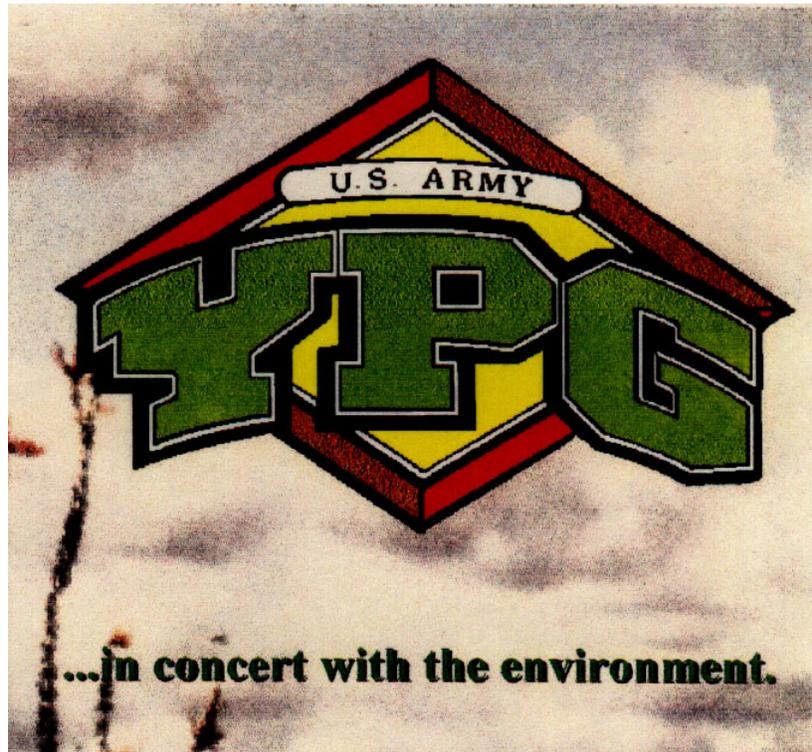


Environmental Assessment for HOT WEATHER TEST COMPLEX



U.S. Army Yuma Proving Ground
Command Technology Directorate
Environmental Sciences Division
Yuma, Arizona 85365

June 2002

ABBREVIATIONS AND ACRONYMS

AAAQS	Arizona Ambient Air Quality Standards
ADEQ	Arizona Department of Environmental Quality
ADNL	A weighted DNL
AGFD	Arizona Game and Fish
AR	Army Regulation
CAA	Clean Air Act
CDNL	C weighted DNL
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CMO	Construction Maintenance and Operations
COE	United States Corps of Engineers
cm	Centimeters
CWA	Clean Water Act
DNL	Day Night Level
dB	Decibel
DoD	Department of Defense
DZ	Drop Zone
EA	Environmental Assessment
ENMP	Environmental Noise Management Program
EPA	Environmental Protection Agency
FCDMC	Flood Control District of Maricopa County
FNSI	Finding of No Significant Impact
FY	Fiscal Year
GIS	Geographical Information System
HWTC	Hot Weather Test Complex
ICUZ	Installation Compatible Use Zone
INRMP	Integrated Natural Resources Management Plan
ITAM	Integrated Training Area Management
KFR	Kofa Firing Range
km	Kilometer
KNWR	Kofa National Wildlife Refuge
LAAF	Laguna Army Airfield
LCTA	Land Condition-Trend Analysis
MAA	Main Administrative Area
MCAS	Marine Corp Air Station
MTA	Mobility Test Area
m	Meters
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NRHP	National Register of Historic Places
OSHA	Occupational Safety and Health Act
PM10	Particulate Matter under 10 Microns
RWEIS	Range Wide Environmental Impact Statement
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SOP	Standard Operation Procedure
UXO	Unexploded Ordnance
USFWS	United States Fish and Wildlife Service
USDA	United States Department of Agriculture
YRMC	Yuma Regional Medical Center
YPG	Yuma Proving Ground
YTC	Yuma Test Center

ENVIRONMENTAL ASSESSMENT
For the
HOT WEATHER TEST COMPLEX

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Yuma, Arizona 85365

June 2002



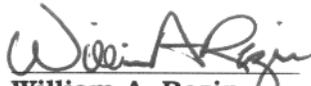
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YUMA, ARIZONA

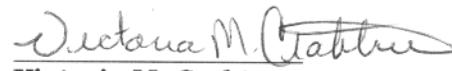
ENVIRONMENTAL ASSESSMENT
HOT WEATHER TEST COMPLEX

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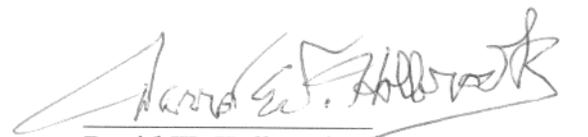
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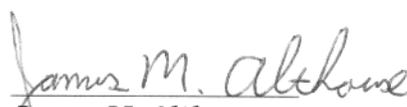

James M. Althouse
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1.0 INTRODUCTION

The U.S. Army Yuma Proving Ground (YPG) proposes to establish a Hot Weather Test Complex (HWTC). Figure 1-1 shows the location of YPG in southwest Arizona and the general location of the proposed HWTC. This Environmental Assessment (EA) has been prepared to support the decisionmaking process pursuant to the requirements of the National Environmental Policy Act (NEPA).

In compliance with NEPA, YPG completed the Range Wide Environmental Impact Statement (RWEIS), which anticipates actions similar to the one analyzed in this EA (YPG 2001a). This EA is tiered from the RWEIS and addresses the Proposed Action of establishing the HWTC, reasonable alternatives, and potential impacts to the affected environment.

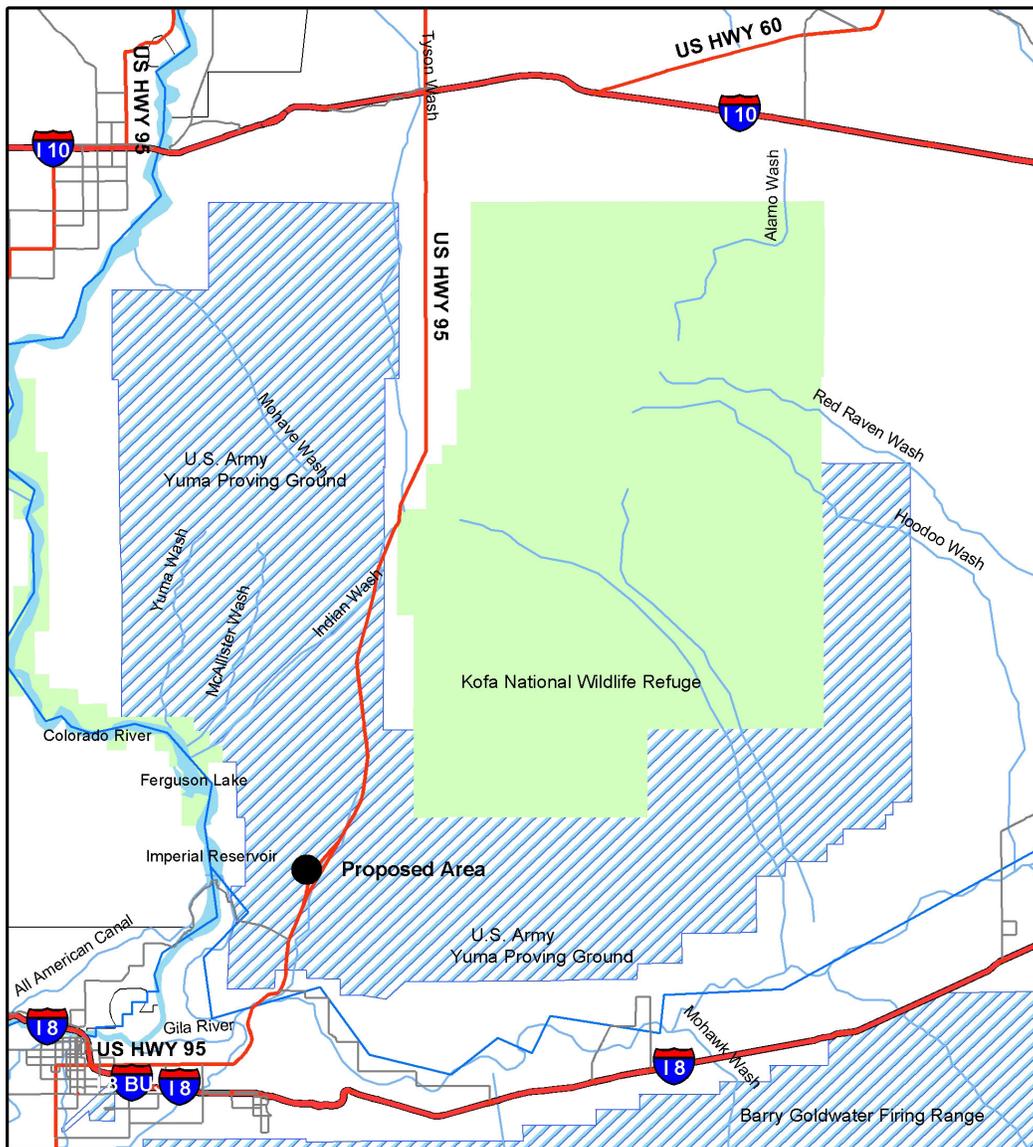
1.1 PURPOSE OF THE PROPOSED ACTION

The purpose of the Proposed Action is to establish a Hot Weather Test Complex (HWTC) at YPG. This facility would be developed as part of a lease action and is expected to include a 5-mile paved oval test track for testing the performance of automotive components and tires under hot weather conditions. Within the perimeter of the 5-mile oval the developer is expected to construct typical paved automotive test facilities such as a ride and handling course, skid surfaces, suspension test surfaces, and tire mechanical reliability courses. The test surfaces and facility infrastructures would be typical of civilian automotive test facilities, while simultaneously meeting military performance testing requirements. This state-of-the-art facility will provide the capability for a developer to conduct evaluations in hot weather conditions on a variety of vehicles. The HWTC also would provide a facility available to the government to independently evaluate tires and/or vehicles involved in accidents, product recalls, or other areas of interest to government agencies.

1.2 NEED FOR THE PROPOSED ACTION

The U.S. military fleet of vehicles is designed for optimum cross-country (off-road) performance. However, as a response to increased humanitarian and peacekeeping missions worldwide military vehicles are required to spend more time operating on highways and in civilian traffic. Even during periods of conflicts, military vehicles are often constrained to travel on paved surfaces due to land mines. Military vehicles are also frequently used under adverse conditions as they respond to natural disasters, such as floods and hurricanes. Therefore, over-the-road safety has become very critical for military vehicles because military vehicles routinely operate on paved roads for much of their life compared to past operations.

Currently, no facility exists to test military vehicles under hot weather conditions at the sustained speeds that are required for today's mission assignments. The only paved driving course at YPG, the Dynamometer Course, was established in the 1950's for hot weather testing but was designed for low-speed, full-load cooling evaluations of vehicles. Highway speeds, at conditions needed to accurately evaluate tire and vehicle performance under real-world operating temperatures and conditions, cannot be sustained on the Dynamometer Course.



Proposed Location
Hot Weather Test
Compound at Yuma
Proving Ground



DoD Land



U.S. Fish and
Wildlife Refuge Area



Proposed Hot
Weather Test Complex

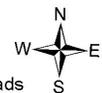
Legend

Major Rivers

Highways

Improved Roads

Major Wash



SOURCE: USAYPG GIS DATABASE

FIGURE 1-1 LOCATION OF YPG AND GENERAL LOCATION OF THE PROPOSED HWTC.

The option of using a private industry test facility was previously explored. There are test facilities operating in Arizona that conduct hot weather testing; however, none of these facilities have the capability to test over-the-road vehicles at the gross weights military vehicles are designed to operate. In addition, the location of YPG in southwestern Arizona experiences the hottest temperatures more days per year than any other test area in the United States. Consequently, commercial manufacturers routinely use public highways in the Yuma area for hot weather testing of prototype tires and vehicles rather than their established test tracks, exposing the public to unnecessary highway risks. The availability of a Hot Weather Test Complex at YPG, operated as a private industry venture, would provide a state-of-the-art facility to both commercial developers and military in one of the hottest climates found in the United States.

