DEPARTMENT OF THE NAVY
EGLIN AIR FORCE BASE, FLORIDA

NAVY EXPLOSIVE ORDNANCE DISPOSAL SCHOOL MASTER DEVELOPMENT PLAN FOR TEST AREA D-51

FINAL ENVIRONMENTAL ASSESSMENT

January 2008

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FINDING OF NO SIGNIFICANT IMPACT
FROM
NAVY EXPLOSIVE ORDNANCE DISPOSAL SCHOOL
MASTER DEVELOPMENT PLAN FOR TEST AREA D-51
EGLIN AIR FORCE BASE, FLORIDA

RCS 06-230

Pursuant to the Council on Environmental Quality regulations for implementing procedural provisions of the National Environmental Policy Act (40 Code of Federal Regulations [CFR] 1500-1508), Department of Defense Directive 6050.1, Air Force Regulation 32 CFR Part 989, and Navy Regulation 32 CFR 775, the United States (U.S.) Department of the Navy with support from the U.S. Air Force has conducted an Environmental Assessment (EA) of probable environmental consequences for the Navy Explosive Ordnance Disposal (EOD) School (NAVSCOLEOD) Master Development Plan for Test Area (TA) D-51 on Eglin Air Force Base (AFB), Florida.

Purpose and Need

Purpose and Need (EA Section 1.3, pages 1-1 to 1-3). Due to an approved increase in the overall size of the U.S. Army, a higher number of students are scheduled to attend the NAVSCOLEOD which trains all DoD EOD personnel. The Navy and international community also have a requirement to increase the number of students scheduled to attend the NAVSCOLEOD. The increase in student numbers would occur over a four-year period from fiscal year (FY) 2008 to FY 2011. New facilities and practical areas will be required to accommodate the increases in student population. The Navy and Air Force identified a need for a Master Development Plan to guide the future expansion of facilities at TA D-51.

The purpose of this action is to update NAVSCOLEOD facilities at TA D-51 in order to accommodate this increase in students. These new facilities would support the training requirements of the Navy, Army, and international students required to attend Navy EOD School. The new buildings and training areas would be located in a secure environment within TA D-51, near already existing classrooms, practical training areas and support facilities (e.g., maintenance and mess hall buildings). TA D-51 is the only viable location for these facilities as it already serves this purpose and is located 12 miles driving distance (approximately 30 minutes travel time) from nearby classroom and dormitory facilities on a portion of Eglin Main Base.

Issues Eliminated from Detailed Analysis

Issues Eliminated (EA Section 1.5.1, pages 1-3 to 1-4) Issues eliminated from further analysis include Hazardous Materials/Solid Waste, Safety and Occupational Health, Socioeconomic, Transportation, and Environmental Justice/Children.

Although the area is not considered prime habitat for the eastern indigo snake and gopher tortoise, prior to the initiation of any construction, biologists from the Eglin AFB Natural Resources Section (96 CEG/CEVSN) would visit the site to assess whether eastern indigo snakes

and gopher tortoises are present. This is standard pre-construction practice at Eglin AFB. If tortoises or burrows are found, Eglin AFB personnel would contact the Florida Fish and Wildlife Conservation Commission. If these species would be identified at this time, construction would cease until proper mitigation or relocation of the resource could occur. If the gopher tortoise is discovered during the biological surveys then the gopher tortoise will be relocated in accordance with Eglin state permit. Should an eastern indigo snake be sighted, project personnel would be directed to cease any activities and allow the snake sufficient time to move away from the site on its own before resuming construction activities.

A Section 7 Endangered Species Act consultation with the U.S. Fish and Wildlife Service is not required. A Section 106 National Historic Preservation Act consultation with the State Historic Preservation Officer is not required.

Description of Proposed Action and Alternatives

Proposed Action (EA Section 2.1, pages 2-1 to 2-6). The Proposed Action is the preferred alternative. The U.S. Navy proposes to implement the Master Development Plan for TA D-51 to support the mandated increase in students and staff. The Master Development Plan outlines future facility and infrastructure requirements necessary to accommodate the increase in student and staff population. The future facility and infrastructure development requires changes to current land uses delineated at TA D-51. A future land use map was developed as part of the Master Development Plan. Acceptance of the future land use map to guide future development on TA D-51 is also part of the Proposed Action.

The estimated student population attending the NAVSCOLEOD by next year is approximately 1,150. The increase in student quotas would occur over a four-year period from FY 2008 to FY 2011, reaching 1,861 by FY 2011. Additionally, the schedule of starting new student classes would be increased from one new class every six days to one new class every four days.

Also part of the NAVSCOLEOD are approximately 300 support staff who either teach courses and practical exercises or provide medical and administrative support. The number of staff is expected to increase by an estimated 120 to accommodate the increased number of quotas. This will occur over a three-year period.

Associated with the NAVSCOLEOD is the proposed Air Education and Training Command (AETC) EOD facility. The facility will be the site for additional, Air Force-specific training to Air Force graduates of the NAVSCOLEOD. The facility is slated for location along Range Road 218 near the NAVSCOLEOD Maintenance Facility Compound. With the new facility, an additional 120 students are expected to be present annually, or an additional eight students at TA D-51 at any given time. Approximately five instructors will support the course. With the total increase in the Army, Navy, international, and Air Force student and staff populations, at any one time on TA D-51 an average of 1,637 people would be expected.

To accommodate the increase in student quotas, several new temporary and permanent facilities will be required. It is anticipated that permanent construction would begin in FY 2012 when military construction funding is appropriated on a permanent Applied Instruction Building (AIB) and a practical area is determined for the diagnosis, disabling, containment, and disposal of

weapons of mass destruction (WMDs) and large, sophisticated improvised explosive devices (IEDs). This building and practical area would be located in the southeastern area of TA D-51 and would cover approximately 4 acres. Other permanent facilities are proposed, but funding has not been secured yet for these facilities.

These proposed facilities include:

- Establish 16 temporary classrooms: seven for the Ground Ordnance Division, three for the WMD Division, and six for the Core Division.
- Construction by the Air Force would begin on the AETC facility.
- Construction on the AIB for Ground/Tools and Methods Division, and the AIB for the Core Division.
- Construction on the 11 training pavilions used to support the Divisions.
- Construction on the NAVSCOLEOD Headquarters building, the AIB for international training, and practical areas for international training.

Three temporary classrooms (trailers) would be established in FY 2007 with an additional thirteen established as soon as FY 2009. Several temporary storage containers would be used in conjunction with the temporary classrooms.

The AETC facility would be a permanent structure of approximately 3,871 square feet (ft^2) containing classrooms, office space, and male/female bathrooms with showers. The building will have its own parking lot. No practical areas are associated with the AETC facility.

The increase in students and proposed construction will lead to additional demands on utilities as well. The increased potable water demand caused by an influx of new students and faculty would tax the existing water supply system. In addition, the previously documented problems associated with the pressure necessary to supply water to each facility would remain and perhaps become amplified. The existing pump is over 20 years old and as a result, increased maintenance on the pump is likely to occur. The following options are available to address future demands on the current water system: access water supply from tank at C-1 or from surrounding communities; build additional aboveground storage tank or new, larger, aboveground storage tank for fire flow demand; upgrade current infrastructure.

As with the water usage rate, the wastewater flow would be expected to increase with the planned future facilities. Under the Proposed Action, the wastewater treatment option would be to establish a connection to the sewer lines currently served by the Okaloosa County Water and Sewer Department.

Increased usage of electrical, natural gas, and communication services are also expected. The estimated electrical service necessary to support the future facilities would be approximately 53 percent above the current usage. The estimated increase in natural gas service necessary to support the future facilities would be approximately 45 percent. Communication lines that provide telephone and local area network (LAN) connectivity will be necessary for the temporary trailers and the permanent facilities that will be constructed. Supplying the proposed

permanent facilities will require expanding the communication lines along the eastern boundary of TA D-51.

Additional infrastructure improvements are currently proposed for TA D-51 as per the Master Plan. These include: utility upgrades for the AIB WMD building; a new student parking area either within the fenced portion of TA D-51 or outside the fence along the eastern boundary of TA D-51; and coordination with the Eglin Spectrum Management Office to secure additional networks for increased communication needs.

The Master Plan for TA D-51 classifies land use types based upon current usage. Based on that classification, current land use and future land use maps were developed. The designation of future land use within TA D-51 guides development within a planned design of how to best provide required facilities, practical areas, and infrastructure while avoiding potential Land Use conflicts.

Implementation of the Master Development Plan would be accomplished over a 10-or-more-year time period. The implementation strategy is divided into phases—short-term, mid-term and longer term. Short-term plans encompass the next 0–5 years and can be predicted with a fair degree of certainty. Mid-term plans cover 5–10 years and can be predicted but are subject to changes. Long-term plans stretch beyond 10 years and are the least predictable due to the extended timeframe in which needs and changes must be anticipated. The strategy and timing may change as conditions change, funding becomes available, and the student population fluctuates. However, similar to the guidance provided by the future land use map, the implementation strategy is a guide to making incremental progress for modification of the NAVSCOLEOD.

Alternative 1 Action (EA Section 2.2, page 2-6). Alternative 1 would encompass the full build-up of activities over the 15-year period as discussed in the Proposed Action under the TA D-51 Master Plan. This alternative, however, would use septic systems for all new and existing facilities rather than tie in to existing local community sewage treatment systems. Additional septic systems would need to be designed and included in the structure site planning to accommodate the anticipated usage and flow. With the previously identified septic system placement restrictions, the new septic systems would need to retain the designated setbacks. Also under this alternative, the use of additional wells, rather than using the nearby water tower at C-1 or other local community sources, would be examined.

The No Action Alternative (EA Section 2.3, page 2-10). Under the No Action Alternative, neither new structures nor training areas would be constructed. Training of U.S. military and international NAVSCOLEOD students would continue in inadequate facilities; overcrowding and issues with course scheduling would occur.

Alternatives Considered But Not Carried Forward

Alternatives Not Carried Forward (EA Section 2.5, pages 2-11). Other alternatives were considered for the TA D-51 Master Plan. The currently selected Proposed and Alternative Actions were determined in part by the necessity of training occurring within TA D-51. Expansion outside of TA D-51 was considered and rejected due to competition of other Eglin

AFB customers for space and due to several known environmental constraints in moving directly outside the boundaries of TA D-51.

As a result of planning meetings and other discussions, the NAVSCOLEOD presented several infrastructure options for the development of the facilities. These included maintaining TA D-51 as a stand-alone facility with predominantly self-sufficient infrastructure or tying all infrastructures into the surrounding communities. One proposed but discarded option included building a new wastewater treatment plant; however, the expense and timeframe required to develop such a facility was regarded as prohibitive. The small volume of wastewater produced by TA D-51 (now or after any future buildup) is considered to be insufficient to make such a proposed project viable.

Summary of Anticipated Impacts

The Proposed Action would potentially affect Water Resources, Utilities and Infrastructure, Topography and Soils, Noise, Natural Resources, and Cultural Resources. Chapter 4 of the EA discusses, in detail, potential environmental consequences to the following resources.

Water Resources (EA Section 4.1, pages 4-1 to 4-4). There would be no significant water resources impacts from the facility construction. Coordination with Florida Department of Environmental Protection (FDEP) regarding stormwater runoff would be required during the design and construction phase. Construction best management practices and proper design will prevent soils and sediments from entering stormwater drainage areas.

Utilities and Infrastructure (EA Section 4.2, pages 4-5 to 4-8). There would be an increase in electricity and natural gas consumption as well as increased communications needs associated with the additional facilities, faculty, and students at NAVSCOLEOD. The Navy does not anticipate significant impacts to water supply or to wastewater removal as a result of the project, but water and wastewater infrastructure improvements would be made as needed.

Topography and Soils (EA Section 4.3, pages 4-8 to 4-9). There would be no significant soil impacts from the implementation of the Master Plan for TA D-51. The permeable Lakeland soils and relatively flat terrain at the project site minimize potential erosion. Minimal impacts would result from landscape disturbance and training activity.

Noise (EA Section 4.4, pages 4-9 to 4-13). There would be no significant impacts resulting from noise. There would be no significant noise impacts associated with this alternative due to the low amount of net explosive weight used in ordnance disposal training.

Natural Resources (EA Section 4.5, pages 4-13 to 4-14). The Proposed Action would not significantly affect natural resources. Other than some direct removal of sand pine and construction-related disturbance in an already disturbed area of Open Grassland/Shrubland, there would be minimal effects to wildlife and vegetation.

Cultural Resources (EA Section 4.6, pages 4-14 to 4-15). The Proposed Action would not significantly affect cultural resources. However, if unexpected cultural resources are uncovered

during construction or training activities, the Base Historic Preservation Officer and Cultural Resources Management Division must be contacted immediately.

Cumulative Impacts (EA Section 4.8, pages 4-15 to 4-18). No significant cumulative impacts related to Water Resources, Topography and Soils, Noise, Natural Resources, and Cultural Resources would result from implementation of the Proposed Action. Cumulative impacts to utilities would potentially result in the inability of TA D-51 to provide sufficient water for fire suppression to the new construction activities. Upgrades to the water system would be required, as with the Preferred Alternative and Alternative 1. The addition of a storage tank, either with the new water treatment facility or with additional wells, would be sized to meet the demands of future construction efforts.

Several reasonably foreseeable future projects may be associated with this action. Two additional Navy Bachelor Enlisted Quarters, referred to as P905, are being considered as a potential future structure near Building 874, Eglin Main Base. These would involve some road redesign, additional parking, and building demolition (Bldg. 874) for construction. Another foreseeable future action at Eglin AFB is the establishment of a Readiness Training Center (RTC) at Eglin AFB with support facilities and natural terrain training areas. The permanent beddown location for the RTC Squadron would be in an area south of TA D-51.

One project related to the Navy EOD training program is currently proposed for the northeastern tip of TA D-51, the AETC EOD Facility. The proposed training facility is needed for the support of the Air Force EOD training mission because there is no currently available space on Eglin AFB to conduct this particular mission. This will be a 4,000-ft^2 facility containing offices, classrooms, parking areas, and equipment bays.

An environmental impact statement (EIS) is currently underway for the 2005 Base Realignment and Closure (BRAC) decision to establish the Joint Strike Fighter (JSF) Integrated Training Center (ITC) at Eglin AFB, which would establish an initial joint training site for joint Air Force, Navy, and Marine Corps JSF training organizations to teach aviators and maintenance technicians how to properly operate and maintain this new weapon system. It would relocate 200 instructors to Eglin AFB. The 7^{th} Special Forces Group (A) would also relocate from Fort Benning, Georgia to Eglin AFB. Potential impacts from these programs due to changing mission and additional personnel may include: noise, air quality, munitions storage concerns, transportation, and utilities concerns, among others. A full analysis of these activities has not taken place, so only a generalized analysis of cumulative impacts can occur.

Agency Review and Public Comment

Agency Review

The EA and Plan were provided to the State Clearinghouse for review. The State Clearinghouse review is included in Appendix A of the EA.

Public Comment

The NAVSCOLEOD published a public notice in the *Northwest Florida Daily News* on **October 21, 2007** inviting the public to review and comment upon the EA. Appendix A of the EA addresses public notification. The public comment period closed on **November 5, 2007**. The NAVSCOLEOD received comments from one member of the public regarding the proposed action.

Permits and Regulatory Coordination

The following permits or regulatory coordination are required: 1. Coastal Zone Management Act (CZMA) Consistency Determination (included as Appendix B); 2. Wastewater Permit (the Navy and its contractor would be required to obtain a Constructing a Domestic Wastewater Collection/Transmission System permit [62-604 FAC]).

A 3. Storm Water Facility Design and Construction Permit, and 4. Generic Permit for Storm Water Discharge from Construction Activities that Disturb One or More Acres of Land (NPDES permit) may be required depending on site and construction design inspection results.

The Navy, as the proponent of this action will be responsible for submitting and enforcing all permitting issues and management actions described here and in EA Section 5.1, pages 5-1 to 5-3.

FINDING OF NO SIGNIFICANT IMPACT

Based on my review of the facts and the environmental analysis contained in the attached Environmental Assessment and as summarized above, I find the proposed decision of the Air Force to allow the Navy to implement the Navy Explosive Ordnance Disposal School Master Development Plan for Test Area D-51 on Eglin Air Force Base, Florida would not have a significant impact on the human or natural environment; therefore, an environmental impact statement is not required. This analysis fulfills the requirements of the National Environmental Policy Act, the President's Council on Environmental Quality and 32 CFR Part 989.

DENNIS D. YATES, Colonel, USAF
Commander, 96th Civil Engineer Group

25 JAN 08
DATE

NAVY EXPLOSIVE ORDNANCE DISPOSAL SCHOOL MASTER DEVELOPMENT PLAN FOR TEST AREA D-51

FINAL ENVIRONMENTAL ASSESSMENT

Submitted to:

Department of the Navy
Eglin Air Force Base, Florida 32542

Submitted by:

Science Applications International Corporation
1140 Eglin Parkway, Shalimar, Florida 32579

RCS 06-230

January 2008

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LIST OF ACRONYMS, ABBREVIATIONS, AND SYMBOLS

7SFG(A)	U.S. Army 7th Special Forces Group (Airborne)
96 ABW	96 Air Base Wing
96 CEG/CEVCE	Eglin AFB's Environmental Engineering Section
96 CEG/CEVSN	Eglin AFB's Natural Resources Section
AAC	Air Armament Center
AETC	Air Education and Training Command
AFB	Air Force Base
AFI	Air Force Instruction
AFPD	Air Force Policy Directive
AHPA	Archaeological and Historic Preservation Act of 1974
AIB	Applied Instruction Building
AIRFA	American Indian Religious Freedom Act
ARPA	Archaeological Resources Protection Act of 1979
B/C	Biological/Chemical
BEQ	Bachelor Enlisted Quarters
BHPO	Base Historic Preservation Office
BMP	Best Management Practice
BRAC	Base Realignment and Closure
C-4	Composition 4 Explosive
CBECS	Commercial Buildings Energy Consumption Survey
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CHELCO	Choctawhatchee Electric Cooperative, Inc.
CSEL	C-Weighted Sound Exposure Level
CUP	Consumptive Use Permit
CWA	Clean Water Act
CZ	Clear Zone
CZMA	Coastal Zone Management Act
dB	Decibel
dBA	A-Weighted Decibels
dBC	C-Weighted Decibels
dBP	Maximum Acoustic Sound Pressure in Decibels
DoD	Department of Defense
DOT	Department of Transportation
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
EOD	Explosive Ordnance Disposal
ESS	Explosive Safety Submission
FAA	Federal Aviation Administration
FAC	Florida Administrative Code
FCMP	Florida Coastal Management Program
FDEP	Florida Department of Environmental Protection
FICON	Federal Interagency Committee on Noise
FICUN	Federal Interagency Committee on Urban Noise
FONSI	Finding of No Significant Impact
ft^2	Square Feet
FY	Fiscal Year
gpm	Gallons per Minute
gpm/ft^2	Gallons per Minute per Square Foot
HAZMAT	Hazardous Materials
HUD	Department of Housing and Urban Development
Hz	Hertz

LIST OF ACRONYMS, ABBREVIATIONS, AND SYMBOLS CONT'D

IED	Improvised Explosive Device
ITC	Integrated Training Center
IWR	Impaired Waters Rule
JSF	Joint Strike Fighter
kW	Kilowatt
kWh	Kilowatt Hour
LAN	Local Area Network
lb	Pounds
L_{Cdn}	Day-Night Average Noise Level Associated with C-Weighted Noise
L_{dn}	Day-Night Average Sound Level
L_{eq}	Equivalent Sound Level
$L_{eq}(24)$	24-hour Equivalent Sound Level
LZ	Landing Zone
MILCON	Military Construction
NAGPRA	Native American Graves Protection and Repatriation Act of 1990
NAPS	Noise Assessment and Prediction System
NAVEOD	Navy Explosive Ordnance Disposal
NAVSCOLEOD	Navy Explosive Ordnance Disposal School
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NRS	Natural Resources Section
NVOC	Niceville, Valparaiso, Okaloosa County
NWFWMD	Northwest Florida Water Management District
OSHA	Occupational Safety and Health Administration
pH	A measure of acidity
Q-D	Quantity Distance
RCS	Report Control Symbol
RDESC	Range Development Executive Steering Committee
RF	Radio Frequency
SEL	Sound Exposure Level
SHPO	State Historic Preservation Office
SPL	Sound Pressure Level
SWPPP	Stormwater Pollution Prevention Plan
TA	Test Area
TNT	Trinitrotoluene
tpy	Tons per Year
UHF	Ultra High Frequency
U.S.	United States
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
USN	U.S. Navy
UXO	Unexploded Ordnance
VA	Veterans Administration
WMD	Weapon of Mass Destruction

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1. PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 INTRODUCTION

This Environmental Assessment (EA) analyzes and presents the potential environmental consequences associated with the implementation of the United States Navy (USN) Test Area (TA) D-51 Master Development Plan at Eglin Air Force Base (AFB), Florida. This EA is prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508), and Air Force and Navy regulations implementing NEPA procedures (32 CFR 989 and 32 CFR 775, respectively).

1.2 PROPOSED ACTION

The Navy Explosive Ordnance Disposal School (NAVSCOLEOD) at Eglin AFB is the sole source for basic explosive ordnance disposal (EOD) training for all Department of Defense (DoD) agencies. The NAVSCOLEOD trains officers and enlisted members of the United States (U.S.) Joint Service, international military students, and civilians in the best methods for location, identification, evaluation, recovery, rendering safe, and disposal of ordnance both foreign and domestic, including nuclear weapons. The NAVSCOLEOD within TA D-51 is located in the southeastern portion of Eglin AFB (Figure 1-1).

The USN proposes to expand existing facilities within TA D-51 at Eglin AFB pending approval by the 96 Air Base Wing (96 ABW), Headquarters Air Force Materiel Command, and Headquarters Air Force. The Master Development Plan for TA D-51 outlines the current and future situations at the NAVSCOLEOD and identifies requirements in facilities, practical areas, infrastructure, and utilities to accommodate the future growth. The Master Development Plan also delineates and defines current and future land use to guide changes within TA D-51. Finally, the Master Development Plan outlines a strategy and timeline for accomplishing new facility and practical area development and describes the changes in infrastructure and utilities required to support the new development. The strategy is divided into short-term, mid-term, and long-term approaches to both facility development and infrastructure/utility upgrades and changes.

1.3 PURPOSE AND NEED FOR THE PROPOSED ACTION

Due to an approved increase in the overall size of the U.S. Army, a higher number of students are scheduled to attend the NAVSCOLEOD. The Navy and international community also have a requirement to increase the number of students scheduled to attend the NAVSCOLEOD. The increase in student numbers would occur over a four-year period from fiscal year (FY) 2008 to FY 2011. New facilities and practical areas will be required to accommodate the increases in student population. The Navy and Air Force identified a need for a Master Development Plan to guide the future expansion of facilities at TA D-51.

Figure 1-1. Location of Test Area D-51 on Eglin AFB

The purpose of this action is to update NAVSCOLEOD facilities at TA D-51 in order to accommodate this increase in students. These new facilities would support the training requirements of the Navy, Army and international students required to attend Navy EOD School. The new buildings and training areas would be located in a secure environment within TA D-51, near existing classrooms, practical training areas and support facilities (e.g., maintenance and mess hall buildings). TA D-51 is the only viable location for these facilities because it already serves this purpose and is located 12 miles driving distance (approximately 30 minutes travel time) from nearby classroom and dormitory facilities on a portion of Eglin Main Base.

1.4 RELATED ENVIRONMENTAL ASSESSMENTS

Table 1-1 lists five previous NEPA documents, all EAs, peripherally related to this Proposed Action. The first EA listed was for the initial movement of the Phase I NAVSCOLEOD training to Eglin AFB from Indian Head, Maryland. The next was for the Construction of the Navy EOD School building on Eglin Main Base. The third EA listed examined a proposed Range Road 218 Bypass that is currently not proceeding due to funding issues that arose following the EA. The fourth EA in the table assessed an effort to construct a 5,000-square-foot (ft^2) training facility within TA D-51. The final EA listed in Table 1-1 analyzed the construction of new Bachelor Enlisted Quarters (BEQ) dormitories near the new school facilities. All five EAs resulted in a signed Finding of No Significant Impact (FONSI).

Table 1-1. Related Environmental Assessments

Title	Control Number	Date
Relocating Phase I EOD Training to Eglin Air Force Base, Florida	RCS 84-039	July 1984
Construction of New U.S. Navy Explosive Ordinance Disposal School and Storage Facility. Eglin Air Force Base, Florida, Final EA	RCS 01-813	September 2002
Construct Range Road 218 Bypass Road at TA D-51, Eglin Air Force Base, Florida, Final EA	RCS 04-889	February 2006
Construct a 5,000 (ft^2) Training Facility at TA D-51, Final Environmental Assessment	RCS 05-024	July 2006
Construct New Navy BEQ at Eglin Air Force Base, Florida, Final EA	RCS 03-645	September 2006

EOD = Explosive Ordnance Disposal; RCS = Report Control Symbol; TA = Test Area; BEQ = Bachelor Enlisted Quarters; EA = Environmental Assessment
1. All EAs resulted in Findings of No Significant Impact (FONSIs)

1.5 SCOPE OF THE ENVIRONMENTAL ASSESSMENT

1.5.1 Issues Eliminated From Detailed Analysis

The Eglin AFB Environmental Impact Analysis Process (EIAP) Working Group does not anticipate that the Proposed Action would adversely impact the following parameters. Therefore, these issues are not carried forward for further analysis.

Safety and Occupational Health

All proposed activities would conform to Occupational Safety and Health Administration (OSHA) standards and requirements. Industry and regulatory standards would govern all materials and equipment use. All proposed construction areas are within an area restricted to public access and would be fenced to further preclude public access. Given these measures, risks to personnel and the public would be minimized.

Hazardous Materials/Solid Waste

Issues with hazardous materials (HAZMAT) are limited to ensuring that necessary management actions are taken with regard to these materials. Any hazardous materials used in the construction project would be tracked through the hazardous materials management and reporting program. Because hazardous materials would be tracked and accounted for, further analysis is not warranted.

TA D-51 is located within the area of the Eglin Range classified as having "probable" unexploded ordnance (UXO) contamination. The probability of finding UXO contamination within TA D-51 is moderate to high. There are two known munitions pits on the boundaries of D-51 near the extreme western corner of TA D-51. Due to their location it is expected that these pits would not be disturbed by future activities. The Explosive Safety Submission (ESS) for the projected NAVSCOLEOD expansion provides the safety criteria to support future construction and training activities planned on and around TA D-51. Clearance and removal of munitions and explosives in accordance with the ESS must occur prior to construction (U.S. Air Force, 2007d). As a result, no further analysis is warranted.

Socioeconomic Issues

There are no issues related to socioeconomics. The local economy would experience a temporary positive impact during the design and the construction phases of the project, because of the jobs provided in that industry. In accordance with Executive Order (EO) 13101, the Navy would use affirmative procurement (buying products containing recycled materials) when economical and practical. No major changes in population, employment, or income would result from the Proposed Action. Thus, no further analysis is warranted.

Environmental Justice/Children

TA D-51 is located on the Eglin Range in an area that is closed to the public. The effects of the Proposed Action are confined to TA D-51. No low-income or minority persons would be affected. No risks to children would result from the Proposed Action since the area is closed to the public. Thus, no further analysis is warranted.

Transportation

Primary access is provided to TA D-51 via Range Road 218, which also provides primary access to TA C-52 and the southeastern portion of the Eglin Range. Range Road 218 is a two-lane paved road that originates from State Highway 20 and passes through a mixed use area (commercial and higher density residential), an elementary school zone (Bluewater Bay

Elementary School), and a low-density residential area prior to reaching the Eglin Range boundary. Centerline Road (Range Road 461) provides access through the center of TA D-51 and is a clay/gravel road. The Navy Construction Force is responsible for maintaining the range roads located on TA D-51.

Transportation of students to the NAVSCOLEOD would occur by busing from new dormitory facilities located on Eglin Main Base. Funding for this service has been secured from the USN and other sources beginning in FY 2008/2009. This busing would be expected to resolve any current parking issues at TA D-51. The amount of traffic in the area is not expected to be impacted by the reduction of car traffic and increase in bus traffic resulting from the implementation of the Master Plan. There should not be a perceptible increase in traffic flow from construction vehicles. Heavy machinery is typically left onsite until a project is complete. Access to Range Road 461 is also possible east of the school zone.

1.5.2 Issues Studied in Detail

Preliminary analysis based on the scope of the Proposed Action and Alternatives identified the following potential environmental issues warranting detailed analysis.

Water Resources

This EA addresses the potential for impacts to water resources. No surface waters occur within TA D-51. Smith Branch (a tributary to Long Creek) is located to the north of TA D-51, and Eagle Creek is located to the west of TA D-51. Both are outside of the fenced boundary of the Test Area. One small jurisdictional wetland has been identified within TA D-51. This wetland, a small area (less than 1 acre) along the southwestern boundary is seasonally wet, possibly due to an underground spring or previous disturbance that changed soil drainage properties.

