Franklin and Organ mountains in southern New Mexico and western Texas and extends south into Mexico. The Rio Grande runs along the east side of the basin in New Mexico and exits the basin in Texas at the south end of the Franklin Mountains. The low land along the river is known as the Mesilla Valley (U.S. Army 2000).

The aquifer in the Mesilla Bolson has been subdivided into four fresh water zones. The Rio Grande alluvium, or shallow zone, up to 80 feet thick, consists of poorly sorted re-worked river deposits of sand, clay, and gravel. The upper intermediate zone, about 170 feet thick, is hydrologically connected to the shallow zone and consists of sand, clay, and gravel lenses. The lower intermediate zone, 250 feet thick, contains fewer clay lenses than the upper intermediate zone. The deep zone, about 400 feet thick, is separated from the lower intermediate zone by a 10- to 40-foot thick clay layer and consists of uniform, fine-grained sand with small lenses of clay. This zone contains the best quality water. A limestone conglomerate containing brackish water underlies the deep zone (U.S. Army 2000).

The aquifer in the Texas part of the basin is estimated to contain 500,000 acre-feet of stored water. The city of El Paso operates a large well field at Canutillo where water is pumped for municipal, industrial, and irrigation supply from bolson (basin-fill) deposits and from the Rio Grande alluvium. Pumpage from municipal wells in the Mesilla Bolson was 26,015 acre-feet in 1996. Recharge to the aquifers in the lower

Mesilla Valley was estimated at 18,000 acre-feet per year. Unlike the Hueco Bolson, the Mesilla Valley groundwater is continuously recharged by the Rio Grande during the irrigation season. The quality of the groundwater is nearly twice as good as that of the Hueco Bolson and, unlike that in the Hueco Bolson, is generally superior to the quality of surface water. Recharge also occurs by infiltration of rainfall and runoff, and by leakage from the Rio Grande, which is increasing probably in response to a lowering of water levels in the aquifer due to pumping. Leakage from the Rio Grande to the alluvium increased from 15,000 acre-feet in 1968 to 30,000 acre-feet in 1983 (U.S. Army 2000).

The Rio Grande alluvium consists of stream channel and flood plain deposits composed of poorly sorted clay, silt, sand, and gravel that are derived from upstream areas and from erosion and redeposition of underlying bolson deposits. The alluvium reaches a maximum thickness of about 80 feet. Groundwater in the river alluvium is hydraulically connected to the shallow groundwater zones of the bolson deposits. The river alluvium groundwater is an important source for supplemental irrigation when the surface water flow in the Rio Grande is insufficient to meet the needs of valley farmers (U.S. Army 2000).

Groundwater in the alluvium is under water table conditions and is generally only a few feet below land surface except in areas where the water level has declined due to direct pumpage from the alluvium or due to downward leakage into underlying heavily pumped aquifers. The alluvium has been drained completely in parts of downtown El Paso and Ciudad Juarez (U.S. Army 2000).

3.4.2 Surface Water

Water from the Rio Grande is part of a U.S. Bureau of Reclamation (USBR) irrigation project that regulates and administers the flow of the Rio Grande below Elephant Butte Reservoir in New Mexico. The reservoir stores and releases water for flood control and power generation. Caballo Reservoir, downstream from Elephant Butte Reservoir, regulates releases for flood control and to meet downstream demands through the January to October irrigation season. Five diversion dams on the river divert flows to the Elephant Butte Irrigation District, New Mexico; the El Paso County Water Improvement District #1 (EPCWID), Texas; and to Mexico (U.S. Army 2000).

The Rio Grande Compact Commission apportions water from the river among Colorado, New Mexico, and Texas by interstate agreement. The compact provides for normal releases of 790,000 acre-feet per year to the irrigation districts, including 60,000 acre-feet per year to Mexico. In a normal water year, the EPCWID allotment is 43 percent of the available U.S. project water or about 310,000 acre-feet per year (El Paso County 1992). Return flows and other water entering the system below Caballo Reservoir increase the amount delivered to the EPCWID in a normal year to about 360,000 acre-feet per year. In years when the Rio Grande flows are below normal, less than full allotments are released, and the deliveries are decreased proportionately. Provisions of the contract allow Colorado and New Mexico to incur debits in their deliveries to Texas and to cancel accrued debits when reservoir spills

occur during years of high flow. Currently, almost all of the agricultural production in El Paso County occurs within the irrigated area of the EPCWID and areas contiguous to the district that irrigate with groundwater. The EPCWID has an area of 76,114 acres, and the contiguous areas irrigated by groundwater pumping represents an additional 8,600 acres (U.S. Army 2000).

El Paso is an EPCWID customer. Municipal and industrial supplies are obtained through water rights owned, leased, and assigned through the USBR and through purchased rights. Municipal and industrial waters are diverted at river plants in El Paso and Zaragosa, Texas, during the irrigation season. These diversions, which represent approximately 43 percent of El Paso's total municipal and industrial supply, amounted to 46,166 acre-feet in 1996 (U.S. Army 2000).

The quality of the Rio Grande water varies greatly during the year. This variation is due to the return flows of irrigation water between Caballo Dam and El Paso. As a result, concentrations of sulfates and total dissolves solids increase during the irrigation season until, near the end of the season, the water quality reaches a point where it no longer meets federal drinking water standards after treatment. The quality remains below standards until the following irrigation season. Shortly after irrigation releases begin in late winter, water quality improves sufficiently to be utilized by the treatment plants (U.S. Army 2000).

Surface water is preferred over groundwater for irrigation because of its lower cost and, in the Hueco Bolson, the superior quality of the river water. However, during years of inadequate surface water supply, shallow wells in the Rio Grande alluvium are pumped to augment the diversions. In 1985, 99 percent of the water used for irrigation was diverted from the Rio Grande. In that year almost 164,000 acre-feet, 57 percent of water used for all purposes in El Paso County, was used for irrigation (U.S. Army 2000).

3.4.2.1 Surface Water Modeling

Stormwater runoff estimates for average annual runoff and peak daily runoff were developed using the Hydrologic Evaluation of Landfill Performance (HELP) Model developed and published by the U.S. Environmental Protection Agency (USEPA) in conjunction with the U.S. Army Engineer Waterways Experiment Station. The HELP model is an industry-accepted model for projecting stormwater runoff as a result of the various types of ground surfaces present on site. The simulations were based on five years of weather data for the El Paso area and an assumed area of 45 acres per site (Tables 3-4 and 3-5).

Table 3-4
Proposed Border Patrol Station Modeling Results
for Average Annual Stormwater Runoff

Proposed Site	Number of Acres	Soil Type*	Average Annual Runoff (inch/acre)**	% Runoff
Site #1	11	E156	0.55	5.8%
Site #1	34	E107	0.03	0.0%
Site #2	45	E41	0.51	5.3%

* Categories based on classification from the Natural Resources Conservation Service (NRCS) under the U.S. Department of Agriculture (USDA 2001).
** Based on the average annual rainfall (9.6) and five years of weather data for the El Paso area (U.S. Army 2000).

Table 3-5
Proposed Border Patrol Station Modeling Results
for Peak Daily Stormwater Runoff

Proposed Site	Number of Acres	Soil Type*	Peak Daily Runoff** (inch/acre)	% Runoff
Site #1	11	E156	1.04	46%
Site #1	34	E107	0.03	0.0%
Site #2	45	E41	0.95	42%

* Categories based on classification from the Natural Resources Conservation Service (NRCS) under the U.S. Department of Agriculture (USDA 2001).
** Based on 2.64 inches daily peak precipitation and five years of weather data for the El Paso area (US Army 2000).

3.4.3 Floodplains

The minimum standard established for an area to be considered in a floodplain and under floodplain management is any area subject to a one percent or greater chance of flooding in a given year (NCFMP 2003). This standard is otherwise referred to as the base floodplain or the 100-year floodplain. Neither site is located within the limits of the 100-year floodplain. Additionally, a records research and ground survey were conducted on both sites by the USACE – El Paso Regulatory Office (correspondence in Appendix A). The results of this investigation indicated that there are no jurisdictional waters of the U.S. on either site. As a result the project would not be subject to provisions of Section 404 of the Clean Water Act and a permit would not be required.

3.5 AIR QUALITY

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.

3.5.1 Climate and Meteorology

The climate of El Paso is dominated by the northern Chihuahua Desert. As such, the area is a semi-arid to arid, subtropical desert, characterized by low rainfall, relatively low humidity, hot summers, moderate winters, wide temperature variations, and an abundance of sunshine throughout the year. Weather records indicate that rainfall amounts in the area can vary greatly from 2.22 inches and 18.29 inches annually. More than one-half of the total average annual precipitation occurs during the months of July, August, and September. During these months, brief but heavy rainstorms frequently cause localized flooding. A small percentage of annual precipitation falls in the form of snow. Periods of extreme dryness lasting up to several months are not unusual (U.S. Army 2000).

The El Paso area has a frost-free season that averages 248 days per year. Temperatures are generally warm, ranging from highs in the mid-50 degrees Fahrenheit (°F) during the winter months to highs well above 90°F during the summer. The annual average temperature is 63.3°F with a record low of -8°F and a record high of 114°F. Daytime humidity is generally low, ranging from 10 to 14 percent. Because of the mountainous terrain and the Rio Grande Valley, there are significant diurnal and locational fluctuations in humidity. Typical of desert climates, rapid cooling from nighttime re-radiation causes increases in relative humidity. Average daily relative humidity increases to about 40 percent at midnight and to 51 percent by 6:00 a.m. (U.S. Army 2000).

Wind speeds in the El Paso area are relatively moderate with an annual average of 9.0 miles per hour (mph). From October through February, average wind speeds range from 8.2 to 9.0 mph and are predominantly from the north. The highest average wind speeds (11.3 mph) occur during the months of March and April, decreasing slightly in May to an average of 10.5 mph. The combination of moderately strong sustained winds and the low average precipitation contribute considerably to the occurrence of dust and sand storms in the area. During the summer months, average wind speeds drop to their lowest levels of the year (less than 8.0 mph). The predominant wind direction during the summer months is from the south-southwest (U.S. Army 2000).

A combination of abundant sunshine, high temperatures, low relative humidity, and continuous winds results in an evaporative rate that is more than 10 times the amount of annual precipitation. The annual evaporative rate for shallow water bodies (known as "pans") is about 105 inches per year, and the average annual evaporation rate from small lakes in the region ranges from 72 to 80 inches (U.S. Army 2000).

3.5.2 Air Quality

The CAA delegates authority to state and local agencies to enforce the National Ambient Air Quality Standards (NAAQS) and to establish air quality standards and regulations of their own. The adopted state standards must be at least as restrictive as the federal requirements. Federal NAAQS are currently established for multiple pollutants (known as "criteria pollutants") shown in Table 3-6. The State of Texas has adopted the majority of the NAAQS as also shown in the table.