The proposed HWTC will provide a facility at YPG to evaluate over-the-road safety and performance of all types of wheeled vehicles, tires, and other components subject to deterioration from exposure to heat and high levels of ultraviolet radiation while meeting minimum military requirements for hot weather testing of military vehicles and equipment.

2.0 DESCRIPTION OF THE PROPOSED ACTION

The Proposed Action is to establish a HWTC at YPG. Figure 2-1 shows the Laguna Region of YPG and the site selected for the Proposed Action in relation to other YPG facilities in the area.

2.1 BACKGROUND

Tire failures due to hot weather driving and/or desert operating conditions occur frequently. Heat and high levels of ultraviolet radiation from sunlight combine to prematurely age and deteriorate rubber, plastics, and composite materials. Examples of such failures include not only the recent highly publicized, high-temperature failures and accidents involving some manufacturers' tires, but also the poor performance of tires on military vehicles during and since Operation Desert Storm. There is an increased rate of failure for tires on heavy over-the-road trucks, both military and civilian, as gross vehicle weights and highway speeds increase.

In the past, designs for military wheeled vehicles have emphasized cross-country (off-road) mobility. Endurance testing at both Aberdeen Proving Ground, Maryland (Temperate Zone) and YPG (Hot Weather/Desert Zone) was generally conducted using a standard test scenario of 40 percent paved highway, 30 percent secondary road, and 30 percent cross-country phases. This standard test ratio requires that several thousand miles of paved road operations be conducted for every Desert Durability Test conducted at YPG.

YPG is the Army's Desert/Hot Weather Test Center. As a result of serious tire problems suffered by U.S. military forces off-road operations during Operation Desert Storm, the U.S. Army routinely conduct tire tests at YPG. Consequently, widespread testing of improved tires for military vehicles has been conducted from 1991 to present. YPG has extensive off-road testing capabilities, instrumentation, and infrastructure but lacks paved test courses needed to fully evaluate over-the-road performance and safety of military vehicles, their tires, and related components under extreme conditions associated with hot weather. As the emphasis for military readiness continues to move toward increased use of wheeled military vehicles and more over-the-road operations, a facility to meet this testing requirement must be established.

In exchange for a long-term lease, the Army would obtain use of a paved test facility. It is anticipated that a developer would customize the design features and capabilities of the facility to meet their specific requirements; however, the site would also meet Army hot weather test requirements while adhering to applicable environmental regulations, safety parameters, and security concerns.

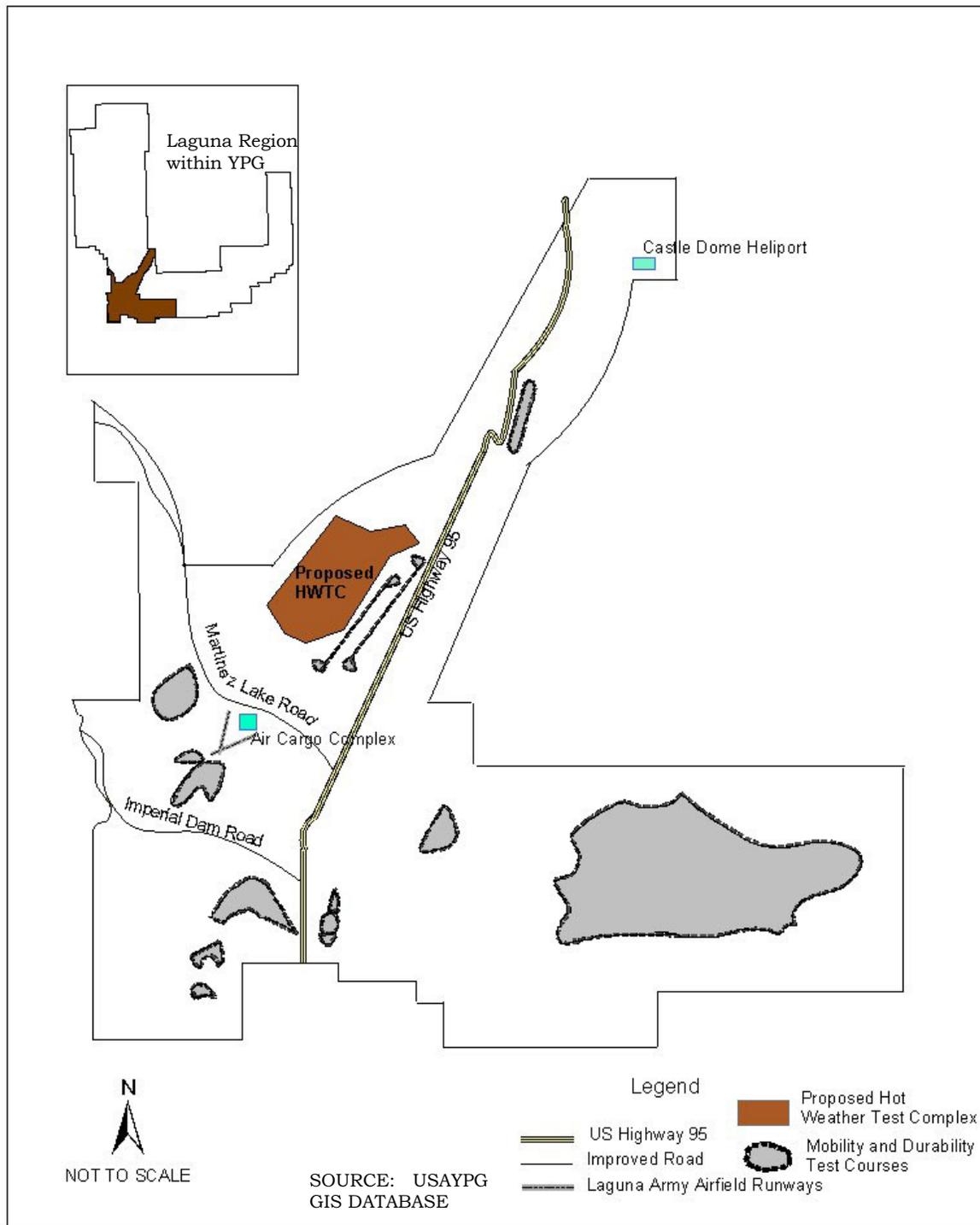


FIGURE 2-1. LAGUNA REGION OF YPG AND LOCATION OF THE PROPOSED ACTION.

2.2 PROPOSED ACTION - ALTERNATIVE A

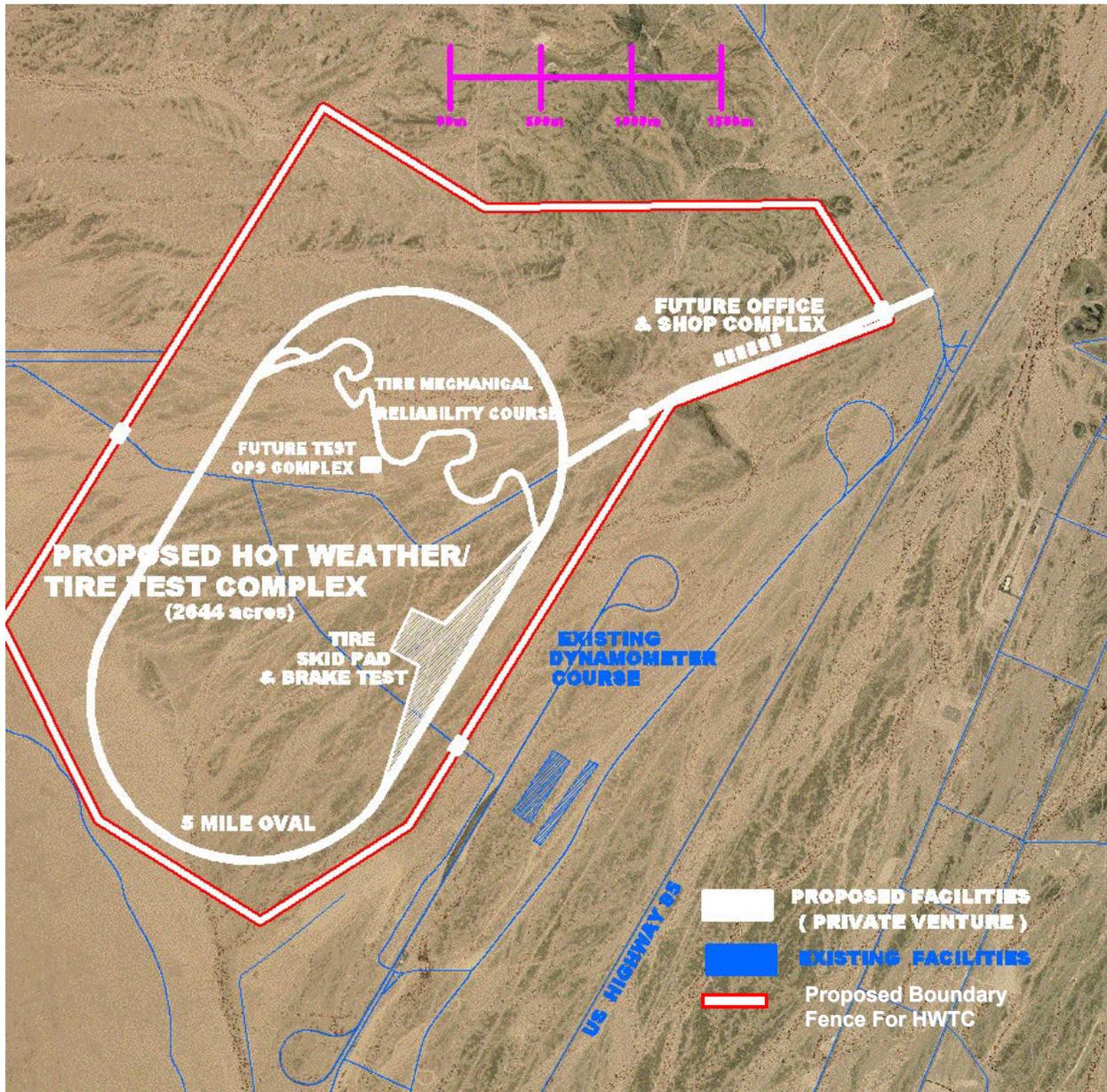
The Proposed Action, Alternative A, is to establish a hot weather test facility at YPG. The following sections discuss the development and operational concepts as well as the site selected to be leased for the HWTC facilities.

2.2.1 Development Concept

Figure 2-2 provides a conceptual plan for development of the HWTC at the site selected to be leased for Alternative A (Stullenbarger 2001). The primary feature of the proposed complex is a 5-mile oval with 1+ mile straight-aways featuring various road or test surfaces along the perimeter. The 5-mile oval track would be 50 to 60 feet wide and may be banked to accommodate high-speed operations (i.e., 120 mph or higher) depending on the developer's requirements. Should fill soil be required to construct a banked track, the acquisition of the fill soil would be addressed in separate environmental documentation (Botdorf 2001).

A 1+ mile, ride and handling course would be constructed within the primary oval track, with the capability to water down the road surface. The ride and handling course would be used to evaluate vehicle and tire safety during heavy braking, evasive maneuvers, and other extreme driving situations. A skid pad and brake test area up to 1,800 feet in length would also be constructed within the 5-mile oval, as well as a 36-foot wide mechanical reliability course. Other specialized course features could be constructed within the oval, depending on the developer's requirements. The track will not require lighting. A standard 36-foot wide paved road would be constructed northeast of the 5-mile oval to provide access between the test track and a variety of service buildings, garages, and office facilities that will comprise the Operations Area.

The proposed test track and facilities will cross several drainage ways. Therefore as part of the development concept, on site and off site drainage flows and ways of passing these flows through the site were addressed. Premier Engineering Corporation (Premier) was contracted to perform an initial drainage analysis of the area. Premier conducted a site survey and determined general drainage patterns, basin hydrological characteristics, and developed a preliminary conceptual drainage plan, characterized as a pass through system. Comprehensive hydraulic analysis at the test track will be conducted when updated planning and design information is available (Premier 2001).



SOURCE: THE AUTOMOTIVE AND EQUIPMENT DIVISION, U.S. ARMY YUMA PROVING GROUND

FIGURE 2-2. CONCEPTUAL PLAN FOR THE HWTC.