The clearing of land and increase in impervious surfaces under the Proposed Action and Alternative creates the potential for an increase in the rate and volume of stormwater runoff. The site plan includes more than 1 acre of disturbance to undeveloped land. A stormwater permit may be required as determined by site and construction design inspection. After inspection, if it is determined that permits are required, they will be obtained. Water supply issues will be discussed. Management requirements, including permitting and stormwater control methods, as well as best management practices (BMPs) are addressed in this EA.

Air Quality

Air quality could be affected by the addition of combustive by-products and dust to the air resulting from construction and land clearing. Potential impacts would be denoted if project emission estimates were to exceed 10 percent of Okaloosa County's Air Emission Inventory. Although analysis of this type is used for impact analysis to air quality in accordance with a General Conformity Rule determination, a general conformity determination does not apply to Eglin, because Eglin is within an attainment area with regard to U.S. Environmental Protection Agency (USEPA) air quality standards. The 10 percent criterion is used as a threshold for impact analysis for non-attainment or maintenance areas (areas that were non-attainment but now

are in attainment). However, the 10 percent criterion is used here as a threshold for potential adverse impacts.

Utilities and Infrastructure

Electric utilities, communication, natural gas, potable water, nonpotable water for fire suppression and wastewater disposal for the proposed complex would need to be examined as part of this analysis. There would be an addition of students and faculty in the area so increased usage and expansion of existing utilities would be expected. Coordination with all utility providers would be required prior to any ground-disturbing activities in an effort to minimize potential conflicts between utility providers.

Topography and Soils

The topography of the area is relatively flat with slopes that are less than 1 percent. The landscape is characterized by mild rises in land elevation, forming a very slight undulation to the land. Areas likely to be impacted by erosion are identified based on factors such as soil type, slope, activity planned, and nature of vegetative cover in the project area. Analysis identifies situations in which erosion is likely to occur, assists in the determination of soil characteristics at a proposed work site, and determines the likelihood of soil loss given any of these factors. Since any construction has the potential to disturb soils, construction BMPs recommended in this document would need to be incorporated into the construction process.

Noise

The noise section discusses potential noise impacts to the community surrounding the addition of new students and structures to the NAVSCOLEOD. The analysis addresses expected noise levels from construction and future use of the test area in the Proposed and Alternative Actions. In addition, the existing noise environment in the area is dominated by EOD training activity, and to a lesser degree vehicular traffic noise from nearby roads. Other potential noise hazards will be addressed through analysis.

Natural Resources

Site preparation and construction would require the removal of sand pine and other vegetation. The area surrounding TA D-51 is predominantly composed of the sand pine ecosystem. Previous to the NAVSCOLEOD locating at TA D-51 much of the test area was mechanically maintained as an open grassland/scrubland typical of Eglin AFB test areas. When the NAVSCOLEOD was established, regular vegetation maintenance stopped, resulting in a regrowth of sand pine, scrub oaks, and an understory of native grasses and forbs. Periodic vegetation maintenance activities are conducted by NAVSCOLEOD to clear underbrush in the training practical areas of the test area. However, no prescribed fire is used to maintain vegetation within TA D-51.

There are no known threatened or endangered species within test area D-51. The Okaloosa darter, a federally and state-listed endangered species found only in a few creeks in Okaloosa and Walton counties, is known to occur in Smith Branch to the north of the test area. Although the

area is not considered prime habitat for the eastern indigo snake and gopher tortoise, prior to any ground disturbance, biologists from the Natural Resources Section (NRS) would visit the site to assess whether eastern indigo snakes and gopher tortoises are present. This is standard pre-construction practice at Eglin AFB.

Cultural Resources

Section 106 of the National Historic Preservation Act (NHPA) of 1966 requires that federal agencies analyze the impacts of federally directed or funded undertakings on historic properties. Known cultural resources are located in the vicinity of the project area. This analysis will examine potential impacts to cultural resources resulting from this Proposed Action.

Land Use

Land use at the proposed site would be modified as a result of the Proposed Action and Alternative. Facilities for the activities and projects outlined in the Master Plan would be erected in the vicinity of existing buildings and structures with similar functions in addition to previously undeveloped areas. Similarly proposed practical training areas would also be located within the TA D-51 land use areas already approved for EOD practical training and expanded as a result of the international training facility. The land use analysis will consider these issues.

1.6 PERMITTING REQUIREMENTS AND AGENCY COORDINATION

A National Pollutant Discharge Elimination System (NPDES) general permit for stormwater discharge (Chapter 62-621.300 [4], Florida Administrative Code [FAC]) and a stormwater pollution prevention plan (SWPPP) may be required based on site and construction design inspection. The general requirements for NPDES stormwater permitting at construction sites are provided in Chapter 62-621, FAC. In addition to the NPDES permit, a generic permit for new stormwater discharge facility (Chapter 62-346, FAC) may also be required.

The Navy will publish a Notice of Availability for the Public Draft. The notice will solicit public review and comment on the Draft EA. The Final EA will include an appendix containing comments/responses for individuals/agencies who submitted comments on the Draft EA.

Analysis presented in this EA has determined that there are no threatened and endangered species or critical habitat within the project area. In addition, there are no cultural/historical resources in the project area identified as eligible to the National Register of Historic Places (NRHP). As a result, no consultations with respective regulatory agencies are required for this Proposed Action.

This construction project requires consistency with Florida's Coastal Zone Management Act (CZMA). The Florida Department of Environmental Protection (FDEP) will review a consistency determination submitted by the U.S. Air Force via Eglin AFB's Natural Resources Section (96 CEG/CEVSN). The Air Force CZMA Consistency Determination is provided in Appendix C.

In accordance with the Master Plan, the proponent has already completed the required Construction Support ESS plan and UXO sweep per DoD Standard 6055.9, Chapter 12, *Real Property Known or Suspected to Contain Munitions and Explosives of Concern or Chemical Warfare Material in Other-Than-Munition Configurations* (U.S. Air Force, 2004).

1.7 DOCUMENT ORGANIZATION

This EA follows the organization established by the CEQ regulations (40 CFR, Parts 1500-1508). This document consists of the following chapters.

- Chapter 1 – Purpose and Need for the Proposed Action
- Chapter 2 – Description of Proposed Action and Alternatives
- Chapter 3 – Affected Environment
- Chapter 4 – Environmental Consequences
- Chapter 5 – Plans, Permits, and Management Actions
- Chapter 6 – List of Preparers
- Chapter 7 – List of Contacts
- Chapter 8 – References
- Appendix A – TA D-51 Master Development Plan
- Appendix B – Public and Agency Review
- Appendix C – Coastal Zone Management Act (CZMA) Negative Determination
- Appendix D –Training Area (TA) D-51, Master Development Plan
- Appendix E – Military Construction Project Data Sheet (DD Form 1391)

2. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.1 PROPOSED ACTION (PREFERRED ALTERNATIVE)

The Proposed Action is to implement the Master Development Plan for TA D-51 to support the mandated increase in students and staff. The Master Development Plan outlines future facility and infrastructure requirements necessary to accommodate the increase in student and staff population. The future facility and infrastructure development requires changes to current land uses delineated at TA D-51 (Figure 2-1). A future land use map was developed as part of the Master Development Plan (Figure 2-2). Acceptance of the future land use map to guide future development on TA D-51 is also part of the Proposed Action.

2.1.1 Student and Staff Population

The current student population attending the NAVSCOLEOD in a year is approximately 1,150. The branch of military of which a student is a member determines the length of time he or she attends the NAVSCOLEOD. The Navy syllabus is nine months, which includes a three-month underwater training division. The syllabus for the other military services is six months. A new class of 25 students starts at the school every six days.

Also part of the NAVSCOLEOD are approximately 300 staff who either teach courses and practical exercises or provide medical and administrative support. Support staff are currently located onsite at TA D-51 and on Eglin Main Base at the NAVSCOLEOD building 845 and barracks. On any given working day, TA D-51 has an average of 952 personnel on site.

The increase in student quotas would occur over a four-year period from FY 2008 to FY 2011, with a total increase of 711, reaching a total of all annual student quotas of 1,861 by FY 2011 (Table 2-1). Additionally, the schedule of starting new student classes would be shortened from one new class every six days to one new class every four days.

The number of staff is expected to increase by an estimated 120 to accommodate the increased number of quotas. This will occur over a three-year period (Table 2-1). The staff consists of instructors, administrators, Navy corpsman and a doctor, and administrative personnel. To consolidate and offer better services to students, all of the staff would be consolidated at TA D-51.

Associated with the NAVSCOLEOD would be the proposed alternative site for the Air Education and Training Command (AETC) EOD facility. The facility would be the site for additional, Air Force-specific training to Air Force graduates of the NAVSCOLEOD. The training will qualify graduates in the use of unique Air Force systems and specialized explosive tools. The facility is slated for location along Range Road 218 near the NAVSCOLEOD Maintenance Facility Compound (Figure 2-2). With the new facility, an additional 120 staff members would be present annually or eight additional staff members at TA D-51 at any given time. Approximately 5 instructors will support the course. With the total increase in Army, Navy, international and Air Force student and staff population, at any one time on TA D-51 an average of 1,637 people will be expected.

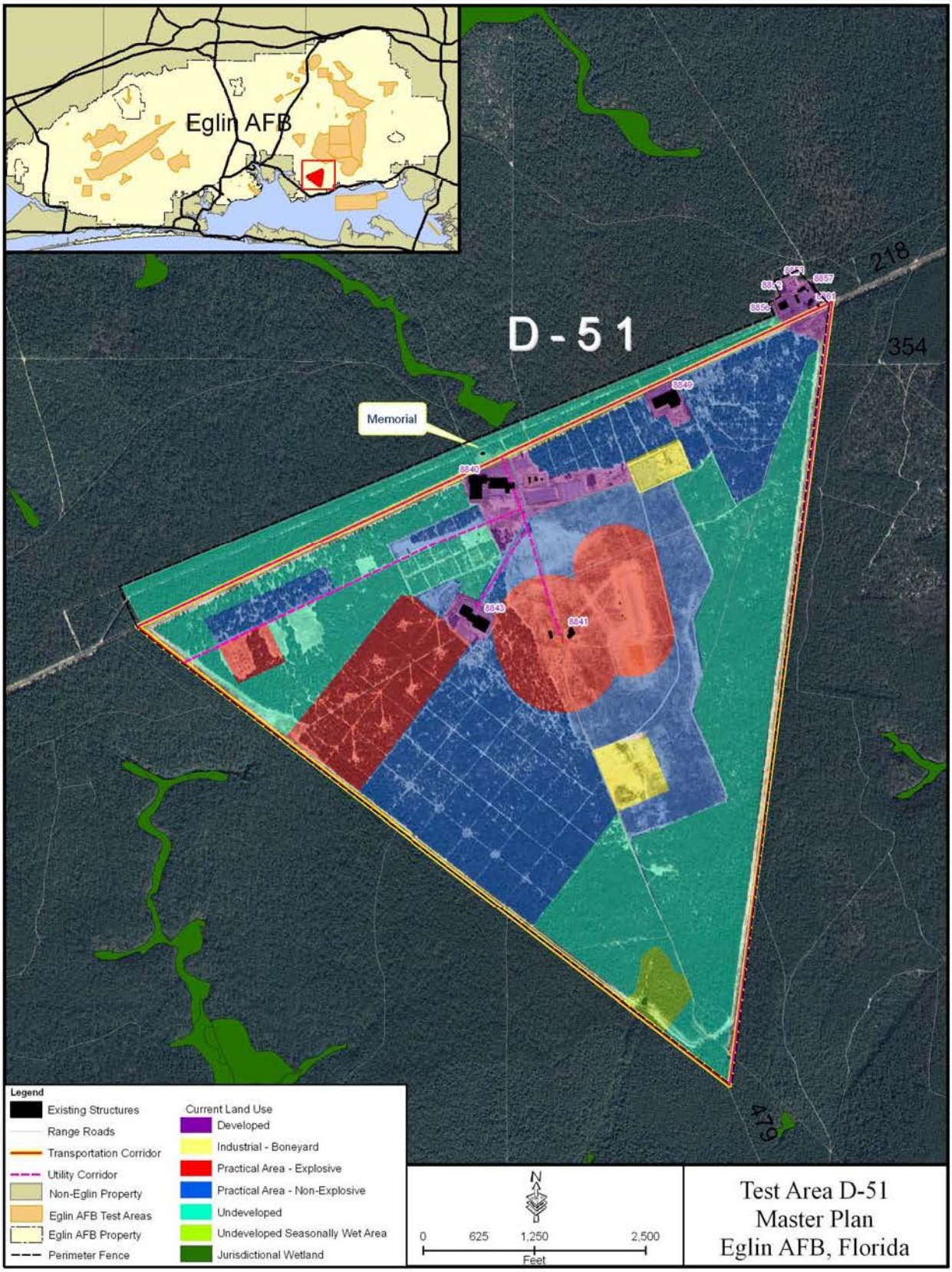

Figure 2-1. Current Land Use at Test Area D-51

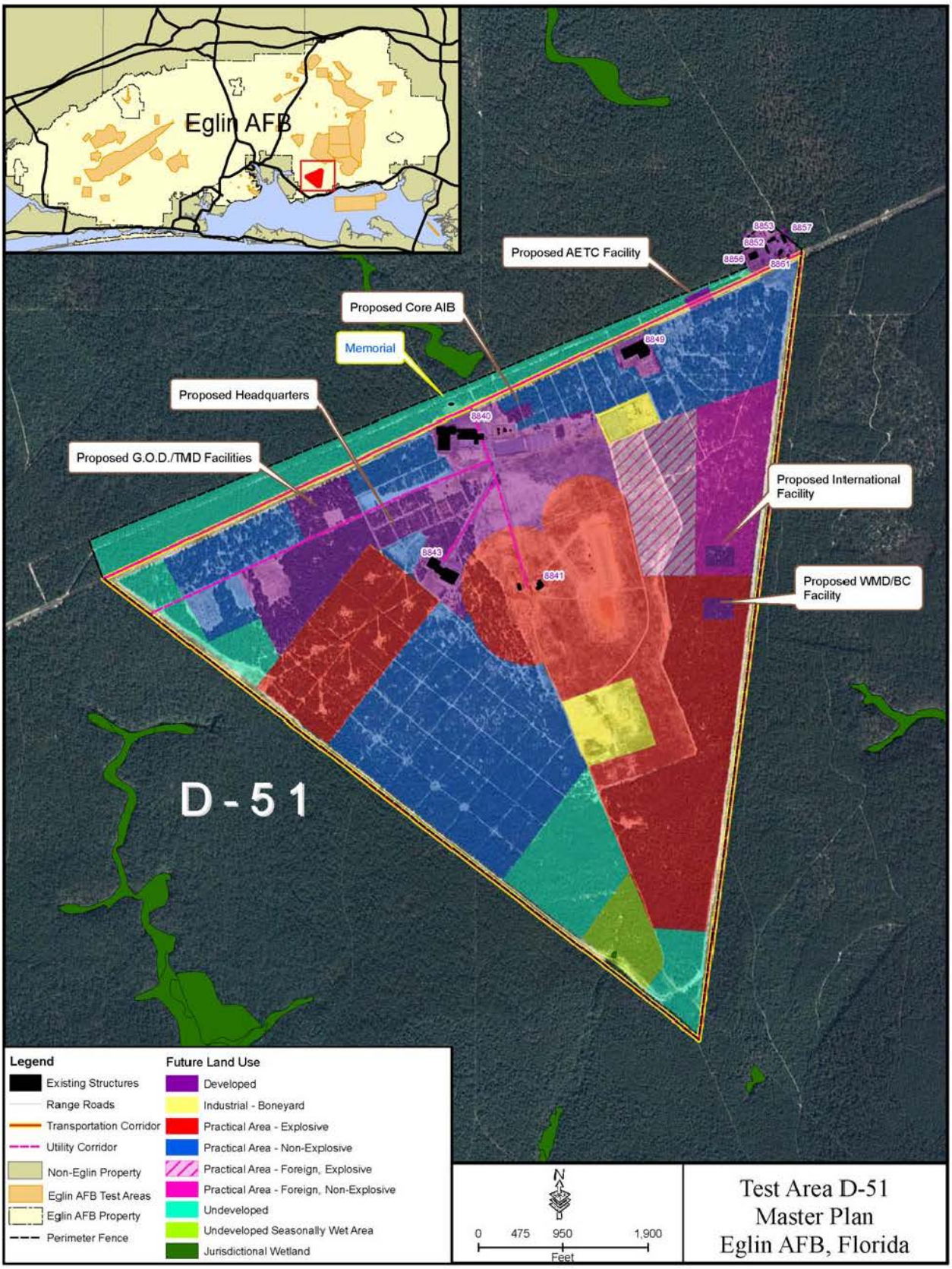

Figure 2-2. Master Plan Land Use at Test Area D-51

Table 2-1. Increase in Annual Quotas and Staff by Fiscal Year and Branch of Service

Fiscal Year	Increase in Annual Student Quotas by Branch of Service	Increase in Staff
Current Conditions	1150	300
2008	203 (40 Navy, 153 Army, and 10 International)	33
2009	492 (427 Army, 65 International)	73
2010	4 (Army)	14
2011	12 (Army)	0
Total Increase	711	120 (72 instructors, 34 USN non-instructor staff, 14 US Army Staff
TOTAL	**1861**	**420**

Source: Snowdon, 2007

2.1.2 Facilities and Practical Areas

The NAVSCOLEOD currently consists of several buildings (Table 2-2) and largely undeveloped areas used for practical exercises (Figure 2-2). The classroom facilities and practical areas are clustered together for logistical and educational reasons. Immediately after the students learn a new technique, they leave the classroom, pick up their tools, and walk outside to the applicable practical area, which functions as their laboratory.

Table 2-2. Facilities Located at Test Area D-51

Name of Facility	Building Number	Square Footage
Headquarters Building	8840	59,731
Operational Control Bunker	8841	900
IED and Ground Ordnance Training Facility	8843	31,474
Core and Air Ordnance Training Facility	8849	35,480
Facilities Maintenance Compound Administrative Building	8856	4,500
Facilities Maintenance Compound Pole Shed	8852	1,600
Facilities Maintenance Compound	8853	1,600
Facilities Maintenance Compound	8857	2,640
Facilities Maintenance Compound	8861	1,320

Source: Eglin AFB Real Property Records, 2007
IED = Improvised Explosive Device

The practical areas are divided into explosive and non-explosive areas. The explosive practical areas are used for detonating 1.25-pound (lb) blocks of C-4 explosives and other smaller charges. In addition, .50 caliber and shotgun shells are also used in the explosive practical areas. Non-explosive practical areas are used for building identification skills and for a variety of teaching methods, including the use of tools and robotics for dismantling improvised explosive devices (IEDs).

To accommodate the increase in student quotas, several new temporary and permanent facilities would be required (Table 2-3) (Jackson, 2007). It is anticipated that permanent construction would begin in FY 2012 when military construction (MILCON) funding is appropriated on a permanent Applied Instruction building and practical area for the diagnosis, disabling, containment, and disposal of weapons of mass destruction (WMDs) and large, sophisticated IEDs. The Applied Instruction Building (AIB) and practical area would be located in the southeastern area of TA D-51 and would cover approximately 4 acres. Other permanent facilities are proposed, but funding has not yet been secured for these facilities. These proposed facilities include:

Short term (0–5 years)

- Establish 16 temporary classrooms: seven for the Ground Ordnance Division, three for the WMD Division, and six for the Core Division.
- Begin construction on the AIB and practical areas for WMD in FY 2012.
- If sited on D-51, construction by the Air Force would begin on the AETC facility.

Mid-term (5–10 years)

- Begin construction on the AIB for Ground/Tools and Methods Division; begin construction on the AIB for the Core Division.
- Begin construction on the 11 training pavilions used to support the Divisions.

Long term (10+ years)

- Begin construction on the NAVSCOLEOD Headquarters building, the AIB for international training, and practical areas for international training.

Three temporary classrooms (trailers) would be established in FY 2007 with an additional thirteen established as soon as FY 2009. Several temporary storage containers would be used in conjunction with the temporary classrooms.

The proposed AETC facility if constructed would be a permanent structure approximately 5,700 ft^2 containing classrooms, office space, and male/female bathrooms with showers (Table 2-3). The building would have its own parking lot. Practical areas are associated with the AETC facility. Construction is expected to begin on the facility in the short term (0-5 years).

Table 2-3. Proposed Future Facilities

Facility and Practical Area	Square Footage
Applied Instruction Building for WMDs and B/C	32,023
10 Training Sites for WMDs and B/C	115,592 (2.65 acres)
Applied Instruction Building for Ground Ordnance and Tools and Methods	20,099
Applied Instruction Building for Core	18,500
11 Training Pavilions for Various Divisions	Unknown at this time
Expansion of Existing Galley in Building 8840	1,389
Air Education and Training Command Facility for EOD Advanced Training	5,700
International Training Facility	Unknown at this time
Headquarters	Unknown at this time

Source: Jackson and Snowdon, 2007
1. DD-1391s in Appendix D
WMDs = weapons of mass destruction; B/C = Biological/Chemical; EOD = Explosive Ordnance Disposal

2.1.3 Infrastructure and Utilities

Water

The increased potable water demand caused by an influx of new students and faculty would tax the existing water supply system. In addition, documented problems associated with the pressure necessary to supply water to each facility would remain and perhaps become amplified. The existing pump is over 20 years old and, as a result, increased maintenance on the pump is likely to occur. The severity and frequency of necessary maintenance would be influenced by an increase in use.

Water would need to be available for fire suppression (both hose demand and sprinkler systems). The water demand required for sprinkler protection depends upon occupancy, discharge density, design area, type of sprinkler, type of construction, and other building features (DoD, 2006).

Distribution systems need to be sized to accommodate fire flows plus domestic demand that cannot be restricted during fires. The existing storage capacity and distribution system would not meet the duration/supply design requirements of the Proposed Action based on preliminary estimates.

The following options are available to address future demands on the current water system:

- Access water supply from tank at C-1 or from surrounding communities.
- Additional above-ground storage tank or new, larger above-ground storage tank for fire flow demand.
- Upgrades to current infrastructure.

Wastewater

As with the water usage rate, the wastewater flow would be expected to increase with the planned future facilities. Under the Proposed Action, wastewater treatment would be to establish a connection to the sewer lines currently served by the Okaloosa County Water and Sewer

Department. The Niceville, Valparaiso, Okaloosa County (NVOC) Regional Wastewater Treatment Plant is currently serving the area near TA D-51, and has excess capacity to service TA D-51 (Sallee, 2007). A larger capacity facility that will increase the wastewater treatment capacity in the area is expected to be completed within the next two years. Even with the existing wastewater treatment facility, the additional wastewater flow from TA D-51 could be accommodated within the existing infrastructure (Mauzy, 2007). Additional sewer lines would be necessary to transfer wastewater from TA D-51 to the existing lines, which are located approximately 2.5 miles from the northern portion of TA D-51. Additional evaluation would be necessary to determine the total wastewater flow from the surrounding range areas and the resulting demand on the Okaloosa County wastewater treatment facility should the service area expand. The cost associated with the pipeline and lift station would be under $200,000.00 not including UXO search and removal costs (Mauzy, 2007). UXO surface and subsurface sweeps cost approximately $7,000 and $25,000 per acre respectively (Spendley, 2007).

Electrical

The estimated electrical service necessary to support the future facilities would be approximately 53 percent above the current usage. It is expected that the substation that supports TA D-51 could support the additional infrastructure without problems. However, the additional demand on the system within the Eglin range area is expected to result in additional repair services necessary to maintain electricity to the area.

Natural Gas

As stated in the Master Plan, the estimated increase in natural gas service necessary to support the future facilities would be approximately 45 percent. No identified deficiencies in the current natural gas supply distribution have been identified.

Communication

Communication lines that provide telephone and local area network (LAN) connectivity would be necessary for the temporary trailers and the permanent facilities that would be constructed. Supplying the proposed permanent facilities would require expanding the communication lines along the eastern boundary of TA D-51.

The increase in number of students would require additional radio channels for each of the two new student divisions. Eglin AFB is procuring 10 new repeater channel systems to be added to the Eglin AFB trunking system (currently utilized by the NAVSCOLEOD) by the end of FY 2008 or early FY 2009. To expand the radio capacity needed to accommodate the new divisions, NAVSCOLEOD can use a new network for each division to communicate internally and a common network to talk to a central point for safety, weather, or other common information (Giangrosso, 2007).

The following additional infrastructure improvements actions are currently proposed for TA D-51 as per the Master Plan.

- Complete any utility upgrades required for the AIB WMD building.

- Implement student busing from the barracks on Eglin Main Base to D-51.
- Coordinate with the Eglin AFB Spectrum Management Office to secure additional networks for increased communication needs.

Land Uses

The Master Plan for TA D-51 classifies land use types based upon current usage. Based on that classification, a land use map was developed (Figure 2-1). Future land use on TA D-51 is based on the same land use classification used to define current land use with two exceptions: Practical – Foreign Non-explosive and Practical – Foreign Explosive. These exceptions are two new land use categories that have been added to the future land use definitions (Table 2-4) to account for the proposed permanent international training facility and practical areas proposed. The designation of future land use within TA D-51 guides development within a planned design of how to best provide facilities, practical areas, and infrastructure while avoiding potential land use conflicts.

Table 2-4. Test Area D-51 Current and Future Land Use Categories

Current Land Use Category	Proposed Land Use Category	Definition
Developed	Developed	Containing administrative and instructional facilities, the facilities maintenance compound, and parking lots.
Undeveloped	Undeveloped	Currently open, green space or forested areas.
Practical – Explosive	Practical – Explosive	Areas within which mission activities utilize live munitions. Included within the designated Q–D Arc.
Practical – Non-explosive	Practical – Non-explosive	Areas within which mission activities do not utilize live munitions.
N/A	Practical – Foreign Explosive	Area within the international training facility at which mission activities would utilize live munitions. Included within the designated Q–D Arc.
N/A	Practical – Foreign Non-explosive	Area within the international training facility at which mission activities would not utilize live munitions.
Industrial	Industrial	Storage areas for targets and other miscellaneous equipment; referred to as the "Bone-yard"
Seasonally Wet Area	Seasonally Wet Area	Area subject to water inundation depending on rainfall; unsuitable for development.
Jurisdictional Wetland	Jurisdictional Wetland	Area containing some combination of hydrophytic plants, hydric soils, and hydrology that is saturated with water or covered by shallow water during the growing season creating wetland conditions; unsuitable for development
Transportation Corridor	Transportation Corridor	Public roads and Range roads.
Utility Corridor	Utility Corridor	Areas within which electrical, natural gas, communication, water and wastewater lines are located.

N/A = Not Applicable; Q–D = Quantity Distance

As of September 2007, the NAVSCOLEOD completed the following steps in the planning process (Jackson, 2007b):

- An Air Force Form 332, Civil Engineering Work Request, and Air Force Form 813, Environmental Impact Analysis, were submitted to the 96th Civil Engineering Group (96 CEG). No formal memo or personal visit with 96 ABW/XPS was conducted.
- Representatives from 96 ABW/XPS, the RC3 and the IDC were present at the kickoff meeting for the Master Plan and EA.
- The RC3 and the Range Development Executive Steering Committee (RDESC) were briefed on the Master Development Plan along with future projects scheduled for installation at TA D51.
- The remaining actions to be taken are 96ABW/CC and HQ AFMC approval/disapproval. No request for beddown required. Beddown request required when request to erect facilities is submitted.

2.1.4 Implementing the Master Development Plan

Implementation of the Master Development Plan would be accomplished over a 10-or-more–year time period. The implementation strategy is divided into phases—short-term, mid-term and longer term. Short-term plans encompass the next 0–5 years and can be predicted with a fair degree of certainty. Mid-term plans cover 5–10 years and can be predicted but are subject to changes. Long-term plans stretch beyond 10 years and are the least predictable due to the extended timeframe in which needs and changes must be anticipated. The strategy and timing may change as conditions change, funding becomes available, and the student population fluctuates. However, similar to the guidance provided by the future land use map, the implementation strategy is a guide to making incremental progress for modification of the NAVSCOLEOD.

2.2 ALTERNATIVE 1

Alternative 1 would encompass the full build-up of activities over the 15-year period as discussed in the Proposed Action under the TA D-51 Master Plan. This alternative however would use septic systems for all new and existing facilities rather then tie in to existing local community sewage treatment. Additional septic systems would need to be designed and included in the structure site planning to accommodate the anticipated increase in usage and flow. With the previously identified septic system placement restrictions, the new septic systems would need to retain the designated setbacks. Also under this alternative the use of additional wells would be examined rather than use of the nearby water tower at C-1 or other local community sources.