Table 3-6
Federal and Texas Ambient Air Quality Standards

Air Pollutant	Averaging Time	National Standards*		Texas Standard*
		Primary(1)	Secondary(2)	
Carbon Monoxide (CO)	1-hr	35 ppm	---	35 ppm
	8-hr	9 ppm	---	9 ppm
Nitrogen Dioxide (NO_2)	AAM(3)	0.053 ppm	0.053 ppm	0.053 ppm
Sulfur Dioxide (SO_2)	3-hr	---	0.5 ppm	0.5 ppm
	24-hr	0.14 ppm	---	0.14 ppm
	AAM(3)	0.03 ppm	---	0.03 ppm
Particulate Matter ($PM_{2.5}$)	24-hr	65 $\mu g/m^3$	65 $\mu g/m^3$	
	AAM(3)	15 $\mu g/m^3$	15 $\mu g/m^3$	
Particulate Matter (PM_{10})	24-hr	150 $\mu g/m^3$	---	150 $\mu g/m^3$
	AAM(3)	50 $\mu g/m^3$	---	50 $\mu g/m^3$
Total Suspended Particulate (TSP)	1-hr	---	---	400 $\mu g/m^3$
	3-hr	---	---	200 $\mu g/m^3$
Lead (Pb) and Lead Compounds	Calendar Quarter			
	3-months	1.5 $\mu g/m^3$	---	1.5 $\mu g/m^3$
Ozone (O_3)	1-hr	0.12 ppm	0.12 ppm	0.12 ppm
	8-hr	0.08 ppm		

[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.
* Adapted from 40 CFR 50 and TNRCC regulations.

$\mu g/m^3$	microgram per cubic meter
hr	hour
ppm	parts per million
TCEQ	Texas Commission on Environmental Quality

The proposed and alternative sites are located within El Paso County, Texas. El Paso County is classified as serious non-attainment for ozone (O_3). The city of El Paso is designated moderate non-attainment for particulate matter that measures 10 microns or less in diameter (PM_{10}), and portions of the city of El Paso are designated as moderate non-attainment for carbon monoxide (CO). The proposed and alternative sites are located within the areas designated non-attainment for O_3 and PM_{10} but are not located in the area of the city of El Paso designated as non-attainment for CO.

Because the sites are located within non-attainment areas, the action is subject to the General Conformity Rule of the CAA, Section 176(c) that states that activities must not: (a) cause or contribute to any new violation; (b) increase the frequency or severity of any new violation; or (c) delay timely attainment of any standard, interim emission reductions, or milestones in conformity to a State Implementation Plan's

(SIP) purpose of eliminating or reducing the severity or number of NAAQS violations or achieving attainment of NAAQS. In general, actions that meet the above criteria and generate emissions below established *de minimis* levels in non-attainment areas are considered to conform. *De minimis* levels for applicable pollutants are shown below in Table 3-7.

Table 3-7
Baseline Pollutant Emissions and *de minimis* Levels
for El Paso County, Texas

	Pollutant Emissions (tpy)				
Emission Type	**SO_X**	**NO_X**	**CO**	**VOCs**	**PM_{10}**
El Paso County Baseline Emissions[a]	896	25,154	154,105	23,849	747
de minimis Level	N/A	50	N/A[b]	50	100

[a] Source: TCEQ, 2001. Note, values for SO_X and PM_{10} are for stationary point sources only and are based on 1999 emissions inventory levels. Values for NO_X, CO, and VOCs include stationary and mobile sources and are based on 1996 emissions inventories.

[b] The CO non-attainment area within El Paso does not encompass the areas of the proposed action or alternative sites.

CO	carbon monoxide	SO_X	sulfur radicals
N/A	not applicable	tpy	tons per year
NO_X	nitrogen oxides	VOC	volatile organic compound
PM_{10}	particulate matter		

Special provisions of the CAA for international border areas govern the evaluation of some select El Paso air quality issues. El Paso has received a federal waiver on control requirements for nitrogen oxides (NO_X). Based on photochemical dispersion modeling, the waiver concedes that, except NO_X emissions emanating from Mexico, the area would be attainment for the O_3 standard (US Army 2000)

Accurate emissions inventories are needed for estimating the relationship between emission sources and air quality. An emissions inventory is an estimate of total mass emissions of pollutants generated from a source or sources over a period of time, typically a year. The most current baseline emissions inventories for pollutants in El Paso County are maintained by the TCEQ and are shown in Table 3-7. Note that O_3 is not typically emitted directly from most emissions sources. O_3 is formed in the atmosphere from its precursors, nitrogen oxides (NO_x) and volatile organic compounds (VOCs) that are directly emitted from various sources. Thus, NO_x and VOC are commonly reported in emissions inventories instead of O_3. El Paso County is not a significant source of lead emissions; therefore, lead emissions are not presented in Table 3-7.

3.6 SOCIOECONOMICS

Socioeconomic resources are defined as the basic attributes associated with the human environment, particularly population and economic activity. Population is described by the change in magnitude, characteristics, and distribution of people. Economic activity is typically composed of employment distribution, personal income, and business growth. Any impact on these two fundamental socioeconomic indicators can have ramifications for secondary considerations, like housing availability and public service provision.

The city of El Paso is regarded as the financial, service, and retail center for the region. Therefore, for the purposes of this analysis, the economic trends for this EA are addressed for El Paso County. All but population growth are comparable for the city and the county, so the Region of Influence (ROI) for most resources in this section is El Paso County.

3.6.1 Population Growth

Table 3-8 shows the growth of the city of El Paso relative to the county, state, and nation. It is apparent that over a ten-year period, the city has comparable population growth to both the county and state levels. The state, county, and city grew at approximately twice the national growth.

Table 3-8
Comparison of Population Growth

Area	7/1/99	4/1/90	Numeric Change	% Change
City of El Paso	612,770	515,652	97,118	18.8
El Paso County	701,908	591,610	110,298	18.6
Texas	20,044,141	16,986,335	3,057,806	18.0
U.S.	272,690,813	249,464,396	23,226,417	9.3
Source: USCB 2001				

3.6.2 Employment

Table 3-9 shows the breakdown of both full- and part-time jobs for El Paso County, as well as per capita income (PCI) for various levels. Over the four-year period for which these statistics were reported, El Paso County experienced a 6.6 percent growth in total jobs, while the State of Texas grew 10.9 percent, and the U.S. increased 9.4 percent. The increase in jobs within El Paso County lags behind the growth that characterizes the rest of the state and the nation. The PCI within El Paso County has increased 17 percent, while increasing by 22 percent and 20 percent for the state and nation, respectively (USCB 2001).

Table 3-9
Employment Information, El Paso County, State of Texas, and United States, 1995 versus 1999

Location	1995	1999[1]
El Paso County		
Total Jobs	301,205	320,956
Farm Employment/ Agricultural services, forestry, fishing, and other	66,105	69,556
Construction and Mining	10,400	12,600
Manufacturing	46,500	39,700
Transport and Public Utilities	12,700	14,800
Wholesale Trade	12,300	13,000
Retail Trade	44,300	46,400
Finance, Insurance, and Real Estate	8,700	10,000
Services	50,700	59,700
Government	49,400	55,200
Per capita personal income (dollars)	19,561	17,216
Average earnings per job (dollars)	21,121	24,327
TEXAS		
Total Jobs	10,539,009	11,689,962
Per capita personal income (dollars)	21,526	26,834
Average earnings per job (dollars)	26,405	32,254
UNITED STATES		
Total Jobs	124,632,000	136,368,000
Per capita personal income (dollars)	23,562	28,546
Average earnings per job (dollars)	27,400	32,711

Source: USBEA 1998 (1999 data unavailable as of 11/9/01)
[1] projected amounts

Within El Paso County, farm employment and agricultural services compose the largest part of private sector jobs, followed by services and manufacturing. Government provides the second largest amount of jobs (USBEA 1998). The proposed BPS would be able to accommodate up to 350 agents. However, any increase in current agents to reach this capacity would occur over several years (INS 2001).

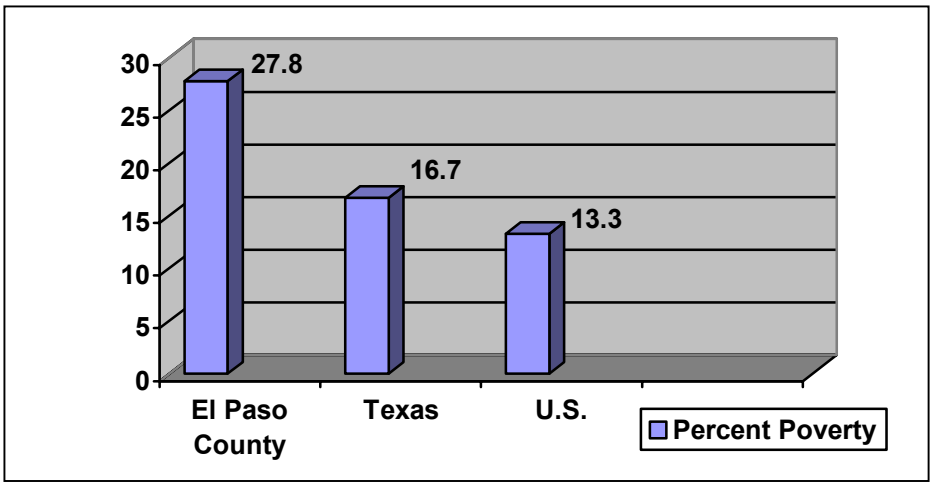
3.7 ENVIRONMENTAL JUSTICE

To ensure that environmental justice issues are addressed by the government, federal agencies are required to conduct their programs, policies, and activities that substantially affect human health or the environment in a manner that ensures that no person is excluded from participation therein, denied the benefit thereof, or subjected to discrimination due to their race, color, or national origin.

Baseline trends for El Paso County were analyzed in comparison to those at the state and national level. Consequently, various data in this section are presented for El Paso County, the State of Texas, and the U.S. Existing conditions for environmental justice were analyzed through demographic characterization, particularly ethnicity and poverty status for El Paso County.

Data from the U.S. Census Bureau is provided in Figure 3-4. This figure compares the percentage of persons living in poverty based on an economic model developed by the Census Bureau. In 1997, the Census Bureau considered the poverty threshold for a two-person household to be $10,473 (INS 2001). Based on these data, El Paso County can be considered to have a disproportionately high number of persons living in poverty with 27.8 percent below the threshold, compared to the state and national levels shown in the graph.

Figure 3-4
Percentage of People in Poverty



El Paso County differs significantly from both the state and the nation in unemployment. The Bureau of Labor Statistics (USDL 2001) reported that in 1999, 9.4 percent of the county's workforce was unemployed, while Texas and the nation had 4.6 and 4.2 percent, respectively. Additionally, El Paso County has a higher percentage of Hispanic residents when compared to state or national profiles. The demographic profile of the population of El Paso County in comparison to Texas and U.S. statistics is provided in Table 3-10.

Based on the data from the Census Bureau and Bureau of Labor Statistics, El Paso County possesses a significantly high number of minority households, households below the poverty level, and a higher unemployment rate than the rest of the state or nation.

Table 3-10
Demographic Data Relevant to Environmental Justice

Area	White, Non-Hispanic	Black	American Indian & Alaskan Native	Asian & Pacific Islander	Hispanic
El Paso County	17.0	3.1	0.8	1.1	78.2
Texas	52.4	11.5	0.6	2.8	32.0
U.S.	69.1	12.3	0.9	3.7	12.5

Information provided in this table was retrieved from the 2000 Census Bureau Database and is presented in percentages of the overall population
Source: USCB 2001

3.8 NOISE

Noise is usually defined as unwanted sound, a definition that includes both the psychological and physical nature of the sound (AIHA 1986). Under certain conditions, noise may cause hearing loss, interfere with human activities at home and work and may affect human health and well-being in various ways.

Sound pressure level (Lp) can vary over an extremely large range of amplitudes. The decibel (dB) is the accepted standard unit for measuring the amplitude of sound, because it accounts for the large variations in amplitude and reflects the way people perceive changes in sound amplitude. Sound levels are easily measured, but the variability is subjective, and physical response to sound complicates the analysis of its impact on people. People judge the relative magnitude of sound sensation by subjective terms such as "loudness" or "noisiness." Table 3-11 presents the subjective effect of changes in sound pressure level. The "Change in Power" column refers to the number of times louder the increase is or the amount of decrease in sound level. For instance, a 3 dB change in sound level equates to the change being either two times as loud or half as loud as the original sound level.