2.2.2 Operations Concept

The HWTC is anticipated to be a facility that is in operation 24 hours a day, 7 days a week during the peak activity hot summer months with seasonal fluctuations the remainder of the year. It is estimated that up to 60 people (approximately 40 privately owned vehicles) may be working at the track area or at the Operations Area at a given time. Test vehicles could range from heavy military equipment to small passenger cars, as many as 30 vehicles could be undergoing testing at one time depending on type of vehicles and test objectives. Possible hazardous materials at the proposed test site include petroleum, oil, and lubricants used for transporting, refueling, and light maintenance of the vehicles. All hazardous materials and waste will be used, stored, and disposed in compliance with applicable regulations and best management procedures. Five 10,000-gallon aboveground fuel storage tanks and associated pumps would be installed. The storage tanks will have all required secondary containment and leak prevention/detection equipment. Wastewater treatment lagoons will be engineered to accommodate up to 60 people and wastewater from maintenance activities. It is estimated that at least two water supply wells will be installed; one within the track area and one near the Operations Area. Currently, a 12,470-volt overhead power line provides power to the Dynamometer Course; energy could come from that existing line (Haygood 2001a). Telephone service could be provided to the site via an existing 12-pair cable (Borieo 2001). However, the developer will be responsible to obtain or construct all required utility support at its own expense (Marler 2002).

It is anticipated that the entrance to the main facility will be guarded and access to the track area will be gated with electronic access cards. There will be two secondary YPG gated (electronic card access) entrances to the track area, one leading from the Dynamometer Course area and one from the west side of the facility (for emergency response access). Public band communication channels will be used for communications between the track and support facilities.

2.2.3 Selected Site

Various sites were studied to determine the best location at YPG for the proposed HWTC; decisive factors included size, topography, visual security, and access. Also considered were the potential use of existing support facilities, should the need arise (Stullenbarger 2001). The selected site is an area of flat terrain within the Laguna Region, west of the existing Dynamometer Course, that provides the best combination of criterion. The desert area at this site exhibits evidence of disturbance from operations at the existing Roadrunner Drop Zone (DZ), air cargo drops and retrieval. Appropriate clearance levels addressing potential contamination from DZ activities will be accomplished prior to the beginning of any construction. However, in accordance with YPG Range Operations Standing Operation Procedure (SOP) Number YP-MTRO-P-1000, Chapter 8.3j, each test resulted in documented, full recovery of the payload (YPG 2000b). Development of the HWTC would preclude DZ operations at the current location. Reestablishing Roadrunner DZ will be accomplished prior to construction of the HWTC. Appropriate environmental documentation will be completed at that time (Botdorf 2002a).

The selected site is the only flat terrain location at YPG that provides an area large enough to accommodate a 5-mile oval track and associated support facilities. The elevation and topographical characteristics of the site provide a location with visual security to protect prototypes from public and competitor viewing without conflicting with the YPG mission. The location is in an area where similar types of test activities are already occurring and is compatible with automotive testing activities at the adjacent Dynamometer Course. The area is designated as "Controlled Access" with barrier gates adjacent to the proposed main entrance for the HWTC. This site would not require extensive preparation or construction, and does not present operational to mission activities.

3.0 ALTERNATIVES

3.1 ALTERNATIVES CONSIDERED

3.1.1 The Proposed Action - Alternative A

YPG's preferred alternative to fulfill the requirements of the Proposed Action is Alternative A, as presented and discussed in Chapter 2. This alternative would establish the Hot Weather Test Complex in the Laguna Region west of the existing Dynamometer Course.

3.1.2 The No-Action Alternative - Alternative B

The No-Action Alternative considers a scenario at YPG where no new area would be designated and equipped for the hot weather testing of tires and other automotive components. Lack of this capability would result in the loss of opportunities to test and evaluate such components, as described under the Proposed Action.

3.2 ALTERNATIVES ELIMINATED FROM FURTHER DETAILED STUDY

The following alternatives were examined for inclusion in the analysis as sites for the Proposed Action, but eliminated from further detailed studies utilizing criterion of size, topography, visual security, and access. Locations of these alternatives are shown in Figure 3-1.

3.2.1 Big Bird Area

The Big Bird Area considered for the HWTC is located slightly south of Castle Dome Heliport and east of U.S. Highway 95, adjacent to the southwest boundary of the Kofa National Wildlife Refuge (KNWR). The potential for security conflicts would be present at this site with ongoing aviation test activities involving sensitive test missions conducted at the Castle Dome Heliport. The close proximity to the KNWR could result in potential impacts to wildlife, and a Geographical Information System (GIS) overlay of this area revealed that the site is not large enough. Consequently, this site was eliminated from further detailed study due to size limitations and security conflicts.

3.2.2 Mobility Test Area

A site within the Mobility Test Area was considered for the HWTC. A GIS overlay of the area considered revealed that the site is not large enough, and the site is close enough to public access roads (U.S. Highway 95 and Imperial Dam Road) to present security problems. Consequently, due to size limitations and visual security problems this site was eliminated from further detailed study.

3.2.3 Kofa Firing Range Area

The area within the Kofa Firing Range (KFR) considered for the HWTC is located south of Pole Line Road just west of Wellton Road. The area lies within an active range, and has an increased potential for environmental impacts due to the presence of significant drainage washes. Consequently, this site was eliminated from further detailed study due to the area's topography and potential mission conflicts.

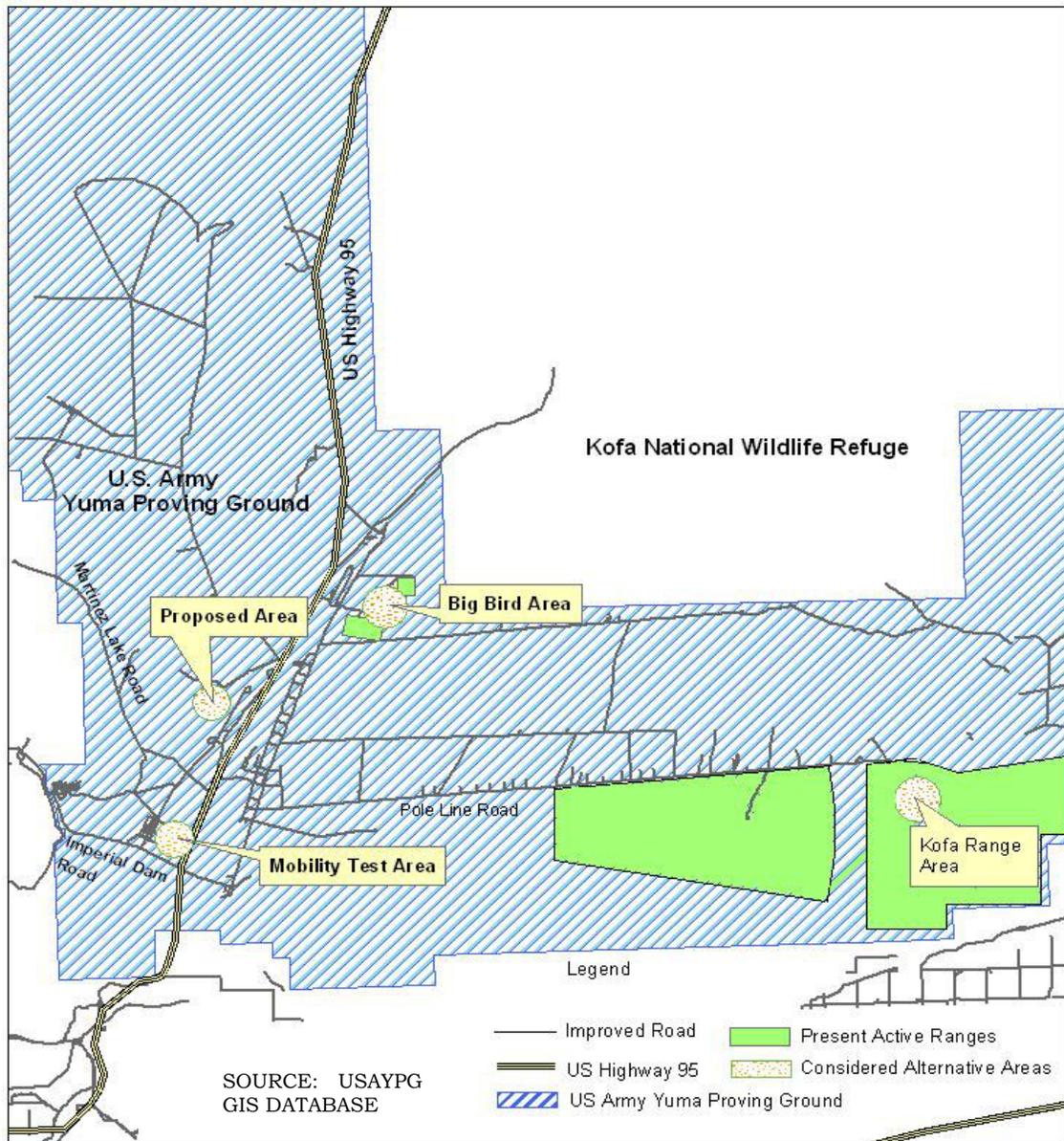


FIGURE 3-1. LOCATIONS OF ALTERNATIVES CONSIDERED FOR THE HWTC.

4.0 AFFECTED ENVIRONMENT

This chapter briefly describes the existing environment at YPG as well as the site selected for the proposed operations of the Hot Weather Test Complex (HWTC). The characterization of existing conditions provides a baseline for assessing potential environmental impacts from the proposed activities. The overall environmental setting for YPG is presented in detail in "Section Three - Affected Environment" of the *Final Range Wide Environmental Impact Statement, Yuma Proving Ground* (YPG 2001a).

YPG is located within Yuma and La Paz counties, in the southwestern portion of the State of Arizona, and north of the international boundary with Mexico. The topography is basin and range with elevations that vary from 46 to 853 meters (m) above mean sea level. The overall climate is warm, extremely arid, and temperatures periodically exceed 120°F. Precipitation rates for the area average 8.9 centimeters (cm) annually with sixty to seventy percent of the total precipitation occurring in late fall or winter. There are no perennial lakes, streams, or mountain springs within the boundaries of YPG; however, the Colorado and Gila Rivers are located in proximity of YPG's western and southern boundaries, respectively. The City of Yuma is located 40 kilometers (km) southwest of YPG and is the nearest population center (YPG 2001a).

4.1 LAND USE

The land base of YPG is dedicated to military testing and evaluation, which requires that most of the land be reserved for firing ranges, impact areas, mobility test courses, and drop zones. These types of activities require large open areas with associated safety and buffer zones.

4.1.1 Installation Land Use

The facility encompasses 3,392 square km of land, approximately 3,390 square km of which the Army controls. Patented lands within the installation not currently leased consist of 1.66 square km. The installation is configured in a "U" shape, extending 86.0 km north to south and 86.9 km east to west (YPG 2001a). Specific information regarding land use at YPG is available from U.S. Army Corps of Engineers (COE). Land within the installation's boundaries is composed of public and non-public lands withdrawn for use by the Department of the Army for military purposes and devoted to functions that are compatible with the current mission for the installation (COE 1992a; COE 1992b). The installation itself is subdivided into five management components: the Cibola Region; Kofa Region; Laguna Region; airspace; and off-post locations (YPG 2001a). No change in airspace designation or use or off-post locations are involved in this EA.

The Laguna Region is in the southwest portion of the installation and has the most potential for supporting an increase in private industry uses (YPG 2001a). Research and development facilities, the Laguna Army Airfield (LAAF) and mobility courses encompass most of the Laguna Region. The Roadrunner DZ is currently located in the Laguna Region; however, it can be reestablished in another location. Potential contamination from DZ activities will be addressed and appropriate clearance levels will be accomplished prior to any construction. Reestablishing Roadrunner DZ will be accomplished prior to construction of the HWTC. Appropriate environmental documentation will be completed at that time (Botdorf 2002a).