In addition, under this alternative option existing or new well(s) would be used to meet an increase in demand for potable water in lieu of utilizing the nearby community water towers or tying into other local water supply sources.

2.3 NO ACTION ALTERNATIVE

Under the No Action Alternative, neither new structures nor training areas would be constructed. Training of U.S. military and international NAVSCOLEOD students would continue in inadequate facilities; overcrowding and issues with student output would occur.

2.4 COMPARISON OF ALTERNATIVES

Table 2-5 provides a comparison of alternatives.

Table 2-5. Proposed Action, Alternative Action, and No Action Alternative and Potential Impacts

Issue	Proposed Action	Alternative Action	No Action
Noise	Impacts resulting from noise would be minimal.	Same as the Proposed Action.	No impact
Soils	Some soil disturbance would occur from construction, but transportation of soil off-site would be controlled through Best Management Practices (BMPs).	Same as the Proposed Action.	No impact
Water Quality	No direct impacts would occur to surface water or ground water. The nearest water body is outside the perimeter of TA D-51. Sufficient vegetation exists between the water body and the construction site to negate the indirect risk of increased sedimentation from construction activities.	No direct impacts would occur to surface water or groundwater. The septic tank and leach field would be designed so that no effects would occur to ground water.	No impact
Natural Resources	Impacts to biological resources would be minimal. Some sand pine and other scrub vegetation would be removed. The potential for threatened or endangered species to be affected in this location is low; however, the NRS will complete a biological survey prior to ground disturbance to verify the presence or absence of any threatened or endangered species.	Same as the Proposed Action.	No impact
Utilities	Impacts resulting from implementation of the Proposed Action to Utilities would include requirement of additional water storage and supply due to increased demand.	Same as the Proposed Action.	Upgrades to water supply infrastructure would be required under this alternative.
Cultural Resources	No cultural resources considered eligible to the National Register of Historic Places would be impacted under this alternative. Due to the presence of cultural resources in close proximity to D-51, any activities outside the boundaries of D-51 (e.g., water lines) would require a Section 106 review.	Same as the Proposed Action.	No impact

2.5 ALTERNATIVES DISCUSSED BUT NOT CARRIED FORWARD FOR ANALYSIS

Other alternatives were considered for the TA D-51 Master Plan. The currently selected Proposed and Alternative Actions were determined in part, based upon the necessity of training

occurring within TA D-51. Expansion outside of TA D-51 was considered and rejected due to competition of other Eglin AFB customers for space and due to several known environmental constraints in moving directly outside the boundaries of TA D-51 (Jackson, 2007a).

As a result of planning meetings and other discussions, the NAVSCOLEOD presented several infrastructure options for the development of the facilities. These included maintaining TA D-51 as a stand alone facility with predominantly self sufficient infrastructure or tying all infrastructures into the surrounding communities. One proposed but discarded option included building a new wastewater treatment plant; however the expense and timeframe required to develop such a facility was regarded as prohibitive. The small volume of wastewater produced by TA D-51 (now or after any future buildup) is considered to be insufficient to make such a proposed project viable (Jackson and Bolduc, 2007).

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3. AFFECTED ENVIRONMENT

3.1 WATER RESOURCES

3.1.1 Definition of Resource

Groundwater

Groundwater is defined by the United States Geological Survey (USGS) as "all subsurface water" (USGS, 2004). Subsurface water that is in significant enough amounts to tap via a well are referred to as aquifers. The two aquifers located under Eglin AFB are the Sand and Gravel aquifer and the Floridan aquifer. Eglin AFB uses only a small amount of water from the Sand and Gravel aquifer, but the Floridan aquifer is used extensively for drinking water. The Floridan aquifer is located below the Sand and Gravel aquifer and extends beneath peninsular Florida. The descriptions of the Sand and Gravel aquifer and Floridan aquifer given below apply to all of Eglin AFB, and therefore all Proposed and Alternative Actions in this Environmental Assessment (EA).

Sand and Gravel Aquifer

The Sand and Gravel aquifer consists of Citronelle formation and marine terrace deposits. Although the aquifer is composed of clean, fine-to-coarse sand and gravel, locally it contains some silt, silty clay, and peat beds. The Sand and Gravel aquifer is segregated from the underlying limestone of the Floridan aquifer by the Pensacola Clay confining bed. Water in the Sand and Gravel aquifer exists in generally unconfined conditions (a free water surface or water table) and confined conditions (under pressure) (Becker et al., 1989). The quality of water in the aquifer has been rated good (i.e., meets its intended use) by FDEP (U.S. Air Force, 2003). Water from this aquifer is not a primary source of domestic or public supply water on Eglin AFB because of the large quantities of higher quality water available from the underlying Upper Limestone of the Floridan aquifer (Becker et al., 1989; Overing et al., 1995).

Floridan Aquifer

The Floridan aquifer consists of a thick sequence of interbedded limestone and dolomite. Throughout the Eglin Range, the Floridan aquifer exists under confined conditions, bounded above and below by the Pensacola Clay Formation confining bed. This clay layer restricts the downward migration of pollutants and restricts saline water from Choctawhatchee Bay and the Gulf of Mexico from entering the upper limestone layer of the aquifer. The clay layer of the Bucatunna Formation separates the upper and lower limestone units. Since this layer has a high saline content, the lower limestone unit is not used as a water source (Overing et al., 1995). Groundwater storage and movement in the upper limestone layer occurs in interconnected, intergranular pore spaces, small solution fissures, and larger solution channels and cavities. The wells on Eglin AFB tap into both the Sand and Gravel and Floridan aquifers and are used for both potable and non-potable supply.

Surface Water

Surface waters have the potential to be impacted by land clearing, construction and demolition activities. Surface waters include bays, bayous, lakes, rivers, streams, ponds, and springs.

The state of Florida has developed and retains jurisdiction for surface water quality standards for all waters of the state in accordance with the provisions of the Clean Water Act (CWA). Section 303 of the CWA requires the state to establish water quality standards for waterways, identify those that fail to meet the standards, and take action to clean up these waterways. Florida recently adopted the Impaired Waters Rule (IWR) (FAC Chapter 62-303), with amendments, as the new methodology for assessing the state's waters for 303(d) listing. The FDEP submits names of surface waters that are determined to be impaired, using the methodology in the IWR and adopted by secretarial order, to the USEPA for approval as Florida's 303(d) list. The FDEP submits updates to Florida's 303(d) List of Impaired Surface Waters to the USEPA every two years. The 2006 Integrated Water Quality Assessment for Florida: 2006 305(b) Report and 303(d) List Update (FDEP, 2006) satisfies the listing and reporting requirements of Sections 303(d) and 305(b) of the CWA.

The FDEP divides river basins across Florida into groups, which the FDEP addresses according to an established rotation schedule. The eastern portion of Eglin AFB drains to the Choctawhatchee-St. Andrews Bay Basin (Group 3) and the west side drains into the Pensacola Bay Basin (Group 4) (FDEP, 2006). Surface waters on Eglin AFB are Class III waters, meaning that they are designated for "recreation, propagation, and maintenance of a healthy, well-balanced population of fish and wildlife" (FDEP, 2006). Impaired waters on or adjacent to Eglin AFB include: Boggy Bayou, Poquito Bayou, Rocky Bayou State Park, Choctawhatchee Bay, East Bay, and Yellow River (FDEP, 2006a and FDEP, 2006b).

Wetlands

Wetlands are areas of transition between terrestrial and aquatic systems where the water table is usually at or near the surface. Conversely, these can occur where shallow water covers land (U.S. Fish and Wildlife Service [USFWS], 1979). Abiotic and biotic environmental factors such as morphology, hydrology, water chemistry, soil characteristics, and vegetation contribute to the diversity of wetland community types. The term *wetlands* describe marshes, swamps, bogs, and familial areas. Local hydrology and soil saturation largely affects soil formation and development as well as the plant and animal communities found in wetland areas (USEPA, 1995). One of the most important factors in establishing and maintaining wetland processes is wetland hydrology, which is the inflow and outflow of water through a wetland and its interaction with other site characteristics (Mitsch and Gosselink, 2000).

Wetlands are defined in the U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (USACE, 1987). The majority of jurisdictional wetlands (wetlands that fall under state or federal regulatory authority)

in the United States are described using the three wetland delineation criteria: hydrophytic vegetation, hydric soils, and hydrology (USACE, 1987).

The USACE is the lead agency in protecting wetland resources. This agency maintains jurisdiction over federal wetlands (33 CFR 328.3) under Section 404 of the CWA (30 CFR 330) and Section 10 of the Rivers and Harbors Act (30 CFR 329). The USEPA assists the USACE (in an administrative capacity) in the protection of wetlands (40 CFR 225.1 to 233.71). The state of Florida regulates wetlands under the Wetlands/Environmental Resource Permit program under Part IV, Florida Statutes Section 373. Executive Order (EO) 11990, *Protection of Wetlands*, offers additional protection to these resources. In addition, the USFWS and the National Marine Fisheries Service have important advisory roles. The FDEP's Chapter 62-312, Dredge and Fill Program, affords regulatory protection to wetland resources (i.e., protection from excavating or filling a wetlands area with dirt, rip-rap, ect.) at the state level. The FDEP issues a Section 401 certification under the authority of the CWA (40 CFR 230.10[b]). Section 401 of the CWA requires federal agencies to obtain certification from the state before issuing permits that would result in increased pollutant loads to a waterbody. The certification is issued only if such increased loads would not cause or contribute to exceedances of water quality standards (USEPA, 2006).

Floodplains

Floodplains are lowland areas adjacent to surface water bodies (i.e., lakes, wetlands, and rivers), where flooding events periodically cover flat areas with water. Floodplain vegetation and soils act as water filters, intercepting surface water runoff before it reaches lakes, streams, or rivers, and storing floodwaters during flood events. This filtration process aids in the removal of excess nutrients, pollutants, and sediments from the water and helps reduce the need for costly cleanups and sediment removal. Conversely, if soils and sediments are contaminated, these contaminants can then be deposited on floodplains.

Federal agencies must evaluate any proposed activity to determine whether it would occur within a floodplain. Agencies must address those areas that have a 1 percent chance of floodwater inundation in a given year (also known as a 100-year floodplain). EO 11988, *Floodplain Management*, requires federal agencies to avoid adverse impacts associated with the occupancy and modification of floodplains and to avoid floodplain development whenever possible. Parts of the floodplain that are also wetlands receive further protection under USACE's Section 404 Permit Program.

The Coastal Zone

The term *coastal zone* is defined as coastal waters and adjacent shorelands strongly influenced by each other and in proximity to the several coastal states, and including islands, transitional and inner tidal areas, salt marshes, wetlands, and beaches. "Coastal waters" are defined as any waters adjacent to the shoreline that contain a measurable amount of sea water, including but not limited to sounds, bays, lagoons, bayous, ponds, and estuaries. The outer boundary of the coastal zone is the limit of state waters, which for the Gulf coast of Florida is 9 nautical miles from shore.

The Coastal Zone Management Act (CZMA) provides for the effective, beneficial use, protection, and development of the U.S. coastal zone. The State defines the landward boundaries of the State of Florida, in accordance with Section 306(d)(2)(A) of the CZMA, as the entire state of Florida. Federal agency activities in the coastal zone are required to be consistent to the maximum extent practicable with approved State Coastal Zone Management Plans. Federal agencies make determinations whether their actions are consistent with approved State plans and submit these determinations for State review and concurrence. All relevant state agencies must review the Proposed Action and issue a consistency determination. The Florida Coastal Management Program (FCMP) is composed of 23 Florida statutes, which 11 state agencies and four of the five water management districts administer.

Any components of the Proposed Action that take place within the jurisdictional concerns of the State would require a consistency determination with respect to Florida's Coastal Management Plan (Appendix C).

Stormwater

Stormwater carried sediment can alter water quality, aquatic habitats, and hydrologic characteristics of streams and wetlands, and increase flooding. Land disturbing activities (such as clearing) and addition of impermeable surfaces (i.e., concrete, asphalt) would result in increases in stormwater runoff. The effects, however, vary based upon the amount of new impervious surface areas, topography, rainfall, soil characteristics, and other site conditions. The rate and volume of stormwater runoff has the potential to impact the quality and utility of water resources (FDEP, 2002). Permits for stormwater discharges may be required under the NPDES program of the CWA. Regulations under FAC Rule 62-346 and the NPDES require permitting for new stormwater discharges. FAC Rule 62-621 requires coverage under the Generic Permit for Stormwater Discharge for construction activities that disturb 1 or more acres of land. Florida Statutes Section 403.0885 requires a notice of intent to use the Generic Permit for Stormwater Discharge under the NPDES program. Compliance with this permit involves developing and implementing a Stormwater Pollution Prevention Plan (SWPPP). A SWPPP requires the implementation of site specific BMPs for erosion and sedimentation control such as silt fences, detention and retention ponds, and grassed swales.

3.1.2 Existing Conditions

Groundwater

Water is supplied to TA D-51 from a well that draws water from the Floridan aquifer. The Consumptive Use Permit (CUP) for this well specifies a maximum withdrawal of 115,000 gallons in a single day, not to exceed 721,000 gallons monthly. During the first five months of 2007, the average daily water use at TA D-51 was approximately 8,700 gallons per day (Ebel, 2007).

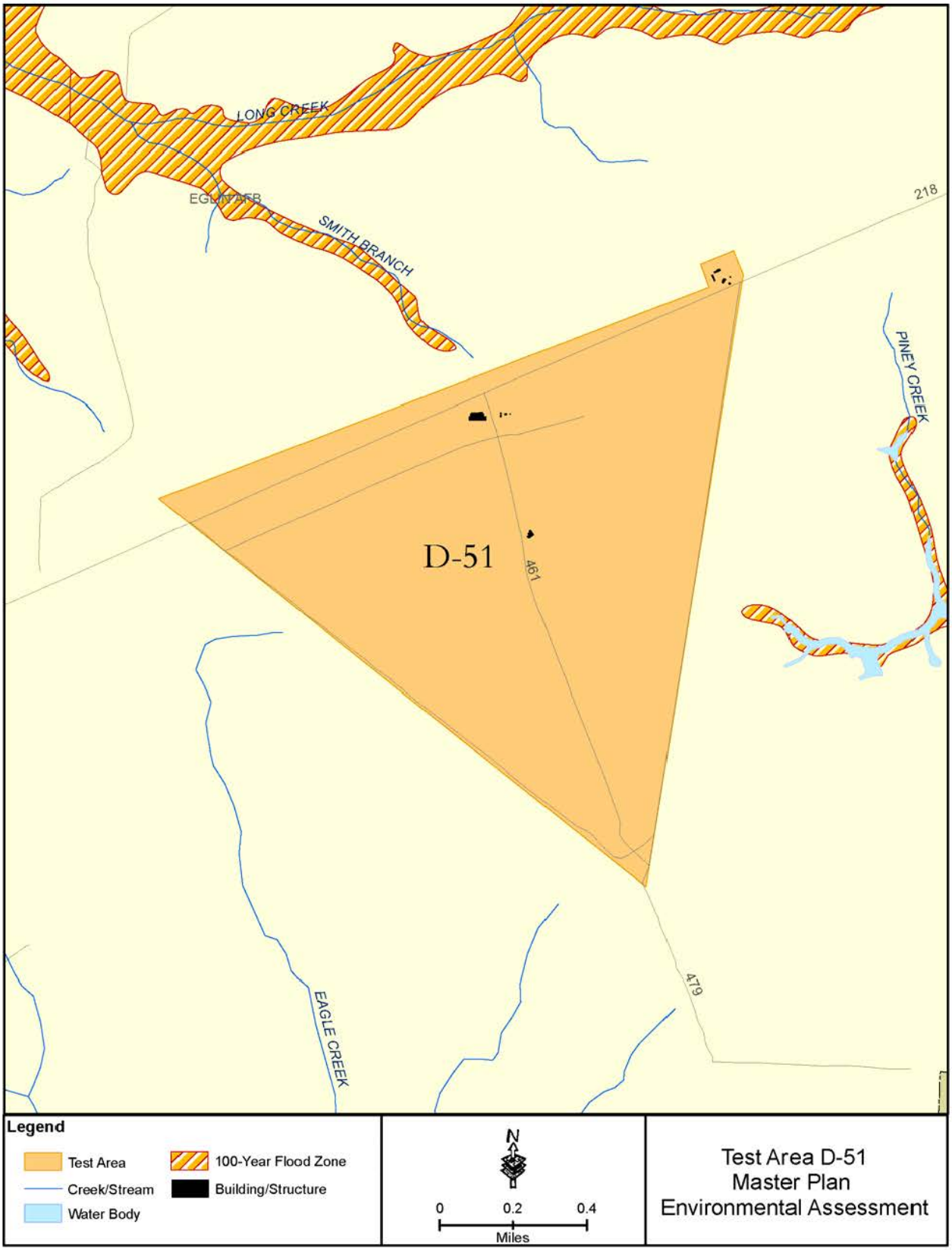

Figure 3-1. Water Resources on Test Area D-51

Surface Water

No surface waters occur within the project area. However, Smith Branch is located just to the north of TA D-51, Eagle Creek is just to the west, and Piney Creek is to the east. The state of Florida defines waters in Smith Branch, Eagle Creek, and Piney Creek (Figure 3-1) as Class III (suitable for recreation, propagation, and maintenance of a healthy, well-balanced population of fish and wildlife) (FDEP, 2006a). According to the 305(b) report most of the water bodies on Eglin AFB are of good quality. However, excess sedimentation is a problem for many water bodies on Eglin AFB. Smith Branch is habitat for the endangered Okaloosa darter, which only inhabits clear, moderate-gradient streams of excellent water quality. This stream is susceptible to increased sedimentation.

Wetlands

One small jurisdictional wetland has been identified within TA D-51. This wetland, a small area (less than 1 acre) along the southwestern boundary is seasonally wet, possibly due to an underground spring or previous disturbance that changed soil drainage properties. The closest other wetlands are associated with Smith Branch, and located outside of the fenced boundary of TA D-51.

Floodplains

No floodplains occur within the project areas. The closest floodplains are those associated with Smith Branch, which lies outside the fenced boundary of the test area. Floodplain areas are depicted in Figure 3-1.

The Coastal Zone

Some components of the Proposed Action would take place within the jurisdictional concerns of the Florida Department of Environmental Protection and therefore would require a consistency determination with respect to the FCMP and the CZMA (Appendix C).

Stormwater

There are no indications that stormwater at the project locations will discharge to surface waters. A vegetative barrier exists between current TA D-51 facilities and Smith Branch, Eagle Creek, and Piney Creek.

3.2 INFRASTRUCTURE AND UTILITIES

This section presents information on infrastructure and utilities within the area potentially impacted by the proposed development and training activities proposed in the TA D-51 Master Plan. The primary issue of concern associated with this Master Plan is the increased demand on utilities resulting from the new construction and the additional personnel.

3.2.1 Definition of Resource

Infrastructure refers to the system of public works, such as transportation and utilities, which provide the underlying framework for a community. Utilities include such facilities as water and power supply and waste management. During project and site planning, engineers consider the utility specifications that are required as part of the project. Potential modifications and upgrades to existing systems factor into the planning process.

3.2.2 Existing Conditions

Electrical

Choctawhatchee Electric Cooperative, Inc. (CHELCO) is the electric power provider to Test Area D-51. Radial feed from lines off State Highway 20 provide electrical power to TA D-51. TA D-51 is the first site along the radial feed prior to service to the remaining range sites (Figure 3-2). All service is via aboveground wooden poles. The electrical infrastructure is old and needs numerous repairs annually to maintain service to the range areas (Dennis, 2007).

During FY 2006, TA D-51 used 3,125,120 kilowatt-hours (kWh) of electricity. When compared to the building square footage (139,045 ft^2) supported by this service, the electrical consumption factor is 22.5 kWh/ft^2. This factor is higher than the 19.7 kWh/ft^2 value identified in the Commercial Buildings Energy Consumption Survey (CBECS) (2003) for federal buildings. The CBECS is a national survey conducted by the U.S. Department of Energy (USDOE) that collects information on U.S. commercial buildings, their energy-related building characteristics, and their energy consumption and expenditures (USDOE, 2003).

Natural Gas

Okaloosa Gas supplies natural gas on a contract basis to TA D-51. During FY 2006, TA D-51 utilized 6.270 million cubic feet of natural gas. When compared to the building square footage (130,045 ft^2) supported by this service, the natural gas consumption factor is 48 cubic $feet/ft^2$. This factor is higher than the 31.4 cubic $feet/ft^2$ value identified in the Commercial Buildings Energy Consumption Survey (CBECS) (2003) for federal buildings.

Communication

Communication lines provide connectivity to telephones and the LAN computer lines for the main Headquarters Building (building 8840), Core and Air Ordnance Training facility (8849), IED and Ground Ordnance Training facility (8843), and the Facilities Maintenance Compound (8856) at the east end of Range Road. Communication lines are a mixture of copper and fiber optic, with the copper gradually being upgraded to fiber optic.

Currently the NAVSCOLEOD utilizes the Eglin AFB radio trunking system for communication between buildings onsite at TA D-51 and from the practical areas to the same buildings. The Eglin AFB trunking radio system utilizes the ultra high frequency (UHF) portion of the radio frequency (RF) spectrum (Giangrosso, 2007).

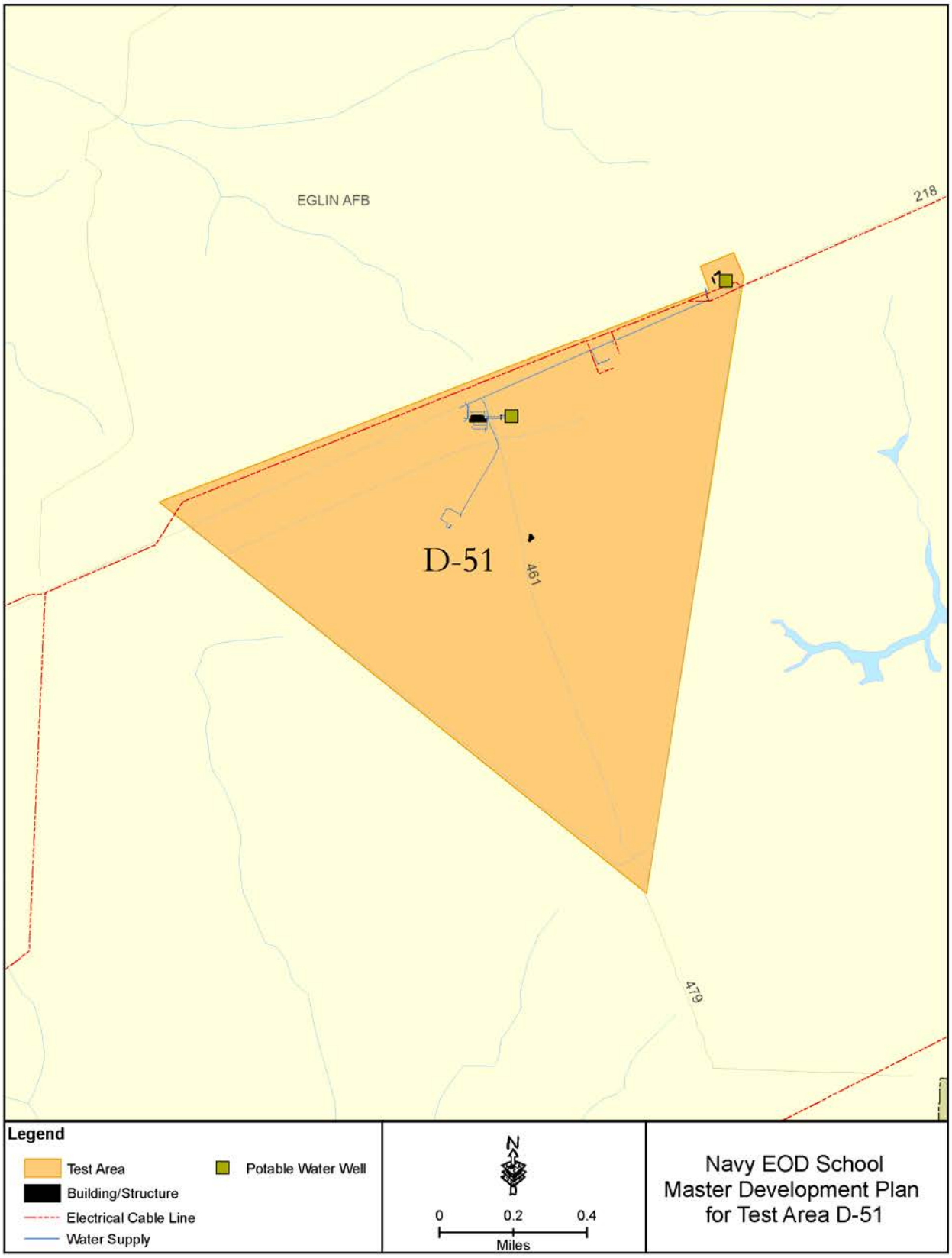

Figure 3-2. Utilities at Test Area D-51

Water

Water supply to TA D-51 is from a 1.5-inch well that draws water from the Floridan aquifer. The system, installed around 1985, has a maximum pump capacity of 50 gallons per minute (gpm) (Ebel, 2007). If operated 24 hours per day at this rate the throughput would equal 72,000 gallons per day; however, pumps operated at a maximum rate are expected to need greater maintenance, and failures with corresponding loss of service would be anticipated. The CUP specifies a maximum withdrawal of 115,000 gallons in a single day, not to exceed 721,000 gallons monthly.

A 150,000 gallon above-ground water storage tank provides TA D-51 with potable water and fire protection. With the existing well and pump system, the above-ground storage tank takes approximately 72 hours to fill (Ebel, 2007). A fire pump connects the water system for potable water and for fire protection. During the first five months of 2007, the average daily water use at TA D-51 was approximately 8,700 gallons per day (Ebel, 2007). With an estimated daily population of 952 personnel, the water consumption rate is 9.1 gallons per person per day.

Several documented problems exist with the water system including the following:

- Explosive vibrations on the ground break the well piping (Ebel, 2005).
- High water pressure is needed to distribute water to the various buildings at TA D-51. Pressure reducing valves are needed in some buildings to keep internal plumbing from bursting (Ebel, 2005).
- When the pumps that direct potable water go offline, the fire pump turns on and surges the entire system. The surge results in emergency response from Eglin AFB and Bluewater Bay Fire Departments (Nicoletti, 2005).

An additional well, located at TA C-1 within 9,900 feet of the TA D-51 water main, is potentially available to serve TA D-51 (Rogers, 2007). The pump capacity of this well is 30 gpm with the potential to increase due to a 6-inch casing (Ebel, 2007). In addition, a water tower associated with this system stores approximately 75,000 gallons. This tank is listed for rehabilitation, but no date has been set.

Wastewater

Four septic tank systems handle wastewater disposal at TA D-51:

- Building 8840 – 12,500 gallon septic tank, installed 1989
- Building 8843 – 6,250 gallon septic tank, installed 1998
- Building 8849 – 10,000 gallon septic tank, installed 1998
- Building 8856 – 1,650 gallon septic tank, installed 1998

Other than standard pump-out operations, no other identified service has been necessary on these systems (Jackson, 2007a). The estimated wastewater generation is approximately 62 percent of the water use based on CY 2006 annual estimates. Extrapolation of this generation to the

estimated daily population results in an average daily flow of 5.6 gallons per person or 5,360 gallons per day. This rate is lower than the generation rate of 15 gallons per person identified in Onsite Wastewater Treatment Systems Manual (USEPA, 2002) for schools.

3.3 TOPOGRAPHY AND SOILS

This section presents information on the soil environment and soil erosion potential within the area that could potentially be impacted by the proposed development and training activities proposed in the TA D-51 Master Plan. The primary issue of concern associated with this Master Plan is the demolition and construction projects that could potentially assist in the transport of soils caused by stormwater runoff from increased impervious surface areas (i.e., roads, buildings, and compacted soil) and soil erosion.

3.3.1 Definition of Resource

Depending on their properties and the topography in which they occur, soils have varying susceptibility to erosion. Soil disturbance associated with development may potentially result in erosion and the transport of eroded soils into nearby drainages. Portions of the affected environment that have been built up, such as areas of existing classroom facilities, are characterized by impervious surfaces (i.e., areas that water cannot seep into, such as roads and paved parking areas). During rainfall events, water moves across impervious surfaces into stormwater drains and retention basins, and is ultimately transported into local water bodies. The Clean Water Act prohibits the deposition of sediments into surface waters. Sediments affect water clarity, decrease oxygen levels in water, and transport pollutants. As soil quality declines (erosion), adverse impacts to on-site and off-site environments increase. Therefore, the maintenance of soil quality is important for efficient and productive land management and utilization. Areas most prone to erosion are identified based on slope, soil type, and vegetative cover.