Table 3-11
Subjective Effects of Changes in Sound Pressure Level

Change in Sound Level (dB)	Change in Power*		Change in Apparent Loudness
	Decrease	Increase	
3	1/2	2	Just perceptible
5	1/3	3	Clearly noticeable
10	1/10	10	Half or twice as loud
20	1/100	100	Much quieter or louder

* Loudness multiplier
Source: Bies and Hansen, 1988

Different sounds contain different frequencies. When describing sound and its effect on a human population, A-weighted (dBA) sound levels are typically used to account for the response of the human ear. The term "A-weighted" refers to a filtering of the noise signal that emphasizes frequencies in the middle of the audible spectrum and de-emphasizes low and high frequencies in a manner corresponding to the way the human ear perceives sound. This filtering network has been established by the American National Standards Institute (ANSI 1983). The A-weighted noise level has been found to correlate well with people's judgments of the noisiness of different sounds and has been used for many years as a measure of community noise. Figure 3-5 shows the typical A-weighted sound levels for various sources.

Community noise levels usually change continuously during the day. However, community noise exhibits a daily, weekly, and yearly pattern. Several descriptors have been developed to compare noise levels over different time periods. One descriptor is the equivalent sound level (Leq). The Leq is the equivalent steady-state A-weighted sound level that would contain the same acoustical energy as the time-varying A-weighted sound level during the same time interval.

Another descriptor, the day-night average sound level (Ldn), was developed to evaluate the total daily community noise environment. L_{dn} is the average A-weighted acoustical energy for a 24-hour period with a 10 dB upward adjustment added to the nighttime levels (10:00 p.m. to 7:00 a.m.). This adjustment is an effort to account for the increased sensitivity of most people to noise in the nighttime hours. The L_{dn} has been adopted by the U.S. Environmental Protection Agency (USEPA), the Federal Aviation Administration (FAA), and the Department of Housing and Urban Development (HUD) as the accepted unit for quantifying human annoyance to general environmental noise.

Annoyance is the primary human response to intermittent environmental noise that includes relatively long intervals of quiet (AIHA 1986). The degree of annoyance has been found to correlate well with the Ldn. A comparison of the Ldn with the percentage of the exposed population that is "highly annoyed" in combination with the estimated population exposed to Ldn levels greater than 65 dBA provides an estimate of the number of persons "highly annoyed" by aircraft noise. These levels of annoyance are based on long-term exposure. Annoyance for short-term activities, such as construction noise and new flight patterns, can be influenced by many factors, including habituation and attitude toward the activity creating the noise. Nonetheless, a comparison of this type provides the best available information to predict reactions to a new noise exposure.

Both of the sites considered for placement of the BPS and Sector Headquarters (the proposed action) are vacant or undeveloped areas. Site 1 (Castner Range Site) is surrounded on at least two sides by urban development. Site 2 – Northern Public Service Board Site is located in an undeveloped area and is used for cattle grazing. However, the both site is located immediately adjacent to U.S. Highway 54, and are located outside the flight paths associated with the El Paso International Airport or Biggs Army Airfield. Therefore, noise levels present on Sites 1 and 2 would be consistent with typical urban developed areas.

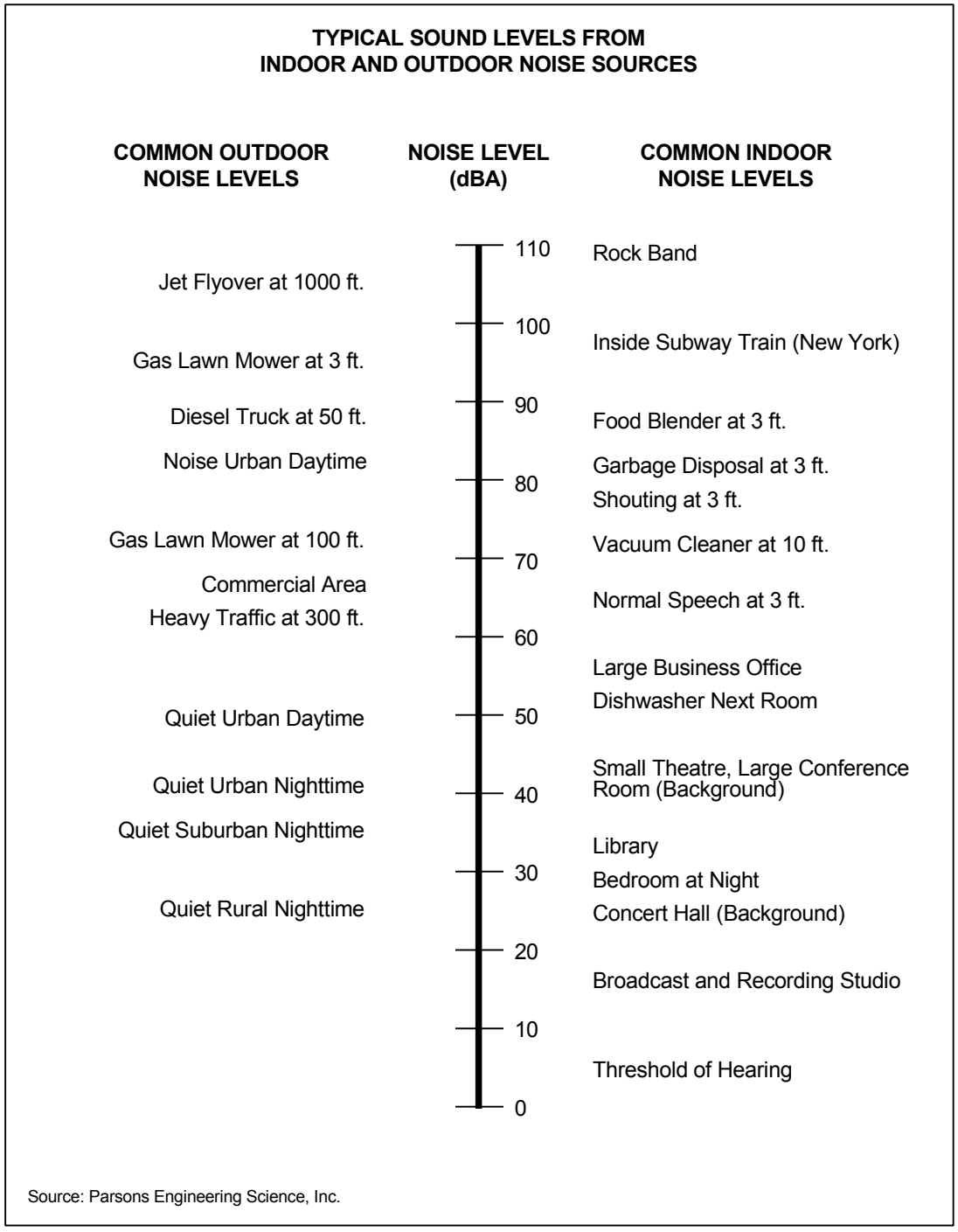


Figure 3-5
Typical A-weighted Sound Levels

3.9 CULTURAL RESOURCES

Cultural resources are significant prehistoric or historic sites, districts, buildings, structures, objects, and other evidence of human activity. These resources can be grouped into three major categories: archaeological (both prehistoric and historic), architectural (including landscapes), and traditional cultural.

Archaeological resources are locations where human activity has altered the earth or left deposits of physical remains (e.g., stone tools, bottles, structure ruins). By definition, prehistoric archaeological resources pre-date the beginning of written records, while historic resources post-date written records. Architectural resources include standing buildings, dams, canals, bridges, and roads. Buildings generally must be 50 years or older or possess an exceptional historical importance.

Traditional cultural resources are associated with the practices and beliefs of a living community, rooted in its history with an importance in maintaining and continuing the cultural identity of the community. These resources can include archaeological sites, buildings, plants, and the locations of significant events or traditional use areas.

3.9.1 Historic Setting

This brief summary of the historic setting in the area of the proposed action is based on that provided in the archaeological survey report in Appendix B.

The Tularosa Basin in the Mogollon area of southern New Mexico and west Texas is currently understood to have been occupied during three major time intervals: PaleoIndian, Archaic and Formative.

3.9.1.1 PaleoIndian Period

The earliest well-documented archaeological remains of human occupation of the Southwest area are assigned to the PaleoIndian period, dating between 11,000-8,000 years ago (Abbott 1996:45, Mauldin 1998:15). Although distinctive PaleoIndian stone tool assemblages containing finely made lanceolate points are highly ephemeral, isolated finds have been reported from areas adjacent to this project location. Isolated Clovis finds, generally in the form of projectile points, have been reported in the area (Harkey 1981, Krone 1976) and more recently at the North Mesa site (LA 5529). Along with these isolates, two confirmed Clovis "localities" have been documented: the Mockingbird Gap site (Weber 1968) and the Rhodes Canyon locality (Eidenbach 1983). Mockingbird Gap is extremely important archaeologically due to its interpretation as a campsite, and the fact that it is located adjacent to an extinct, Pleistocene lakebed.

Folsom assemblages (projectile points and associated debitage [Abbott 1996:45-46, Camilli 1988, Krone 1975, Russel 1968, Everitt 1974, Quimby 1967, Russel 1968]) that have been dated elsewhere at 11,500-8,000 years ago (Wheat 1972) are by far the oldest PaleoIndian remains found in the immediate area. The Cruz Tarin site located approximately 45 miles to the northwest of the project area and the Folsom complex as

described by Russel (Russel 1968) near Oro Grande, New Mexico, are examples of sites in the immediate vicinity of this project area which have produced large amounts of Folsom material.

Isolated occurrences and sites of diversified lithic technologies have been reported in the project area (Broilo 1973, Eidenbach 1983, Elyea 1987, Everitt 1974, Kauffman 1984). These technologies are collectively dated from approximately 10,500-8,000 years B.P. (Wheat 1972, Cordell 1979).

Sites and isolated occurrences within the project area are generally assigned to the PaleoIndian period based on the presence of specialized tools and projectile points (Kauffman 1987). Chronometric evidence must be established in future studies in order to be confident that the projectile points date to the PaleoIndian period.

3.9.1.2 Archaic Period

Increasingly diversified adaptations among the prehistoric inhabitants of the area were documented as beginning approximately 8,000 B.P. (Mauldin 1998:15-16, Abbott 1996:47). This period of adaptations lasted from approximately 8,000 to around 2,000 years ago and is generally referred to as the Archaic Period.

Most of the Archaic sites known from the project area are from surface scatters and not from excavated sites; however, several excavated Archaic sites are present (e.g., two fire-cracked rock/lithic scatter sites that were excavated at the Doña Ana County Fairgrounds, located on Las Cruces' West Mesa [Seaman 1988]). Archaic cultural remains found within the general project location are manifestations of two basic cultural groups: Cochise Culture and Oshara Tradition (Abbott et al. 1996:231).

In the immediate project location, Upham (Upham 1987) and MacNeish (MacNeish 1987) have reported evidence for early cultigens from several rock shelters including Roller Skate (NMSU 1519), Tornillo (LA17687), and Todsen (LA 5531) shelters—within the Mesilla Valley proper, located within a radius of 10 miles of Las Cruces. Specialized architectural features that appeared late in the Archaic sequence have been noted in the general project area (O'Laughlin 1980).

3.9.1.3 Formative Period

The succeeding periods in the occupational history of the region are generally termed "Mogollon." Archaeological research was first intensively done in the Mogollon area of southern New Mexico and west Texas by Donald Lehmer in the late 1940s. This early research has since served as a baseline for later researchers with the Formative Period defined as extending from A.D. 250-1450 (Abbott 1996:47).