4.1.2 Adjacent Land Use

The majority of land bordering YPG is managed by federal resource agencies. These areas include the Kofa, Cibola, and Imperial National Wildlife Refuges. Wilderness areas include locations within the Kofa National Wildlife Refuge (KNWR), the Muggins Mountains, the New Water Mountains, and the Trigo Mountains. Privately owned land located within the

Wellton-Mohawk Irrigation District extends along the southern edge of YPG in the Gila River floodplain and is utilized primarily for agriculture. The southern boundary of the Kofa Region is two miles from the town of Roll, Arizona. Quartzsite is the nearest town north of the Cibola Region, located in La Paz County. U.S. Highway 95 runs north to south adjoining the Cibola Region and Cibola Lake Road, which is a public access road that bisects the Cibola Region from east to west (YPG 2001a).

4.2 SOIL RESOURCES

The surficial soils of YPG were mapped and described by the Natural Resources Conservation Service and have been classified by the U.S. Department of Agriculture (USDA) as aridic and hyperthermic. Mean soil temperatures are at least 72°F with more than a 9°F difference between summer and winter temperatures (YPG 1997; YPG 2001a). Soil depth at YPG ranges from moderately deep in alluvial basins to very shallow in the mountain regions where bedrock is often exposed. The majority of YPG soils have been characterized as ranging from extremely gravelly, or cobbly sand, to very fine, sandy loam (Cochran 1991). Some soils in the region could support agriculture, except that precipitation is insufficient to produce crops without irrigation (YPG 1997).

The site selected for Alternative A is best described as a broad flat region intermingled with braided streams and desert washes. Desert pavement covers most of the area. Five soil types can be found within the site and the surrounding area. These soils are the Riverbend family-Carrizo family complex, the Cristobal family-Gunsight family complex, the Gunsight family-Chuckawalla family complex, the Superstition family-Rositas family complex, and the Lithic and Typic Torriorthents soils (Cochran 1991, Premier 2001). However, predominate soil types within the area are the Riverbend family-Carrizo family complex and the Cristobal family-Gunsight family complex. These cobbly, sandy soils are characterized as having small to large stones, resulting in high drainage patterns, with moderate to rapid permeability rates, and a one to three percent slope.

Found to a lesser degree within the southeastern portion of the site is the Superstition family-Rositas family soil complex. Characteristics of this soil complex reflect similarities with the previously mentioned soils; however, this complex is sandier, with a one to fifteen percent slope.

4.3 WATER RESOURCES

4.3.1 Surface Hydrology

Surface water is protected by the Clean Water Act (CWA), which established guidelines for water quality standards and the control over discharges into waters of the U.S. The term surface water includes rivers, recurrent or perennial streams, and natural water holes. There are no perennial streams at YPG, although two rivers are located nearby. The Colorado River traverses the surrounding desert region in a north-south direction to the west of the installation, while the Gila River flows in an east-west direction to the south of YPG (YPG 1997, YPG 2001a). Surface drainage from western portions of YPG flow into the Colorado River; similarly, drainage from the central and eastern portions flow into the Gila River. Both rivers have occasionally breached their banks during wet years; however, upstream dams and reservoirs have decreased the severity of recent flood events (YPG 2001a).

Desert washes are a prevalent feature of the YPG landscape and surface hydrology. They are produced by localized high-intensity thunderstorms resulting in rapid surface runoff and flash floods. These desert watersheds are dry most of the year as a result of infrequent rainfall, characteristic of Sonoran Desert precipitation patterns. Standing water may occur at YPG after

rainfall-runoff events but generally does not last long. However, runoff water trapped in deep bedrock depressions within mountain canyons or ravines create natural water holes, or "tinajas," which may persist for months. Enhanced tinajas are natural water holes that have been artificially improved or modified to prolong water storage capacity; some may retain water throughout the year. Both natural water holes and enhanced tinajas are classified as surface water (YPG 2001a).

Premier was contracted to perform an initial drainage analysis at the proposed HWTC site. The purposes of the analyses were to determine off site peak flow rates impacting the site, determine the best method to convey these flows through the site, and decide on a preliminary design to address drainage conditions (See 5.4.3). Premier conducted a field survey and determined that storm water runoff events flowed in a south, southwesterly direction and resulted in the formation of a plain. This large flat area, or plain, characterizes the majority of the proposed site. The plain has a one to five percent slope, and was formed from weathered soils washed down from the surrounding hills (Premier 2001). No permanent surface water developments are at the site. The terrain is flat, surface water at this site would be temporary and consist of minor stream flow events associated with desert washes in the area, and standing water from rainfall-runoff.

4.3.2 Groundwater

Groundwater is found in hydrologic basins located below the surface. Contamination of groundwater by leakage or spilled substances is unlikely to be found in existing groundwater resources. This is because evaporation rates exceed precipitation rates at YPG; rainfall evaporates instead of percolation into groundwater resources (YPG 2001a). Well G services the region for the proposed HWTC site; depth to water is approximately 84.73 m or 278 feet (Haygood 2001b). A complete discussion of groundwater at YPG is presented in detail in "Section Three - Affected Environment" of the *Final Range Wide Environmental Impact Statement, Yuma Proving Ground* (YPG 2001a).

4.4 BIOLOGICAL RESOURCES

Additional information on biological resources found throughout YPG is available from the *Integrated Natural Resources Management Plan* (YPG 1997) and the *Final Range Wide Environmental Impact Statement* (YPG 2001a).

4.4.1 Vegetation

Typically, YPG vegetation consists of desert scrub dominated by creosote bush-white bursage plant communities, few trees, sparse annual forbs and grasses. However, there are a variety of annual plants associated with the different rainfall patterns that occur throughout the YPG area (YPG 1997). Average annual rainfall at YPG is 8.9 cm (3.50 inches) and potential evapotranspiration is high (pan evaporation averages 272 cm or 107 inches per year). Consequently, soils tend to be dry supporting only sparse stands of vegetation, if any. However, during occasional rainfall-runoff events, overland flows concentrate in microchannels and washes, enhancing soil moisture recharge along the watercourse. The extra soil moisture creates a "xeroriparian" zone in and along the channel where plant biomass and species diversity are greater than the adjacent runoff surfaces (YPG 2001a).

Detailed information on plant communities and xeroriparian plant communities can be found in the *Final Range Wide Environmental Impact Statement* (YPG 2001a), and the *Integrated Natural Resources Management Plan* (YPG 1997), as well as complete lists of scientific and common names from the *Land Condition-Trend Analysis Installation Report, Yuma Proving Ground, Arizona - 1991-1994* (Bern 1995), *Yuma Proving Ground Perennial Plant List* (YPG 2001b), and the *Yuma Proving Ground Annual Wildflowers Plant List* (YPG 2001c).

The topography and vegetation of the proposed HWTC site are characteristic of YPG in general, relatively flat terrain covered with desert scrub. Creosote bush and white bursage are the dominant plant species located throughout the flat portions of the site with turkshead forbs found scattered throughout the desert pavement. Predominate species located in the washes are ironwood and yellow paloverde, along with various understory shrubs such as sweetbush, California trixis, and desert lavender. Other common plants dispersed about the area are brittlebush, Anderson wolfberry, various grasses and forbs, along with sporadic occurrences of ocotillo, saguaro, and beavertail (Obregon and Young 2001).

The southeastern section of the area consists of slightly different topography and vegetation. Gentle sandy slopes support typical stands of desert vegetation; however, variations exist. Creosote bush and white bursage still dominate throughout this section of the proposed HWTC area but with a marked increase of cacti and ocotillo. Understory shrub compositions are similar to those found throughout the area with inclusions of chollas, ratany, and some big galleta (Obregon and Young 2001).

4.4.2 Wildlife

Wildlife on the installation consists of species that have adapted to the harsh and specialized habitat conditions of the Sonoran Desert, along with a few introduced exotics such as wild horses and burros (feral equines). Detailed information on wildlife found throughout YPG is available from the *Integrated Natural Resources Management Plan* (YPG 1997), and from surveys conducted on YPG by the Arizona Game and Fish Department (AGFD) (Ough and deVos 1986; deVos and Ough 1986). A complete listing of scientific and common names of mammals, birds and reptiles is available from the *Yuma Proving Ground Mammal List* (YPG 2001d), the *Yuma Proving Ground Bird List* (YPG 2001e), and the *Yuma Proving Ground Reptile and Amphibian List* (YPG 2001f).

Seasons and the availability of habitat dictate species quantity and composition; however, the wildlife found at the proposed site for Alternative A, would be consistent with the general fauna of YPG. Portions of this location contain desert washes. These washes provide vegetation for food and cover, and a variety of wildlife habitats. Mule deer and other wildlife such as coyotes, desert cottontails, and jackrabbits are broad-ranging habitat generalists that are known to utilize desert washes (Ough and deVos 1986; deVos and Ough 1986). Members of these species could inhabit the area. The selected site for Alternative A also contains broad flat regions and sandy slopes. These regions in combination with the desert washes provide habitats that could support badgers, kit foxes, mice, an array of reptiles, as well as native and migratory birds. Wider ranging birds that may enter the area, although at lesser intervals, are red-tailed hawks, American kestrels, turkey vultures and common ravens. Bats, which inhabit abandoned mines and caves of the surrounding mountains, may be found foraging in the area (Ough and deVos 1986). Feral burros, which are protected and managed under the Wild and Free-Roaming Horse and Burro Act of 1971, have been sighted in the area (Obregon and Young 2001).

4.4.3 Sensitive Species

Analysis for this EA addressed sensitive species as well as federal and state identified endangered species. Coordination with AGFD reflected that the Sonoran desert tortoise, a special status species, has been documented as occurring in the vicinity of the proposed project (AGFD 2001). At present, no federally listed Threatened or Endangered Species are known to occur at the site selected for Alternative A (YPG 1997; YPG 2001a). However, the Sonoran pronghorn is listed on the Federal Threatened and Endangered Species list and has part of its historic range on YPG. Several species of cactus, including the saguaro, are known to occur within the area and have been identified for protection by the Arizona Native Plant Law (YPG 1997, Obregon and Young 2001).

4.5 CULTURAL RESOURCES

Cultural resources are defined by the National Historic Preservation Act as prehistoric and historic sites, structures, districts, or any other physical evidence of human activity considered important to a culture, a subculture, or a community for scientific, traditional, religious, or any other reason. Depending on the condition and historic use, such resources may provide insight into the lifestyles of previous cultures and/or may retain cultural significance to modern groups.

4.5.1 Archeology

Archeological research indicates important cultural resources do exist on the installation. The *YPG Integrated Cultural Resources Management Plan* (YPG 2000c) sets forth specific goals, policies, and procedures to identify, nominate, and protect archaeological sites, and other eligible or potentially eligible historic properties for nomination to the National Register of Historic Places (NRHP).

A Class III cultural resource inventory and evaluation was performed by Statistical Research Inc., at the proposed area. The survey identified and recorded cultural sites, as well as isolates and historic military sites. Eleven archeological sites were recorded by this inventory; eight prehistoric, two historic, and one site contained both components. These sites combined with the isolates provide clear evidence that the proposed project area was used during the prehistoric period and extensively used for military activities in the 1940s and 1950s (Gauna 2001, Statistical Research Inc. 2002a).

4.5.2 Native American Cultural Concerns

Historically, the southwestern desert of Arizona has been home to Native American peoples (YPG 2001a). The Cocopah Indian Tribe, the Colorado River Indian Tribes, and the Quechan Indian Tribe are located within the vicinity of YPG.

4.6 AIR QUALITY

The Clean Air Act (CAA), as amended, establishes National Ambient Air Quality Standards (NAAQS) for the control of criteria air pollutants to protect human health and the environment, and to prevent adverse effects to national air resources. The Arizona Department of Environmental Quality (ADEQ) has adopted these Federal standards as the Arizona Ambient Air Quality Standards (AAAQS). The ADEQ is the regulating and enforcing agency for Arizona air standards (YPG 2001a).

Air quality in a given location is defined by measuring concentrations of certain pollutants in the atmosphere. Type and amount of pollutants emitted, size and topography of the air basin, and meteorological conditions related to the prevailing climate determine pollutant concentrations. The significance of a pollutant concentration is determined through comparison of Federal and local standards. YPG has agreed to place an artificial (synthetic) limit on CAA Title 5 pollutants and thus is classified by ADEQ as a "synthetic minor source." YPG possesses a Synthetic Minor Operating Permit, #1000097, covering emissions from two generators located within the installation. All other base activities are considered to be insignificant with regards to air quality (YPG 2001a).