3.3.2 Existing Conditions

The Proposed Action and Alternative Action site is located within TA D-51 on a previously developed area of Eglin AFB. The predominant soil type within TA D-51 is classified as Lakeland Series (Figure 3-3). Lakeland Sand consists of very deep, excessively drained, rapidly permeable, strongly acidic soils that formed in thick beds of eolian, fluvial, or marine sands on broad, nearly level to very steep uplands in the Lower Coastal Plain. Depth to seasonal water table is more than 80 inches. Sand or fine sand comprises the majority of the entire series; at 10 to 40 inches below the ground, silt and clay make up 5 to 10 percent of the soil. Permeability is moderate to very rapid (6.0 to 20 inches per hour) for Lakeland soils (Overing et al., 1995). Slopes are primarily 0 to 12 percent. The Lakeland soils are easily eroded because they lack cohesiveness and have limited water-holding capacity.

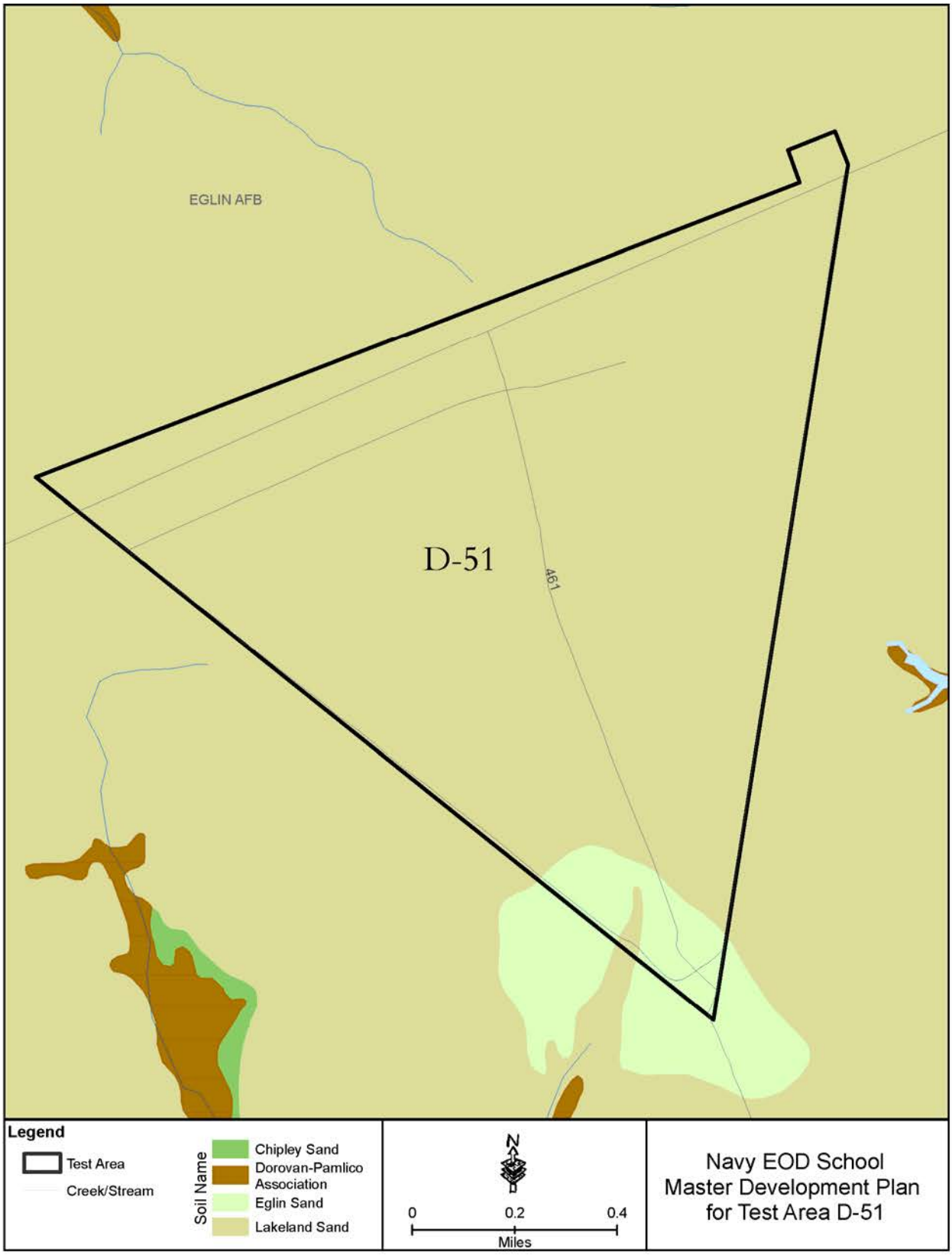

Figure 3-3. Soils at Test Area D-51

The topography of the proposed project area is relatively flat with slopes that are less than 1 percent. The landscape is characterized by mild rises in land elevation, forming slight plateau-ridge features intermingled with mild slope-depression topography. Generally these features are indistinguishable to the naked eye under natural vegetated conditions. The establishment and maintenance of vegetation is often difficult because the soils are too sandy or are on steep slopes.

3.4 NOISE

3.4.1 Definition of Resource

Characteristics of Noise

Noise is sound that injures, annoys, interrupts or interferes with normal activities, or otherwise diminishes the quality of the environment. It may be intermittent or continuous, steady or impulsive. It may be stationary or transient. Stationary sources are normally related to specific land uses (e.g., industrial plants or some military training activities). Transient noise sources move through the environment, either along relatively established paths (e.g., highways, railroads, and aircraft flying a specific flight track), or randomly (e.g., military training conducted in a training area). Wide diversity in responses to noise vary not only according to the type of noise and the characteristics of the sound source, but also according to the sensitivity and expectations of the receptor (for example, a person or animal), the time of day, and the distance between the noise source (e.g., an aircraft) and the receptor.

The physical characteristics of noise, or sound, include its intensity, frequency, and duration. Sound is created by acoustic energy, which produces pressure waves that travel through a medium, such as air, and are sensed in people and some animals by the ear. Sound pressure waves may be likened to the ripples in water produced by a stone being dropped into it. As the acoustic energy increases, the intensity or amplitude of the pressure waves increase, and the ear senses louder noise.

Sound intensity varies widely (from a soft whisper to a jet plane or a gunshot) and is measured on a logarithmic scale to accommodate this wide range. The logarithm, and its use, is a mathematical tool that simplifies dealing with very large and very small numbers. For example, the logarithm of the number 1,000,000 is 6, and the logarithm of the number 0.000001 is -6 (minus 6). Obviously, as more zeros are added before or after the decimal point, converting these numbers to their logarithms greatly simplifies calculations that use these numbers (U.S. Army Center for Health Promotion and Preventive Medicine, 2005).

The frequency of sound is measured in cycles per second, or hertz (Hz). This measurement reflects the number of times per second the air vibrates from the acoustic energy. Low frequency sounds are heard as rumbles or roars, and high frequency sounds are heard as screeches.

Sound measurement is further refined through the use of "weighting." The normal human ear can detect sounds that range in frequency from about 20 Hz to 15,000 Hz. However, not all sounds throughout this range are heard equally well. Therefore, through internal electronic

circuitry, some sound meters are calibrated to emphasize frequencies in the 1,000 to 4,000 Hz range. The human ear is most sensitive to frequencies in this range. When measuring these sounds that continue over some time period (such as an aircraft overflight) with these instruments, the levels are termed "A-weighted" and are shown in terms of A-weighted decibels (dBA). Conversely, when describing large amplitude impulsive sounds of extremely short duration (such as a gunshot or explosive detonation), the total amount of acoustic energy created is an important consideration. Sounds of this nature are normally measured on the "C-weighted" scale, which gives nearly equal emphasis to sounds of most frequencies. Mid-range frequencies approximate the actual (unweighted) sound level, while the very low and very high frequency bands are significantly affected by C-weighting. When measured, these sounds are shown in terms of C-weighted decibels (dBC).

The duration of noise events and the number of times noise events occur are also important considerations in assessing noise impacts.

Noise Metrics and Analysis Thresholds

The word "metric" is used to describe a standard of measurement. Many different types of noise metrics are used in environmental noise analysis. Each metric has a different physical meaning or interpretation and each metric was developed by researchers attempting to represent the specific effects of environmental noise.

The metrics supporting the assessment of noise that would result from facility construction and from the conduct of the proposed EOD training activities at TA D-51 include both A- and C-weighted single event metrics and time-averaged cumulative metrics. Each metric represents a "tier" for quantifying the noise environment and is briefly discussed below.

Sound Pressure Level

The Sound Pressure Level (SPL) is the actual amount of acoustic energy created by the event. It represents the event's maximum, unweighted sound level. It is characterized as the maximum acoustic sound pressure in decibels (dBP). Impacts to people and animals from impulsive noise (e.g., a bomb explosion) are sometimes expressed in terms of dBP (U.S. Army Center for Health Promotion and Preventive Medicine, 2005).

Sound Exposure Level

The Sound Exposure Level (SEL) metric combines the intensity and duration of a noise event into a single measure. It is important to note, however, that SEL does not directly represent the sound level heard at any given time, but rather provides a measure of the total exposure of the entire event. Its value represents all of the acoustic energy associated with the event, as though it was present for one second. For sound events that last longer than one second, the SEL value will be greater than the maximum noise level created by the event. For sound events that last less than one second, the SEL value will be less than the maximum acoustic pressure (dBP). The duration of many impulsive sounds, such as gunfire, is significantly less than one second. When coupled with the extremely low frequencies associated with such sounds that are repressed on the C-weighted scale, the "sensed" or "perceived" sound may be 20 decibels (dB) or more below the

actual sound pressure level. Nevertheless, the SEL value is important because it is the value used to calculate other time-averaged noise metrics.

Time-Averaged Cumulative Day-Night Average Noise Metrics

The equivalent sound level (Leq) is a metric reflecting average continuous sound. The metric considers variations in sound magnitude over periods of time, sums them, and reflects, in a single value, the acoustic energy present during the time period considered. Common time periods for averaging are 1-, 8-, and 24-hour periods.

The Day-Night Average Sound Level (Ldn) also sums the individual noise events and averages the resulting level over a specified length of time. Normally, this is a 24-hour period (U.S. Army Center for Health Promotion and Preventive Medicine, 2005). Thus, like Leq, it is a composite metric representing the maximum noise levels, the duration of the events, and the number of events that occur. However, this metric also considers the time of day during which noise events occur. This metric adds 10 dB to those events that occur between 10:00 P.M. and 7:00 A.M. to account for the increased intrusiveness of noise events that occur at night when ambient noise levels are normally lower than during the daytime. It should be noted that if no noise events occur between 10:00 P.M. and 7:00 A.M., the value calculated for Ldn would be identical to that calculated for a 24-hour equivalent noise level [Leq(24)]. This cumulative metric does not represent the variations in the sound level heard. Nevertheless, it does provide an excellent measure for comparing environmental noise exposures when multiple noise events are being considered.

In this document, sound levels associated with proposed TA D-51 training activities are considered as 1- and 24-hour equivalent sound levels [Leq(1) and Leq(24)]. If applicable, the Ldn metric would be used in lieu of the Leq(24) metric. Average Sound Level metrics are the preferred noise metrics of the U.S. Department of Housing and Urban Development (HUD), the Department of Transportation (DOT), the Federal Aviation Administration (FAA), the U.S. Environmental Protection Agency (USEPA), and the Veteran's Administration (VA). Scientific studies and social surveys have found that Average Sound Level metrics are the best measure to assess levels of community annoyance associated with all types of environmental noise. Therefore, their use is endorsed by the scientific community and governmental agencies (American National Standards Institute [ANSI] 1980; USEPA, 1974; Federal Interagency Committee on Urban Noise [FICUN], 1980; Federal Interagency Committee on Noise [FICON], 1992; U.S. Army, 2001). In general, there are no recommended restrictions on any land uses at Ldn of 62 dBC or less (C-weighted).

3.4.2 Existing Conditions

The existing noise environment on TA D-51 is typical of a military base with sounds such as aircraft overflights, explosive noise from testing and training, and vehicle traffic. Non-military noise from local highways, commercial aircraft, and recreational users may be audible at TA D-51. Natural sounds contributing to the existing noise environment include wind, rain, thunder, and wildlife.

Training at TA D-51 dominates the noise environment of the test area with frequent detonations of various net explosive weights. The largest amount of explosive detonated is a 1.25-pound block of Composition 4 (C-4) explosive, which is equal in force to 1.46 lb of trinitrotoluene (TNT). Instructors and trainees detonate approximately 25 1.25-lb blocks of C-4 daily.

3.5 NATURAL RESOURCES

This section provides background information on natural resources that may be affected by the Proposed Action and Alternative. Eglin AFB natural resources include major ecological associations, wildlife, and threatened and endangered species. Emphasis is placed on threatened and endangered species that occur adjacent to TA D-51 and may be affected indirectly by the Proposed Action. There are no known threatened or endangered species within TA D-51. The potential for other wildlife such as black bears and other non-targeted species is considered possible but remote due to the level of noise and activity at TA D-51. In addition, although the area is not considered prime habitat for the eastern indigo snake and gopher tortoise, prior to any ground disturbance, biologists from the NRS would visit the site to assess whether eastern indigo snakes and gopher tortoises are present.

3.5.1 Definition of Resource

Ecological associations and the process for consulting on potential impacts to threatened and endangered species are defined in this section.

Ecological Associations

Eglin AFB uses a classification system of five ecological associations that were developed based on floral, faunal, and geophysical characteristics of land area on the range. The five ecological associations are the Sandhills, Wetlands/Riparian, Flatwoods, Barrier Island, and Grassland/Shrublands. A sixth category, Landscaped/Urban, is used to identify built up areas on the main base and other cantonment areas, and test areas. These ecological associations are described in the *Integrated Natural Resources Management Plan, Eglin AFB, 2007-2011* (U.S. Air Force, 2007) and the Environmental Baseline Study Resource Appendices, Volume 1 (U.S. Air Force, 2003).

Threatened and Endangered Species

An endangered species is one that is in danger of extinction throughout all or a significant portion of its range. A threatened species is any species that is likely to become endangered within the future throughout all or a significant portion of its range due to factors such as loss of habitat and anthropogenic effects. A candidate species is one for which the U.S. Fish and Wildlife Service (USFWS) has on file sufficient information on biological vulnerability to warrant a listing, but the listing is precluded at the present time. Once a species is legally protected, to "take" (import, export, kill, harm, harass, possess, or remove) protected animals from the wild without a permit is a federal offense. Federal candidate species should be given consideration during planning of projects, but have no protection under the Endangered Species Act. Similar regulations are in place for state-listed species (endangered, threatened, or species of special concern). While these state regulations do not apply on federal lands (U.S. Air Force,

2001), Eglin AFB will protect state species in accordance with management requirements addressed within Eglin AFB's Integrated Natural Resources Management Plan.

Under the Endangered Species Act of 1973, federal agencies must ensure that their actions (including permitting) do not jeopardize the continued existence of any endangered or threatened species or destroy or adversely modify the habitat of such species without a permit, and must set up a conservation program. A Section 7 consultation with USFWS would be required if a "take," which is defined as pursuing, molesting, or harming a protected species, were to occur. If the Proposed Action were likely to adversely affect a federally protected species, USFWS would determine whether jeopardy or no jeopardy to the species population would occur. As a result, Air Force projects that may affect, either directly or indirectly, federally protected species, species proposed for federal listing, or critical habitat for protected species are subject to Sections 7 and 10 of the Endangered Species Act prior to the irreversible or irretrievable commitment of resources (U.S. Air Force, 2003). Eglin AFB has developed an overall goal within the Integrated Natural Resources Management Plan to continue to protect and maintain populations of native threatened and endangered plant and animal species within the guidelines of ecosystem management (U.S. Air Force, 2007).

3.5.2 Existing Conditions

Ecological Associations

The area along the northern boundary of TA D-51 is primarily sand pine (Sandhills association); the remaining area is Wetland/Riparian. The Open Grassland/Shrubland association dominates the area within the TA D-51 boundary.

Open Grassland/Shrubland

The Open Grasslands/Shrublands ecological association occurs predominantly within the test areas on Eglin AFB, being relatively uncommon within the interstitial areas. Typical vegetation in this association consists of native grasses such as switchgrass, broomsedge, big bluestems, yellow Indian grass, purple lovegrass, and various forbs. This habitat on test areas is maintained with machinery or fire that removes or prevents future growth. The Open Grassland/Shrubland areas of TA D-51 were at one time part of the Sandhills ecological association with a predominance of the Sand Pine Ecosystem. Conversion to Open Grassland/Shrubland is a result of vegetative maintenance that occurred when the test area was created. Vegetative maintenance is no longer practiced at TA D-51, and regrowth of sand pines is occurring in many areas, including the proposed facility location.

Wetland/Riparian

Approximately 60,809 acres of wetlands exist on Eglin AFB, with approximately 1,158 miles of streams/riparian areas. Several categories and natural community types make up the many Wetland/Riparian areas located on the Eglin Range but only one category, seepage stream, is especially pertinent to the Proposed Action. Smith Branch is a type of seepage stream known as a steephead. It is located about 200 meters north of the proposed facility location. Additional discussion on wetlands may be found in Section 3.1, Water Resources.

Steephead seepage streams are formed when water seeping from a slope creates a slump in the hillside. Seepage streams originate from shallow groundwaters that have percolated through deep, sandy, upland soils. They are clear to lightly colored, relatively short, shallow, and narrow. Water temperatures stay around 70 degrees Fahrenheit. In shaded areas, filamentous green algae often grow within the stream. Mosses, ferns, and liverworts grow in clumps at the water's edge. Narrow bands of spatterdocks, golden club, spike-rush, pondweed, and tapegrass grow in sunny areas. The Okaloosa darter, a federally endangered fish, inhabits the seepage stream adjacent to TA D-51. Rare plant species in seepage streams include water sundew, white-topped pitcher plant, sweet pitcher plant, spoon flower, and panhandle lily.

Sandhills

The Sandhills is the largest ecological association on Eglin AFB, covering 78 percent of the range. The Sandhills vegetative community represents the majority of this association, and includes the Sand Pine ecosystem, which covers 3 percent of the range, and the Pine/Mixed Hardwood ecosystem, which covers approximately 10,000 acres of the range. The Sandhills association contains the oldest natural sand pine on the Eglin Range. The Sand Pine ecosystem is the result of the encroachment of sand pine into other forest ecosystems. TA D-51 is surrounded largely by the Sand Pine ecosystem.

Threatened and Endangered Species

Okaloosa Darter (Etheostoma okaloosae)

The Okaloosa darter, first listed as federally endangered in the Federal Register, June 4, 1973, is found in six small Choctawhatchee Bay Basin tributaries on the Eglin Range, including Smith Branch which is located adjacent to TA D-51 (Figure 3-4). This species is also listed as endangered by the state of Florida.

The Okaloosa darter habitat is sensitive to a variety of disturbances. Erosion can increase siltation and imperil the darter's habitat. Its range has also been reduced by habitat modification and encroachment by the brown darter. In order to protect the Okaloosa darter, the quantity and quality of water in the streams must be protected. Principal factors in the initial listing of the darter were the amount of its habitat degraded by road and dam construction, as well as siltation from land clearing (USFWS, 1998).

In 1981 USFWS, in cooperation with Eglin AFB Natural Resources, developed the first Okaloosa Darter Recovery Plan. This plan was later revised in 1998. One objective in the recovery plan is to improve riparian habitat by reducing sedimentation through closure and rehabilitation of inactive borrow pits and nonpoint source pollution sites such as roadways or right of ways. The goals of this effort are to (1) stabilize and increase the Okaloosa darter population, (2) significantly reduce erosion from degrading Okaloosa darter habitat, and (3) identify and modify road culverts that have resulted in stream gradients detrimental to Okaloosa darters. Eglin AFB Natural Resources identified 37 borrow pits and 235 nonpoint source pollution sites, totaling 528 acres with soil loss estimated at 66,000 tons per year, that impacted Okaloosa darter watersheds.

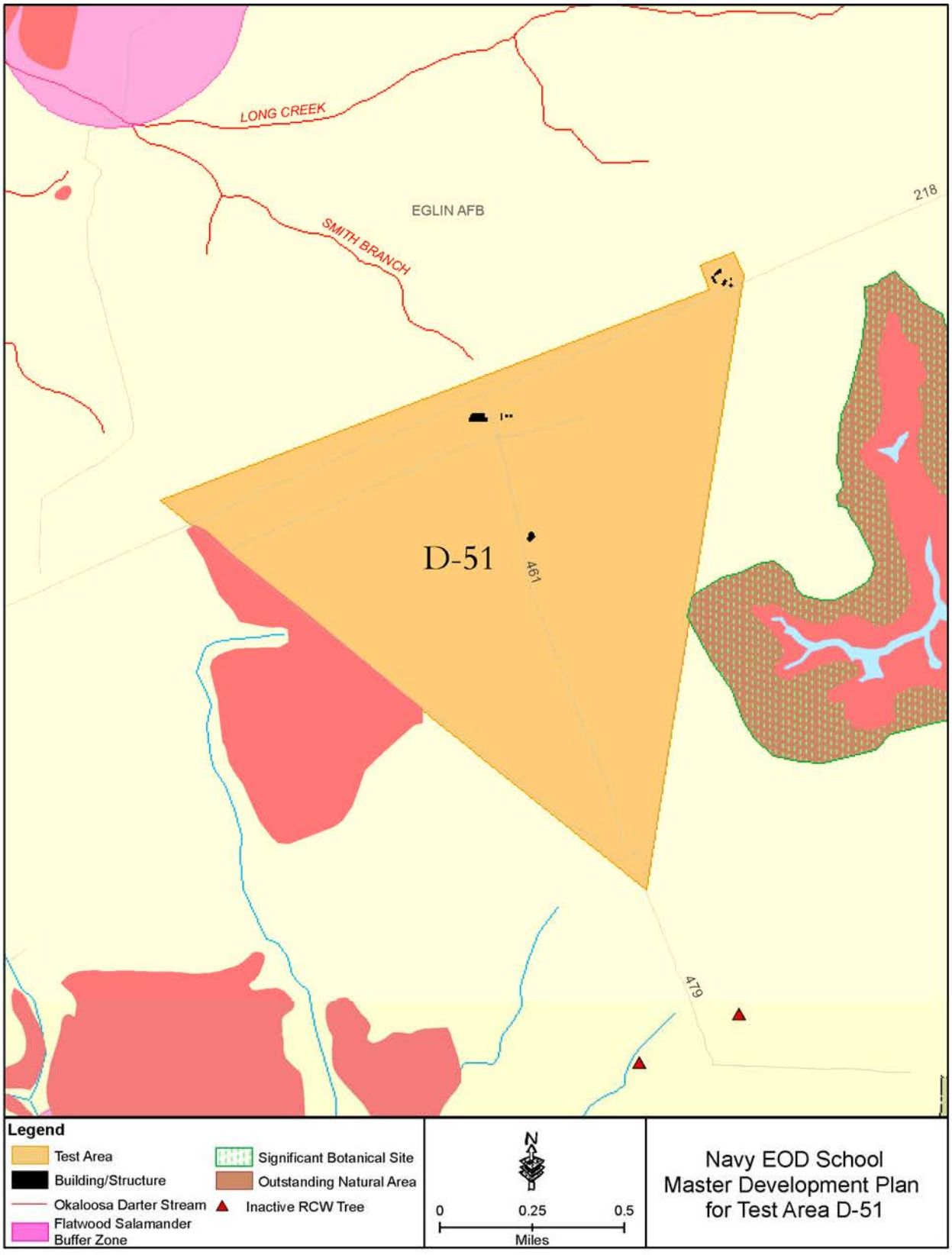

Figure 3-4. Natural Resources at Test Area D-51

Important seasons to consider are March to October when this species spawns, with the greatest amount of activity taking place during April. The spawning occurs in beds of clean, current swept macrophytes (large aquatic plants). Each spawning act results in the release of a single egg. Little is known of the development of the darter afterwards

Gopher Tortoise (Gopherus polyphemus)

The gopher tortoise is a state-listed species of special concern in Florida and has been proposed for listing as a federally threatened species. Destruction of natural habitat is the biggest threat to the gopher tortoise (USFWS, 2007). The tortoise is found primarily within Sandhills or Open Grassland/Shrubland associations, where it excavates a tunnel-like burrow for shelter from climatic extremes and refuge from predators (Gopher Tortoise Council, 2007). The primary features of good tortoise habitat are sandy soils, open canopy with plenty of sunlight, and abundant food plants (forbs and grasses) (Gopher Tortoise Council, 2007).

Eastern Indigo Snake (Drymarchon corais couperi)

The federally listed (threatened) eastern indigo snake is a large but very docile and nonvenomous snake which can grow up to 125 inches in length. It is carnivorous and will eat any animal up to about the size of a squirrel. The eastern indigo snake is strongly associated with gopher tortoise burrows, using abandoned burrows in winter and spring for egg laying, shedding, and protection from dehydration and temperature extremes. During warmer months the snake will greatly expand its home range, frequenting streams, swamps and occasionally flatwoods. This species decline is attributed to habitat loss and fragmentation plus over collection for the pet trade. Management and recovery of the eastern indigo snake is closely linked to the gopher tortoise.

3.6 CULTURAL RESOURCES

As a federal agency, Eglin AFB is legally required to consider the effects its actions may have on historic properties existing on the Eglin range complex. This includes all properties being utilized by other federal agencies such as the Navy, in this case. These requirements are considered under Air Force Instruction (AFI) 32-7065 (U.S. Air Force, 2004a). Mandating federal regulations are the Antiquities Act of 1906, the Historic Sites Act of 1935, the National Environmental Policy Act (NEPA) of 1969, the NHPA of 1966 as amended, 36 CFR Part 800, the Archaeological and Historic Preservation Act of 1974 (AHPA), the Archaeological Resources Protection Act of 1979 (ARPA), the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA), and the American Indian Religious Freedom Act (AIRFA). The act that has the most influence on cultural resources management at Eglin AFB is the NHPA (U.S. Air Force, 2004a).

The NHPA of 1966 was enacted to set federal policy for managing and protecting significant historic properties. Federal agencies must identify historic properties and consult with the Advisory Council on Historic Preservation and State Historic Preservation Office (SHPO) (U.S. Air Force, 2004a). Section 106 of the NHPA requires that federal agencies analyze the impacts of federal activities on historic properties, or cultural resources included in, or eligible for inclusion in, the National Register of Historic Places (NRHP).

3.6.1 Definition of Resource

Cultural resources consist of prehistoric and historic districts, sites, structures, artifacts, and any other physical evidence of human activity considered relevant to a culture or community for scientific, traditional, religious, or other reasons. They include archaeological resources (both prehistoric and historic), historic architectural resources, and American Indian sacred sites and traditional cultural properties. Historic properties (as defined in 36 CFR 60.4) are significant archaeological, architectural, or traditional resources that are defined as either eligible or ineligible for listing in the National Register. Under the NHPA, Eglin AFB is required to consider the effects of its undertakings on historic properties listed or eligible for listing in the National Register. NHPA obligations for a federal agency are independent from NEPA and must be complied with even when an environmental document is not required. When both are required, Eglin AFB coordinates NEPA compliance with their NHPA responsibilities to ensure that historic properties are given adequate consideration in the preparation of environmental documents such as EAs and EISs. In accordance with AFI 32-7065 Sections 3.3.1 and 3.3.2, and 36 CFR 800.8, Eglin AFB has incorporated NHPA Section 106 review into the NEPA process.

3.6.2 Existing Conditions

No archaeological resources have been surveyed and recorded at TA D-51. There are two prehistoric sites within 500 meters of the outer boundaries of D-51 however, neither of these are eligible for listing on the NRHP and would not be impacted by the Proposed Action or Alternatives. Less than half of TA D-51 has been surveyed to date. The remaining area is not recommended for additional survey because of the low probability for cultural resources, combined with contamination and safety concerns. No additional archaeological survey or evaluation would be required prior to development.

If any cultural resources or human remains are uncovered during construction or training activities, all actions in the immediate vicinity would cease to protect the find from further impact. The Base Historic Preservation Office (BHPO) and Eglin AFB Cultural Resources Branch would be immediately contacted and would subsequently assess the find and determine what legal mandates apply.

3.7 LAND USE

Air Force Instruction (AFI) 32-7062, dated October 1997, implements Air Force Policy Directive (AFPD) 32-70, *Environmental Quality*, by establishing the *Air Force Comprehensive Planning Program* for development of Air Force installations. It contains responsibilities and requirements for comprehensive planning and describes procedures for developing, implementing, and maintaining the *General Plan* within the installation *Comprehensive Plan*. This AFI specifies requirements for *General Plan* submittals; provides minimum level of mapping details for *General Plans;* provides map and graphic layers for *Comprehensive Plans;* identifies proponents for plan products, and provides guidance and references on site planning explosives facilities. It also provides broad flexibility on how base comprehensive plans are developed and maintained.