According to the postulate formulated by Donald Lehmer, there was a shift away from nomadic hunting-and-gathering around 2,000 years ago toward a more sedentary settlement system based on the cultivation of crops such as maize and beans. In the southern New Mexico area, the Formative Period has been subdivided into three phases including the Mesilla (A.D. 900-1100), Doña Ana (A.D. 1100-1200), and El Paso (A.D. 1200-1400) phases.

3.9.1.4 Historic Native Americans

At the time of first contact with Native Americans, Spanish explorers assigned names to a myriad of small groups of hunter-gatherers situated along the margins of the Rio Grande, including the Sumas, Jumanos or Quemanderos and, finally the Apaches (Forbes 1957). Archaeological studies of sites associated with the activities of such groups are lacking.

3.9.1.5 The Recent Period

Perhaps the most important factor affecting the El Paso region in the Recent Period was the establishment in 1849 of the military outpost of Fort Bliss near Smith's Ranch (Jamieson 1993:1, Thomlinson 1945:1). Initially intended to provide protection to travelers making their way to California, the cavalry soldiers of Ft. Bliss found themselves riding as far west as the Arizona state line and as far east as the Big Bend country.

The importance of Ft. Bliss waxed and waned depending on such events as the Civil War and Indian raiding; consequently, the location of the fort shifted a number of times during the mid-late nineteenth century (Harris and Sadler 1993:1, Sonnichson 1968:128). In 1854, it was moved to Magoffinsville (Sonnichson 1968:155, Thomlinson 1945:7, 13). In 1868, the fort was moved again to a temporary encampment on the Stephenson Ranch (Thomlinson 1945:17-19) and in 1876, this post, too, was abandoned (Thomlinson 1945:21).

In 1879, Ft. Bliss was reestablished near Hart's Mill (Sonnichson 1968:210, Thomlinson 1945:23). By 1890 with the arrival of rail service into El Paso, Ft. Bliss was again moved this time to its present location (Thomlinson 1945:29-30). Since 1890 and particularly since 1945, Ft. Bliss has gradually expanded its holdings so that it now includes almost a million acres.

Of particular importance is the acquisition of the Castner Range, location of one of the parcels discussed in this report. According to Thomlinson (Thomlinson 1945:37-38), an initial piece of the Castner Range was acquired in 1928, and in 1932, it was expanded to its current 3,520 acres (Harris 1993:107, Jamieson 1993:42-43).

3.9.2 Cultural Resources

3.9.2.1 Site 1 – Castner Range Site

The Castner Range Site is situated in the lower bajada along the east-facing slopes of the Franklin Mountains. Vegetation consists of creosote, mesquite, yucca, acacia, cacti, and various grasses. Rail systems and observation towers once dotted this part of the Castner Range; however, there is no remaining surface evidence of any of these structures. Their absence is due most likely to the effects of construction of the Northgate Dam.

The surface inventory of this site included a pedestrian survey in which crew spacing averaged 15 meters. Shovel test pits *were not* excavated due to the hazards posed by potential unexploded ordnance.

Fifty-nine isolated occurrences were found on the surface of the Castner Range Site. The overwhelming majority of these consisted of historic period artifacts such as glass bottle/container fragments, cans, firearm cartridges; automobile parts were also found. These items likely represent, in effect, a debris field surrounding the two identified archaeological sites.

The first of these sites is a very large historic site dating to the mid-twentieth century. The second is a prehistoric site dating to the late prehistoric period.

The fist site is located along the southwestern edge of the Castner Range Site and consists of 18 spatially distinct loci representing historic, mid-twentieth century trash dumps. The highest density of artifacts is situated along the eastern margin of the site. The artifact assemblage consists primarily of glass bottle fragments with relatively smaller proportions of tin cans. There are perfume bottles, children's toys, firearm cartridges, and other more unusual artifacts intermixed with these items. The artifacts are consistent with household domestic refuse; industrial or military refuse is absent.

The second site is a low-density prehistoric sherd scatter situated adjacent to a small arroyo that drains eastward from the Franklin Mountains. There are 36 sherds and one large quartzite primary flake associated with these sherds. There is no surface evidence of hearths, structures, or other features. This evidence suggests that the site represents a short-term, limited activity occupation. The approximate age of this site is estimated solely based on the single Playas Red Incised sherd fragment found on the surface. On this basis, the site dates to approximately ca. A.D. 1075 to 1400 (Abbott 1996:242-243).

3.9.2.2 Site 2 - Northern Public Service Board Site

The Northern Public Service Board Site is located along the west side of U.S. Highway 54 immediately north of the junction of McCombs Road and Gateway South.

The surface inventory of the site included a pedestrian survey in which crew spacing averaged 15 meters. Shovel test pits were also excavated to evaluate the potential for subsurface deposits. No artifacts were found in any of the 16 test pits.

Fifty-nine isolated occurrences were found on the surface of the Northern Public Service Board Site. Without exception, all of the isolated occurrences consisted of historic period artifacts (glass bottle/container fragments, cans, firearm cartridges, and automobile parts). All of the isolated artifacts date to the early twentieth century and mirror the types and ages of artifacts found on more formal, bounded archaeological sites. Again, isolated artifacts seem to represent a debris field surrounding such sites.

Perhaps the most obvious impact to the site has been the construction of a variety of ranching and recreational features, including an abandoned earthen stock tank and the concrete foundation for a metal water tank. The other impact consists of the remnants of two asphalt runways used by model airplane enthusiasts.

One very large historic site was documented. Artifacts consist primarily of surficial trash, consisting primarily of glass fragments. The weighted average age of this site is estimated at 1916 plus or minus 16.7 years.

3.10 AESTHETICS

Visual resources constitute the natural and manmade features that give a particular environment its aesthetic qualities. A visual impression of an area is derived from the type, arrangement, and contrast between these features. Although each viewer's perception may differ slightly, an overall landscape character can be assigned to an area and impacts to that character can be assessed. The following provides a description of the aesthetic qualities of the proposed project area.

3.10.1 Site 1 – Castner Range Site

The areas along the eastern and southern boundaries of Site 1 are developed, consisting of residential and commercial land use. The areas along the northern and western edges of the site are undeveloped, possessing a view of the Franklin Mountains and the surrounding desert. Immediately adjacent to the proposed site, along the northwestern edge of the site, is Northgate Dam. Northgate Dam, which is approximately 60 feet high, is a dominant feature in the surrounding landscape, secondary only to the Franklin Mountains. The proposed facilities would include a 100-foot communications tower. Although the tower is expected to exceed the height of Northgate Dam by 40 feet. Motorists traveling along U.S. Highway 54 encounter a scenic view of both the mountains and the dam. Residents in the neighborhood to the southwest of the site experience a dramatic view of the Franklin Mountains and the backside of Northgate Dam. The backside of Northgate Dam resembles a large borrow-area or hole, where soil was removed to construct the dam. Residents in this neighborhood also experience a view of U.S. Highway 54 and the urban development adjacent to the highway.

3.10.2 Site 2 - Northern Public Service Board Site

The area surrounding Site 2 is, for the most part, undeveloped. To the north and northeast of the site lie a small private airfield and a public golf course, respectively. Currently, Site 2 is part of a 9,000-acre cattle-grazing lease. With the exception of some disturbed vegetation resulting from road construction activities and the placement of a drinking water well, the site still retains all of the characteristics of an undisturbed desert environment. The views surrounding the site are scenic and uninhibited by any significant development. The panoramic view of the Franklin Mountains is the dominant aesthetic feature of the site.

4. ENVIRONMENTAL IMPACTS

An environmental consequence or impact is defined as a modification in the existing environment brought about by the implementation of the proposed action or alternatives. Impacts can be beneficial or adverse, can be a primary result of an action (direct) or a secondary result (indirect), and can be permanent or long-lasting (long-term) or temporary and 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 during and immediately after the construction activities as defined in the proposed action and alternatives. For this project, short-term impacts are defined as those impacts resulting from construction activities, whereas long-term impacts are those resulting from the operation of the BPS and Sector Headquarters.

Impact-significant criteria are presented for each affected resource. These criteria are based on existing regulatory standards, scientific and environmental documentation, and/or best professional judgment. Potential impacts for this project were classified at one of four levels: significant, moderate, insignificant (or negligible), and no impact. Significant impacts (as defined in CEQ guidelines 40 CFR 1500-1508) would be those effects that are most substantial and, therefore, should receive the greatest attention in the decision-making process. Moderate impacts would be those impacts associated with a proposed action that were noticeable to the public and surrounding community but failed to meet the criteria used to define significant impacts. 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:

- Significance Criteria. The level of impact that would qualify as significant based on regulatory standards, available scientific documentation, and the best professional judgment of resource specialists.

- Impacts. The level and duration of impacts that would occur as a result of the proposed action and alternatives.

- Mitigation. Mitigation measures and/or standard operating procedures that could be applied to avoid or further reduce adverse impacts. These measures would be incorporated into the project design.

Cumulative impacts and irreversible and irretrievable commitment of resources are discussed in this section as part of the following discussions of each specific resource. Cumulative impacts are those that 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. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (CEQ, 1978).

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 alternatives. Table 2-2 in Section 2 presents a comparison of the potential impacts by each area of concern that are discussed in detail in this section.

4.1 LAND USE, TRANSPORTATION, AND HAZARDOUS MATERIAL/WASTE

4.1.1 Significance Criteria

Impacts to land use would be considered significant if activities under the proposed action and alternatives resulted in a major change of land use or conflicted with an existing land use. For this environmental analysis, land use was assessed for compatibility with current and projected land uses and the existing land management plan for the city of El Paso. Impacts to transportation would be considered significant if the implementation of the proposed action or alternatives created a major change in the level of service of an existing street and roadway as it relates to traffic flow.

A hazardous material/waste impact would be significant if the environment or construction workers during an activity were exposed to potentially harmful concentrations of hazardous or regulated materials, wastes, or substances. Impacts could result if nonhazardous/regulated and hazardous substances were collected, stored and/or disposed of improperly. The development and implementation of a spill prevention and response plan would minimize the potential impacts of an accidental release.

4.1.2 Proposed Action

4.1.2.1 Site 1 – Castner Range Site

Land Use. Designated by the U.S. Army as a closed artillery training area, the land use on Castner Range would not be significantly impacted by the implementation of the proposed action. Additionally, land use in the area adjacent to the southeast corner of Castner Range would not be significantly impacted by the implementation of the proposed action at Site 1. As a federally held resource, Castner Range is not subject to city zoning ordinances. Therefore, no changes in zoning would be required. The proposed BPS and Sector Headquarters would be a compatible land use to the existing TXDOT compound already present at the intersection of U.S. Highway 54 and Hondo Pass Road, as well as to the Army National Guard Armory across U.S. Highway 54. The land use along Hondo Pass Road immediately across from the proposed compound is commercial, with a residential community beyond that. As a result of this distance between the residential community and the proposed BPS and Sector Headquarters, the proposed action would not significantly impact those areas. Additionally, given the current status of the property as a closed artillery firing range for the U.S. Army, the site possesses an explosive hazard to the neighboring community.

Under the proposed action, the explosive hazards (and chemical residues from explosives) and heavy metal contamination (the 45-acre site southwest of Northgate Dam) would be eliminated during the remediation process. Trespassing on the site, which currently is prohibited, would be more strictly enforced in the vicinity of the Border Patrol Station, thus, reducing the explosive hazards of the site.