Air quality data for Yuma County reveals the extreme southwestern portion of YPG falls within the Yuma County nonattainment area for particulate matter 10 microns and smaller (PM₁₀). In arid regions such as southern Arizona, PM₁₀ occurs naturally at higher levels due to low soil moisture, low humidity, and wind resulting in higher dust dispersion rates. Agricultural activities are considered a major contributor to PM₁₀ pollutants, while activities at the installation have been listed as minor contributions (YPG 2001a). However, construction

activities that fall within a nonattainment area for PM₁₀ must be evaluated for conformity under the Clean Air Act, Section 176 in accordance 40 Code of Federal Regulations (CFR) 51. PM₁₀ calculations and conformity evaluations have been performed for the proposed HWTC. Results are presented in Table 5-1, and are discussed in Section 5.7.3 (Jason 2002).

4.7 NOISE

Noise is considered a source of pollution because it can be a public health hazard, causing hearing impairment and undue psychological stress. Noise is usually defined as sound that is undesirable because it interferes with speech communication and hearing, is intense enough to damage hearing, or is otherwise annoying. Noise may be intermittent or continuous, steady or impulsive. Noise from sound energy is radiated in all directions from the source, and as the area of noise exposure increases, noise energy decreases. Noise weakens as it travels over long distances and crosses natural barriers such as mountains, ridges, hills, and bluffs (YPG 2001a).

To reduce noise impact, the Army established the Installation Compatible Use Zone (ICUZ) noise management program at all major commands and installations (AR 200-1, 7-5). The ICUZ is a concept of achieving compatible land use in areas around military installations by preventing incompatible development in high-noise exposure areas, while protecting the operational capability of the installation (YPG 2001a).

4.7.1 Noise Environment

The main sources of noise on YPG come from transportation and weapons firing activities in the Kofa and Cibola Regions. At YPG, ambient noise (baseline noise when installation activities are not in operation) is associated with helicopter flights from Marine Corp Air Station (MCAS) Yuma and AGFD wildlife surveys, military aircraft, commercial air traffic, and traffic on U.S. Highway 95 (YPG 2001a).

Noise contour maps were prepared as part of the Environmental Noise Management Program (ENMP). The maps delineate three different noise zones, which are based on the expected percentage of the population that would be annoyed by noise (See Table 4-1).

Table 4-1. Noise Levels

Noise Zone	Population Highly Annoyed	Transportation Noise (ADNL)	Small Arms Noise (ADNL)	Impulse Noise (CDNL)
Zone I	<15%	<65 dBA	<62 dBC	<87dBP
Zone II	15% - 39%	65-75 dBA	62-70 dBC	87-104 dBP
Zone III	>39%	>75 dBA	>70 dBC	>104 dBP
DNL is the time weighted, energy average sound level with a 10-decibel (dB) penalty added to the nighttime levels. ADNL (A-weighted DNL) is used to assess sound levels from noise generated by transportation sources, such as vehicles and aircraft, and from continuous sources, such as generators. CDNL (C-weighted DNL) is used to assess sound levels from impulse noise resulting from armor, artillery, and demolition activities.				
Source: YPG 2001a.				

Noise contour maps for YPG show that, with the exception of one small area located in a remote portion of the Kofa National Wildlife Refuge (KNWR), all Zone II and III contours are contained well within the bounds of the installation. A Letter of Permit from the Department of the Interior covers the above-mentioned area in the KNWR (YPG 1987).

The Laguna Region where the selected site for Alternative A is located includes populated areas as well as the Laguna Army Airfield; no firing activities take place in this region. The proposed HWTC site is away from populated portions of the Laguna region; noise from proposed activities would be compatible with current use and will not exceed the Occupational Safety and Health Act (OSHA) standards (YPG 2001a).

4.8 SOCIOECONOMIC SETTING

The socioeconomic setting involves the basic attributes and resources associated with the activities of humans, particularly population characteristics, economic assets, and activity. Economic activity typically encompasses employment, personal income, and industrial trends and growth. Impacts on population and/or economic activity can also influence other components, such as housing availability and public services provision.

4.8.1 Demographic Setting

When La Paz County was formed from northern Yuma County in 1983, YPG became centered in both counties. The City of Yuma is the largest urban center in the region. From 1990-2000 the population increased by 36.1% to 160,026. The population of the Yuma Planning Area is predicted to grow by as much as 58 percent over a 20-year planning period from 1995 to 2015 (See Table 4-2), as well as continue to accommodate growing numbers of winter visitors (Yuma 2002).

Table 4-2. Regional Population Data

	Statistical Data		Projected Data		
	1995	2000	2005	2010	2015
Arizona	4,134,894	4,961,953	5,553,849	6,145,108	6,744,754
Yuma County	121,097	160,026	154,582	171,689	189,783
Yuma	60,457	77,515	74,347	81,836	90,271
Source: Yuma 2002			Source: Arizona DES 1997		

4.8.2 Local Economy and Employment

Economic growth in Yuma County is largely dependent upon three activities; agriculture, tourism, and government employment. YPG is Yuma County's largest single employer of civilians and is one of the largest consumers of goods and services of all the government organizations in the county. The combined YPG military and civilian payroll in Fiscal Year (FY) 2000 was \$42.7 million with an additional \$70.7 million going to contractual services. Construction and operations programs totaled \$29.7 million. Typically, 32% of all YPG purchases are from Arizona businesses and 18% are made at Yuma county businesses (YPG 2001a, YPG 2001g).

4.8.3 Environmental Justice

Executive Order 12898 – *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, directs Federal agencies to address disproportionately high and adverse human health or environmental effects of its programs and policies, and activities on minority and low-income communities. Suggestions and guidance for addressing these issues are provided by the Council on Environmental Quality (CEQ) in *Environmental Justice, Guidance Under the National Environmental Policy Act*, (CEQ 1997b).

Population levels and their associated income groups fluctuate in Yuma County on a seasonal basis. Based on the 2000 Census demographic information, 160,026 individuals resided in Yuma County representing many races (Yuma 2002). YPG is the largest civilian employer for Yuma County and contributes positively towards the economy.

4.9 HEALTH AND SAFETY

Health and safety risks are inherent to the mission, terrain, and climate at YPG. The health and safety of workers and the public is overseen and managed by the YPG Safety Division. Guidance concerning safety issues can be found in Department of Defense (DoD) Directive 1000.3, *Safety and Occupational Health Policy for the Department of Defense*, March 29, 1979, which updates established policy and guidance for the prevention of mishaps throughout the Department of Defense. Procedures for explosives, ammunition safety, and unexploded ordnance (UXO) contamination are addressed in DoD Standard 6055.9, *DoD Ammunition and Explosives Safety Standards*, August 1997. Safety standards and procedures for day-to-day operations at YPG are found in the following regulations: USA YPG Regulation 385-1 *Safety and Occupational Health Program*, 9 April 1992; Army Regulations (AR) 385-10, *The Army Safety Program*; and YP-MTEA-P-3003, *YPG's Standing Operation Procedure* for recovery of airdropped ammunition. Fire protection and explosive safety are regulated at a local or site specific level. Continual compliance with regulations and safety measures ensure the health and safety of YPG personnel and others who live and work in the area.

Emergency medical facilities at YPG are limited to an outpatient medical clinic. Onsite staff can perform routine procedures such as X-rays and laboratory work. Transport time from within the installation to the clinic ranges from 15 to 60 minutes. Serious injuries or illness can be treated at Yuma Regional Medical Center (YRMC), helicopters from MCAS Yuma and Luke Air Force Base are available for emergency transportation. Fire protection at YPG is provided by fire stations at LAAF, KFR, and a secondary station in the Main Administrative Area (MAA). YPG Law Enforcement and Security Division provide law enforcement personnel and security services to YPG (YPG 2001a, COE 1992b).

4.10 TRANSPORTATION, UTILITIES, AND INFRASTRUCTURE

Analyses of impacts associated with transportation, utilities, infrastructure, and services focus on roads and traffic patterns, water and power sources, use and supply capability, and

the availability of public services. Such analyses can include traffic volume and types of vehicles, electric power use, fossil-fuel consumption, construction materials consumption, and also demand for onsite emergency services such as medical support, fire protection, and law enforcement.

The road network at YPG includes highways, primary and secondary roads, and tertiary and rural roads (COE 1992a). Access to the site selected for Alternative A is via U.S. Highway 95, which is the principal high-speed traffic access route to YPG. U.S. Highway 95 runs north to south from the United States-Mexico border through the City of Yuma to the town of Quartzsite, AZ. The majority of the installation's paved roads are located within the Laguna Region near the MAA, Mobility Test Area (MTA), and LAAF. Unpaved roads in the Laguna Region are mainly used to transport vehicles to mobility test courses. Other roads within the area include Imperial Dam Road, which transects the Laguna Region and is open to public access, and Martinez Lake Road, which transects the installation between the Cibola and Laguna Regions (YPG 2001a).

The developer will be responsible for obtaining or constructing all required utility support, including but not limited to, electricity, water, wastewater treatment, natural or propane gas, and communications at its own expense. Commercial electricity, natural gas, and communications utilities are reasonably near the elected site. Commercial electricity is available from the Wellton-Mohawk Irrigation and Drainage District. Natural gas is available from the El Paso Natural Gas Company. Communications services are available from Quest Communication International, Inc. Propane gas can be purchased from local suppliers in the Yuma area. Utility corridors will be negotiated during the leasing action, and cannot be defined until after the developer has made requirements determinations. There are no commercial water sources available to the selected site. However, water is known to exist in the area and the developer may, after obtaining prior approval of the State of Arizona, construct wells and treatment facilities to satisfy water requirements. The developer must include wastewater treatment facilities in its construction and design plans.

4.11 AESTHETICS

Aesthetics generally involve visual resources, which are defined as the natural and man-made features that give a particular area its aesthetic quality. These features form the overall impression that an observer receives of an area or its landscape character. The significance of a change in visual character is influenced by social considerations, including public value placed on the resource, public awareness of the area, and general community concern for the viewscape associated with an area (YPG 2001a).

YPG is located in an area characterized by rugged mountains, broad alluvial plains, and sparse desert vegetation. The site selected for the Proposed Action and lands within the immediate proximity are characteristic of the installation and have few visual resources.

5.0 ENVIRONMENTAL CONSEQUENCES

This chapter assesses potential environmental consequences associated with direct and indirect effects of each alternative considered. Potential impacts are addressed in the context of the scope of the Proposed Action in Chapter 2.0 and in consideration of the potentially affected environment as characterized in Chapter 4.0.

5.1 EFFECTS COMMON TO ALTERNATIVES

For aesthetic resources, the effects of both alternatives considered are essentially the same and are presented in section 5.1.1. The information is being presented in this manner to avoid repeating text and will not be discussed later in the chapter.

5.1.1 Aesthetics

Impacts to these areas are considered significant if the panoramic views or scenic beauty of specific areas are permanently degraded (YPG 2001a). The significance of potential impacts on visual resources is based on the level of visual sensitivity in the area. Visual sensitivity is defined as the degree of public interest in a visual resource and concern over adverse changes in the quality of that resource. This section examines potential impacts to aesthetic values resulting from either the implementation of Alternative A, or the implementation of the No-Action Alternative B. Activities from Alternative A, or the No-Action Alternative B will not alter the visual characteristics of the installation and therefore would have no effect on the general, overall visual quality, or aesthetics of the installation.

5.2 LAND USE

The significance of potential impacts to land use is based on the level of sensitivity of an area affected by the proposal. Impacts to land use are considered significant if land is degraded so it cannot be used for current or planned use; and/or planned uses conflict with off post land use, especially along the YPG boundary. With this in mind the management of YPG land use is guided by three goals. The first goal is to promote the most efficient and cost effective land use plan. The second goal is to promote compatible and coordinated land use decisions by Federal, State, and local agencies. The final goal is to maximize the welfare and quality of life for on post personnel and neighboring residents (YPG 2001a).

5.2.1 The Proposed Action – Alternative A

Implementation of Alternative A would result in the HWTC being developed in the Laguna Region. The test complex would be located southeast of Middle Mountain Road and west of the Dynamometer Course. Mobility test courses are currently located in the Laguna Region and would be compatible with implementation of Alternative A. Development of a commercial complex within the Laguna Region is consistent with other tests and activities currently operating in the area (YPG 2001a). The area exhibits disturbances from prior activities associated with the Roadrunner DZ currently at the location. After airdrops that included explosive items the area is secured and explosive material is either destroyed at the site or taken to X-Ray, depending upon the type of payload dropped (DoD 1997).