The Air Armament Center (AAC) Executive Council is the senior planning body of Eglin AFB, chaired by the AAC Commander. The Council reviews all development plans for the range and Eglin Main Base semi-annually and provides corporate direction as key decisions are required to adjust approved plans. The RDESC is the senior planning body for the Test Wing that approves and gives strategic direction to range planning. It is composed of the Test Wing Commander, with senior technical leaders and representatives from Eglin AFB organizations that provide range support. Various Standing and/or Ad Hoc Test Wing Committees are also directed by the RDESC.

3.7.1 Definition of Resource

TA D-51 is located on the southeastern portion of Eglin AFB, approximately 15 miles from Eglin Main Base and is currently used as an active Navy and Joint Forces EOD Classroom and Practical Training area. The TA D-51 complex consists of classroom facilities, administrative and maintenance areas and practical training ranges.

3.7.2 Existing Conditions

The Master Plan classifies the area within TA D-51 into land use types based on current usage. These land uses includes the "built" environment such as administrative or mission-related areas, and natural land uses such as wetland or undeveloped areas. The current identified land use categories for TA D-51 are presented below in Table 3-1 (see also Figure 2-1).

Table 3-1. Test Area D-51 Current Land Use Categories

Land Use Category	Definition
Developed	Containing administrative and instructional facilities, the facilities maintenance compound, and parking lots.
Undeveloped	Currently open, green space, or forested areas.
Practical – explosive	Areas within which mission activities utilize live munitions; included within the designated quantity distance (Q-D) arc.
Practical – non-explosive	Areas within which mission activities do not utilize live munitions.
Industrial	Storage areas for targets and other miscellaneous equipment; referred to as the "bone-yard."
Seasonally wet area	Area subject to water inundation depending on rainfall; unsuitable for development.
Jurisdictional wetland	Area containing some combination of hydrophytic plants, hydric soils, and hydrology that is saturated with water or covered by shallow water during the growing season creating wetland conditions; unsuitable for development.
Transportation corridor	Public roads and range roads.
Utility corridor	Areas within which electrical, natural gas, communication, water, and wastewater lines are located.

Future land use on TA D-51 is based on the same land use classification used to define current land use with two exceptions. These exceptions account for the proposed permanent international training facility and practical areas proposed in the Master Plan (Table 3-2). The designation of future land use within TA D-51 guides development within a planned design of

how the test area can best provide facilities, practical areas, and infrastructure while avoiding conflicts with explosive safety buffers or environmentally sensitive areas such as wetlands.

Table 3-2. Test Area D-51 New Future Land Use Categories

Land Use Category	Definition
Practical – foreign explosive	Area within the International Training Facility at which mission activities would utilize live munitions. Included within the designated Q-D Arc.
Practical – foreign non-explosive	Area within the International Training Facility at which mission activities would not utilize live munitions.

Q-D = quantity distance

3.7.3 Utilities

The wastewater from the facilities at TA D-51 is currently handled by a local septic tank system. These systems are discussed in detail under the utilities section of this document (Section 3.2).

Potable water is brought into the buildings via two existing wells and pressurized via a 150,000-gallon water tower. These sources also provide the required fire suppression capabilities for the test area. Water sources and requirements are discussed in detail under Sections 3.1 and 3.2 of this document.

Electrical, communications and natural gas utilities are also present and functional within TA D-51 and are discussed in detail within Section 3.2 of this document.

3.8 AIR QUALITY

Identifying the affected area for an air quality assessment requires knowledge of sources of air emissions, pollutant types, emission rates and release parameters, proximity to other emissions sources and local conditions. Refer to Appendix C, Air Quality, for review of air quality and associated methodologies used for emissions calculations.

3.8.1 Definition of Resource

Air quality is determined by the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin and the prevailing meteorological conditions. The levels of pollutants are generally expressed on a concentration basis in units of part per million (ppm) or micrograms per cubic meter ($\mu g/m^3$). For this air quality analysis, the Region of Influence (ROI) centers on Walton County for both the proposed action and alternative.

Air quality is described by the atmospheric concentration of six pollutants: ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter equal to or less than 10 microns in diameter (PM_{10}), and lead (Pb).

The baseline standards for pollutant concentrations are the National Ambient Air Quality Standards (NAAQS) and state air quality standards. These standards represent the maximum allowable atmospheric concentration that may occur and still protect public health and welfare. Further discussion of the NAAQS and state air quality standards are included in Appendix C.

For analysis purposes the emissions from the proposed action will be compared to the Walton County emissions obtained from the U.S. Environmental Protection Agency's 2002 National Emissions Inventory (NEI), which are presented in Table 3-3, Baseline Emissions Inventory for Walton County, Florida. The county data includes emissions data from point sources, area sources, and mobile sources. *Point sources* are stationary sources that can be identified by name and location. *Area sources* are point sources whose emissions are too small to track individually, such as a home or small office building or a diffuse stationary source, such as wildfires or agricultural tilling. *Mobile sources* are any kind of vehicle or equipment with gasoline or diesel engine, an airplane, or a ship. Two types of mobile sources are considered on-road and non-road. On-road consists of vehicles such as cars, light trucks, heavy trucks, buses, engines, and motorcycles. Non-road sources are aircraft, locomotives, diesel and gasoline boats and ships, personal watercraft, lawn and garden equipment, agricultural and construction equipment, and recreational vehicles (USEPA, 2005).

3.8.2 Existing Conditions

Eglin AFB is located within the Mobile (Alabama) - Pensacola - Panama City (Florida) – Southern Mississippi Interstate Air Quality Control Region (federal AQCR 5). In Florida, AQCR 5 consists of the territorial area encompassed by the boundaries of the following jurisdictions: Bay County, Calhoun County, Escambia County, Gulf County, Holmes County, Jackson County, Okaloosa County, Santa Rosa County, Walton County, and Washington County. The EPA has classified all counties in AQCR 5 as attainment for all criteria pollutants. Walton County, as part of the AQCR 5, is classified as attainment for all criteria pollutants.

An attainment area is an area considered to have air quality as good as or better than the national ambient air quality standards as defined in the CAA. An area may be an attainment area for one pollutant and a non-attainment area for others. Therefore, Walton County is in attainment for all criteria pollutants

D-51 is located in Walton County and this analysis will compare project emissions against. Baseline emissions for Walton County are outlined in Table 3-3, Baseline Emissions Inventory for Walton County Emissions. Eglin AFB baseline emissions are summarized in Table 3-4, Eglin AFB Calendar Year (CY) 2006 Emissions.

Table 3-3. Baseline Emissions Inventory for Walton County, Florida

Source Type	Emissions (Tons/yr)				
	CO	NO_x	PM_{10}	SO_x	VOC
Area Sources	1,060.03	76.56	7,380.69	20.64	1,515.16
Non-Road Mobile	8,892.45	740.94	208.40	67.44	1,675.32
On-Road Mobile	23,915.43	3,849.43	189.94	153.35	1,671.01
Point Sources	24.84	14.39	5.79	4.31	28.25
Total	**33,892.75**	**4,681.32**	**7,784.82**	**245.73**	**4,889.75**

Source: USEPA, 2002a

CO = Carbon Monoxide; NO_x= Nitrogen Oxides; PM_{10} = Particulate Matter with a diameter $\leq$ 10 microns; SO_x = Sulfur Oxides; VOC = volatile organic compounds

Table 3-4. Eglin AFB Calendar Year 2006 Emissions

Emissions	Emissions (Tons/yr)				
	CO	**NO_x**	**PM_{10}**	**SO_2**	**VOC**
--Stationary Sources[1]	64.0	77.6	229.6	4.8	141.5
--Mobile Sources[2]	975.5	131.6	92.7	9.5	75.7
Total	**1039.5**	**209.2**	**322.3**	**14.3**	**217.2**

1. Source: U.S. Air Force, 2007c
2. Source: U.S. Air Force, 2007b

CO = Carbon Monoxide; NO_x= Nitrogen Oxides; PM_{10} = Particulate Matter with a diameter $\leq$ 10 microns; SO_2 = Sulfur Dioxide; VOC = volatile organic compounds

4. ENVIRONMENTAL CONSEQUENCES

4.1 WATER RESOURCES

The Proposed Action has the potential to affect water resources. This analysis focuses on possible direct or indirect (secondary) effects to water resources due to construction and everyday operation of the proposed training facilities.

Potential impacts associated with water quality are related to the potential for increased rate and volume of stormwater runoff, increased amounts of sediment and pollutant runoff during construction, and stormwater runoff from everyday operations of the training facility at the proposed location. Additionally, this section examines the effects on groundwater in regards to increased potable water consumption due to the proposed expanded use of TA D-51.

4.1.1 Proposed Action (Preferred Alternative)

Groundwater

The Proposed Action would utilize the current water well on TA D-51 in addition to the existing water well and water tower at TA C-1. The well at TA C-1 does not currently have a CUP (Ebel, 2007a). However, the current CUP for the TA D-51 well would cover the TA C-1 well and the consumption levels that would need to drawn from both wells. A Public Water System Permit would be required for the proposed increased usage of the well on TA C-1 (Ebel, 2007a).

Groundwater withdrawals from the Floridan aquifer in the region have caused saltwater intrusion in the aquifer's potable water zone (Northwest Florida Water Management District [NWFWMD], 2006). Sustainability model results developed by HydroGeologic, Inc. for the NWFWMD found that "a moderate but reduced degree of groundwater pumpage can be sustained in the coastal areas" of Santa Rosa, Okaloosa, and Walton counties (NWFWMD, 2006 and HydroGeologic, Inc., 2005). However, it was determined when the CUP for the TA D-51 well was granted that water consumption up to the permit limits would not cause significant adverse impacts to the Floridan Aquifer or nearby users.

In accordance with the Florida Water Conservation Act (Florida Statutes 553.14), the proposed construction at TA D-51 would incorporate water conservation measures to the greatest extent possible. Landscaping would consist of native, drought-tolerant vegetation to reduce water use. Any plans involving irrigation would be coordinated through Eglin AFB's Environmental Engineering Section (96 CEG/CEVCE) prior to implementation. These efforts would protect the Eglin AFB water supply by reducing consumptive uses of water withdrawn from the Floridan aquifer (U.S. Air Force, 2001a).

Given that water consumption would stay within the current CUP limits and with the utilization of current Eglin water conservation programs, no significant impacts to groundwater resources are expected.

Surface Water

There are no surfaces waters within the TA D-51 boundary. The nearest surface water (Smith Branch) is about 210 feet away and is additionally separated from the TA D-51 boundary by Range Road 218. Potential impacts to surface waters would come from stormwater runoff due to land clearing, construction activities, and the addition of impermeable surfaces. However, it would be unlikely that stormwater runoff from activities on TA D-51 would enter any surface waters due to the topography (relatively flat), soil characteristics (highly permeable) and distance of TA D-51 to the nearest stream. Therefore, no significant impacts to surface waters as a result of the Proposed Action are expected.

Wetlands

The Proposed Action would not affect wetlands. No wetlands occur within the proposed project sites. Wetlands associated with Smith Branch (located just outside of the TA D-51 border) and the small wetland area within the southwest boundary of TA D-51 would not be directly impacted by the Proposed Action. Any secondary (indirect) impacts from land clearing, construction activities, and increases in impervious areas related to the Proposed Action would be unlikely given the area topography and soil characteristics, as well as the distance of the construction/land disturbing sites from wetlands. If upon site and construction design inspection it is determined that stormwater runoff would potentially impact wetlands, adherence to the BMPs and permitting requirements identified in Chapter 5 would help to avoid/minimize any secondary (indirect) impacts to wetlands. Thus, given the distance of wetlands from the Proposed Action construction/land disturbing sites, the flat area topography, and soil characteristics, the Proposed Action is not expected to significantly impact wetlands.

Floodplains

No floodplains exist within TA D-51; therefore, no direct impacts to floodplains would occur due to implementation of the Proposed Action. Potential indirect impacts and actions are the same as described in the Wetlands section above; therefore the Proposed Action is not expected to significantly impact floodplains.

The Coastal Zone

This construction project requires consistency with Florida's CZMA. The FDEP will review a U.S. Air Force submitted consistency determination (Appendix C).

Stormwater

Stormwater would increase but would be managed by implementing BMPs. The addition of new impervious surface or land clearing activities would increase the rate and volume of stormwater runoff (FDEP, 2002). The discharge of untreated stormwater can potentially become a source of pollution to nearby water bodies and therefore would be subject to FDEP regulations. Stormwater runoff from areas located near surface waters has the potential to adversely impact water quality. In addition, landclearing operations and the use of construction-related vehicles may exacerbate soil erosion. However, stormwater runoff pollution from the Proposed Action is

not expected due to the area topography, soil characteristics, and the distance of TA D-51 from surface waters, wetlands, and floodplains.

If site and construction design found stormwater runoff into water resources to be a concern, applicable permitting requirements would be satisfied in accordance with FAC Rule 62-346 and the NPDES. The proponent and any contractors would adhere to all applicable regulatory requirements, which would serve to either offset or minimize any potential impacts from construction operations. The proponent would coordinate with 96 CEG/CEVCE to submit a Notice of Intent to Use the Generic Permit for Stormwater Discharge under the NPDES program prior to project initiation according to Florida Statute Section 403.0885.

Construction activities would also require coverage under the Generic Permit for Stormwater Discharge, where 1 or more acres of land are disturbed (FAC Rule 62-621) if determined necessary after site and construction design inspection. Under this permit, the proponent would incorporate a comprehensive SWPPP into the final design plan. Stormwater permits and any necessary utility extension permits would require coordination between the proponent and 96 CEG/CEVCE. The proponent would obtain all appropriate permits prior to the commencement of any ground-disturbing activities.

Due to site topography, soil characteristics, and distance of the Proposed Action to water resources, adverse impacts are not expected. However, if it is determined upon site and construction design inspection that stormwater runoff would enter a water resource, then the permits and their associated requirements would prevent water resource pollution from stormwater runoff. Therefore, no significant impacts to water resources from stormwater run-off are expected.

4.1.2 Alternative 1

Groundwater

Alternative 1 would include the construction of a new well and utilize the current water well and storage tank on TA D-51. The CUP for the current TA D-51 well would cover the new well and the consumption levels that would need to drawn from both wells. Impacts to groundwater resources would be identical to the Proposed Action except for the installation of additional septic systems.

The lack of a sanitary sewer system at this location would require the construction of additional septic systems. A registered septic tank contractor would perform all site evaluation, construction and maintenance on these systems, in accordance with Chapter 64E-6, FAC (2004). Chapter 64E-6 specifies standards of construction and site location designed to ensure the protection of groundwater from septic systems. The leach field associated with the proposed septic system would be placed in an area away from the existing water well. Furthermore, this leach field would be downgradient from the facilities and training areas. Design plans would be coordinated with 96 CEG/CEVCE. Therefore, the installation of additional septic systems on TA D-51 under Alternative 1 would not adversely affect groundwater.

As in the Proposed Action, no significant impacts to groundwater resources are expected given that water consumption stays within the current CUP limits and current Eglin water conservation programs are utilized.

Surface Water

Construction would be the same as in the Preferred Alternative. New septic tanks and leach fields would require a buffer of 75 feet (as required by law) to prevent water quality impacts to surface waters (Florida Administrative Code [FAC], 2004). Installation and maintenance of this system would occur in accordance with Chapter 64E-6, FAC (2004), which was written to prevent impacts to domestic water supply, ground water and surface water. Therefore, as in the Preferred Alternative, given site characteristics and with adherence to applicable permits, no significant impacts to surface waters are expected.

Wetlands

Impacts under Alternative 1 would be identical to the Proposed Action. Therefore, no significant impacts to wetlands are expected

Floodplains

The Alternative 1 impacts would be the same as those in the Proposed Action. Therefore, no significant impacts to floodplains are expected from Alternative 1 activities.

The Coastal Zone

This construction project requires consistency with Florida's CZMA. The FDEP will review a U.S. Air Force submitted consistency determination (Appendix C).

Stormwater

Stormwater effects for Alternative 1 would be the same as described in the Proposed Action. Therefore, no significant impacts to water resources due to stormwater run-off are expected.

4.1.3 No Action Alternative

Under the No Action Alternative, the TA D-51 Master Plan would not be implemented. Therefore, no adverse impacts to water resources would occur.

4.2 UTILITIES AND INFRASTRUCTURE

4.2.1 Proposed Action (Preferred Alternative)

Electricity

Under the Preferred Alternative an increase in electricity consumption would be associated with the additional facilities. The total building area associated with the Preferred Alternative is unknown. In order to estimate the potential impact to electricity consumption, the evaluation

assumes a total new construction square footage of approximately 80,000 ft^2. The estimated electrical service necessary to support the future facilities is between 1,576,000 and 1,800,000 kWh based on the CBECS factor and the existing usage, respectively. The increased use would be approximately 54 percent above the current usage. Utilizing the U.S. Army Corps of Engineers recommended demand factor of 2 – 5 kilowatts (kW)/ 1,000 ft^2 for Air Force training operations, the maximum demand for the new construction would be between 160 and 400 kW (USACE, 1995). While the potential electrical increase is anticipated to be accommodated by CHELCO, the additional demand on the system within the Eglin range area is expected to result in additional repair services necessary to maintain electricity to the area. With TA D-51 as the first site along the radial line, an increase in demand and potential increase in service disruptions due to repairs may ultimately have larger impacts to additional range areas also served by the radial line.

Natural Gas

Assuming a total new construction square footage of approximately 80,000 ft^2, the estimated natural gas service necessary to support the future facilities is between 2.5 and 3.84 million cubic feet based on the CBECS factor and the existing usage, respectively. The increased use would be approximately 50 percent. Okaloosa Gas is able to accommodate increases in demand by altering supply, including increasing the supply line pipe size when necessary. No identified deficiencies in the current natural gas supply distribution have been identified. While the anticipated increase in natural gas would occur with the future facilities, no upgrades to the system were identified by Okaloosa Gas as necessary (Clark, 2007).

Communication

Communication lines that provide telephone and LAN connectivity would be necessary for the temporary trailers and the permanent facilities. Supplying the proposed permanent facilities will require expanding the communication lines along the eastern boundary of TA D-51. Continuing to upgrade the communication lines to fiber optic would be advantageous for the permanent facilities.

The increase in number of students will require additional radio channels for each of the two new student divisions. Eglin AFB is procuring 10 new repeater channel systems to be added to the Eglin AFB trunking system (currently utilized by the NAVSCOLEOD) by the end of FY 2008 or early FY 2009. To expand the radio capacity needed to accommodate the new divisions, NAVSCOLEOD can use a new network for each division to communicate internally and a common network to talk to a central point for safety, weather, or other common information (Giangrosso, 2007). A spectrum analysis may be required, depending on the final number of new channels needed by the NAVSCOLEOD. Close and timely coordination with the Eglin AFB Spectrum Management Office is vital to ensuring the network support required for the increase in students.

Water

Assuming the water usage rate would be the same for future operations, the 685 average increase in daily personnel would result in the estimated increase in consumption of approximately 6,234 gallons per day or a total consumption of nearly 14,900 gallons per day. In addition to the

potable water demand, water would need to be available for fire suppression (both hose demand and sprinkler systems). The water demand required for sprinkler protection depends upon occupancy, discharge density, design area, type of sprinkler, type of construction, and other building features (DoD, 2006). New sprinkler systems that service areas greater than 1,500 ft^2 must be designed using hydraulic calculations. Additionally, the required system pressures must be determined using hydraulic calculations (including pipe friction losses and equivalent lengths of pipe for fittings and valves). The required discharge densities and areas of discharge can be determined for sprinkler system and water supply design requirements for sprinklered facilities within certain occupancy classifications (Table 4-1).

Table 4-1. Sprinkler System and Water Supply Design Requirements for Sprinklered Facilities

Occupancy Classification[1]	Sprinkler System		Hose Stream Allowance (gpm)	Duration of Supply (minutes)
	Design Density (gpm/ft^2)	Design Area (ft^2)		
Light Hazard	0.10	3,000	250	60
Ordinary Hazard Group 1	0.15	3,000	500	60
Ordinary Hazard Group 2	0.20	3,000	500	90
Extra Hazard Group 1	0.30	3,000	750	120
Extra Hazard Group 2	0.40	3,000	750	120

Source: DoD, 2006

gpm/ft^2 = gallons per minute per square foot; ft^2 = square foot; gpm = gallons per minute

1. Light Hazard – small, scattered amounts of flammable liquids in closed containers not exceeding five gallons per fire area;
   Ordinary Hazard Group 1 – modest, scattered amounts of flammable liquids in closed containers are allowable in quantities not to exceed 20 gallons per fire area;
   Ordinary Hazard Group 2 – moderate, scattered amounts of flammable liquids in closed containers are allowable in quantities not to exceed 50 gallons per fire area;
   Extra Hazard Groups/Special – Areas with special protection requirements such as aircraft hangars, engine test cells, and ordnance plants.

It is not known whether future construction efforts would require hydraulic calculations for the specific design specifications. If fire suppression to the largest known building is used for estimation purposes, the design value for light hazard occupancy yields an estimated total demand (sprinkler system plus hose stream) of approximately 373,400 gallons. Distribution systems need to be sized to accommodate fire flows plus domestic demand that cannot be restricted during fires. Typical distribution systems require the presence of a loop that would provide at least 50 percent of the required fire flow in case of a single break or treated water storage capacity adequate to supply domestic demand for 24 hours, plus the maximum required fire flow demand. With an existing above-ground storage tank of 150,000 gallons, an anticipated domestic demand of nearly 14,900 gallons per day, and a pump rate of 72,000 gallons per day, the existing storage capacity and distribution system would not meet the duration/supply design requirements based on preliminary estimations. The addition of the well and water storage tower at TA C-1 would not meet the estimated fire suppression demands without an additional water storage tank. Sufficient water storage would need to be available in order to maintain both fire suppression and potable water demands.

Wastewater

As with the water usage rate, the planned future facilities would increase the wastewater flow. Assuming the water usage rate would be the same for future operations, the average increase in daily personnel of 685 would result in the estimated increase in wastewater generation between

3,836 and 10,275 gallons per day based on the existing usage and the EPA factor, respectively. The corresponding total generation would be between 9,167 and 24,555 gallons per day.

Under the Preferred Alternative, wastewater treatment would be handled by connecting to the sewer lines currently served by the Okaloosa County Water and Sewer Department. The NVOC Regional Wastewater Treatment Plant is currently serving the area near TA D-51 and will increase wastewater treatment capacity in the area within the next two years. Even with the existing wastewater treatment facility, the additional wastewater flow from TA D-51 could be accommodated within the existing infrastructure (Mauzy, 2007).

4.2.2 Alternative 1

Under Alternative 1, the electricity and natural gas consumption would be the same as under the Preferred Alternative. In addition, the demands on communication would be the same. Water and wastewater systems would be different.

Water

Under Alternative 1, the increased water demand would be managed with an additional well. The potable water demand increase would amount to less than 21 percent of the existing maximum pump capacity; however, the documented problems associated with the pressure necessary to supply water to each facility would remain and perhaps become amplified. An additional well would relieve the demand on the existing well. The additional well would not be able to meet the potential increased fire suppression demand without an additional storage tank. The necessary storage tank size would be dependent on the square footage of the new facilities. Using the estimates for the Preferred Alternative, the additional storage tank would need to be approximately 150,000 gallons.

Wastewater

Under Alternative 1, the increased wastewater flow would be managed by additional septic systems. These septic systems would need to be designed and included in the structure site planning to accommodate the anticipated usage and flow. Florida statutes limit the placement of septic systems to not closer than 200 feet from a public potable well serving a population with a sewage flow of more than 2,000 gallons per day (100 feet from a population with less than 2,000 gallons per day sewage flow). These placement limitations when combined with high density building construction can limit the effective use of septic systems. In addition, septic system placement is dictated by soil conditions including slope and permeability. These factors combine to influence the size of the tank and the necessary drain field elevation and size.

4.2.3 No Action Alternative

Under the No Action Alternative, neither new structures nor training areas would be constructed. Additional demand on the existing infrastructure would occur and the existing well/pump, which is over 20 years old, would likely lead to increased maintenance on the pump. In addition, deficiencies in the existing water system noted in Section 3.2.2.4 would remain.

4.3 TOPOGRAPHY AND SOILS

4.3.1 Proposed Action (Preferred Alternative)

The Proposed Action would not adversely impact soil resources. The permeable Lakeland soils and relatively flat terrain at the project site minimize potential erosion. Minimal impacts would result from landscape disturbance and training activity. Soil excavations, removal of vegetation, grading, and construction activities would occur primarily over the northern portion of the TA D-51 area. These activities would have the potential to disturb soil stability and increase the susceptibility of soil particles to suspension and transport by wind and water. The distance of the proposed NAVSCOLEOD development projects from waterways inside and near the project area further minimize the potential for the sedimentation of area streams.

The surface disturbances associated with the proposed NAVSCOLEOD training area activities were determined to be negligible to minor, since land clearing and site preparation would follow BMPs as discussed in Chapter 5.

Training is an ongoing activity and occurs in an area designated and already being used for that purpose. Apparent land disturbances that may occur would be limited to locating fragmentation pits and small shed-like structures for training purposes and would be transitory in nature. Small areas adjacent to training structures may remain in a state of disturbance caused by foot traffic and the use of small explosive shots; however, natural areas disturbed during training structure transport and placement would likely return to a natural state within one year.

4.3.2 Alternative 1

No appreciable difference in the level of ground disturbance or geographic location would occur between both the Alternative and Proposed Actions. As a result, the Alternative Action would not adversely impact soil resources.

4.3.3 No Action Alternative

Under the No Action Alternative, neither new structures nor training areas would be constructed. No impacts to soils would occur as a result of this alternative.

4.4 NOISE

Concerns regarding noise relate to certain potential impacts such as hearing loss, non-auditory health effects, annoyance, speech interference, sleep interference, and effects on domestic animals, wildlife, structures, and historic and archaeological sites.

This EA considers noise associated with facility construction and ordnance disposal training on TA D-51, Eglin AFB, Florida. Construction would occur at stages over a 15 year period according to the TA D-51 Master Development Plan (Appendix E). Ordnance disposal training would include currently conducted training at existing practical explosive areas, and future training at new practical training areas. The largest amount of explosive currently detonated is a 1.25-lb block of C-4. Future detonations will not exceed this amount, though the number of daily detonations will increase. The location of an additional practical explosive area, where up

to 1-lb of explosive would be detonated at any one time, is south and east of the existing practical area (Figure 4-1). As such it is closer to the range boundary and the nearest neighboring community by about 2,000 feet. Analysis will determine impacts, if any, to the local community from the increase in detonations of 1.25-lbblocks of C-4 and from the 1-lb detonations at the new practical area.

4.4.1 Proposed Action (Preferred Alternative)

There would be no significant noise impacts associated with this alternative due to the low amount of net explosive weight used in ordnance disposal training. Analysis supporting this conclusion is provided in the following discussion.

Based on numerous sociological surveys and recommendations of federal interagency councils, the most common benchmark for assessing environmental noise impacts from impulsive sources (e.g. explosions) is 62 dBC for C-weighted noise. Noise resulting from most construction, transportation and other daily human-related activities is measured on the A-weighted scale. A-weighted noise from construction is lower in intensity and decibel level and drops off quickly from the source. Except for personnel and facilities on TA D-51 there are no nearby receptors that would be affected by construction noise. Wooded areas, which have a dampening effect on sound, separate the proposed facility location from neighboring communities. Thus, construction noise would have no impact to the nearest community, located over 1.5 miles from the nearest proposed TA D-51 facility location.

Noise level thresholds are often used to determine residential land use compatibility and risk of human annoyance. In general, land uses are unrestricted when exposure is less than the noise level of 62 dBC identified above. As noise levels increase above these levels, some land uses become incompatible. Several other noise level measurements discussed in the following subsections are also useful in assessing environmental impacts.

Single-Event Noise Impacts from Training

A SPL of 140 dBP has been identified by the U.S. Department of Labor, OSHA, as a maximum recommended unprotected exposure level necessary to prevent physiological damage to the human eardrum (29 CFR Ch. XVII § 1926.52[e]). Using the Noise Assessment and Prediction System (NAPS) model (Smith et al., 1991), noise of this intensity is calculated to extend out to a distance of approximately 150 meters. Noise of this intensity (140 dBP) would not extend into the neighboring community. Personnel engaged in training would follow established safety procedures to ensure protection against exposure to high noise levels.

A more applicable threshold for single-event analysis is an SPL level of 115 dBP. An SPL less than 115 dBP has been shown to cause minimal public annoyance resulting from the noise (U.S. Air Force, 1996). Analysis was conducted using the NAPS- model (Smith et al., 1991). NAPS provides an estimate of the uniform surface peak noise intensity in all directions around a blast source. The model also has the capability to incorporate meteorological conditions into the blast sound propagation. The model calculates acoustic intensity estimates by generating acoustic ray traces over a sufficient range of azimuth and elevation angles to define the focusing and shadow regions in the area around the blast. Additionally, it considers the effects of spherical spreading, absorption, focusing, and interference resulting from multiple rays arriving at the same location.