The proposed 100-foot communications tower would operate at a frequency of 162 to 165 Megahertz. The Institute of Electrical and Electronics Engineers has established maximum permissible exposure (MPE) limits for human exposure in an uncontrolled environment to electromagnetic frequencies from 3 Kilohertz to 300 Gigahertz. An uncontrolled environment is defined by the Institute as the exposure of individuals who have no knowledge or control of their exposure. Therefore, there would be no exposure risks to community or the environment as a result of the tower.

Transportation. In recent studies performed by the Texas Department of Transportation in September 2003, U.S. Highway 54 at Loop 375 handles approximately 49,000 average cars annually, while at Dyer Street the highway handles approximately 57,000 average cars annually. If the proposed Border Patrol Station and Headquarters increases the traffic by 300 to 500 cars annually, the increase would only equate to less than 1% of the total traffic volume. The transportation network in the area of Site 1 would be able to handle the increased traffic resulting from the implementation of the proposed action without diminishing the level of service of the roads. The southbound access road to U.S. Highway 54 could provide suitable access to the site. Given the limited amount of development in the area north of the site, the expected traffic flow would be within the capacity of the roadway. Access to the site from Hondo Pass Road would also be accomplished without significantly impacting the level of service of the roadway. The location of the proposed compound would be in close proximity to the intersection of Interstate 54 and Hondo Pass Road. As a result, traffic in and out of the compound from Hondo Pass Road would have an insignificant impact on the traffic flow to the commercial and residential areas located further down Hondo Pass Road. Additionally, Site 1 is located closer to the detention centers (Paso del Norte Processing Center and the El Paso District Detention and Deportation Center) than Site 2.

Hazardous Materials and Hazardous Waste. All unexploded ordnance and hazardous contamination removed from Site 1 would be handled in accordance with all local, state, and federal regulations and laws. This remediation process would improve the overall quality of the site. Any hazardous materials used during the construction and operation of the proposed facilities would be handled and managed in accordance with all local, state, and federal regulations and laws. Any wastes generated during the construction and operation of the proposed facilities would be handled and disposed of in accordance with all local, state, and federal regulations and laws. Therefore, in terms of explosive hazards and chemical and/or heavy metal contamination, there would be no significant impact to the environment.

A Military Munitions Response Action would be performed prior to construction activities on Site 1. Clearance of Munitions Explosives Constituents, including unexploded ordnance, and munitions debris would be performed using magnetometers.

Clearance would be to depth of detection, which is dependent on the mass of the item being detected, but would assure clearance to four feet below ground surface. The entire 45 acres would be cleared by certified Military Munitions Response Program personnel and contractors. Prior to any construction activity, a clearance certificate would be provided to CBP. The government's contractor would perform the clearance, and the government would perform quality assurance.

Only anomalies detected by magnetometers would be investigated, reducing impact to the natural environment. In the event an anomaly is detected directly below vegetation, the vegetation would be removed during the identification of the anomaly as discussed in Section 4.2.2.1. In the event that unexploded ordnance is found, and an item requires detonation or blow-in-place, engineering controls such as sand bagging would be used to minimize impacts to the environment. These engineering controls would also be used to minimize risk to personnel on site. Every attempt would be made to preserve the existing natural environment. No heavy equipment would be used and anomalies would be investigated using hand tools such as shovels and trowels.

4.1.2.2 Site 2 – Northern Public Service Board Site

Land Use. The city of El Paso does not currently have an approved master development plan for the area in which Site 2 is located. However, based on the *Draft Northeast El Paso Master Development Plan*, the proposed land use (commercial) would be compatible with the proposed action. The small private airfield and public golf course would not be significantly impacted by the implementation of the proposed action. The release of the 45-acres site from the existing cattle grazing lease would not significant impact the 9,000-acre lease.

As with Site 1 the proposed 100-foot communications tower would operate at a frequency of 162 to 165 Megahertz, which well within the MPE of 3 Kilohertz to 300 Gigahertz in an uncontrolled environment. Therefore, there would be no exposure risks to community or the environment as a result of the tower.

Transportation. The transportation network in the vicinity of Site 2 currently possesses the capacity to handle the increased traffic flow that would be expected from the implementation of the proposed action. Given the limited amount of development in the area of the site, both U.S. Highway 54 and McCombs Street would not be significantly impacted by the change in traffic.

Hazardous Materials and Hazardous Waste. Any hazardous materials used during the construction and operation of the proposed facilities would be handled and managed in accordance with all local, state, and federal regulations and laws. Any wastes generated during the construction and operation of the proposed facilities would be handled and disposed of in accordance with all local, state, and federal regulations and laws.

4.1.3 No-Action Alternative

Under the no-action alternative, the BPS and Sector Headquarters would remain at its current location (Hawkins Boulevard and Montana Avenue). There would be no new impacts to land use, transportation networks, or hazardous materials/waste as a result.

4.2 BIOLOGICAL RESOURCES

4.2.1 Significance Criteria

Impacts to vegetation resulting from the proposed action and alternatives could be considered significant if they resulted in a long-term reduction in sensitive or critical vegetation productivity or a permanent change in composition of those sensitive or critical species. Impacts to wetlands and riparian areas could be considered significant if activities resulted in violation of Section 404 of the Clean Water Act, EO 11988 Floodplain Management, or EO 11990 Protection of Wetlands. Impacts to wildlife resources could be considered significant if they prevent realization of specified population objectives. Any action that results in the disruption of raptor breeding activities and subsequent reproductive failure could be considered a significant adverse impact. Any action that would effect a federally listed threatened or endangered species, a critical habitat, or any recovery program for such species could be considered a significant impact. Any action that could jeopardize a candidate species could be a significant impact.

Impacts to biological resources would occur principally from activities associated with the construction of the CBP facilities. As indicated in Section 2.1, buildings, parking lots, and other facilities would occupy about 27 acres. For the purposes of this analysis, it was assumed that all land within the site boundaries would have the potential to be impacted during construction. Long-term loss of habitat would occur in the approximately 27 acres used for buildings, parking lots, and other facilities. The remaining 18 acres of disturbed ground would be revegetated with native plants following the completion of construction. In addition, impacts to wildlife near the construction zone may occur due to noise and other human activity. This potential impact would be temporary as the construction period is estimated to last 12 to 18 months.

4.2.2 Proposed Action

4.2.2.1 Site 1 – Castner Range Site

Upland Vegetation. The 45-acre site on the southeast corner of Castner Range is part of the foothill-desert shrubland communities associated with the alluvial fans of the Franklin Mountains. These diverse upland plant communities on Castner Range represent the northern limit of this type of vegetation. As a result of the implementation of the proposed action on Site 1, there would be a long-term loss of approximately 27 acres as a result of new facilities, driveways, and parking areas. The remaining 18 acres would be impacted during the construction activities, but would be revegetated

upon completion of the project using native species that occur in the area. The recovery of vegetation on the 18 acres would depend on the degree of land disturbance. Therefore, topsoil removed from the area would be replaced to assist in the recovery time of the remaining 18 acres. If the shallow topsoil were not replaced, the recovery of the plant community to preconstruction levels would take decades. Such a scenario has taken place on land cleared next to the project site for the Northgate Dam in 1973. Here, the plant community in much of the area has not attained preconstruction conditions and the vegetative cover is sparse in many areas. For the purposes of this analysis, it is assumed that the implementation of the proposed action would result in the long-term loss of all 27 acres and short-term loss of 18 acres at Site 1. However, to mitigate this loss, the CBP would carefully remove the significant vegetation currently on site, care for that vegetation during the construction, and replant it back on site once the construction activities are complete.

Although the Mexican Gold Poppy (*Eschscholzia californica* ssp. *mexicana*) does occur in the vicinity of the proposed site (northwest of the site), the abundant blooms do not occur on Site 1 (TWPD 2003). Therefore, there would not be any impact to the spring blooming season of this flower. However, to mitigate the any potential disruption of the poppies, CBP would seed the disturbed area with the Mexican Gold Poppy in order to ensure the continued health of the species in the area.

Wetlands and Arroyo-Riparian Drainages. No wetlands were observed on Site 1 during site-specific surveys conducted for this EA or during surveys conducted by the USACE. Therefore, no Section 404 USACE permit would be required (Malanchuk 2001). Eight small drainages were observed at Site 1 but none of these are considered USACE jurisdictional waters (Malanchuk 2001).

Wildlife. Construction of the BPS facilities would result in the long-term loss of approximately 45 acres of wildlife habitat. It is expected that many of the wildlife species that now inhabit this parcel of land would be excluded over the long-term. Some of the bird species that are common in the foothill-desert shrublands such as the mourning dove, northern mockingbird, and house finch would likely inhabit the project area once construction is complete. However, most of the other common bird species (i.e., black-throated sparrow, western kingbird, cactus wren, and ash-throated flycatcher) as well as other species would be largely absent. It is anticipated that the bird species of conservation concern (Table 3-2) would also be absent from the project area. Although species such as the loggerhead shrike and curve-billed thrasher occasionally nest in landscaped areas, the numbers would be low relative to unaltered native habitat. There is no information regarding wildlife density in the project area. Data from breeding bird surveys in creosotebush habitat in the Chihuahuan Desert resulted in densities of nine to 18 pairs per 100 acres (Raitt and Maze 1968). This would indicate that the elimination of 45 acres of habitat could displace four to eight pairs of breeding birds. The average number of the 10 most common breeding bird species in the viscid acacia habitat (foothill-desert shrublands) on Fort Bliss over the three-year period (1996 through 1998) was 1,674 or 81 percent of all birds tallied (2,069 birds – Table 3-2) (US Army 1998a, 1999a). Based on this information, the eight pairs of breeding birds that could be displaced may consist of about three pairs of black-throated sparrows, one pair of

northern mocking bird, and less then one pair of Scott's oriole, mourning dove, ash-throated flycatcher, house finch, and verdin (*Auriparus flaviceps*). Implementation of the proposed action could result in the elimination or partial elimination of one to two territories of bird species of conservation concern.

As with breeding birds, there is no data regarding small mammal density in the project area. Long-term data (1989 to 2003) from the Sevilleta National Wildlife Refuge in New Mexico indicates that small mammal density in creosotebush habitat is highly variable. The average density of small mammals ranged from about two to 26 per hectare (less than one to 11 per acre) and averaged about nine per hectare (3.6 per acre) (Servilleta 2003). Assuming this data approximates the small mammals density in the project area, the elimination of 45 acres of land would, during an average year, result in the displacement of about 160 small mammals. It was concluded that the long-term loss of 45 acres would not pose a significant adverse impact to wildlife because:

- the proposed site is located in the southeast corner of Castner Range adjacent to residential and commercial development,
- the land directly adjacent to Site 1 on Castner Range itself has been previously disturbed for Northgate Dam and the TXDOT facility, and
- the 45 acres represents only about 0.07 percent of the foothill-desert shrublands on Fort Bliss and 0.6 percent of Castner Range (US Army 1998a, 1999a).

The loss of habitat at Site 1 would be a greater impact on wildlife than at the other site because of the increased habitat diversity at Site 1. There are more small drainages on Site 1 than on the other site. However, most of the drainages did not contain riparian vegetation. Drainage One located on the southern end of Site 1 contains marginal arroyo-riparian habitat that could support more neotropical land birds and other birds during migration than the adjacent upland habitat, but the impact of the disturbance of this drainage on these species would be expected to be minimal. However, construction in this area would be avoided if possible.

Sensitive Species. As indicated in section 3.2.4, Site 1 does not support federally listed, proposed, or candidate species. The site does not support the Sneed pincushion cactus that has been observed in the Franklin Mountains but was not observed on Castner Range due to the lack of suitable substrate (Corral 2001). There are no federal plant species of concern or state listed plant species known to occur on Site 1. Moreover, surveys have been conducted for the night-blooming cereus but none have been found (Corral 2001).