Construction associated with implementation of Alternative A would be related to facilities necessary for storage, transport, maintenance, and the testing of vehicles. Facilities constructed in conjunction with Alternative A would be compatible with current land use conditions. No changes to land use patterns on or off the installation would be required from proposed testing activities. Activities associated with necessary construction would not impede, degrade or create a conflict with current land use on or off the installation.

5.2.2 No-Action Alternative - Alternative B

If the No-Action Alternative were implemented there would be no new area designed, built and equipped for hot weather testing of vehicles and tires on paved surfaces.

5.2.3 Mitigation and Monitoring

Prior to construction activities appropriate land clearance levels will be accomplished. Necessary permits will be applied for, final drainage designs and plans will be complied with, and during construction activities best management procedures will be followed. No additional mitigation related to land use is necessary for the implementation of Alternative A.

5.3 SOIL RESOURCES

Impacts to soil resources are considered significant if: 1) soil subsidence occurs over large areas; 2) activities result in severe soil erosion; 3) permanent contamination of soil occurs that would restrict future land use (YPG 2001a).

5.3.1 The Proposed Action – Alternative A

Soils at the site selected for Alternative A reflect typical installation mission usage. The ground surface and soils exhibit evidence of land use disturbances from vehicular traffic and other activities. Airdrop and retrieval activities from the Roadrunner DZ previously conducted at the site, as well as vehicular traffic crossing the area from the nearby Dynamometer Course and Sidewinder DZ have altered ground surfaces and caused disturbances to both soils and vegetation.

This site is situated on a plain, composed mainly of desert pavement covering soils washed down from the surrounding hills to the north. YPG soils and those found predominantly at this site are protected to an extent from wind and water erosion by the presence of desert pavement and vegetation. Soils within this area have been previously disturbed to some extent due to installation use and vehicular traffic (YPG 2001a, Obregon and Young 2001). Activities associated with implementation of Alternative A could result in disturbances to current soil conditions at the selected site. The majority of these potential disturbances would occur from ground-disturbing activities such as construction and vehicles traversing the terrain during construction. Disturbances or impacts to the physiography of the area could result as new test tracks are built, terraces are graded, and washes are cut and filled. Impacts could result from grading, compaction, and filling soil for access roads and electrical infrastructure. These types of activities have the potential to disturb or impact soils resources and increase soil erosion; however, soil subsidence over large areas, soil contamination or severe soil erosion is not expected as a result of the Proposed Action.

5.3.2 No-Action Alternative - Alternative B

If the No-Action Alternative were implemented there would be no new area designed, built and equipped for hot weather testing of vehicles and tires on paved surfaces.

5.3.3 Mitigation and Monitoring

Premier conducted a site survey of the area selected for the HWTC, to determine general drainage patterns and developed a conceptual drainage plan. This plan is characterized as a pass through system that will not re-route or substantially change existing flow paths, thereby minimizing potential disturbances to soil surfaces from diverted stormwater runoff. Minor local drainages changes may be necessary; however, the predominant flow patterns will be maintained. A comprehensive hydraulic analysis and culvert sizing will be conducted when updated planning and design information is available (Premier 2001).

Disturbances to soils can be avoided or minimized if proper construction techniques and structural engineering designs are incorporated into project development. Implementation of best management practices during construction would limit impacts on soils resulting from construction activities and vehicular traffic. Standard erosion control measures (e.g., silt fencing, sediment traps, applications of water sprays, and revegetation of disturbed areas) would reduce potential impacts related to these characteristics. Excavated earth would be disposed of on higher ground away from adjacent retention basins or drainage ways. Refueling operations would only occur in pre-designated, hardened sites, to minimize the chances for soil contamination. Through the implementation of proper procedures and best management practices during construction and operation of this alternative, impacts to the regional or local topography features at YPG may be reduced or avoided. No significant impacts are expected to occur from the implementation of Alternative A; no soil subsidence should occur over a large area, no severe soil erosion, and no permanent contamination of soils that would restrict future land use should occur.

YPG currently maintains several environmental plans and programs designed to assist with monitoring and maintaining its natural environmental resources, the Land Condition-Trend Analysis (LCTA), and Integrated Training Area Management (ITAM), and the Integrated Natural Resources Management Plan (INRMP). These programs provide scientific and management information for the monitoring of natural resources on the installation, with specific emphasis on lands where training and testing activities occur. Inclusion of the proposed HWTC site in these monitoring and mitigation programs will ensure that any adverse impacts are identified, mitigated where possible, and monitored.

5.4 WATER RESOURCES

Impacts to water resources are considered significant if one or more of the following significance criteria are met: 1) surface water is contaminated by stormwater runoff to levels above Federal or State water quality standards; 2) "Waters of the U.S." are degraded by actions that exceed limits authorized under the CWA; 3) groundwater is depleted to the degree that subsidence causes fissures to form; 4) groundwater quality is degraded below CWA standards (YPG 2001a).

5.4.1 The Proposed Action – Alternative A

Average rainfall for YPG is 8.9 cm (3.5 inches) per year, and the pan evaporation rate is 271.8 cm (107 inches) per year (YPG 2001a). The combination of low precipitation and high evaporation prevents surface water build up and/or infiltration into the soil, therefore surface water contamination from the Proposed Action would not be an issue. Stormwater runoff may be disturbed by changes in the soil surface, plant cover, or the natural drainage system. Soil surfaces that lose their protective rock and vegetative cover shed rainwater more quickly and are prone to accelerated erosion. This can lead to higher sediment yields entering drainage systems, causing siltation and increased flooding.

Major desert washes are considered "waters of the United States," and are regulated under Section 404 of the CWA. Any dredging or filling of these washes requires a permit from the COE. A few washes are located within the proposed test track alignment; however, culverts will be used to pass stormwater through the track alignment. Premier determined general drainage patterns, basin hydrological characteristics, and possible drainage concerns. Drainage ways crossing the proposed test track alignment have been identified. Premier developed a conceptual drainage plan characterized as a pass through system that would not significantly re-route or change existing flow paths. Culvert sites have been tentatively selected to route off site flows through the test track prism. A comprehensive hydraulic analysis will be conducted when updated planning and design information is available, and culverts will be sized to pass the flow with the desired level of service being maintained (Premier 2001).

Appropriate permits under Section 404 will be applied for or obtained when design elements are finalized.

Depth to groundwater within the proposed test site is deep, approximately 84.73 m (278 feet) (Haygood 2001b). Potential for groundwater contamination or depletion to the degree that subsidence causes fissures to form is unlikely. Consequently, implementation of this alternative should have no significant impacts on surface water resources or groundwater resources.

5.4.2 No-Action Alternative - Alternative B

Under the No-Action Alternative, there would be no change to the use of water resources for the installation.

5.4.3 Mitigation and Monitoring

Stormwater runoff will be controlled within the selected site development area through the use of culverts and ditches. Premier determined general drainage patterns, basin hydrological characteristics, and developed a conceptual drainage plan for stormwater runoff, characterized as a pass through system. Premier performed standard Army Corps of Engineers' (COE) program HEC-1 models and utilized the Flood Control District of Maricopa County (FCDMC) Rational Method analyses to quantify flow rates for design and planning purposes. Culverts have been tentatively selected to route off site flows through the test track prism. The desired level of service was set at the 25-year event for off site flows, and 5 to 10-year event for on site flows. Most on site flows will drain into ditches, be collected in retention basins and allowed to drain on to areas adjacent to the test track. A comprehensive hydraulic design analysis of wash crossings at the test track will be conducted when updated planning and design information is available, and culverts will be sized to pass flows with the desired level of service being maintained (Premier 2001).

No significant impacts are expected from the implementation of Alternative A. Contamination by stormwater runoff is not expected from the proposed activities, and by adherence to proper construction procedures and drainage plans, no degradation of stormwater dynamics are expected to occur that would exceed limits authorized under the CWA. No groundwater contamination is anticipated, and no groundwater degradation below CWA standards is expected from the implementation of Alternative A. Any and all possible adverse impacts to water resources resulting from the implementation of Alternative A will be mitigated and addressed through construction plans, and by application of land management practices. Proper soil erosion and surface flow control measures along with limits placed on off-road vehicular traffic would protect the current surface water dynamics at the selected site. Culverts built during construction activities and following final drainage plans will mitigate any impacts to washes and stormwater runoff. Disturbances and impacts to washes from the implementation of Alternative A would be mitigated by best management practices to avoid or minimize degradation and to ensure that limits authorized under the CWA are not exceeded. All necessary permits will be procured prior to construction activities.

YPG currently maintains several environmental plans and programs designed to assist with monitoring and maintaining its natural environmental resources, the LCTA, the ITAM, and the INRMP. These programs provide scientific and management information for the monitoring of natural resources on the installation, with specific emphasis on lands where training and testing activities occur. Inclusion of the proposed HWTC site in these monitoring and mitigation programs will ensure that any adverse impacts are identified, mitigated where possible, and monitored.

5.5 BIOLOGICAL RESOURCES

Biologic resources include native and exotic plants, animals, and the habitat in which they occur. Sensitive biologic resources are those plant and animal species listed as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) and/or by the state in which they exist. Potential physical impacts such as habitat loss, noise, and impacts on water resources, are evaluated to assess potential adverse effects on biologic resources resulting from implementation of the alternatives.

Impacts to biologic resources are considered significant if: 1) habitat necessary for all or part of the life cycle of a species is lost as a result of the action alternative (e.g., lambing areas, migratory corridors, or wildlife watering areas); 2) threatened or endangered species are adversely affected; 3) a regional or local species is extirpated; 4) ecologic processes are damaged to the extent that the ecosystem is no longer sustainable or biodiversity is impaired (YPG 2001a).

5.5.1 The Proposed Action – Alternative A

Implementation of Alternative A could result in minor disturbances to wildlife, vegetation and habitat from construction of test facilities or from vehicular traffic. Moving vehicles during construction or operation of HWTC could potentially disturb or displace some larger mammals, particularly mule deer and burros. Disturbance of these species is a concern; however, they are prevalent throughout the installation and fencing would be used if necessary to keep them out.

The Arizona Game and Fish Department's Heritage Data Management System was accessed and current records reflected that the Sonoran desert tortoise, a special status species has been documented as occurring in the vicinity of the selected site (AGFD 2001). If Alternative A is chosen, a trained member of the YPG environmental staff will survey the area for the presence of any sensitive species before construction begins.

5.5.2 No-Action Alternative - Alternative B

If the No-Action Alternative were implemented there would be no survey of the area for the presence of any sensitive species, and no area designed and equipped for hot weather testing of vehicles and tires on paved surfaces.

5.5.3 Mitigation and Monitoring

No significant impacts to biological resources are expected as a result of the implementation of Alternative A. Wildlife and conservation management practices will be followed in order to ensure that habitat necessary for all or part of the life cycle of a species is not lost, and ecologic processes are not damaged to the extent that YPG biodiversity is impaired or ecosystems are no longer sustainable. If any sensitive species are discovered, a separate mitigation plan will be prepared, if necessary, to protect them. Sightings of a Sonoran desert tortoise during the construction of, or testing at the HWTC will be reported to the installation biologist and the tortoise will, otherwise, be left alone. Threatened or endangered species do not occur within the area and will not be affected, and regional or local species will not be extirpated. Personnel would be briefed and instructed in the recognition and avoidance of saguaro cacti, the Sonoran desert tortoise, wild horses and burros. Continued compliance with YPG's environmental plans and programs will ensure continued stewardship of biological resources within the installation.

5.6 CULTURAL RESOURCES

YPG's mission activities have the potential to significantly impact cultural resources. Implementation of any of the alternatives will have a significant impact if one or more of the

following criteria are met: 1) prehistoric and historic sites eligible for the NRHP are adversely affected; 2) Native American religious or other cultural activity areas are adversely impacted (YPG 2001a).

5.6.1 The Proposed Action – Alternative A

A Class III Pedestrian Cultural Resource Survey was conducted at the site selected for the implementation of Alternative A. Eleven archeological sites were identified and recorded as a result of the survey; eight prehistoric, two historic and one site contained both components. Seven prehistoric archaeological sites are recommended NRHP eligible (Statistical 2002a).