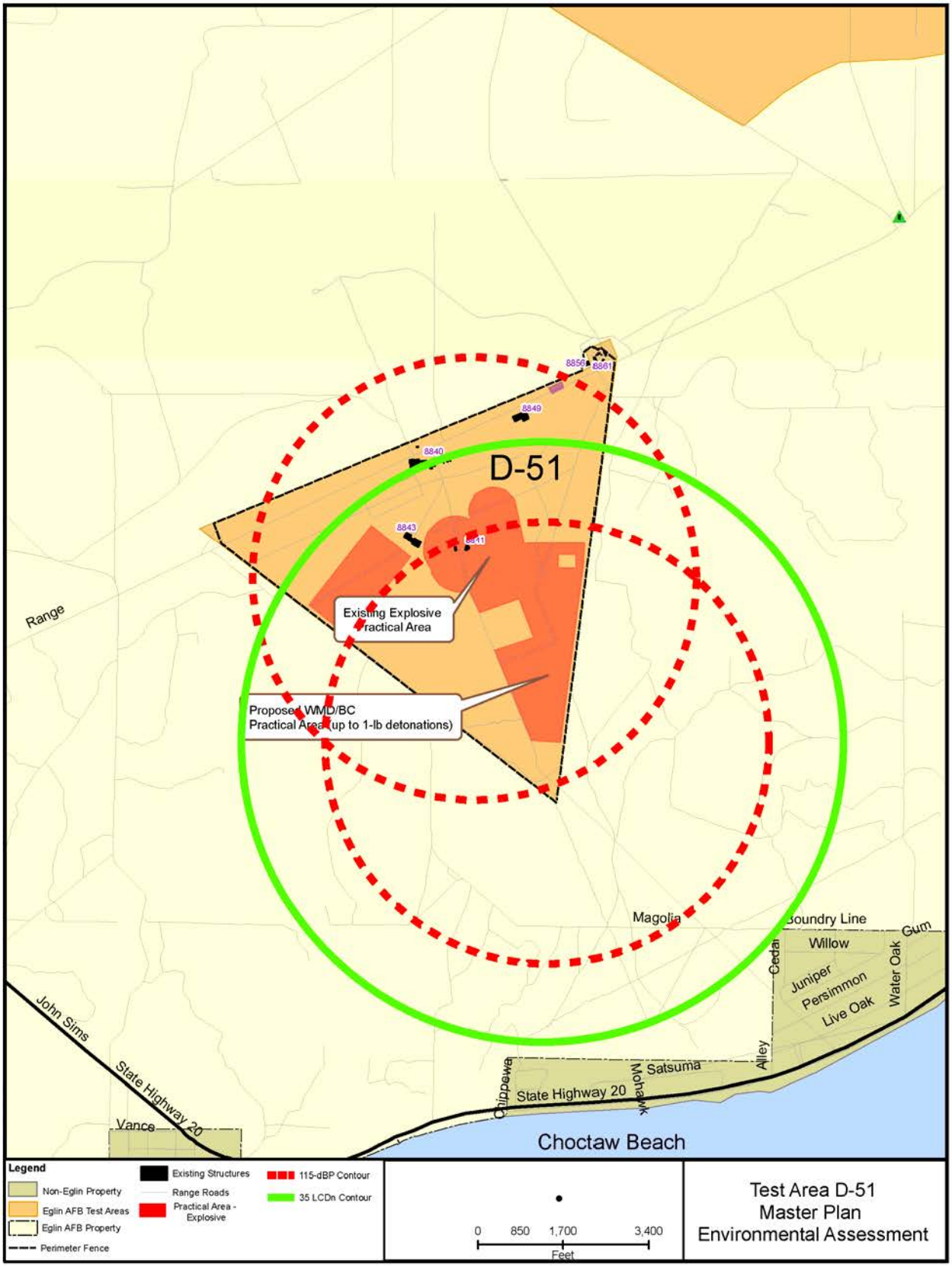

Figure 4-1. Proposed Action Single Event and Average Noise Impacts on the Community

Figure 4.1 presents results of NAPS modeling of a 1.25-lb block of C-4 and a 1-lb detonation of TNT-equivalent explosive at two practical training areas. These amounts represent the largest net explosive amount currently used (in the case of the 1.25-lb block of C-4) and proposed for future use. Figure 4.1 displays the distance out to which noise of 115 dBP would extend. Noise of this intensity from a single detonation under a meteorological scenario of calm winds would not extend into the closest neighboring community of Choctaw Beach.

Average Noise Impacts from Multiple Training Events

As with single events, public annoyance is often the most common impact associated with exposure to elevated noise levels from multiple events. When subjected to Day-Night Average Sound Levels of 62 dBC, expressed as 62 Day-Night Average Noise Level Associated with C-Weighted Noise (LCdn), approximately 15 percent of persons so exposed would be "highly annoyed" by the noise (Committee on Hearing, Bioacoustics, and Biomechanics [CHABA], 1981).

Noise impacts are normally assessed as those occurring during a "typical day" averaged from a year's events.

For impulsive noise, the noise analysis focuses on determining the area potentially impacted at 62 LCDn threshold level for multiple detonations of the 1.25–lb block of C-4 and the 1-lb detonations at the new practical training area. The NAPS output is SPL or dBP from a single event (Smith et al., 1991). Since Ldn levels are not a direct output from the model, they must be developed. This process is briefly described below.

The basic equation for the calculation of LCdn is:

$$L_{Cdn} = CSEL + \left(10Log_{10}\left(N_D + 10N_N\right)\right) - 49.4$$

Where: CSEL = C-weighted Sound Exposure Level for a single event
ND = Number of events occurring between 0700 and 2200 hours
NN = Number of events occurring between 2201 and 0659 hours (zero for the Proposed Action)
49.4 = 10 Log10 (86,400). This is the number of seconds in 24-hours

The relationship between pressure in dBP (which is the model's output metric) and CSEL is:

$$CSEL \cong dBP - 25$$

Therefore, by substituting and combining terms, a dBP-dependent equation may be developed as:

$$L_{Cdn} \cong dBP + \left(10Log_{10}\left(N_D + 10N_N\right)\right) - 74.4$$

Assuming an activity level of 25 1.25-lb C-4 events or 1-lb TNT events per day the approximate average noise level at the nearest neighboring community would be 35 LCDn, which is

substantially lower than the 62 LCDn annoyance threshold (Figure 4.1). Thus, the Proposed Action would not exceed average noise thresholds for annoyance to the local community.

4.4.2 Alternative 1

There would be no significant noise impacts associated with this alternative. Alternative 1 noise activities would be the same as those for the Proposed Action. Likewise detonations associated with explosive ordnance disposal training would not exceed single event or average noise annoyance thresholds.

4.4.3 No Action Alternative

There would be no significant noise impacts from ordnance disposal detonations under the No Action alternative. Facilities and training areas would be added without the benefit of a Master Development Plan. Training would continue and the size and frequency of detonations would generally remain the same as they currently are now. Noise reaching the community would be the same or indistinguishable for this alternative from the Proposed Action. Though fewer in number the difference in number of detonations is not sufficient to result in an appreciably lower average noise level reaching the nearest community. That level would still be around 35 LCDn. Likewise, single event noise would not result in annoyance to the community.

4.5 NATURAL RESOURCES

4.5.1 Proposed Action (Preferred Alternative)

This section discusses potential impacts to the ecological associations and sensitive species located within and adjacent to the Proposed Action project area. Analysis focuses on assessing the potential for impacts to the ecological associations and sensitive species from land clearing and construction and identifying methods to reduce the potential for negative impacts from these activities

The Proposed Action would not significantly affect natural resources. Other than some direct removal of sand pine and construction-related disturbance in an already disturbed area of Open Grassland/Shrubland, there would be minimal effects to wildlife and vegetation. The following section addresses the potential for the Proposed Action to affect sensitive species and habitats.

Sensitive Species and Habitats

Analysis of the potential for erosion and stormwater and their effects on water quality previously discussed in Section 3.1, Water Resources, establishes that there is little potential to significantly affect the Okaloosa darter in nearby Smith Branch. A vegetative barrier would remain in place between Smith Branch and TA D-51, effectively limiting the transport of eroded and windblown sediments in to the stream. Measures to control construction-related erosion suggested in Chapter 6 would also prevent increased sedimentation of Smith Branch. Additionally, there is a low potential for transport of sediments given the flat terrain of the project area. Based on these conditions, the Okaloosa darter would not be affected by the Proposed Action. Therefore, a consultation with USFWS for this species is not required.

Although the gopher tortoise is known to occur in the Grassland/Shrubland ecological association which dominates TA D-51, gopher tortoises or burrows are not known to exist in the areas associated with the Proposed Action. As further discussed in Section 5.2.4, surveys will be conducted prior to any land clearing or construction, and proper procedures will be followed should any gopher tortoises be located.

4.5.2 Alternative 1

Impact from Alternative 1 would be the same as for the Proposed Action.

4.5.3 No Action Alternative

The No Action Alternative would have no effect on natural resources including sensitive species or habitats. No construction would occur and the Open Grassland/Shrubland ecological association of TA D-51 would not be modified.

4.6 CULTURAL RESOURCES

4.6.1 Proposed Action (Preferred Alternative)

No impacts to cultural resources are expected from implementation of the Proposed Action. However, since the entire D-51 Test Area has not been surveyed, it is possible that unexpected cultural resources may be uncovered. If this occurs, all activity in the immediate vicinity would cease and the BHPO and Cultural Resources Management Branch would be contacted immediately. Due to the presence of cultural resources in close proximity to D-51, any activities outside of the boundaries of D-51 (e.g., water lines, road repairs) would require a Section 106 review.

4.6.2 Alternative 1

As with the Proposed Action, no impacts to cultural resources are expected from implementation of Alternative 1. The potential that unexpected cultural resources may be uncovered exists under this Alternative. If this occurs, all activity in the immediate vicinity would cease and the BHPO and Cultural Resources Management Division would be contacted immediately.

4.6.3 No Action Alternative

No impacts to cultural resources are expected under the No Action Alternative. The No Action alternative would result in no changes to TA D-51. The Navy would not expand training, facilities and associated infrastructure at TA D-51 for the NAVSCOLEOD.

4.7 LAND USE

4.7.1 Proposed Action

Under the Proposed Action, some currently undeveloped land on the eastern edge of TA D-51 would be changed to practical area-explosive usage. In addition some of the currently designated Practical Area- Non-explosive areas within the central TA D-51 would be changed to Practical Area- Explosive, Practical Area- Foreign Explosive, and Practical Area – Foreign Non-explosive use. These changes in land use would be necessary due to the requirements to separate international student instruction areas from U.S. military personnel.

Permanent facilities and temporary buildings would be expanded within the northern half of TA D-51 to encompass developed areas, currently undeveloped areas, and Practical Area-Non-Explosive areas.

With the increase in student load, current potable water supply may not be adequate for future needs. As this test area is currently designated for the purposes stated above, no significant impacts are expected to land use from the implementation of the Proposed Action.

4.7.2 Alternative 1

The same changes to land use would occur under Alternative 1 as under the Proposed Action. Utilities under this alternative would include use of septic systems instead of use of local sewage treatment infrastructure. Septic systems could potentially impact land use due to the space requirements for the system and leach field.

4.7.3 No Action Alternative

No change in land use would occur under this alternative. The proposed facility and infrastructure changes would not be made to TA D-51. With the increase in student load, overcrowding conditions would worsen and already inadequate infrastructure would continue to degrade.

4.8 AIR QUALITY

This section discusses the potential impacts to air quality because of the Proposed Action, Alternative Action and No Action Alternative. For the analysis of the actions, a threshold on an individual pollutant-by-pollutant basis was established. The Proposed Action and alternatives will occur at D-51 located in Walton County. For this analysis Walton County is considered the region of influence (ROI).

In order to evaluate the air emissions and their impact to the overall ROI the emissions associated with the project activities were compared to the total emissions on a pollutant-by-pollutant basis for the ROI's 2002 NEI data. Potential impacts to air quality are identified as the total emissions of any pollutant that equals 10 percent or more of the ROI's emissions for that specific pollutant. The 10 percent criteria approach is used in the General Conformity Rule as an indicator for impact analysis for non-attainment and maintenance areas and although Walton

County is attainment, the General Conformity Rule's impact analysis was utilized to provide a consistent approach to evaluating the impact of construction and aircraft emissions. To provide a more conservative evaluation, the impacts screening in this analysis, used a more restrictive criteria than required in the General Conformity Rule. Rather than comparing emissions from construction activities to regional inventories (as required in the General Conformity Rule), emissions were compared to the individual county (Walton) potentially impacted, which is a smaller area.

The Air Conformity Applicability Model (ACAM) version 4.3.0, developed for Air Force Center for Environmental Excellence (AFCEE) and is used by the Air Force for conformity evaluations, was utilized to provide a level of consistency with respect to emissions factors and calculations. The ACAM provides estimated air emissions from proposed federal actions in areas designated as non-attainment and/or maintenance for each specific criteria and precursor pollutant as defined in the National Ambient Air Quality Standards (NAAQS). ACAM was utilized to provide emissions for construction, grading, and paving activities by providing user inputs for each, details are discussed in Appendix, *Air Quality*. Commuter emissions were calculated based on personnel increases which were input into ACAM.

4.8.1 Proposed Action (Preferred Alternative)

The proposed action entails the phased increase of students and staff over a four year period as well as construction plans for short-term (0-5 years), mid-term (5-10 years), and long-term (10+ years). This analysis looks at the air emissions expected for each phase of the project. Personnel increases are expected to begin in 2008 and are included in the short-term plan emissions analysis. The estimated construction emissions expected are summarized in Table 4-2, Proposed Action Estimated Construction Air Emission by Activity.

Table 4-2. Proposed Action Estimated Construction Air Emission by Activity

Source Category	Emissions (Tons/yr)				
	CO	NO_x	PM_{10}	SO_2	VOC
Acres Paved	0.000	0.000	0.000	0.000	0.000
Mobile Equipment	7.118	16.973	1.369	2.099	1.551
Non-Residential Arch. Ctgs.	0.000	0.000	0.000	0.000	0.214
Residential Arch. Ctgs.	0.000	0.000	0.000	0.000	0.000
Stationary Equipment	48.271	1.250	0.037	0.064	1.807
Workers Trips	3.107	0.154	0.026	0.000	0.142
Total	58.496	18.377	1.431	2.163	3.714

Note: These emissions are from the short-term analysis for the year with the greatest emission rate (CY 2013)
CO = Carbon Monoxide; NO_x= Nitrogen Oxides; PM_{10} = Particulate Matter with a diameter $\leq$ 10 microns; SO_2 = Sulfur Dioxide; VOC = volatile organic compounds

As indicated in Table 4-3, Percentage of Emissions Compared to Walton County, the individual pollutant emissions from the project will not exceed 10 percent of the total Walton County emissions for each corresponding pollutant in any of the phases. The greatest increase in emissions would occur during the first phase primarily due to the increase in students and staff,

captured in the mobile source calculations. The highest pollutant percentage is for SO_2 and PM_{10} which is approximately 0.92 and 0.72 percent of Walton County total emissions respectively based on the USEPA 2002 NEI. This slight increase in local air quality will be temporary. In calculating emissions, certain assumptions were made regarding various variables associated with construction activities. Specific details regarding the assumptions and calculations associated with the emissions estimates are located in Air Quality Appendix. No impacts are expected for the proposed action.

Table 4-3. Percentage of Emissions Compared to Walton County

	Emission Activities	Emissions (Tons/yr)				
		CO	NO_x	PM_{10}	SO_2	VOC
Short-Term (0-5 Years)	Construction Emissions	58.50	18.38	55.54	2.16	3.71
	Point Source	0.56	0.69	0.05	0.00	0.04
	Mobile Source	33.13	4.44	0.14	0.10	2.44
	Total	92.19	23.51	55.73	2.27	6.19
	Walton County Emissions	33,892.75	4,681.32	7,784.82	245.73	4,889.75
	Percentage of County Emissions	0.27%	0.50%	0.72%	0.92%	0.13%
Mid-Term (5-10 Years)	Construction Emissions	58.49	18.38	22.87	2.16	3.71
	Point Source	0.56	0.69	0.05	0.00	0.03
	Mobile Source	0.00	0.00	0.00	0.00	0.00
	Total	59.04	19.06	22.92	2.17	3.75
	Walton County Emissions	33,892.75	4,681.32	7,784.82	245.73	4,889.75
	Percentage of County Emissions	0.17%	0.41%	0.29%	0.88%	0.08%
Long-Term (10+ Years)	Construction Emissions	57.23	18.31	12.34	2.16	3.61
	Point Source	0.33	0.41	0.03	0.00	0.02
	Mobile Source	0.00	0.00	0.00	0.00	0.00
	Total	57.56	18.72	12.37	2.17	3.63
	Walton County Emissions	33,892.75	4,681.32	7,784.82	245.73	4,889.75
	Percentage of County Emissions	0.17%	0.40%	0.16%	0.88%	0.07%

4.8.2 Alternative 1

Alternative 1 would require the same construction and location with the addition of septic systems. This would mean slightly larger areas to be cleared and graded for these systems. Assuming an additional acre would be graded and cleared construction emissions are summarized in Table 4-4, Alternative 1 Construction Emissions for the Septic Systems.

Table 4-4. Alternative 1 Construction Emissions for the Septic Systems

Source Category	Emissions (Tons/yr)				
	CO	NO_x	PM_{10}	SO_2	VOC
Grading Equipment	0.02475	0.09315	0.00765	0.009	0.01
Grading Operations	0	0	2.7315	0	0
Total	0.02475	0.09315	2.73915	0.009	0.01

CO = Carbon Monoxide; NO_x= Nitrogen Oxides; PM_{10} = Particulate Matter with a diameter $\leq$ 10 microns; SO_2 = Sulfur Dioxide; VOC = volatile organic compounds

The emissions would not exceed the 10 percent general conformity criteria as shown in Table 4-5, Percentage of Walton County Emissions for Alternative 1. The emissions from the construction and implementation of the septic system would cause temporary and short term increases of emissions to regional air quality. No adverse impacts are expected from Alternative 1.

Table 4-5. Percentage of Walton County Emissions for Alternative 1

Emission Activities	Emissions (Tons/yr)				
	CO	NO_x	PM_{10}	SO_2	VOC
Septic System	0.025	0.093	2.739	0.009	0.010
Construction Emissions	58.50	18.38	58.28	2.16	3.71
Point Source	0.56	0.69	0.05	0.00	0.04
Mobile Source	33.13	4.44	0.14	0.10	2.44
Total	**92.22**	**23.60**	**61.21**	**2.28**	**6.20**
Walton County Emissions	33,892.75	4,681.32	7,784.82	245.73	4,889.75
Percentage of County Emissions	*0.27%*	*0.50%*	*0.79%*	*0.93%*	*0.13%*

CO = Carbon Monoxide; NO_x= Nitrogen Oxides; PM_{10} = Particulate Matter with a diameter $\leq$ 10 microns; SO_2 = Sulfur Dioxide; VOC = volatile organic compounds

4.8.3 No Action Alternative

The construction of new facilities and influx of students and staff would not occur for the no action alternative, thus regional air quality would not change. No adverse impacts would occur.

4.9 CUMULATIVE IMPACTS AND IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

According to the CEQ regulations, cumulative impact analysis in an EA should consider the potential environmental impacts resulting from "the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (40 CFR 1508.7).

40 CFR 1508.7 defines impacts or effects as:

(a) Direct effects, which are caused by the action and occur at the same time and place.

(b) Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

4.9.1 Past and Present Actions Relevant to the Proposed Action

The Navy has not identified any other past or present actions that are relevant to the current Proposed Action. Other future actions planned include two projects at TA D-51 to expand training facilities for the NAVSCOLEOD. These projects are discussed in Section 4.8.2.

4.9.2 Reasonably Foreseeable Future Actions

Although located some 12 miles from TA D-51, the construction of additional Navy BEQ structures are future actions related to NAVSCOLEOD. Two BEQ structures are currently planned. The first is a currently funded action P904 with a second structure referred to as P905 is considered a potential follow on project. These future structures would be two story structures, approximately 45,000 ft^2 in size, with similar construction materials and safety footprints. P904 is located near the current NAVSCOLEOD School building on Eglin Main Base. The proposed site for P905 is the plot of land between P904 and the Eglin AFB flight line. The projects involve some road redesign, additional parking, building demolition (building 874), some soil disturbances through construction and grading of proper safety layout, and potential noise and safety issues due to proximity to an active flight line for P905.

Another project planned for the vicinity is the Fort Walton Beach-Niceville Bypass and Mid-Bay Bridge Access Toll Road. The Fort Walton Beach-Niceville Bypass is planned for construction in three phases, with the first phase starting as early as July 2008. This project currently consists of four potential corridors connecting State Road 85 (North of Niceville) to the northern approach to the Mid-Bay Bridge. As part of this project there will be an expected grade separation on Range Road between TA D-51 and Bluewater Elementary School. The road corridor currently encompasses a 200-foot-wide right-of-way. The total planned corridor lease is for a 400-foot-wide right-of-way to accommodate a potential future US 98 bypass (also known as Emerald Coast Freeway). However, discussions for this second bypass are in a very preliminary state and cannot be judged as a reasonably foreseeable future event.

An EIS is currently underway for the 2005 Base Realignment and Closure (BRAC) decision to establish the Joint Strike Fighter (JSF) Integrated Training Center (ITC) at Eglin AFB, which would establish an initial joint training site for joint Air Force, Navy, and Marine Corps JSF training organizations to teach aviators and maintenance technicians how to properly operate and maintain this new weapon system. The proposed plan would relocate 200 instructors to Eglin AFB. The 7th Special Forces Group (Airborne) (7SFG[A]) would also relocate from Fort Bragg, North Carolina to Eglin AFB. Potential impacts from these program due to changing mission and additional personnel may include noise, air quality, munitions storage concerns, transportation, and utilities concerns, among others. A full analysis of these activities has not taken place, so only a generalized analysis of cumulative impacts can occur.

4.9.3 Analysis of Cumulative Impacts

Water Resources

Cumulative impacts to surface waters, wetlands, and floodplains would not be expected. However, cumulative impacts to groundwater would be expected due to the potential for

increased water withdrawal from the Floridan aquifer because of increased consumption. Any water withdrawals from the Floridan aquifer would negatively affect the aquifer. In the Proposed Action, Alternative 1, and the reasonably foreseeable future actions, there would be no direct impacts to groundwater, surface waters, wetlands, and floodplains. Potential indirect impacts due to the Proposed Action, Alternative 1, and the foreseeable future actions could result from stormwater run-off caused by land clearing, construction, and the addition of impervious surfaces. It was determined in the Proposed Action, Alternative 1 and in the foreseeable future actions that with proper permitting, the development of and adherence to a SWPPP, and the utilization of site specific BMPs; no significant impacts to water resources from stormwater run-off would be expected.

Infrastructure and Utilities

Cumulative impacts to utilities would potentially result in the inability of TA D-51 to provide sufficient water for fire suppression to the new construction activities. Upgrades to the water system would be required, as with the Preferred Alternative and Alternative 1. The addition of a storage tank, either with the new water treatment facility or with additional wells, would be sized to meet the demands of future construction efforts.

Topography and Soils

Cumulative impacts with regard to soil compaction, disturbance, and erosion would be minimal. Both the Proposed Action and other Navy and TA D-51 actions involve land disturbance, clearing of vegetation, and exposure of soils to increased erosion potential. Through analysis, the proponent has been made aware of the potential for soils to be transported off the project site and affect water resources and sensitive species. Requirements for containing soil erosion have been identified in environmental analysis documents for these actions. The Navy does not anticipate any significant impacts to soils or geology as a result of implementing the Proposed Action or alternative or reasonably foreseeable future actions; therefore, the Navy does not expect any significant cumulative impacts to occur.

Noise

The Proposed Action of implementing the Test Area D-51 Master Development Plan would not result in significant cumulative noise impacts to the local community. The contribution of noise from the Proposed Action to other explosive and non-explosive noise sources at Eglin would be minor primarily because of the low net explosive weight involved. The increase in number of trainees and subsequent training detonations would result in imperceptible increases in average environmental noise levels (from 34.9 LCDn to 35.4 LCDn) at the nearest community of Choctaw Beach. The threshold of 62 LCDn would not be exceeded. Because of the variation in locations of other explosive noise sources at other test areas, an overall average LCDn cannot be calculated. However, the Eglin Range Environmental Planning Office has evaluated the collective noise contribution from military activities on Eglin AFB. Without defining specific noise levels, the Interim Final Eglin Impact Study (U.S. Air Force, 2007e) concluded that all communities (including Choctaw Beach) adjacent to the Eglin Military Complex boundary are subject to "moderate intensity, infrequently occurring" impulse noise, and "low intensity, infrequently occurring" impulse noise. The Proposed Action would increase the number of

detonations potentially heard by the local community but would not change the assessment provided in the Eglin Impact Study.

There would be no cumulative noise impacts with regard to the proposed Mid-Bay Bridge Toll Access Road. The Mid-Bay Bridge Toll Access Road would be associated with two sources of noise, construction and vehicle noise after construction. Neither of these types of noise are additive or cumulative to Test Area D-51 EOD training noise, which is impulsive or explosive. Further, the locations of the two actions are separated geographically. Whereas the location most likely to be perceive EOD training noise is Choctaw Beach, communities most likely to be affected by the Mid-Bay Bridge Toll Access road construction and operation are the communities of Rocky Bayou and Bluewater Bay (Figure 4-2).

Air Quality

With the projects proposed in this plan, conjoined with the Navy BEQ, Fort Walton Beach-Niceville Bypass and Mid-Bay Bridge Access Toll Road, and Eglin BRAC projects, pollutant emissions would increase. This increase in pollutants would be due to construction projects, an influx of people to the area, and introduction of the JSF IJTC and associated aircraft. Due to limited information on these projects quantitative analysis was not completed. Construction emissions are expected to be the primary cause for increased emissions, which would be a temporary, short-term affect. The increase in population from the BRAC and D-51 Master Plan projects would be a permanent increase in air emissions from personally owned vehicle emissions. These emissions are expected to be minimal as compared to Okaloosa, Santa Rosa, and Walton County emissions. No permanent adverse impacts to regional air quality are expected cumulatively.

Natural Resources

Cumulative impacts to ecological associations have already occurred since the area potentially impacted by construction projects is an already disturbed area of open Grassland/Shrubland. All prior and future construction activities and the proposed bypass would occur beyond 300 feet from Smith Branch. This distance has been established by USFWS as an appropriate buffer distance for ensuring that actions do not affect the endangered Okaloosa darter. Additionally, stormwater and construction BMPs would minimize indirect effects to the stream from erosion. Therefore, any additional cumulative impacts to the Okaloosa darter are not anticipated.

Cultural Resources

Potential cumulative impacts to cultural resources would not be significant. Potential impacts to cultural resources primarily include but are not limited to projects with a construction component and heavy vehicle movement and operation. Such actions include road reconstruction/repair, other test area operations, and future training operations. Under any of these activities the 96th Civil Engineer Group, Cultural Resources Branch (96 CEG/CEVH) would be contacted and proper access and operation points would be determined for heavy equipment and training activities. Consequently, direct impacts to known cultural resources would be avoided.