The state threatened Texas lyre snake is known to occur on Castner Range and may occur on Site 1. This species could potentially be affected during construction of the CBP facilities. The Texas horned lizard also has the potential to occur on Site 1. However, the potential for the proposed action to affect this species is considered slight, because the habitat present at the site is marginal. The loggerhead shrike could be a breeding and/or wintering species at Site 1. Additionally, Golden Eagles, Red-tailed

Hawks, Swainson's Hawks, and American Kestrels may also frequent the site. It is believed that the impacts of construction would be minimal on these species, because they can leave the area when construction crews are active and re-inhabit the area at a reduced level once construction is complete. As part of the proposed action, the CBP would construct two hawk towers on site to encourage these sensitive species to return to the area. Once construction is complete, facilities and structures would also create perching features that should foster recolonization.

4.2.2.2 Site 2 – Northern Public Service Board Site

Upland Vegetation. Site 2 covers 45 acres, and it is assumed that there would be the long-term loss of approximately 40 acres and that the remaining five acres would be revegetated with native species once construction is completed. Revegetation with native species that would approach preconstruction levels would be easier at Site 2 then Site 1 because plant species diversity is less and soils are deeper at Site 2. It would be expected that the long-term loss of approximately 40 acres of mesquite-dominated plant community type would not be significant, because 1) it is the most common plant community type on Fort Bliss and in the Tularosa Basin (U.S. Army 1999a), 2) it has been increasing in coverage area at the expense of grasslands for the last 100 years (Buffington 1965), and 3) it has low plant species diversity relative to some other Chihuahuan Desert shrubland types (Corral 2001).

Wetlands and Arroyo-Riparian Drainages. No wetlands were observed on Site 2 during site-specific surveys conducted for this EA or during surveys conducted by the USACE. Therefore, no Section 404 USACE permit would be required (Malanchuk 2001). Four small drainages were observed in Site 2 but none are considered USACE jurisdictional waters (Malanchuk 2001).

Wildlife. Site 2 is in a relatively undisturbed area outside of El Paso, and the loss of wildlife due to project construction would be similar to that projected for Site 1. As indicated above for Site 1, many wildlife species that currently inhabit the project area would be displaced both during and after construction and many would not return after the completion of construction. The formation of a desert-shrublands habitat in the revegetated area would take many years. Wildlife would occupy the habitats created initially by revegetation and this wildlife community would likely change over time as the plant communities matures. It is concluded that the long-term loss of approximately 40 acres of mesquite-dominated habitat would not pose a significant impact on wildlife because of the small area to be affected and the large amount of this habitat type in the region. No arroyo-riparian habitat capable of supporting an increased number of neotropical land birds or other migrant birds relative to the surrounding habitat occurs at Site 2.

Sensitive Species. As indicated in Section 3.2.4, Site 2 does not support federally listed, proposed, or candidate species. The night-blooming cereus and sand prickly pear are two federal plant species of concern that have a slight potential to occur at Site 2. Night-blooming cereus is typically found in sandy to silty soil in desert grassland and Chihuahuan Desert Shrublands. It typically grows up through and is supported by shrubs

such as mesquite and creosotebush (NMRPTC 1999). Only one small population of the night-blooming cereus occurs in Doña Ana County, New Mexico on Fort Bliss in the mesquite coppice dune plant community (U.S. Army 1999a). In addition, there has been no documentation of the species occurring in El Paso County (Borderland News 2001). It is, therefore, concluded that it is unlikely that the night-blooming cereus occurs at Site 2. Sand prickly pear grows in sandy soil in the Chihuahuan Desert Shrublands often dominated by mesquite with a sparse grass cover (NMRPTC 1999). It generally occurs in the sand dunes, floodplains, and foothills in the Rio Grande Corridor between Las Cruces, New Mexico and El Paso, Texas (USFWS 1997). This species has been documented on Bureau of Land Management land about 0.8 miles west of Fort Bliss. This species was not detected during species-specific surveys in areas of appropriate habitat or during other extensive surveys in numerous locations on Fort Bliss (U.S. Army 1999a). It is assumed that the possibility of this species occurring on Site 2 is very low because it was not detected in similar habitat on nearby Fort Bliss, and the known populations are located west of the site in the vicinity of the Rio Grande.

The Texas lyre snake inhabits steep rocky terrain and would not be expected to occur at Site 2. The Texas horned lizard has the potential to occur at Site 2 and the sandy substrate and open ground provides good habitat for this species. This species often buries itself in the sand and it has a "sit and wait" foraging strategy (Pianka 1966) that may make it susceptible to direct mortality from equipment and vehicles used during construction. The loggerhead shrike is a likely breeding and/or wintering species at Site 2 and was observed at this site during the field surveys in October 2001. Golden Eagles, Red-tailed Hawks, Swainson's Hawks, and American Kestrels have been observed at Site 2, with Swainson's Hawk nests observed by the Texas Parks and Wildlife (TPWD 2003). It is believed that the impacts of construction would be minimal on these species because they can leave the area when construction crews are active and re-inhabit the area at a reduced level once construction is complete. Additionally, once construction is complete, facilities and structures would create perching features that should foster recolonization. Construction of nesting towers for the hawk species could be added to the design of the site in order to encourage breeding populations to return to the site once construction is complete.

4.2.2.3 No-Action Alternative

Under the no-action alternative, the plant and wildlife communities that currently exist in Sites 1 and 2 would not be impacted by BPS construction activities. It is expected that the general pattern of vegetation cover and wildlife use that exists today at these sites would continue into the future.

4.2.2.4 Cumulative Impacts

Activities that contribute to the cumulative impacts on biological resources in the area of Sites 1 and 2 include the industrial and residential growth in the El Paso area. This growth is occurring in the vicinity of both sites and is likely to continue into the future. The loss of Chihuahuan Desert Shrublands as a result of the implementation of the proposed action would add to the continued loss of this type of vegetation in the area.

The cumulative loss to the foothill-desert shrubland at the base of the Franklin Mountains (Site 1) would be considered greater then the cumulative loss of mesquite (Site 2) shrublands because the foothill-desert shrublands 1) have greater plant species diversity, 2) have a lower frequency of occurring, and 3) are associated with uncommon vegetated alluvial fans of the Franklin Mountains free of recent human disturbance (Corral 2001). However, given the vastness of Castner Range and the limited land use of the range due to the ordnance hazard, the potential for cumulative impacts to biological resources from possible future projects is considered low on Castner Range.

Implementation of the proposed action at Site 1 would contribute to the continued cumulative displacement of wildlife in the Chihuahuan desert habitat in the El Paso area. This could include the cumulative loss of the Texas lyre snake habitat in the foothills of the Franklin Mountains if the proposed action were implemented. Implementation of the proposed action at Site 2 could contribute to the cumulative loss of Texas horned lizard habitat in the mesquite- and creosotebush-dominated habitat that is being lost to development in the El Paso area. Implementation of the proposed action at both sites could contribute to the cumulative loss of loggerhead shrike habitat in the El Paso area.

4.3 GEOLOGY AND SOILS

4.3.1 Significance Criteria

Impacts to topography and physiography would be considered significant if disturbance permanently affects prominent landforms or surface drainage patterns. Geologic hazards are defined as seismic events, landslides, subsidence, or flooding. Impacts from the proposed action and alternatives would be considered significant if the activities increased the likelihood of a geologic hazard. Additionally, impacts to the proposed project sites would be considered significant if project facilities were damaged due to a geologic hazard. Impacts to soils would be considered significant if a reduction in soil productivity and/or increased erosion would prevent revegetation after construction, or if an area was no longer able to be classified as prime or important farmland.

Since the proposed construction activities primarily involve surface alterations and do not involve any major subsurface excavation, drilling, or blasting, the major earth resource element of concern is soil. Exposed surface materials would be prone to erosion by wind and water, which would be the main impact of the proposed action on soil resources.

4.3.2 Proposed Action

There would be no significant long-term effects on soil and geology as a result of implementing the proposed action at any of the sites. The soil and geology at both sites have few limitations for the construction of buildings and roads. Impacts to soil and the effects of grading would be of concern primarily during construction. The instability of soil side slopes during excavation necessitates that safety precautions be taken while trenches remain open. Precautionary measures should be used to protect sewage pipe

from damage by large stones and gravel. The susceptibility of the soil to wind erosion means that temporary erosion control measures must be installed during construction. Construction would occur over a twelve to sixteen month period, so the entire site would not be disturbed at once. However, any disturbance of five acres or greater at any one time would require a Stormwater Pollution Prevention Management Plan to be submitted to the USEPA and implemented during construction.

The soil would be permanently stabilized after construction by the presence of pavement, buildings, and xeriscape. This stabilization would reduce the wind and water erosion currently occurring on both sites. The soil condition at Site 1 would be improved through the remediation process, thus creating a positive impact on the quality of the soil. Site 2, which is currently used as an agricultural lease area, is not expected to be classified as prime or unique farmland. However, CBP or their contractor would be required to follow the procedures outlined in the Farmland Protection Policy Act to determine whether the site is farmland subject to the Act. This can be accomplished by completing and submitting the Farmland Conversion Impact Rating Form (Form AD-1006) in Appendix C to the Natural Resource Conservation Service under the U.S. Department of Agriculture. Site 1 is not used as agricultural lands nor support agricultural land use. Therefore, neither site would be subject to the Farmland Protection Policy Act.

Despite the presence of numerous faults, earthquakes in the area are generally low in magnitude and confined to areas north of the subject sites (U.S. Army 2000). The proposed action would not increase the likelihood of geologic hazards in the area. The geologic hazard for both sites would be equivalent to the hazards associated with the city of El Paso.

4.3.3 No-Action Alternative

Under the no-action alternative both sites would be left in their current state or condition. Therefore, there would be no significant environmental impacts as a result of the no-action alternative.

4.4 WATER RESOURCES

4.4.1 Significance Criteria

Impacts to surface water and groundwater resulting from the proposed action would be considered significant if any of the following criteria is applicable to the proposed project.

- Surface water quality declined such that the existing surface water quality standards would be violated.
- Water usage from the underlying aquifer increased significantly so that the usage had an impact on the aquifer.
- Surface water quantities were depleted such that water rights of downstream users were violated.

- Groundwater quantity in local stock or domestic wells declined such that the waters would no longer serve their present functions.

4.4.2 Proposed Action

The BPS and Sector Headquarters at both sites would use water carried to the site through city lines. Water usage and sewer discharges would be consistent with the current BPS Station and Sector Headquarters located in downtown El Paso. The current capacity of the city of El Paso's water and sewer systems would be adequate to handle any minor increases in demand relating to additional staff at the new BPS and Sector Headquarters. Site 1 currently has utility connections in the vicinity; whereas, Site 2 would require extending water and sewer lines out to the property. Costs associated with extending the lines out to Site 2 would be absorbed by the CBP as part of the project costs.

As discussed in Section 3.4.2.1, surface water runoff for the sites was calculated and evaluated using the HELP Model developed by the USEPA and representatives at the U.S. Army Engineer Waterways Experiment Station. The results of the model are shown in Table 4-1 below. Based on the criteria discussed in Section 3.4.2.1 (i.e., five years of weather data for El Paso, 45-acre parcel at each site, and NRCS soil types at each site) surface water runoff was calculated for each site. Under the proposed action stormwater runoff would increase by approximately 0.05 of a cubic foot per year at both Site 1 and Site 2. This increase is based on the assumption that 60 percent of the 45-acre parcel would be covered by concrete, buildings, and asphalt parking areas. This small increase would be further reduced as a result of the higher evaporation rate than infiltration rate that is associated with the El Paso area. Additionally as per the Texas Water Development Board (TWDB), the closest areas of recharge for the Hueco Bolson Aquifer lie to the northwest of Site 1 in the foothills of the Franklin Mountains. Therefore, this increase in stormwater runoff would not have a significant impact on groundwater recharge. The existing stormwater collection system at each of the sites would have the capacity to handle the expected increase in stormwater flow. A site-specific stormwater management system would be developed at the time of project design to handle the localized drainage pattern.