5.6.2 No-Action Alternative - Alternative B

Under the No-Action Alternative - Alternative B, there would be no change or impacts to cultural resources. There would be no change in ground disturbing activities and any archeological or historic sites would be preserved. Activities associated with Alternative B will not impact cultural resources for the installation or the area in question.

5.6.3 Mitigation and Monitoring

In the event of an inadvertent discovery of a potential cultural resource site, the guidelines outlined in the *Integrated Cultural Resources Management Plan* (YPG 2000c), will be implemented and project personnel will receive a briefing on their stewardship responsibilities. Where cultural resources sites may be adversely affected by constructions activities, mitigation strategies will be determined and implemented through consultation with the Arizona State Historic Preservation Officer (SHPO) and in consultation with Native American Tribes (Statistical 2002b). Statistical Research Inc. has prepared a treatment plan. Once mitigation has occurred, monitoring is not necessary unless the scope of construction changes; therefore, no plans regarding monitoring are currently in place.

5.7 AIR QUALITY

Due to the activities conducted at YPG, regulated air pollutants are not normally an issue. Impacts to air quality are considered significant if an action exceeds emission limits established under the CAA (YPG 2001a).

5.7.1 The Proposed Action – Alternative A

Due to engineering controls and regular maintenance of access roads, limited dust could be generated. Minor, localized increases in air emissions due to construction activities from implementation of Alternative A will occur; however, emission are not expected to exceed limits established under the CAA. YPG's dust emissions can vary substantially on a daily basis depending on levels of activity, specific operations, and prevailing meteorological conditions. However, increased air pollutants at YPG from implementation of Alternative A is not anticipated due to good dispersal by strong winds and a lack of topographic features to inhibit dispersal. Air resources for the installation would remain the same.

Based on coordinates from Environmental Protection Agency (EPA) (40 CFR § 81.303), it was determined that construction activities for the HWTC would fall outside the PM₁₀ Moderate Nonattainment Area. YPG, in an effort to avoid any question of non-compliance, chose to follow the 1994 State Implementation Plan (SIP), which specifies broader boundaries for this area (Botdorf 2002b). Therefore PM₁₀ calculations under the Clean Air Act, Section 176 and in accordance with the General Conformity Rule (40 CFR 93) have been performed in order to estimate the construction and maintenance operations (CMO) emissions for years one and two of the Proposed Action. Results are presented in Table 5-1, and discussed below.

Of the total area within the site selected for the implementation of Alternative A approximately 50% falls inside the Moderate PM₁₀ Nonattainment Area according to the 1994

SIP. The figures listed in Table 5-1 reflect this data. All buildings associated with Alternative A were assumed to be outside the 1994 Moderate PM₁₀ Nonattainment Area, and therefore not considered in the calculations (Botdorf 2002b). According to the NAAQS and General Conformity Rule (40 CFR 93), threshold limits for PM₁₀ pollutants with a moderate nonattainment are 100 tons per year. Emissions from CMO for years one and two are estimated below the established thresholds, and the project is not considered regionally significant (Jason 2002). Regional significance under 40 CFR 93.153(i) determines regional inventory or PM₁₀ pollutants for the entire nonattainment area. Estimated inventory for the year 2000, according to the 1994 SIP is listed below in Table 5.1, under Established Regional PM₁₀ Emissions.

Table 5-1. Conformity Analysis

Total CMO Emissions Year One	50 % CMO Emissions Year One	Total CMO Emissions Year Two	50 % CMO Emissions Year Two	Threshold Limits Moderate Nonattainment Area	Established Regional PM₁₀ Emissions
190.05 Tons	95.025 Tons	28.92 Tons	14.46 Tons	100 Tons per Year	4759.7 Tons

5.7.2 No-Action Alternative - Alternative B

Under the No-Action Alternative, there would be no change to air quality for the installation or the area in question.

5.7.3 Mitigation and Monitoring

Implementation of a mitigation and monitoring plan utilizing air quality monitors would ensure that dust generated as a result of HWTC activities does not migrate off the installation. Proper construction techniques and best management practices utilized during construction and normal activities are expected to mitigate any potential air quality issues. No other mitigation is anticipated for air quality.

5.8 NOISE

Impacts are considered significant if the following criteria are met: 1) Noise levels allowed in the ICUZ as described in AR 200-1, 7-5 are violated; 2) Noise levels at testing areas exceed DoD standards that establishes acoustical limits as described in AR 40-5 and associated noise level compatibility guidelines (YPG 2001a).

5.8.1 Proposed Action – Alternative A

Implementation of this alternative would have minor short-term effects on the noise environment in the vicinity of the HWTC. Construction activities related to the use of heavy equipment for site preparation and development (e.g., earth removal, grading, and backfill) would generate noise exposure above typical ambient levels for this area. However, noise generation would be typical of construction activities, would only last the duration of construction activities, and would not exceed noise levels found in the ENMP. Activities during operations of the HWTC may have minor effects on the noise environment at YPG or in the vicinity of the HWTC.

5.8.2 No-Action Alternative - Alternative B

Under this alternative there would be no change in the current noise environment of the installation.

5.8.3 Mitigation and Monitoring

No mitigation is necessary for the implementation of this alternative; however the lessening of potential noise could be accomplished through restriction of construction activity

to normal working hours. No significant impacts regarding noise are expected from the implementation of Alternative A.

5.9 SOCIOECONOMICS

The significance of potential impacts on socioeconomic resources addresses effects on populations, expenditures and is assessed in terms of their direct or indirect effect on the local economy and related effects on other socioeconomic resources (e.g., jobs, housing). The magnitude of potential impacts can vary greatly depending on the location of a proposed action. For example, an action that creates 20 jobs in an urban area may be unnoticed but one that creates 20 jobs in a rural region may be a significant contribution to the local economy.

Impacts to socioeconomics are considered significant if one or more of the following conditions are met or implementation of the alternative results in: 1) substantial changes in the number of employees due to growth would overload the public services such as schools which would increase the demand for housing beyond what is presently available, 2) changes of the number of employees, due to downsizing would leave the present public services with funding problems, under utilization and create excess housing (YPG 2001a).

5.9.1 Proposed Action – Alternative A

Activities associated with the implementation of the proposed action would occur completely within the installation's boundaries and could result in beneficial long-term impacts on socioeconomic resources. Under the Proposed Action approximately 60 employees could occupy the HWTC at any given time. Potential long and short-term benefits could result from this increase in employment for the Yuma area. YPG could possibly benefit from an increase in base services and productivity due to an increase in employment. Local economic conditions may incur a short-term positive impact. Additionally more paved, hot weather vehicle testing could take place at YPG, as opposed to other installations and locations. This could result in more long-term revenues for the installation and its services. No significant changes in population characteristics or housing patterns would be expected. No significant or adverse impacts would be expected.

5.9.1.1 Local Economy and Employment

Implementation of Alternative A may result in some minor short-term benefits on regional socioeconomics during construction activities at the installation, due to the purchase of materials and use of labor from the regional workforce. Construction activities associated with the proposed action are fairly limited and potentially, a few, short-term jobs would be created for local construction workers. There could be some long-term benefits on installation socioeconomics from an increase in numbers of both civilian and military personnel occurring on the installation. This could feasibly result in more long-term revenues associated with the installation and its services.

5.9.1.2 Environmental Justice

Implementation of the proposed action has been evaluated in accordance with CEQ guidelines and no disproportionately high and/or adverse human health or environmental effects on minority and low-income communities are projected. The amount of potential construction related to the HWTC is fairly limited and takes place completely within the YPG boundaries. Potentially, only a few, short-term jobs would be created for local construction workers. Adverse human health or environmental effects on a low-income population, minority population, or Indian tribe are not anticipated. Adverse economic impacts on children, minority, or low-income populations are not expected. However, short-term positive results are anticipated from potential employment opportunities associated with the proposed action.

5.9.2 No-Action Alternative – Alternative B

If the No-Action Alternative were implemented there would be no change in the existing socioeconomic conditions or impacts to minority or low-income populations, and no new area designed, built and equipped for hot weather testing of vehicles and tires on paved surfaces.

5.9.3 Mitigation and Monitoring

No mitigation or monitoring is required for socioeconomic. Potential construction activities related to the implementation of Alternative A are fairly limited and potentially, only a few, short-term jobs would be created for local construction workers. Therefore, the minority and low-income populations in the area surrounding the YPG would not be disproportionately affected by impacts resulting from either alternative.

5.10 HEALTH AND SAFETY

Issues addressed in this section relate to potential impacts to public and occupational health and safety associated with operations at the YPG. Because of the installation's remote location and the type of testing, there are inherent, potential risks to personnel and the public. Risks to public health and safety would stem from exposure to the extreme heat, lack of water, UXO, and dangerous wildlife (e.g., rattlesnakes, Africanized honey bees, and scorpions). Range fires are not a significant risk to the public or installation personnel due to the sparseness of vegetation. Impacts are considered significant if the following criterion is met: public or YPG's personnel health or safety is adversely affected (YPG 2001a).

5.10.1 Proposed Action – Alternative A

Implementation of Alternative A would require additional construction activity on YPG, potentially increasing the likelihood of a mishap involving personnel or potential impacts to worker safety at construction sites. Ordnance and explosive investigations indicate the potential for UXO to be found at the property due to current and historical land use. Spills, unauthorized release of fuel, or other potentially hazardous liquids stored at the HWTC pose possible impacts to health or safety; however, best management practices would minimize or eliminate potential impacts.

5.10.2 No-Action Alternative – Alternative B

If the No-Action Alternative were implemented there would be no new area designed, built and equipped for hot weather testing of vehicles and tires on paved surfaces.

5.10.3 Mitigation and Monitoring

YPG has stringent operating and security procedures designed to minimize or eliminate accidents and injuries as a result of mission related activities (YPG 2001a, YPG 2000b). The public is prohibited from wandering onto firing and maneuver ranges. Warning signs are posted in appropriate locations throughout the installation. YPG personnel who work outdoors receive safety and awareness briefings; carry cellular phones, and/or two-way radios. In the Laguna Region where the selected site for Alternative A is located, there is a network of roads both paved and unpaved; but, access to the HWTC would be controlled through a gated entry. Restricted access would limit the possibility of untrained personnel at the proposed HWTC.

Contractors would be required to establish and maintain safety programs that would be monitored by the installation. Soldiers, construction, and test personnel would be briefed on the hazards of the area. An environmental and safety briefing, detailing specific issues, will be given to all personnel involved in construction and operation of the HWTC (YPG 2000b). Management options and technologies outlined in *DoD Unexploded Ordnance (UXO): An*

Overview-October 1996, would be followed in order to reduce or eliminate hazards and risk. Prior to leasing and as construction efforts become more defined, ammunitions and explosives shall be removed until an acceptable level of protection is reached, in accordance with *Ammunition and Explosives Safety Standards, August 1997*, DoD 6055.9 Chapter 12 (2d). Due to the potential for UXO contamination, YPG SOP YP-MTRO-P-1000 Range Operations requires an UXO technician to be on-site during digging, survey, and construction phases. YPG has an Integrated Contingency Plan to facilitate quick, appropriate responses in the event of an unauthorized release of potentially hazardous material during construction or operations activities associated with the HWTC (YPG 2000a).

5.11 TRANSPORTATION, UTILITIES, AND INFRASTRUCTURE

Transportation, utilities, and infrastructure are evaluated for the potential disruption or improvement of current transportation patterns and systems, and deterioration or improvements of existing levels of service. Impacts may arise from physical changes to circulation (e.g., closing, rerouting, or creating roads), construction activity, introduction of construction-related traffic on local roads, or changes in daily or peak-hour traffic volumes, increased by either indirect or direct workforces or population changes related to facility activities. This section discusses potential impacts to transportation, utilities and internal support infrastructure on the installation. Impacts are considered significant if the following criterion are met: 1) transportation characteristics are reduced to a level that impacts safety or movement of people, goods, and services; 2) utilities or infrastructure are taxed beyond their capacity to support installation mission requirements (YPG 2001a).

5.11.1 The Proposed Action – Alternative A

Implementation of Alternative A would have only short-term impacts on the existing transportation network. Under this alternative, the installation road network would be improved by providing additional roads and improved road surfaces. Implementation of this alternative would require delivery of materials to construction sites. Construction traffic would comprise a small portion of the total existing traffic and many of the vehicles may be driven to and kept on site for the duration of construction, resulting in very few additional trips. In addition, increases in traffic volumes associated with construction activity would be temporary.