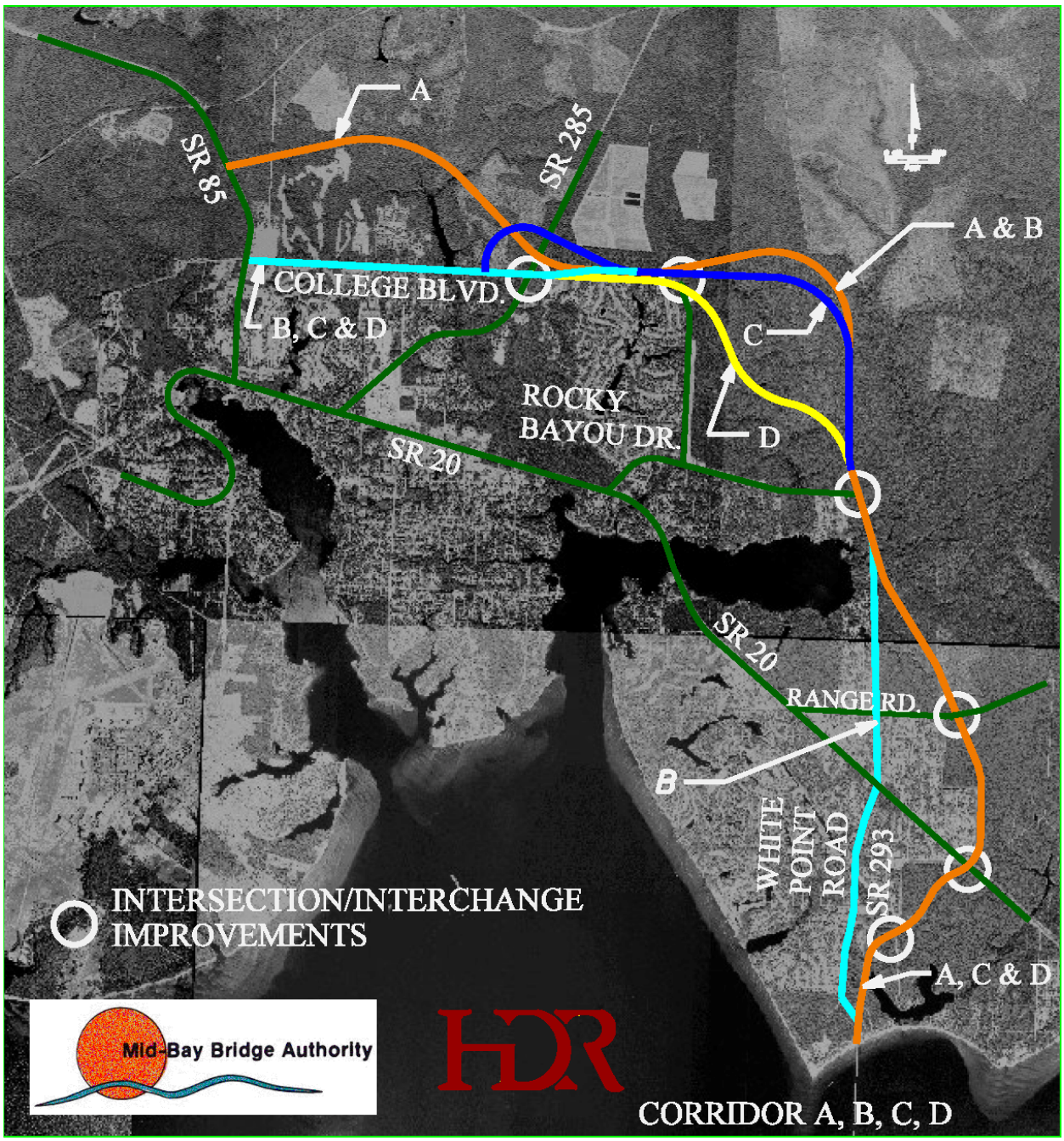

Figure 4-2. Proposed Mid-Bay Bridge Toll Access Road Candidate Corridors

The surface disturbances associated with the proposed Navy Explosive Ordnance Disposal (NAVEOD) facility training area activities were determined to be negligible since few cultural resources are known to exist at TA D-51. Apparent land disturbances that may occur would be limited to the construction of training facilities and training exercises which would be transitory. However, the use of C-4 explosives and other, smaller charges raises the question that unknown cultural resources may be discovered. If they are not, then no impacts are expected. Since no eligible cultural resources are recorded for TA D-51, further evaluation of potential impacts to

cultural resources associated with establishing the proposed NAVEOD facility training area was not conducted.

4.9.4 Irreversible and Irretrievable Commitment of Resources

NEPA requires that environmental analysis include identification of any irreversible and irretrievable commitment of resources that would be involved in the implementation of the Proposed Action or the Alternative 1.

Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that the uses of these resources have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the Proposed Action (e.g., extinction of a threatened or endangered species or the disturbance of a cultural site).

Implementation of the Master Plan may result in an irreversible and/or irretrievable commitment of natural resources since a small previously developed portion of some of the TA D-51 would be altered, specifically the removal of mature vegetation. However, these areas could be returned to their existing state if the proposed facilities were removed and the areas were allowed to revert back to its present state. The Navy has not identified any sensitive species or significant resources at this site; therefore, no irreversible and/or irretrievable commitment of these resources is associated with the implementation of the Proposed Action or Alternative 1.

Any environmental consequences as a result of this project are considered short-term and temporary. Construction activities would require consumption of limited amounts of materials typically associated with interior and exterior construction (e.g., concrete, wiring, piping, insulation, and windows). The Navy does not expect the amount of these materials used to significantly decrease the availability of the resources. Small amounts of nonrenewable resources would be used; however, the Navy does not consider these amounts to be appreciable and do not expect them to affect the availability of these resources.

No Action Alternative

Under the No Action Alternative, the Navy would not implement the TA D-51 Master Plan. Problems with having adequate space to train future increased student levels would develop. No irretrievable or irreversible commitment of resources would occur under the No Action Alternative.

5. PLANS, PERMITS, AND MANAGEMENT ACTIONS

The following is a list of regulations, plans, permits, and management actions associated with the Proposed Action. The environmental impact analysis process for this EA identified the need for these requirements, and the proponent and interested parties involved in the Proposed Action cooperated to develop them. These requirements are, therefore, to be considered as part of the Proposed Action and would be implemented through the Proposed Action's initiation. The proponent is responsible for adherence to and coordination with the listed entities to complete the plans, permits, and management actions.

5.1 REGULATIONS, PLANS, AND PERMITS

- CZMA Consistency Determination.
- Stormwater Facility Design and Construction Permit (applicable as determined by site and construction design inspection).
- Wastewater Permit: The Navy and its contractor would be required to obtain a Constructing a Domestic Wastewater Collection/Transmission System Permit (62-604 FAC).

In addition, applicable U.S. Department of Labor, Occupational Safety and Health Administration regulations covering these activities include, but are not limited to:

- Construction Title 29, Part 1910, Section 12 of the Code of Federal Regulations.

In October 2000, the USEPA authorized the FDEP to implement the NPDES stormwater permitting program in the state of Florida. The FDEP's authority to administer the NPDES program is set forth in Section 403.0885, Florida Statutes. The NPDES stormwater program regulates point source discharges of stormwater into surface waters of the state of Florida from certain municipal, industrial, and construction activities. As the NPDES stormwater permitting authority, the FDEP is responsible for promulgating rules and issuing permits, managing and reviewing permit applications, and performing compliance and enforcement activities (FDEP, 2007).

Eglin AFB operates under a Title V Permit and the additions of any boilers for the new facilities would require coordination with the 96 CEG/CEVCE air quality program manager Mr. John Wolfe, 882-7677, as a Title V Air Operating Permit revision may be required.

Complete the External Combustion form for each boiler at the following website, and return to the Air Quality Program Manager before boiler installation.

https://em.eglin.af.mil/userdocs/Air/inventory_forms/AQP_Ext_Comb_Form.doc

5.2 MANAGEMENT ACTIONS

The proponent is responsible for the implementation of the following management actions.

5.2.1 Utilities and Infrastructure

Water storage tank and pumps should be sized to accommodate the fire suppression demands within TA D-51 and/or the supporting range area.

5.2.2 Soils/Water Resources

The proponent will ensure that the design engineer coordinates with 96 CEG/CEVC (Compliance Engineering, 882-7660) for final stormwater design and permitting.

The site plan includes more than 1 acre of disturbance to previously developed land. A stormwater permit may be required as determined by site and construction design inspection.

Irrigation systems should not be connected to potable water. A Notice of Intent to Use the General Permit for Construction of Water Main Extensions for Public Water Systems (DEP Form 62-555.900(7)) and the Certification of Construction completion and Request for Clearance to Place Permitted Public Water System Components into Operation (DEP Form 62-555.900(9)) will be required for this project. Contact 96 CEG/CEVCE (Teresa Jordan, 882-7768) for review, approval, and execution of the permit clearance package to the state.

The proponent would ensure that the construction contractor implements the following stormwater and Soils BMPs:

- Site preparation and construction would disturb the soil. Heavy machinery would compact soil and alter terrain. It is suggested that BMPs such as silt fences and hay bales be implemented during construction to avoid soil run-off into the nearby drainage ditch.
- Inspect BMPs on a weekly basis and after rain events. Replace fencing as needed.
- In permits and site plan designs, include site-specific management requirements for erosion and sediment control.
- Store chemicals, cements, solvents, paints, or other potential water pollutants in locations where they cannot cause runoff pollution.
- For construction equipment (e.g., cement mixers), designate “staging areas” designed to contain any chemicals, solvents, or toxins and prevent them from entering surface waters.
- Stabilize construction site entrance using FDOT-approved stone and geotextile (filter fabric).
- Inspect and maintain the aforementioned BMPs to ensure effectiveness.

5.2.3 Natural Resources

- Gopher tortoise surveys must be conducted prior to any land clearing activities in preparation for the construction. If active gopher tortoise burrows are found, then the gopher tortoise will be relocated in accordance with Eglin's state permit.
- No construction activities may take place within a 300 foot buffer around Smith Branch as recommended by USFWS to avoid impacts to the Okaloosa Darter.

5.2.4 Cultural Resources

- If artifacts or other biological or cultural remains are uncovered as a result of construction activities, the construction contractors will cease all work in the immediate vicinity and notify the BHPO and the Cultural Resource Branch of the discovery. Artifacts include any man-made object, including glass, nails, bricks, ceramics, arrowheads, metal, and structures such as fence posts and building remnants.
- Due to the presence of cultural resources in close proximity to D-51, any activities outside of the boundaries of D-51 (e.g., water lines, road repairs) would require a Section 106 review.

5.2.5 Other

- Energy efficient lighting and affirmative procurement should be used.
- Any hazardous materials used in the construction project must be tracked through the HAZMAT management and reporting program.
- Clearance and removal of munitions and explosives in accordance with the ESS must occur prior to construction (U.S. Air Force, 2007d).
- Temporary facilities will have a minimum separation of 15 feet, in accordance with Unified Facilities Criteria 3-600-01, Fire Protection Engineering for Facilities.

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6. LIST OF PREPARERS

Name/Qualifications	Contribution	Experience
Carmen J. Ward, P.E. Environmental Engineer, SAIC M.S. Environmental Engineering B.S. Chemical Engineering	Author	15 years Environmental Engineering
Jason Koralewski Archaeologist/NEPA Specialist B.A., Anthropology M.L.S., Archaeology M.A., Anthropology	Technical Lead, Author Description of Proposed Action and Alternatives (DOPAA)	12 years environmental science
Matyskiela, Kim Environmental Scientist/Planner B.S. Biology	Master Plan Author/Quality Assurance	14 years environmental science
Alysia Baumann NEPA Planner/Specialist B.S. Chemical Engineering E.I.T., 2002	Author	3 years environmental science
Baker-Littman, Sherri L. Geoscientist/Archaeologist M.S. Geology & Geophysics B.A. Anthropology	Author	17 years Archaeological science, 8 years geosciences with 5 years environmental science
McKee, W. James (Jamie) Environmental Scientist B.S. Marine Biology	Project Manager, Author	21 years Environmental Science with experience in freshwater, estuarine and marine applications
Nation, Mike Environmental Scientist B.S. Environmental Science/Policy, Minor in Geography; A.A. General Science	GIS Analyst	4 years experience as an environmental consultant; Interagency Coordination; GIS Arc View applications
Brich, Hilary M.A. Philosophy	Technical Editor	13 years technical writing and editing
Boykin, Brad Junior NEPA Specialist B.S. Biomedical Science MBT Biotechnology	Author	2 years experience in biotechnology and chemistry fields
Fries, Janice Junior NEPA Specialist B.S. Biology and Chemistry	Author	7 years experience in the biology and chemistry fields

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7. LIST OF CONTACTS

Teresa Jordan
96 CEG/CEVCE, Eglin AFB
Purpose of Contact: Water, Permitting

Mindy Rogers
796 CES/CEOP, Eglin AFB
Purpose of Contact: General Project Issues

Bob Penrose
96 CEG/CEVSN, Eglin AFB
Purpose of Contact: CZMA, Water and Natural Resources

Eugene Jackson
U.S. Navy, Eglin AFB
Purpose of Contact: Naval EOD School Facilities Representative

Russell Brown
96 CEG/CEVCE, Eglin AFB
Purpose of Contact: Wastewater and Stormwater Treatment

Charles McBay
96 CEG/CER, Eglin AFB
Purpose of Contact: Utility Usage

Eric Sculthorpe
96 CEG/CEVC, Eglin AFB
Purpose of Contact: Water, Permitting

Dennis Ebel
796 CES/CEOMFU & CEOMFUS
Purpose of Contact: Water Well on C-1

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APPENDIX A

PUBLIC AND AGENCY COMMENTS

A.1 Introduction.

This appendix provides the record of coordination with the Florida State Clearinghouse (Attachment A-1) and comments received during the public review period (Table A-1).

Attachment A-1. Florida State Clearinghouse Review

Florida Department of Environmental Protection

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

December 14, 2007

Mr. Jamie McKee, Project Manager
Science Applications International Corp.
1140 North Eglin Parkway
Shalimar, FL 32579

RE: Department of the Air Force – Draft Environmental Assessment, Navy Explosive Ordnance Disposal School, Test Area D-51 Master Development Plan at Eglin Air Force Base – Walton County, Florida.
SAI # FL200710193832C

Dear Mr. McKee:

The Florida State Clearinghouse, pursuant to Presidential Executive Order 12372, Gubernatorial Executive Order 95-359, the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4321, 4331-4335, 4341-4347, as amended, has coordinated a review of the referenced draft environmental assessment (DEA). The proposed project is to update the Navy Explosive Ordnance Disposal School Master Development Plan for Test Area D-51 on Eglin Air Force Base (AFB), Florida to accommodate the anticipated increase in military students with the construction of new facilities near existing infrastructure.

As indicated in the DEA, the Florida Department of Environmental Protection's (DEP) Northwest District Office in Pensacola notes that the proposed project will require a state permit for stormwater management and a National Pollutant Discharge Elimination System (NPDES) permit. The U.S. Air Force is advised that as of October 1, 2007, stormwater permitting in Northwest Florida is now subject to the requirements of the Environmental Resource Permitting (ERP) program under Chapter 62-346, *Florida Administrative Code* (*F.A.C.*). For more information on the new permitting requirements, please contact Mr. Cliff Street, P.E., at (850) 595-8300, ext. 1135. If any wetland impacts are proposed for the subject facility or the installation of future infrastructure improvements, please contact Mr. Larry O'Donnell at (850) 595-8300, ext. 1129. Additional information on NPDES permitting under Chapter 62-621, *F.A.C.*, can be obtained from the NPDES Stormwater Program in Tallahassee at (850) 245-7522.

The West Florida Regional Planning Council (WFRPC) notes that, based upon the information provided, staff has no specific comments with regards to potential

environmental impacts. The WFRPC does, however, support a pre-construction biological assessment/survey of the site in order to identify habitats associated with threatened and/or endangered species as outlined in the project narrative. The Air Force is encouraged to relocate any threatened and/or endangered species that may be identified at the project site. In addition, the WFRPC requests additional information on the project's compatibility with the ongoing Joint Land Use Study. Please contact Mr. Bruce Stitt, WFRPC Director of Land Use and Economic Development, at (850) 332-7976 to coordinate further. Please refer to the enclosed WFRPC memorandum.

Based on the information contained in the DEA and the enclosed agency comments, the state has determined that, at this stage, the proposed activities are consistent with the Florida Coastal Management Program (FCMP). The federal agency must, however, address the concerns identified by our reviewing agencies prior to project implementation. The state's continued concurrence with the project will be based, in part, on the adequate resolution of issues identified during this and subsequent reviews. The state's final concurrence of the project's consistency with the FCMP will be determined during the environmental permitting stage.

Thank you for the opportunity to review the proposed project. Should you have any questions regarding this letter, please contact Ms. Lori Cox at (850) 245-2168.

Sincerely yours,

Sally B. Mann

Sally B. Mann, Director
Office of Intergovernmental Programs

SBM/lec
Enclosures

cc: Darryl Boudreau, DEP, Northwest District
John Gallagher, WFRPC

Florida
Department of Environmental Protection

"More Protection, Less Process"

Categories

DEP Home | OIP Home | Contact DEP | Search | DEP Site Map

Project Information	
Project:	FL200710193832C
Comments Due:	11/22/2007
Letter Due:	12/16/2007
Description:	DEPARTMENT OF THE AIR FORCE - DRAFT ENVIRONMENTAL ASSESSMENT, NAVY EXPLOSIVE ORDNANCE DISPOSAL SCHOOL, TEST AREA D-51 MASTER DEVELOPMENT PLAN AT EGLIN AIR FORCE BASE - WALTON COUNTY, FLORIDA.
Keywords:	USAF - NAVY EXPLOSIVE ORDNANCE DISPOSAL SCHOOL, TA D-51, EGLIN AFB - WALTON CO.
CFDA #:	12.200

Agency Comments:
COMMUNITY AFFAIRS - FLORIDA DEPARTMENT OF COMMUNITY AFFAIRS
ENVIRONMENTAL PROTECTION - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
As indicated in the DEA, the DEP Northwest District Office in Pensacola notes that the proposed project will require a state permit for stormwater management and a National Pollutant Discharge Elimination System (NPDES) permit. The U.S. Air Force is advised that as of October 1, 2007, stormwater permitting in Northwest Florida is now subject to the requirements of the Environmental Resource Permitting (ERP) program under Chapter 62-346, Florida Administrative Code (F.A.C.). For more information on the new permitting requirements, please contact Mr. Cliff Street, P.E., at (850) 595-8300, ext. 1135. If any wetland impacts are proposed for the subject facility or the installation of future infrastructure improvements, please contact Mr. Larry O'Donnell at (850) 595-8300, ext. 1129. Additional information on NPDES permitting under Chapter 62-621, F.A.C., can be obtained from the NPDES Stormwater Program in Tallahassee at (850) 245-7522.
FISH and WILDLIFE COMMISSION - FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION
NO COMMENT BY BILLY SERMONS ON 10/25/2007.
STATE - FLORIDA DEPARTMENT OF STATE
No Comments Received
TRANSPORTATION - FLORIDA DEPARTMENT OF TRANSPORTATION
Released Without Comment
NORTHWEST FLORIDA WMD - NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT
No Comment
WEST FLORIDA RPC - WEST FLORIDA REGIONAL PLANNING COUNCIL
The WFRPC notes that there do not appear to be any wetland, stormwater or water facility service impacts associated with the proposal. Though staff has no specific comments, the WFRPC supports a pre-construction biological assessment/survey of the site to identify any threatened or endangered species habitats. All measures to relocate protected species should be taken prior to the initiation of construction. In addition, the WFRPC requests additional information on the project's compatibility with the ongoing Joint Land Use Study. Please contact Mr. Bruce Stitt, WFRPC Director of Land Use and Economic Development, at (850) 332-7976 to coordinate further.
WALTON -

For more information or to submit comments, please contact the Clearinghouse Office at:

3900 COMMONWEALTH BOULEVARD, M.S. 47
TALLAHASSEE, FLORIDA 32399-3000
TELEPHONE: (850) 245-2161
FAX: (850) 245-2190

11/01/2007 07:50 8506371932 WFRPC PAGE 01/02

West Florida Regional Planning Council

Bill Roberts, Chairman
Bill Dozier, Vice-Chairman

Terry A. Joseph, Executive Director

FAX TRANSMITTAL (S) Total # of Pages (including cover) 1

TO: STATE CLEARINGHOUSE ▪ FAX: (850) 245-2190/(850) 245-2189
Phone: 850-245-2161

DATE: Thursday, November 01, 2007

FROM: John Gallagher, Director, Housing & Homeland Security & Emergency Mgmt.
John.Gallagher@wfrpc.org

SUBJECT: State Clearinghouse Review(s) Fax Transmittals:

SAI #	Project Description	RPC #
FL200710193832C	Draft Environmental Assessment, Navy Explosive Ordnance Disposal School, Test Area D-51 Master Development Plan at Eglin AFB, Walton County	WL 190-10-24-07

	No Comments – Generally consistent with the WFSRPP
X	See attached comments

ALSO: Bruce Stitt, WFRPC Director, Land Use and Economic Development, asks, "Is this project compatible with the ongoing Joint Land Use Study?"

If you have any questions, please call.

P.O. Box 11399 ▪ Pensacola, FL 32524-1399 • P: 850.332-7976 • 1.800.226.8914 • F: 850.637-1923
4081 East Olive Road, Suite A; Pensacola, FL 32514
651 West 14th Street, Suite E • Panama City, FL 32401 • P: 850.769.4854 • F: 850.784.0456
www.wfrpc.org

West Florida Regional Planning Council

Bill Roberts, Chairman
Bill Dozier, Vice-Chairman

Terry A. Joseph, Executive Director

MEMORANDUM

To: Mr. Jamie McKee, Science Applications International Corporation, 1140 Eglin Parkway, Shalimar, FL 32579

From: Mary F. Gutierrez, Environmental Planner, West Florida Regional Planning Council ("Council") MFG 10/29/07

Date: October 30, 2007

Subject: Review of Draft Environmental Assessment Navy Explosive Ordinance Disposal School Master Development Plan for Test Area D-51 at Eglin AFB, FL. RPC ID NO: WL190-10-24-07

The proposed project is to update the Navy Explosive Ordinance Disposal School Master Development Plan for Test Area D-51 on Eglin AFB, Florida to accommodate the anticipated increase in military students with the construction of new facilities near existing infrastructure.

There does not appear to be any wetland impacts associated with the proposal nor does there appear to be an increase in surface water runoff that cannot be addressed under a stormwater permit. In addition, the new structures will connect to existing sewer and water lines. Based on this information and additional information provided, the Council has no specific comments with regards to potential environmental impacts. However, the Council does support a pre-construction biological assessment/survey of the site in order to identified habitats associated with threatened and/or endangered species as outlined in the project narrative. Please ensure that all measures are taken to relocate all species identified at the project site.

P.O. Box 11399 • Pensacola, FL 32524-1399 • P: 850.332.7976 • 1.800.226.8914 • F: 850.637.1923
651 West 14th Street, Suite E • Panama City, FL 32401 • P: 850.769.4854 • F: 850.784.0456
www.wfrpc.org

COUNTY: WALTON

DATE: 10/17/2007
COMMENTS DUE DATE: 11/28/2007
CLEARANCE DUE DATE: 12/16/2007
SAI#: FL200710193832C

MESSAGE:

STATE AGENCIES	WATER MNGMNT. DISTRICTS	OPB POLICY UNIT	RPCS & LOC GOVS
COMMUNITY AFFAIRS	X NORTHWEST FLORIDA WMD		
ENVIRONMENTAL PROTECTION			
FISH and WILDLIFE COMMISSION			
STATE			
TRANSPORTATION			

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evaluation and is categorized as one of the following:

- _ **Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.**
- X **Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.**
- _ **Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.**
- _ **Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.**

Project Description:

DEPARTMENT OF THE AIR FORCE - DRAFT ENVIRONMENTAL ASSESSMENT, NAVY EXPLOSIVE ORDNANCE DISPOSAL SCHOOL, TEST AREA D-51 MASTER DEVELOPMENT PLAN AT EGLIN AIR FORCE BASE - WALTON COUNTY, FLORIDA.

To: Florida State Clearinghouse

AGENCY CONTACT AND COORDINATOR (SCH)
3900 COMMONWEALTH BOULEVARD MS-47
TALLAHASSEE, FLORIDA 32399-3000
TELEPHONE: (850) 245-2161
FAX: (850) 245-2190

EO. 12372/NEPA

- ☑ No Comment
- ☐ Comment Attached
- ☐ Not Applicable

Federal Consistency

- ☐ No Comment/Consistent
- ☐ Consistent/Comments Attached
- ☐ Inconsistent/Comments Attached
- ☐ Not Applicable

NO COMMENTS

From:

Division/Bureau: NWFWMD
Resource Management Div.
Reviewer: Duncan J. Cairns
Date 20 NOV 2007

Date:

RECEIVED
NOV 26 2007
OIP / OLGA

Table A-1. Public Comments for the Environmental Assessment, Navy Explosive Ordnance Disposal School Master Development Plan For Test Area D-51, Eglin AFB Florida

Page #	Comment	Response
4-9 to 4-13	It is estimated that the number of training detonations will double. Existing detonations shake our windows and sometimes structures; doubling the number of detonations is an unacceptable environmental impact on our quality of life.	Thank you for your comments. Detonations occur on numerous test areas throughout Eglin. The largest size amount of explosive used on Test Area D-51 is 1.25 pounds, which is a relatively very small amount compared to other test areas.
4-9 to 4-13	Analysis wrongly made an unrealistically conservative assumption that the maximum explosion noise intensity would be an SPL of 115 dBP. By using this unrealistically low baseline for noise contour modeling, the model produced an unrealistically conservative blast noise contour. It is important to note the model products used to make the FONSI conclusion was not validated by actual noise measurements in the surrounding neighborhoods. Had this modeling analysis been physically validated, the Assessment would reflect definite noise related environmental impacts.	The text state identifies the 115 decibel level as that which would "moderately annoy" 15% of the population exposed. The text does not state that 115 dBP is the maximum noise level. It is only a widely used noise threshold for predicting community response. The model has been in use for many years and its validity for use at Eglin is well known. Thus, actual measurements were not necessary. Additionally, the model is conservative reflecting a higher than actual noise level for a given distance.
4-9 to 4-13	The Assessment stated the model used "has the capacity to incorporate meteorological conditions into the blast sound propagation." However, the Assessment's FONSI conclusion of No Noise Impact was based upon "a meteorological scenario of calm winds." It appears evident the Assessment selected unrealistically conservative baseline assumptions of low detonation dBP levels in concert with calm winds (and assumedly no low overcast) to support a desired FONSI Noise conclusion.	The determination of significance is still accurate. These detonations have been ongoing for several years. The proposed action would not result in a significant change in location respective to the reader. The calm weather scenario provides a realistic weather scenario for a almost 20% of the year. Most of the remaining typical weather scenarios direct noise away from the reviewers location. It is unlikely that the noise effects experienced by the reviewer are attributable to activities at Test Area D-51.
4-9 to 4-13	The Assessment recognized, but did not factor in expected F-35 operations. According to 96 CEG/CEVPA, F-35 operations "could create significant noise impacts" (The Beacon, October 31, 2007, page A-7). F-35 operations will occur every flying day/night from 7:00 AM to 11:00 PM (Col Ross, EIS Scoping Meeting, 7 Nov, 2007). Add this recognized potential for significant noise impact to EOD School's on-going window-rattling bomb blasts, and existing C-130 and Army range noise, one can appreciate the noise saturation the local population experiences. As a result, contrary to the Assessment, doubling EOD training detonations will synergistically contribute to existing noise related environmental impact.	Noise from the F-35 and detonations are measured in two different ways. Mathematically they cannot be combined to determine a cumulative or synergistic decibel level. We understand that multiple sources of noise from testing and training are perceptible at all areas throughout our region.

Table A-1. Public Comments for the Environmental Assessment, Navy Explosive Ordnance Disposal School Master Development Plan For Test Area D-51, Eglin AFB Florida, Cont'd

Page #	Comment	Response
4-9 to 4-13	The Assessment failed to include and consider Blue Water Bay and Rocky Bayou neighborhoods. Blue Water Bay population north of Hwy 20 is only 0.2 statute miles further in distance from the center of D-51 than the area of Choctaw Beach. Ref. Assessment Figure 4-1.	The assessment intentionally focused on the closest residential area. By determining that the Proposed Action would not significantly affect the closest area, those areas further away such as Bluewater Bay and Rocky Bayou would likewise not be affected.

BOOM LOG

4.75 miles from EOD School Center to Rocky Bayou

#	Date	Time	Intensity
1	26 Feb 2007	0909	Moderate, short duration, high energy
2	26 Feb 2007	0910	Moderate, short duration, high energy
3	29 Mar 07	0930	Moderate, medium duration, med. energy
4	29 Mar 07	0931	Moderate, medium duration, med. energy
5	29 Mar 07	0932	Moderate, medium duration, med. energy
6	29 Mar 07	0933	Moderate, medium duration, med. Energy
7	20 June 07	0958	Moderate, long duration, med. energy
8	20 June 07	0958	Moderate, long duration, med. energy
9	20 June 07	0959	Moderate, long duration, med. energy
10	23 July 07	1010	Very high, long duration, high energy
11	7 Sep 07	0906	Very high, long duration, high energy
12	31 Oct 07	0850-55	Several moderate long duration, med energy
13	1 Nov 07	1015	Moderate, medium duration, med. energy
14	1 Nov 07	1015	Moderate, medium duration, med. energy

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APPENDIX B

COASTAL ZONE MANAGEMENT ACT (CZMA)

FEDERAL AGENCY COASTAL ZONE MANAGEMENT ACT (CZMA) NEGATIVE DETERMINATION

Introduction

This document provides the State of Florida with the United States (U.S.) Air Force's Negative Determination under Section 307 of the Coastal Zone Management Act (CZMA), 16 United States Code (USC) § 1456, and 15 Code of Federal Regulations (CFR) Part 930.35. The information in this Negative Determination is provided pursuant to 15 CFR. Section 930.35.

This negative determination addresses the Proposed Action for the Navy Explosive Ordnance Disposal School Master Development Plan for Test Area D-51, Eglin Air Force Base (AFB), Florida (Figure 1).