There are no floodplains or jurisdictional waters of the U.S. present on either site. Therefore, there would be no significant environmental impacts to these resources as a result of the proposed action.

4.4.3 No-Action Alternative

The no-action alternative would cause no new impacts to the water resources, because there would be no change in the use of the sites.

Table 4-1
Proposed Action Modeling Results for Stormwater Runoff

Area Description	Number of Acres	Category[1]	Average Annual Runoff (inch/acre)[2]	Cubic Inches of Runoff per Year/*Cubic Feet per year*	Total for Site Cubic Inches/*Cubic Feet* Annual
Existing					
Site #1	11	E156	0.55	**6**/*0.0034*	**7**/*0.0039*
Site #1	34	E107	0.03	**1**/*0.0006*	
Site #2	45	E41	0.51	**23**/*0.0133*	**23**/*0.0133*
Proposed Action[3]					
Site #1	27	Impervious	3.95	**107**/*0.062*	**112**/*0.055*
Site #1	18	E156/E107	0.29[4]	**5**/0.003	
Site #2	27	Impervious	3.47	**94**/*0.054*	**103**/0.059
Site #2	18	E41	0.51	**9**/*0.005*	

[1] Categories based on classification from the Natural Resources Conservation Service (NRCS) under the U.S. Department of Agriculture (USDA 2001).
[2] Based on the average annual rainfall (9.6) and five years of weather data for the El Paso area.
[3] Based on the assumption that 60% of the 45-acre site would be covered with concrete, buildings, or asphalt parking.
[4] Average runoff for both soil categories at Site 1.

4.5 AIR QUALITY

4.5.1 Significance Criteria

Impacts to air quality would be considered significant if activities under the proposed action result in a violation of federal and/or state air quality attainment standards or failed to meet the requirements of the CAA General Conformity Rule.

4.5.2 Site 1 – Castner Range Site

The proposed action would generate temporary emissions from heavy equipment usage and ground-disturbing activities from the construction of the Border Patrol facility and associated paved structures and landscaping. The following paragraphs detail the assumptions used in the emissions calculations and describe the impacts of the emissions.

Exhaust emissions would be generated by the use of construction equipment during the proposed action. Based on the type of equipment and duration of use, the USEPA has established factors for the emission of criteria air pollutants by heavy equipment used for construction activities (USEPA 1985). The type of equipment and hours of operation anticipated for the proposed construction of the Border Patrol facility were estimated based on anticipated project requirements and established equipment usage factors for construction (Means 1997a; Means 1997b). Calculation of heavy equipment emissions for the proposed action is presented in Table 4-2.

Table 4-2
Air Pollutant Emission Calculations
Heavy Equipment Emissions

Equipment Type	Operation (Hours)[a]	Emission Factors (lb/hr)[b]				
		SOx	NOx	CO	VOC	PM_{10}
Bulldozer	140	0.137	1.260	0.346	0.148	0.112
Backhoe (rubber tire)	145	0.182	1.890	0.572	0.291	0.172
Front Loader (rubber tire)	250	0.182	1.890	0.572	0.291	0.172
Dump Truck	305	0.454	4.166	1.794	0.304	0.256
Concrete Truck	760	0.454	4.166	1.794	0.304	0.256
Crane	375	0.137	1.260	0.346	0.148	0.112
Asphalt Spreader	10	0.143	1.691	0.675	0.183	0.139
Asphalt Roller	25	0.067	0.862	0.304	0.083	0.050
Flat-bed (18 Wheel)	460	0.454	4.166	1.794	0.304	0.256
Grader	5	0.086	0.713	0.151	0.052	0.061
Total Estimated Emissions (lb/yr):		**838**	**7,791**	**3,155**	**659**	**519**
Total Estimated Emissions (tpy):		**0.42**	**3.90**	**1.58**	**0.33**	**0.26**

a Estimated from Means 1997a and Means 1997b.
b Source: USEPA 1985.

CO	carbon monoxide	PM_{10}	particulate matter
lb/hr	pounds per hour	SO_X	sulfur radicals
lb/yr	pounds per year	tpy	tons per year
NO_X	nitrogen oxides	VOC	volatile organic compound

Fugitive dust emissions, or total suspended particulate (TSP), for the proposed construction would be generated primarily during the initial construction phases involving site top soil removal, aggregate (dirt) hauling, and cut and fill operations. Some dust generation would also potentially arise from equipment traveling over non-paved surfaces during construction activities. According to the USEPA, uncontrolled fugitive dust emissions from ground-disturbing activities are emitted at an average rate of 1.2 tons of TSP per acre of disturbance per working month (30-day period), or 80 pounds per acre per day for large construction projects (USEPA 1995). Using 0.24 as an average of USEPA-published PM_{10} to TSP ratios, the PM_{10} emission factor for fugitive dust emissions becomes 19.2 pounds per acre per day (USEPA 1988). The total site area is approximately 45 acres, and it is estimated that approximately one-fourth of this area, or approximately 10 acres, would undergo disturbance at some point during the construction. The estimated time of ground disturbance for site clearing, grading, and similar ground-disturbing activities is estimated to be no more than 60 working days during the yearlong construction period. Based on these parameters, PM_{10} emissions from ground disturbing activities under the proposed action are estimated to be approximately 5.76 tons per year.

Table 4-3 summarizes the estimated percent increase in pollutant emissions associated with the proposed construction activity as compared to the El Paso County baseline emissions inventory, and it compares project emissions to *de minimis* levels for

applicable contaminants. As shown, heavy equipment emissions and fugitive dust emissions from the construction of the Border Patrol facility would increase air pollutant levels minimally (all less than 0.8 percent) compared to current baseline levels.

Table 4-3
Estimated Increase in Pollutant Emissions within
El Paso County, Texas, from Proposed Action

	Pollutant Emissions (tpy)				
Emission Activity	**SO_X**	**NO_X**	**CO**	**VOCs**	**PM_{10}**
Heavy Equipment Emissions	0.42	3.90	1.58	0.33	0.26
Fugitive Dust Emissions	--	--	--	--	5.76
Total Estimated Emissions	**0.42**	**3.90**	**1.58**	**0.33**	**6.02**
El Paso County Baseline Emissions*	896	25,154	154,105	23,849	747
Increase from Baseline (%)	**0.05**	**0.02**	**0.001**	**0.001**	**0.80**
de minimis Levels	N/A	50	N/A	50	100
***de minimis* Exceedance?**	**N/A**	**No**	**N/A**	**No**	**No**

* Source: TCEQ 2001. Note, values for SO_X and PM_{10} are for stationary point sources only and are based on 1999 emissions inventory levels. Values for NO_X, CO, and VOCs include stationary and mobile sources and are based on 1996 emissions inventories.

Note:

CO	carbon monoxide	SO_X	sulfur radicals
N/A	not applicable	tpy	tons per year
NO_X	nitrogen oxides	VOC	volatile organic compound
PM_{10}	particulate matter		

Construction of the proposed facilities is considered a temporary activity. Emissions associated with these activities would not occur all at once but would be distributed over the year-long construction period. The primary short-term air quality impacts resulting from the construction in El Paso would be a temporary increase of air pollutants within El Paso County over a few months, which would cease as soon as the project was completed. Emissions from the action would not result in a violation of federal and/or state air quality attainment standards or significantly contribute to further air quality degradation. Environmental design measures would include dust suppression methods to minimize airborne particulate matter during construction activities. Additionally, in accordance with the SIP, all construction equipment and vehicles would be required to be inspected and 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. These dust suppression measures, which may include wind breaks, mulch or other soil stabilizers, and direct watering, would be addressed under the National Pollutant Discharge Elimination System Storm Water Construction General Permit, which outlines dust control measures and the preparation of a Storm Water Pollution Prevention Plan for construction sites disturbing greater than 1 acre. All mitigation measures would be incorporated into the proposed action and alternatives and would not be a separate mitigation step.

Operations at the new facility under the proposed action would remain similar to current operations of the Border Patrol. Given that the proposed action is the relocation of the Border Patrol operations, no net increase or decrease in operational emissions is expected from the implementation of the proposed action. However, due to the potential increase in facility staffing, a negligible change in emissions associated with operational activities for the proposed facility is expected within El Paso County. Any potential increased emissions in the immediate vicinity would be insignificant relative to the background emissions that already occur at the site due to the proximity of U.S. Highway 54.

4.5.3 Site 2 – Northern Public Service Board Site

Activities associated with Site Number 2 relative to air quality would be identical to those for the proposed action at Site Number 1. Therefore, no significant impacts to air quality are expected for actions at Site Number 2.

4.5.4 No-Action Alternative

Under the no-action alternative, the environment would remain at baseline conditions relative to air quality, because no construction activities associated with the action would occur. Operational activities associated with the existing facility would continue to be generated. Therefore, no net impact to air quality is expected from the no-action alternative.

4.5.5 Conformity Analysis

The proposed action is required under Section 176(c) of the CAA to demonstrate conformance with the appropriate state or federal regulations or SIP. It is the responsibility of the Applicant to demonstrate that emissions associated with the proposed action would conform to the applicable implementation plan goals. Conformity with SIP is determined according to USEPA's rule, Determining Conformity of General Federal Actions to State or Federal Implementation Plans, 40 CFR Part 93. For the proposed action and alternatives, PM_{10} and the ozone precursors NO_X and VOC are the contaminants of interest relative to conformity. Because implementation of the proposed action would only minimally increase the emissions of these contaminants on a temporary basis as described previously, an increase in the frequency or severity of existing violations of standards is not expected. Further, all temporary emissions increases for these pollutants are significantly below *de minimis* levels (shown above in Table 4-3). For these reasons, the requirements of General Conformity under the Clean Air Act, 40 CFR Part 93 are not applicable to this project/action because total direct and indirect emissions from this project/action have been estimated at *de minimis* levels and are below the conformity threshold value established at 40 CFR Part 93.153(b).

4.6 SOCIOECONOMICS

4.6.1 Significance Criteria

Impacts to socioeconomics would be considered significant if activities under the proposed action resulted in a change in the population, economic growth, or employment of a region. Construction impacts are assessed in terms of direct effects on the local economy. Related effects to secondary socioeconomic resources (e.g., public services) are not evaluated because this action would not cause significant changes in population. The magnitude of potential impacts can vary greatly, depending on the geographic location and social environment of a proposed action. For example, implementation of an action that creates ten employment positions may not be noticeable in an urban area but would be significant to a rural region. If potential socioeconomic changes were to result in substantial shifts in population trends or in adverse effects to regional spending and earning patterns, they would be considered significant.

4.6.2 Proposed Action

Implementation of the proposed action on any of the sites would benefit the local and regional economies if the construction companies purchase materials locally and use labor from the regional workforce. However, there would be no significant long-term changes to socioeconomic patterns or trends. The proposed construction activities would be beneficial by creating a demand for goods and services, resulting in a brief temporary increase in income for local businesses. Employment of construction workers, although temporary, may provide additional job opportunities and income for area laborers.