Utility services and test infrastructure would be improved by the expansion of the installation's electrical utilities. Upon completion of construction, no long-term impacts on the transportation systems would result.

5.11.2 No-Action Alternative – Alternative B

Implementation of the No-Action Alternative would result in no changes to the installation's current transportation, utilities, infrastructure, and services; however, there would not be a change, expansion or improvement to the utilities either.

5.11.3 Mitigation and Monitoring

No significant impacts are expected from the implementation of Alternative A. No reduction in transportation characteristics to a level that would impact safety or the movement of people, goods, and or services is anticipated. No significant population growth is projected to result from implementation of either alternative. No mitigation or monitoring is required for the existing housing supply, utility services, transportation or infrastructure.

5.12 CUMULATIVE IMPACTS

Cumulative impacts on environmental resources result from incremental impacts of proposed actions, when combined with other past, present, and reasonably foreseeable future projects in the area. Cumulative effects may arise from single or multiple actions and may result in additive or interactive effects (CEQ 1997a). Cumulative impacts can result from minor, but collectively substantial, actions undertaken over a period of time by various agencies (Federal, State, and local) or individuals. A discussion of cumulative impacts resulting from projects that are proposed, under construction, recently completed, or anticipated to be implemented in the near future is a NEPA requirement (CEQ 1987).

Cumulative impact analysis identifies the resources or ecosystem components that have the greatest potential to be significantly impacted by the proposed action within the framework of natural geographically boundaries, and/or time periods. The analyses also evaluates or compares the environment and resource in its naturally occurring state, and contrasts that with anticipated or potential impacts of the proposed action in combination with impacts of other actions, at established thresholds. According to EPA's guidance on cumulative impact analysis, "while a broad consideration of resources is necessary for the adequate assessment of cumulative impacts, the analysis should be expanded for only those resources that are significantly affected." Similar guidance is given for the assessment of ecosystem components. EPA goes on to further stipulate, "The measure of cumulative effects is any change to the function of these resources or ecosystem components" (EPA 1999). Locally, soils, biologic, and cultural resources may be exposed to minor impacts by the proposed HWTC and its associated construction activities. Interruption of upstream flows could lead to vegetation dying. Vehicles during construction traversing the area and local washes could potentially impact soil resources, wildlife, and cultural resources. Although biologic and cultural resources would incur disturbances from the proposed action under EPA guidelines, cumulative analysis for these resources is not warranted. No change regarding the functions of these resources are expected, only minor disturbances or impacts to isolated areas. Implementation of mitigation plans, hydrological analyses and a comprehensive drainage plan would mitigate the potential impacts. Long-term monitoring would assist in evaluating unknowns so proper mitigation techniques could be implemented as needed.

Within the selected site, only one ecosystem component or resource has the potential for disturbance from both the proposed action and cumulatively, the resource is soils. Impacts to soil resources are considered significant if soil subsidence occurs over large areas, activities result in severe soil erosion, and permanent contamination of soil occurs that would restrict future land use (YPG 2001a). Soils at the proposed site and surrounding areas already exhibit evidence of prior land use disturbances. Increased usage and increased disturbances for this area are expected. Disturbances to soils from construction activities and vehicular traffic are also expected from the proposed action. When analyzing this resource within the framework of time periods (past present and foreseeable future actions), and including natural geographic boundaries it is reasonable to predict disturbances and impacts to this resource. The protection of soil resources and minimization of soil erosion were considered when evaluating the feasibility of the Proposed Action.

YPG has several environmental management programs and plans currently in place to continually assist with this rationale. For example, the Integrated Natural Resources Management Plan (INRMP), the Land Condition-Trend Analysis (LCTA) Program, the Land Rehabilitation and Maintenance (LRAM) and the Integrated Training Area Management (ITAM) Program all represent YPG's commitment to effectively managing Army lands. By maintaining optimal training conditions, while ensuring compliance with environmental regulations YPG demonstrates its commitment to sound stewardship of public land. As for project specific precautions regarding environmental resource management, a hydrological analysis and aerial survey have been conducted for the proposed HWTC site. The resulting data, maps, and

drainage plan were used to evaluate potential impacts and plan for monitoring and mitigation efforts that may be required. The preliminary drainage plan is characterized as a pass through system that will not re-route or substantially change existing flow paths, minimizing potential disturbances to soils and soil surfaces from distorted stormwater runoff. Best management practices will limit impacts to soils from construction and operational activities and vehicular traffic traversing the area. Regionally, no development (e.g., residential, commercial, or industrial) or infrastructure upgrades have recently been completed or are planned that would have an effect on or be affected by implementation of the Proposed Action at YPG. Significant cumulative impacts to environmental resources are not expected to occur in association with the Proposed Action.

6.0 LISTING OF PREPARERS, AGENCIES, AND PERSONS CONSULTED

6.1 AGENCIES AND ORGANIZATIONS CONSULTED

On July 12, 2001, the Command Technology Directorate mailed formal written correspondence addressing the Proposed Action to various agencies and interested parties. The written correspondence informed each recipient of the ongoing preparation of an environmental assessment for this proposal. The written correspondence was mailed to the following organizations:

Ak-Chin Indian Community; Maricopa, AZ
Arizona Department of Agriculture; Phoenix, AZ
Arizona Department of Transportation; Yuma, AZ
Arizona Game and Fish Department; Phoenix, AZ
Arizona Game and Fish Department; Yuma, AZ
Arizona Department of Environmental Quality; Phoenix, AZ
Arizona State Historic Preservation Office; Phoenix, AZ
Bureau of Land Management; Yuma, AZ
Bureau of Reclamation; Yuma, AZ
Bureau of Indian Affairs; Phoenix, AZ
Cocopah Indian Tribe; Somerton, AZ
Colorado River Tribal Council; Parker, AZ
Community Planning and Liaison Office MCAS; Yuma, AZ
Fort McDowell Yavapai Nation; Fountain Hills, AZ
Fort Mohave Tribal Council; Needles, CA
Gila River Pima-Maricopa Indian Community; Sacaton, AZ
Hopi Tribal Council; Kykotsmovi, AZ
Imperial National Wildlife Refuge; Martinez Lake, AZ
Kofa National Wildlife Refuge; Yuma, AZ
La Paz County Community Development; Parker, AZ
Natural Resources Conservation Service; Yuma, AZ
Quechan Indian Tribe; Yuma, AZ
Salt River Pima-Maricopa Indian Community; Scottsdale, AZ
San Carlos Apache Tribe; San Carlos, AZ
Sierra Club; Phoenix, AZ
Audubon Club; Yuma, AZ
Tohono O'odham Nation, Cultural Preservation Committee; Sells, AZ
U.S. Fish and Wildlife Service; Phoenix, AZ
U.S. Environmental Protection Agency, Region IX; San Francisco, CA
Wellton – Mohawk Natural Resources Conservation Service; Roll, AZ
Yavapai-Apache; Camp Verde, AZ
Yavapai-Prescott Tribe; Prescott, AZ
Yuma County Planning and Zoning Division; Yuma, AZ

6.2 TECHNICAL PREPARERS

6.2.1 U.S. Army Yuma Proving Ground

Charles Botdorf, Chief, Environmental Sciences Division
Delores Gauna, Cultural Resources Manager
Valerie Morrill, Conservation Program Manager
James Marler, Realty Officer, Directorate of Public Works
Graham Stullenbarger, Technical Advisor

6.2.2 Contractual Support

Jason Associates Corporation prepared this environmental assessment for the Environmental Sciences Division at YPG. The following persons made major technical contributions:

Jeffrey McCann, Program Manager, Senior Environmental Scientist
Richard Holder, Deputy Program Manager
Kimberly Maloney, Task Manager, Senior Environmental Specialist
Jeffrey Weiler, Senior Environmental Scientist
Renee Young, Environmental Scientist
Sergio Obregon, Natural Resources Specialist
Dwight Clark, Senior Regulatory Specialist
Christine Saladin, Information Technology Specialist
Keith Duffy, Civil Engineer

6.3 COMMENT AND REVIEW PERIOD

A 90% Draft EA was sent out to agencies and individuals listed in Section 6.1 for a 30-day review period. This Final EA is available for a 30-day public review and comment period. Additional copies of the EA are available upon request. Inquiries should be directed to U.S. Army Yuma Proving Ground, Command Technology Directorate, Mr. Charles Botdorf, CSTE-DTC-YP-CD-ES, Yuma, AZ 85365-9107 or by calling (928) 328-2754 or by submitting a fax to (928) 328-6696; or Jason Associates Corporation at (928) 328-2630 or by submitting a fax to (928) 328-2565.

7.0 SUMMARY OF FINDINGS

Two alternatives were evaluated for potential impacts to environmental resources, the Proposed Action – Alternative A, and the No-Action – Alternative B. Minor impacts to some resources were determined to be associated with Alternative A. However, through the implementation of proper mitigation plans many minor impacts could be avoided or minimized. An aerial survey and a hydrological analysis for the proposed site have been conducted. Data resulting from these activities were used to produce a conceptual drainage plan, topographical maps, evaluate potential impacts, and plan for monitoring and mitigation efforts as needed. The conceptual drainage plan will not re-route or substantially change existing flow paths, thereby minimizing potential disturbances to soil and biological resources. Minor local drainages changes may be necessary; however, the predominant flow patterns will be maintained. A comprehensive hydraulic analysis will be conducted when updated planning and design information is available (Premier 2002). Appropriate clearance levels; concerning potential contamination of the site selected for the proposed action from DZ activities currently located there, will be accomplished prior the beginning of any construction.

Potential impacts to resources within the proposed HWTC site and the surrounding area were evaluated, and it was determined that no significant change to any environmental functions or components would result from the implementation of Alternative A. As a result of the analysis in this EA, Alternative A is the most logistical and feasible approach to accomplishing the Proposed Action while supporting the diverse mission of YPG. Implementation of the No-Action Alternative would result in the HWTC not being built. No new areas would be designated or equipped for the hot weather testing of vehicles over paved surfaces at the YPG.

This EA has evaluated the potential for impacts from the Proposed Action at YPG and summaries of these findings are provided for each environmental resource and discussed in chapter 5. Based on this evaluation of potential impacts to resources, this report recommends that Alternative A (the Proposed Action Alternative) be implemented and a Finding of No Significant Impact (FNSI) be issued for the Proposed Action. Monitoring and mitigation plans will be developed and implemented as needed to minimize potential impacts.

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DRAFT
FINDING OF NO SIGNIFICANT IMPACT
For
HOT WEATHER TEST COMPLEX

U.S. ARMY YUMA PROVING GROUND
YUMA, ARIZONA

An *Environmental Assessment for the Hot Weather Test Complex* has been prepared in compliance with the National Environmental Policy Act (NEPA) in order to assess the potential environmental impacts associated with the Proposed Action of establishing a Hot Weather Test Complex (HWTC) in the Laguna Region at U.S. Army Yuma Proving Ground, Yuma, Arizona.

The Proposed Action involves construction of a 5-mile oval track; a 1+ mile ride and handling course; a 36-foot wide mechanical reliability course; a 1,800 foot skid pad and brake test area; and construction of a variety of service buildings and office facilities. These construction elements are based on conceptual development plans for the Hot Weather Test Complex.

Two alternatives were evaluated in this EA for potential impacts on environmental resources, Alternative A (Laguna Region) and Alternative B (No-Action). Potential impacts to soils, biological, and cultural resources were determined to be associated with Alternative A. However, implementation of standard best management practices and mitigation measures during activities associated with the Proposed Action would negate or minimize impacts.

As a result of the analysis in this EA, it is anticipated that the implementation of Alternative A will not result in significant impacts to the environment. To ensure that impacts to the environment are avoided or minimized, the mitigation and management methods discussed in Chapter 5 of the referenced EA will be followed.

The Final EA and a Draft Finding of No Significant Impact (FNSI) is being made available to the public for a 30-day review and comment period prior to making of a final decision and proceeding with the action [32 CFR 651.14b(2)(i)].

Note: *After the 30-day review period is completed this text box will be replaced with a signature block and the Final FNSI staffed for signature.*