Direct employment associated with the proposed facility is expected to increase slightly over time, although the new jobs represent only a small percentage of the available employment in the county. All persons, including minority groups, may benefit from the increase in employment offered by the new BPS and Sector Headquarters, by the temporary enhancement in services, and in the labor sector created by the construction activities. Construction expenditures represent a small percentage of the regional economy, so impacts to socioeconomic resources would be negligible.

4.6.3 No-Action Alternative

No new construction or expansion of activities would occur under the no-action alternative. Therefore, there would be no change in the existing socioeconomic conditions. The Border Patrol in El Paso would continue to contribute both payroll and operations and maintenance expenditures. Consequently, there would be no significant impact to socioeconomic resources.

4.7 ENVIRONMENTAL JUSTICE

4.7.1 Significance Criteria

Impacts relating to environmental justice would be considered significant if activities under the proposed action resulted in an unequitable distribution of adverse environmental impacts on low-income or minority populations and communities. To comply with NEPA, the planning and decision-making process for actions proposed by federal agencies involves a study of other relevant environmental statutes and regulations, including EO 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations). The purpose of EO 12898 is to ensure the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, tribal, and local programs and policies. Also included with environmental justice are concerns pursuant to EO 13045, Protection of Children from Environmental Health Risks and Safety Risks. This EO directs federal agencies to identify and assess environmental health and safety risks that may disproportionately affect children under the age of 18. These risks are defined as "risks to health or to safety that are attributable to products or substances that the child is likely to come in contact with or ingest."

Baseline trends for this region are analyzed in comparison to those at the state and national scale. Existing conditions for environmental justice were analyzed through demographic characterization, particularly ethnicity and poverty status for the County of El Paso.

4.7.2 Proposed Action

To comply with EO 12898, ethnicity and poverty status in El Paso County were examined and compared to state and national statistics to determine if any minority or low-income groups could be disproportionately affected by the proposed action. Because El Paso County has a greater portion of minority and low-income persons than the state and national average, short-term socioeconomic benefits may occur in these groups with the increase of construction jobs under the proposed action. There are no low-income neighborhoods or government sponsored housing near any of the sites. Further analysis of environmental justice issues is not required due to the minimal environmental impacts associated with the proposed action.

Protection of Children. The proposed action for Site 1 and 2 would not involve activities that pose any disproportionate environmental health risks to children. The presence of children is minimal in the areas of Sites 1 and 2. No schools are in the immediate location of Sites 1 and 2, so no children would be directly affected.

4.7.3 No-Action Alternative

Under the no-action alternative there would be no change in the existing land use; thus, there would be no significant environmental justice impacts.

4.8 NOISE

4.8.1 Significance Criteria

Noise impact analyses typically evaluate potential changes to existing noise environments that would result from the implementation of a proposed action or alternative. In considering the basis for analysis of noise impacts, several items were examined, including:

- the degree to which noise levels generated by construction and demolition activities were higher than the ambient noise levels;
- the degree to which there is annoyance and/or activity interference; and
- the proximity of noise sensitive receptors to the noise source.

Sound produced by construction activities as they relate to the ambient sound produced by the urban activities is examined below.

The use of heavy equipment for site preparation and development (e.g., demolition, earth removal, grading, backfilling, and construction) would be the primary source of noise and would generate noise above typical ambient levels at the base. These operations would be temporary in nature and would have no long-term affect on the noise levels for the base.

Assuming that noise from the construction and demolition equipment radiates equally in all directions, the sound intensity will diminish inversely as the distance doubles from the source. Therefore, in a free field (no reflections of sound), the Lp decreases 6 dB with each doubling of the distance from the source. Under most conditions, reflected sound will reduce the attenuation due to distance. Therefore, doubling the distance may only result in a decrease of 4 to 5 dB (AIHA 1986). Table 4-4 provides the anticipated sound pressure levels measured at a distance of 50 feet from various heavy equipment used for site preparation and development. Typical noise levels generated by construction and demolition activities would range from 75 to 88 dBA at 50 feet from the source.

Table 4-4
Heavy Equipment Noise Levels at 50 Feet

Equipment Type	Generated Noise Levels, L_p (dBA)
Bulldozer	88
Backhoe (rubber tire)	80
Front Loader (rubber tire)	80
Trenching Machine	85
Crane	75
Dump Truck	75
Concrete Truck	75

Source: USAF 2002
L_P sound intensity
dBA A-weighted decibel

Using the equipment type with the greatest noise producing potential (bulldozer with an Lp of 88 dBA) and a minimal distance of 200 feet from that source, the noise level would be attenuated to approximately 75 dBA. Sensitive receptors located more than 700 feet from the source would experience a sound intensity of approximately 65 dBA, the approximate Lp of normal speech at a distance of three feet from the source. Those sensitive receptors located less than 700 feet from the source would experience noise levels between 65 and 75 dBA. These noise levels would be temporary in duration and occur during day-light hours. The Federal Interagency Committee on Urban Noise (FICON) guidelines has established compatibility guidelines for specific types of land uses. Noise levels equal to or greater than 65 dB are marginally compatible to incompatible with commercial and business categories (INS 2001).

4.8.2 Proposed Action

The proposed sites are located within the city limits, so urban noises (primarily highway/vehicular) are common at both sites. Because of current land use patterns and human activity associated with vehicular traffic and airport operations, construction, maintenance, and operations under the proposed action would not constitute a significant change from the baseline noise conditions. Baseline conditions at both sites are outside the 65 dB noise contour for the El Paso International Airport and the Biggs Airfield. The FICON guidelines have established that noise levels less than 65 dB are compatible for most residential land uses, and noise levels equal to or greater than 65 dB are marginally compatible to incompatible with commercial and business categories. The proposed activities would have little effect on average noise levels in surrounding areas; therefore, any noise sensitive receptors such as churches and schools in the local region would not be affected.

4.8.3 No–Action Alternative

Under the No-Action alternative, no construction would take place and the current BPS and Sector Headquarters would remain at their current location. Therefore, there would be no impact to noise levels.

4.9 CULTURAL RESOURCES

4.9.1 Significance Criteria

The impact assessment process for cultural resources centers on the concept of significance. Under federal law, cultural resources can be affected by an action if they are significant. Significant resources are generally those eligible for inclusion in the National Register of Historic Places (NRHP) (36 CFR 60.4), or those that are important to traditional groups as outlined in the American Indian Religious Freedom Act (AIRFA), the Native American Graves Protection and Repatriation Act (NAGPRA), and EO 13007. A cultural resource that is eligible for inclusion in the NRHP is called an historic property.

To be considered eligible for the NRHP, archaeological resources, architectural resources, and traditional cultural resources must possess integrity and meet one or more of the criteria outlined in 36 CFR 60. NRHP-eligible resources are those:

1. that are associated with events or have made a significant contribution to the broad patterns of our history; or

2. that are associated with lives of persons significant in our past; or

3. that embody the distinctive characteristics of a type, period, or method of construction, that represent the work of a master, that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

4. that have yielded, or may be likely to yield, information important in prehistory or history.

An action affects a cultural resource eligible for listing on the NRHP when it alters the resource's characteristics, including relevant features of its environment or use, in such a way that it no longer qualifies for inclusion in the NRHP (36 CFR 800.9[b]). Effects can include physical destruction, damage, or alteration of all or part of the property or introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting.

4.9.2 Proposed Action

As discussed in the Cultural Resources Survey Report (Appendix B), none of the artifacts or archeological sites identified on the Castner Range, Northern Public Service Board, or

Southern Public Service Board sites exhibit characteristics consistent with criteria needed for inclusion on the NRHP. Therefore, the proposed action is unlikely to affect cultural resources. However, in the event that any cultural or archeological resources are discovered during the construction phase of the proposed action, additional consultation with all local, state and federal agencies and interested parties would be initiated and completed prior to continuing the construction activities.

4.9.3 No-Action Alternative

Under this alternative, facility construction would not occur, so no cultural resources would be affected.

4.10 AESTHETICS

4.10.1 Significance Criteria

Impacts to aesthetic resources and the relationship of people with the environment may be considered significant if the proposed action had the potential to detract from the natural setting of the area, or alter the visual characteristics of an area in such a way as to diminish the contrast, arrangement, or scale of those unique features.

4.10.2 Proposed Action

4.10.2.1 Site 1 – Castner Range Site

Under the proposed action at Site 1 (Castner Range Site), the BPS and Sector Headquarters would be constructed along the perimeter of the 7,000-acre range. More specifically, the proposed station and headquarters would be constructed between Northgate Dam and the TXDOT compound. The proposed facilities would consist of single story buildings that would not compete with the scale of the Franklin Mountains. As part of the proposed compound a 100-foot communications tower would be constructed adjacent to the equipment room. Although the tower is expected to exceed the height of Northgate Dam by 40 feet and would be seen from Highway 54, the architectural and landscape design would be sensitive to the surrounding area. As part of the proposed action, CBP would use a local architect to ensure regional sensitivity to the surrounding environment is incorporated into the facility design. Where possible, the following design concepts would also be incorporated into the project:

- preserve all arroyos and natural drainages,
- landscape with Franklin Mountain or northern Chihuahuan Desert native plants, and
- use natural southwestern desert architecture in the development areas.

Given the scale of the Franklin Mountains, the vastness of Castner Range, and the presence of Northgate Dam to the north-northwest of the proposed site, the proposed

facilities would not detract from these features or diminish the views of these unique resources from U.S. Highway 54. Northgate Dam would serve as a visual buffer between the proposed compound and the undeveloped area of Castner Range. Given the close proximity of the proposed site to U.S. Highway 54, the TXDOT compound, and the commercial development associated with the intersection of U.S. Highway 54 and Hondo Pass Road, the lighting in the compound would blend in to the existing lighting in the area. During the design phase of the project, lighting equipment, its location, and its height would be selected to minimize light pollution.

4.10.2.2 Site 2 – Northern Public Service Board Site

Given the undeveloped nature of the area surrounding Site 2, the construction of the proposed facilities would have a minor impact on the aesthetics of the immediate area. However, the overall view of the Franklin Mountains would not be diminished as a result of the construction and operation of the proposed BPS and Sector Headquarters. As with Site 1, special consideration would be given to the design, location, height, and type of lighting used at the proposed facility, to minimize unnecessary light.

4.10.3 No-Action Alternative

The No Action alternative would cause no new impacts to aesthetics because there would be no change in the land use.

4.11 CUMULATIVE AND INDIRECT IMPACTS

Cumulative environmental impacts are most likely to arise when a relationship exists between a proposed action and other actions expected to occur in the ROI in a similar time period. Projects in close proximity to the proposed action could have a greater potential for a relationship that would result in potential cumulative impacts than those more geographically separated. Various agencies (federal, state, or local) or persons can propose and implement these projects.

Past and present actions associated with Border Patrol activities and other public and private entities are addressed in either Chapter 3 - Baseline Conditions or Chapter 4 - Environmental Impacts. Under this proposed action, no projects are anticipated to cause significant cumulative environmental impacts. However, the relocation of the Border Patrol station and Sector Headquarters would shorten response time of the agents in assisting stranded hikers, allow for more operational efficiencies within the organization, and allow the organization to meet the ever growing mission requirements.

Indirect effects are caused by the action and occur later in time or are further removed in distance but must be reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air, water, and other natural systems (40 CFR 1508[b]). Minor indirect effects have been documented in Chapter 4

related to possible short-term employment and business increases during construction of the BPS. No significant indirect effects have been identified in this EA.

4.12 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

For the Proposed Action, irreversible or irretrievable commitments of resources would include: a small amount of soil lost through construction activities by wind or water erosion; a minor loss of native vegetation; energy and manpower expended during construction activities; and a higher level of noise generated during construction activities.

Under the no-action alternative no irreversible or irretrievable commitments of resources would occur.

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