Proposed Federal Agency Action:

The Navy proposes to expand existing facilities within Test Area D-51 at Eglin AFB. The Master Development Plan for Test Area D-51 outlines the current and future situations at the Navy Explosive Ordnance Disposal School (NAVSCOLEOD) and identifies requirements in facilities, practical areas, infrastructure, and utilities to accommodate the future growth. The Master Development Plan also delineates and defines current and future land use to guide changes within Test Area D-51 (Figure 2). Finally, the Master Development Plan outlines a strategy and timeline for accomplishing new facility and practical area development and describes the changes in infrastructure and utilities required to support the new development (Figure 3). The strategy is divided into short-term, mid-term, and long-term approaches to both facility development and infrastructure/utility upgrades and changes.

To accommodate the increase in student quotas, several new temporary and permanent facilities would be required (Table B-1). It is anticipated that permanent construction would begin in 2012 when military construction (MILCON) funding is appropriated for the permanent Applied Instruction Building (AIB) and the associated practical area for the diagnosis, disabling, containment, and disposal of weapons of mass destruction (WMDs) and large, sophisticated Improvised Explosive Devices (IEDs). The AIB and practical area would be located in the southeastern area of D-51 and would cover approximately four acres. Other permanent facilities are proposed, but funding has not yet been secured for these facilities. These proposed facilities include:

Short-term (0–5 years)

- Establish 16 temporary classrooms: seven for the Ground Ordnance Division, three for the WMD Division, and six for the Core Division.
- Construction by the Air Force would begin on the Air Education and Training Command (AETC) facility.
- Begin construction on the AIB and practical areas for WMD in 2012.

Mid-term (5–10 years)

- Begin construction on the AIB for Ground/Tools and Methods Division; begin construction on the AIB for the Core Division.
- Begin construction on the 11 training pavilions used to support the Divisions.

Long-term (10+ years)

- Begin construction on the NAVSCOLEOD Headquarters building, the AIB for international training, and practical areas for international training.

Three temporary classrooms (trailers) would be established in 2007 with an additional thirteen established as soon as 2009. Several temporary storage containers would be used in conjunction with the temporary classrooms.

The AETC facility would be a permanent structure approximately 3,871 ft^2 containing classrooms, office space, and male/female bathrooms with showers (Table B-1). The building would have its own parking lot. No practical areas are associated with the AETC facility. Construction is expected to begin on the facility in the short term (0–5 years).

Table B-1. Proposed Future Facilities

Facility and Practical Area	Square Footage
Applied Instruction Building for WMDs and Biological/Chemical (B/C)	32,023
Training Sites for WMD and B/C	115,592 (2.65 acres)
Applied Instruction Building for Ground Ordnance and Tools and Methods	20,099
Applied Instruction Building for Core	18,500
Training Pavilions for various Divisions	Unknown at this time
Expansion of existing galley in building 8840	1,389
Air Education and Training Command Facility for EOD Advanced Training	3,871
International training facility	Unknown at this time
Headquarters	Unknown at this time

Federal Review

After review of the Florida Coastal Management Program and its enforceable policies, the U.S. Air Force has made a determination that this activity would not have an effect on the state of Florida coastal zone or its resources.

Florida Coastal Management Program Consistency Review

Statute	Consistency	Scope
Chapter 161 *Beach and Shore Preservation*	The Proposed Action would not affect beach and shore management, specifically as it pertains to: • The Coastal Construction Permit Program. • The Coastal Construction Control Line (CCCL) Permit Program. • The Coastal Zone Protection Program. All land activities would occur on federal property.	Authorizes the Bureau of Beaches and Coastal Systems within DEP to regulate construction on or seaward of the states' beaches.
Chapter 163, Part II *Growth Policy; County and Municipal Planning; Land Development Regulation*	The Proposed Action would not affect local government comprehensive plans.	Requires local governments to prepare, adopt, and implement comprehensive plans that encourage the most appropriate use of land and natural resources in a manner consistent with the public interest.
Chapter 186 *State and Regional Planning*	The Proposed Action, which occurs on federal property, would conform to the State Comprehensive Plan and associated translational plans, in regards to the Florida Water Plan.	Details state-level planning efforts. Requires the development of special statewide plans governing water use, land development, and transportation.
Chapter 252 *Emergency Management*	The Proposed Action would not affect the state's vulnerability to natural disasters. The Proposed Action would not affect emergency response and evacuation procedures.	Provides for planning and implementation of the state's response to, efforts to recover from, and the mitigation of natural and manmade disasters.
Chapter 253 *State Lands*	All activities would occur on federal property; therefore the Proposed Action would not affect state or public lands.	Addresses the state's administration of public lands and property of this state and provides direction regarding the acquisition, disposal, and management of all state lands.
Chapter 258 *State Parks and Preserves*	The Proposed Action would not affect state parks, recreational areas and aquatic preserves.	Addresses administration and management of state parks and preserves.
Chapter 259 *Land Acquisition for Conservation or Recreation*	The Proposed Action would not affect tourism and/or outdoor recreation.	Authorizes acquisition of environmentally endangered lands and outdoor recreation lands.
Chapter 260 *Recreational Trails System*	The Proposed Action would not include the acquisition of land and would not affect the Greenways and Trails Program.	Authorizes acquisition of land to create a recreational trails system and to facilitate management of the system.

Florida Coastal Management Program Consistency Review, Cont'd

Statute	Consistency	Scope
Chapter 375 *Multipurpose Outdoor Recreation; Land Acquisition, Management, and Conservation*	The Proposed Action would not affect opportunities for recreation on state lands.	Develops comprehensive multipurpose outdoor recreation plan to document recreational supply and demand, describe current recreational opportunities, estimate need for additional recreational opportunities, and propose means to meet the identified needs.
Chapter 267 *Historical Resources*	The Proposed Action is not anticipated to impact cultural resources of the state. However, in the event that additional archaeological resources are inadvertently discovered during construction, 96th CEG/CEVH, Cultural Resources Branch would be notified immediately and further ground-disturbing activities would cease in that area. Identified resources would be managed in compliance with Federal law and Air Force regulations.	Addresses management and preservation of the state's archaeological and historical resources.
Chapter 288 *Commercial Development and Capital Improvements*	The Proposed Action would not affect future business opportunities on state lands, or the promotion of tourism in the region.	Provides the framework for promoting and developing the general business, trade, and tourism components of the state economy.
Chapter 334 *Transportation Administration*	The Proposed Action would not affect transportation.	Addresses the state's policy concerning transportation administration.
Chapter 339 *Transportation Finance and Planning*	The Proposed Action would not affect the finance and planning needs of the state's transportation system.	Addresses the finance and planning needs of the state's transportation system.
Chapter 370 *Saltwater Fisheries*	The Proposed Action would not affect saltwater fisheries.	Addresses management and protection of the state's saltwater fisheries.
Chapter 372 *Wildlife*	Impacts to biological resources would be minimal. Some sand pine and other scrub vegetation would be removed. No threatened or endangered species would be affected. A gopher tortoise survey would be completed prior to any ground disturbing activities. Any gopher tortoise found would be relocated in accordance with Eglin's permit. Therefore the proposed action would not adversely affect wildlife resources.	Addresses the management of the wildlife resources of the state.

Florida Coastal Management Program Consistency Review, Cont'd

Statute	Consistency	Scope
Chapter 373 *Water Resources*	Eglin's Water Resources Section, 96th CEG/CEVCE, would coordinate all applicable permits in accordance with the Florida Administrative Code (FAC). The Proposed Action would increase the potential for impact from the increased rate and volume of stormwater runoff, due to an increase in impervious surface area. In order to limit the effects the Proposed Action would have on water resources, Best Management Practices would be applied to control erosion and stormwater runoff. Applicable permitting requirements would be satisfied in accordance with 62-25 of the FAC and National Pollutant Discharge Elimination System (NPDES). Eglin AFB would submit a notice of intent to use the generic permit for stormwater discharge under the NPDES program prior to project initiation according to Section 403.0885, Florida Statutes (FS). The Proposed Action would also require coverage under the generic permit for stormwater discharge from construction activities that disturb one or more acres of land (FAC 62-621). The increased potable water demand would tax the existing water supply system. The following options are available to address future demands on the current water system: • Access water supply from tank at C-1 or from surrounding communities. • Additional above-ground storage tank or new, larger above-ground storage tank for fire flow demand. • Upgrades to current infrastructure. Permitting requirements would be in accordance with FAC 62-555.	Addresses the state's policy concerning water resources.
Chapter 376 *Pollutant Discharge Prevention and Removal*	The Proposed Action would not affect the transfer, storage, or transportation of pollutants.	Regulates transfer, storage, and transportation of pollutants, and cleanup of pollutant discharges.
Chapter 377 *Energy Resources*	The Proposed Action would not affect energy resource production, including oil and gas, and/or the transportation of oil and gas.	Addresses regulation, planning, and development of oil and gas resources of the state.

Florida Coastal Management Program Consistency Review, Cont'd

Statute	Consistency	Scope
Chapter 380 *Land and Water Management*	The Proposed Action would not affect development of state lands with regional (i.e. more than one county) impacts. The Proposed Action would not include changes to coastal infrastructure such as capacity increases of existing coastal infrastructure, or use of state funds for infrastructure planning, designing or construction.	Establishes land and water management policies to guide and coordinate local decisions relating to growth and development.
Chapter 381 *Public Health, General Provisions*	The Proposed Action would not affect the state's policy concerning the public health system.	Establishes public policy concerning the state's public health system.
Chapter 388 *Mosquito Control*	The Proposed Action would not affect mosquito control efforts.	Addresses mosquito control effort in the state.
Chapter 403 *Environmental Control*	Eglin AFB would take reasonable precautions to minimize fugitive particulate (dust) emissions during any ground disturbing/construction/renovation activities in accordance with FAC 62-296. Therefore, the Proposed Action would not affect water quality, air quality, pollution control, solid waste management, or other environmental control efforts.	Establishes public policy concerning environmental control in the state.
Chapter 582 *Soil and Water Conservation*	Major impacts to soils and sediments are not anticipated. Some soil disturbance would occur from construction, but transportation of soil off-site would be controlled through Best Management Practices. Therefore, the Proposed Action would not affect soil and water conservation efforts.	Provides for the control and prevention of soil erosion.

Figure B-1. Location of Test Area D-51 on Eglin AFB, Florida

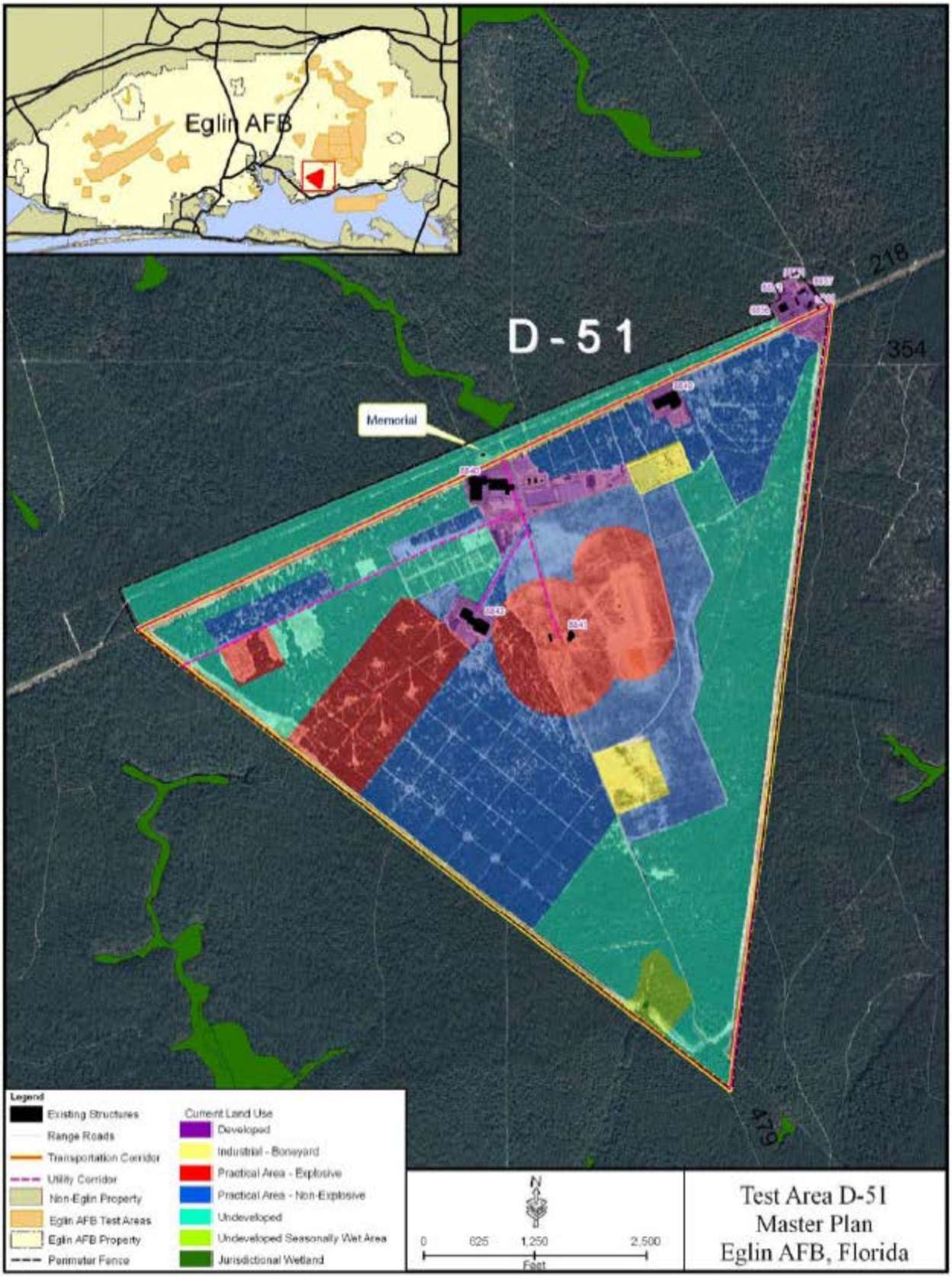

Figure B-2. Current Land Use at Test Area D-51

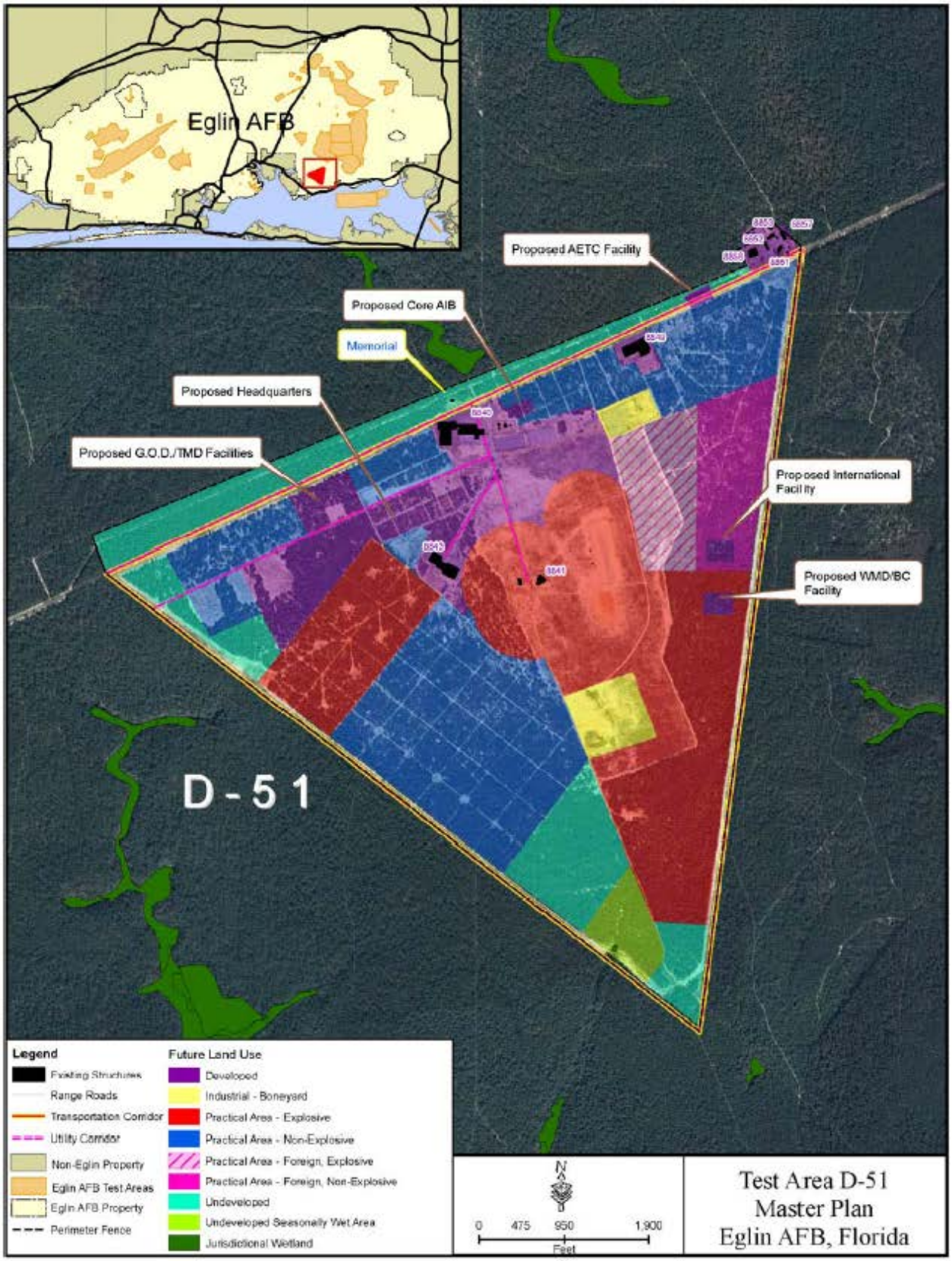

Figure B-3. Master Plan Land Use at Test Area D-51

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APPENDIX C

AIR QUALITY

ACRONYMS, ABBREVIATIONS, AND SYMBOLS

$\mu g/m^3$	Micrograms Per Cubic Meter
ACAM	Air Conformity Applicability Model
CAA	Clean Air Act
CO	Carbon Monoxide
CY	Calendar Year
ETS/CEM	Emission Tracking System/Continuous Emissions Monitoring
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FHWA	Federal Highway Administration
GRSQF	Gross Square Feet
HAPS	Hazardous Air Pollutants
NAAQS	National Ambient Air Quality Standards
NEI	National Emissions Inventory
NO_x	Nitrogen Oxides
PM_{10}	Particulate Matter With a Diameter Less Than or Equal to 10 Microns
$PM_{2.5}$	Particulate Matter With a Diameter Less Than or Equal to 2.5 Microns
ppm	Parts per Million
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
ROI	Region of Influence
SER	Significant Emissions Rate
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
USEPA	U.S. Environmental Protection Agency
VOC	Volatile Organic Compounds

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AIR QUALITY

This appendix presents an overview of the Clean Air Act (CAA) and the state of Florida air quality program. The appendix also discusses emission factor development and calculations including assumptions employed in the air quality analyses presented in the Air Quality sections.

Air Quality Program Overview

In order to protect public health and welfare, the U.S. Environmental Protection Agency (USEPA) has developed numerical concentration-based standards or National Ambient Air Quality Standards (NAAQS) for six "criteria" pollutants (based on health-related criteria) under the provisions of the Clean Air Act Amendments of 1970. There are two kinds of NAAQS: Primary and Secondary standards. Primary standards prescribe the maximum permissible concentration in the ambient air to protect public health including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards prescribe the maximum concentration or level of air quality required to protect public welfare including protection against decreased visibility, damage to animals, crops, vegetation, and buildings (GPO, no date).

The CAA gives states the authority to establish air quality rules and regulations. These rules and regulations must be equivalent to, or more stringent than, the Federal program. The Division of Air Resource Management within the Florida Department of Environmental Protection (FDEP) administers the state's air pollution control program under authority of the Florida Air and Water Pollution Control Act and the Environmental Protection Act.

Florida has adopted the NAAQS except for sulfur dioxide (SO_2). USEPA has set the annual and 24-hour standards for SO_2 at 0.03 parts per million (ppm) (80 micrograms per cubic meter [$\mu g/m^3$]) and 0.14 ppm (365 $\mu g/m^3$) respectively. Florida has adopted the more stringent annual and 24-hour standards of 0.02 ppm (60 $\mu g/m^3$) and 0.1 ppm (260 $\mu g/m^3$) respectively. In addition, Florida has adopted the national secondary standard of 0.50 ppm (1300 $\mu g/m^3$). Federal and state of Florida ambient air quality standards are presented in Table C-1 (FAC 62-204.240, 2006).

Based on measured ambient air pollutant concentrations, the USEPA designates areas of the United States as having air quality better than (attainment), worse than (nonattainment) the NAAQS, and unclassifiable. Those that cannot be classified on the basis of available information as meeting or not meeting the NAAQS for a particular pollutant are "unclassifiable" and are treated as attainment until proven otherwise. Attainment areas can be further classified as "maintenance" areas. Maintenance areas are those areas previously classified as nonattainment but have successfully reduced air pollutant concentrations below the standard. Maintenance areas are under special maintenance plans and must operate under some of the nonattainment area plans to ensure compliance with the NAAQS. All areas of the state are in compliance with the NAAQS.

Table C-1. Summary of National and State Ambient Air Quality Standards

Criteria Pollutant	Averaging Time	Federal Primary NAAQS[8]	Federal Secondary NAAQS [8]	*Florida Standards*
Carbon Monoxide (CO)	8-hour[1]	9 ppm (10 mg/m^3)	No standard	9 ppm (10 mg/m^3)
	1-hour[1]	35 ppm (40 mg/m^3)	No standard	35 ppm (40 mg/m^3)
Lead (Pb)	Quarterly	1.5 µg/m^3	1.5 µg/m^3	1.5 µg/m^3
Nitrogen Dioxide (NO_2)	Annual	0.053 ppm (100 µg/m^3)	0.053 ppm (100 µg/m^3)	0.053 ppm (100 µg/m^3)
Particulate Matter ≤10 Micrometers (PM_{10})	Annual[2]	Revoked	Revoked	50 µg/m^3
	24-hour[3]	150 µg/m^3	150 µg/m^3	150 µg/m^3
Particulate Matter <2.5 Micrometers ($PM_{2.5}$)	Annual[4]	15 µg/m^3	15 µg/m^3	15 µg/m^3
	24-hour[5]	35µg/m^3	35 µg/m^3	65 µg/m^3
Ozone (O_3)	1-hour[7]	0.12 ppm (235 µg/m^3)	0.12 ppm (235 µg/m^3)	0.12 ppm (235 µg/m^3)
	8-hour[6]	0.08 ppm (157 µg/m^3)	0.08 ppm (157 µg/m^3)	
Sulfur Dioxide (SO_2)	Annual	0.03 ppm (80 µg/m^3)	No standard	0.02 ppm (60 µg/m^3)
	24-hour[1]	0.14 ppm (365 µg/m^3)	No standard	0.10 ppm (260 µg/m^3)
	3-hour[1]	No standard	0.50 ppm (1300 µg/m^3)	0.50 ppm (1300 µg/m^3)

Source: USEPA, 2006a (Federal Standards)
FAC 62-204.240, 2006 (Florida Standards)

ppm = parts per million; mg/m³ = milligrams per cubic meter; µg/m³ = micrograms per cubic meter; NAAQS = National Ambient Air Quality Standards

[1] Not to be exceeded more than once per year.

[2] Due to lack of evidence linking health problems to long-term exposure to coarse particle pollution, the agency revoked the annual PM_{10} standard in 2006 (effective December 17, 2006).

[3] Not to be exceeded more than once per year on average over 3 years.

[4] To attain this standard, the 3-year average of the weighted annual mean $PM_{2.5}$ concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m³

[5] To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 mg/m³ (effective December 17, 2006)

[6] To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.

[7] (a) The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is ≤ 1.
(b) As of June 15, 2005 EPA revoked the 1-hour ozone standard in all areas except the fourteen 8-hour ozone nonattainment Early Action Compact (EAC) Areas.

[8] Concentration expressed first in the units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25° C and a reference pressure of 760 mm of mercury; ppm refers to parts per million by volume.

General conformity analysis is required if the action's direct and indirect emissions have a potential to emit (PTE) one or more of the six criteria pollutants at or above emission rates shown in Table C-2 or Table C-3; or the action's direct and indirect emissions of any criteria pollutant represent 10 percent of a non-attainment or maintenance area's total emissions inventory for that pollutant.

Table C-2. Emission Rates for Criteria Pollutants in Nonattainment Areas*

Pollutant		Emission Rate (tpy)
Ozone (VOCs or NO_x)		
	Serious Nonattainment areas	50
	Severe nonattainment areas	25
	Extreme nonattainment areas	10
	Other ozone nonattainment areas outside an ozone transport region	100
Marginal and moderate nonattainment areas inside an ozone transport region		
	VOC	50
	NO_x	100
CO: All nonattainment areas		100
SO_2 or NO_2: All nonattainment areas		100
PM_{10}		
	Moderate nonattainment areas	100
	Serious nonattainment areas	70
$PM_{2.5}$		
	Direct emissions	100
	SO_2	100
	NO_x (unless determined not to be a significant precursor)	100
	VOC or ammonia (if determined to be significant precursors)	100
Pb: All nonattainment areas		25

Source: USEPA, 2006c

**De minimus* threshold levels for conformity applicability analysis.
tpy = tons per year; VOCs = volatile organic compounds; NO_x= Nitrogen Oxides; CO = Carbon Monoxide; SO_2 = Sulfur Dioxide; NO_2 = Nitrogen Dioxide; PM_{10} = Particulate Matter with a diameter $\leq$ 10 microns; $PM_{2.5}$ = Particulate Matter with a diameter $\leq$ 2.5 microns; Pb = Lead

Each state is required to develop a state implementation plan (SIP) that sets forth how CAA provisions will be imposed within the state. The SIP is the primary means for the implementation, maintenance, and enforcement of the measures needed to attain and maintain the NAAQS within each state and includes control measures, emissions limitations, and other provisions required to attain and maintain the ambient air quality standards. The purpose of the SIP is twofold. First, it must provide a control strategy that will result in the attainment and maintenance of the NAAQS. Second, it must demonstrate that progress is being made in attaining the standards in each nonattainment area.

Table C-3. Emission Rates for Criteria Pollutants in Attainment (Maintenance) Areas*

Pollutant		Emission Rate (tpy)
Ozone (NO_x, SO_2 or $NO_{2)}$: All maintenance areas:		100
Ozone (VOCs)		
	Maintenance areas inside an ozone transport region	50
	Maintenance areas outside an ozone transport region	100
CO: All maintenance areas		100
PM_{10}: All maintenance areas		100
$PM_{2.5}$		
	Direct Emissions	100
	SO_2	100
	NO_x (unless determined not to be a significant precursor)	100
	VOC or ammonia (if determined to be significant precursors)	100
Pb: All maintenance areas		25

Source: USEPA, 2006c

**De minimus* threshold levels for conformity applicability analysis.
tpy = tons per year; VOCs = volatile organic compounds; NO_x= Nitrogen Oxides; CO = Carbon Monoxide; SO_2 = Sulfur Dioxide; NO_2 = Nitrogen Dioxide; PM_{10} = Particulate Matter with a diameter $\leq$10 microns; $PM_{2.5}$ = Particulate Matter with a diameter $\leq$2.5 microns; Pb = Lead

In attainment areas, major new or modified stationary sources of air emissions on and in the area are subject to Prevention of Significant Deterioration (PSD) review to ensure that these sources are constructed without causing significant adverse deterioration of the clean air in the area. A major new source is defined as one that has the potential to emit any pollutant regulated under the CAA in amounts equal to or exceeding specific major source thresholds: 100 or 250 tons/year based on the source's industrial category. A major modification is a physical change or change in the method of operation at an existing major source that causes a significant "net emissions increase" at that source of any regulated pollutant. Table C-4 provides a tabular listing of the PSD significant emissions rate (SER) thresholds for selected criteria pollutants (USEPA, 1990).

Table C-4. Criteria Pollutant Significant Emissions Rate Increases Under PSD Regulations

Pollutant	Significant Emissions Rate (Tons/yr)
PM_{10}	15
$PM_{2.5}$	10
Total Suspended Particulate (TSP)	25
SO_2	40
NO_x	40
Ozone (VOC)	40
CO	100

Source: Title 40 CFR Part 51.166
PSD = Prevention of Significant Deterioration; PM_{10} = Particulate Matter with a diameter $\leq$10 microns; $PM_{2.5}$ = Particulate Matter with a diameter $\leq$2.5 microns; SO_2 = Sulfur Dioxide; NO_x= Nitrogen Oxides; VOC = volatile organic compounds; CO = Carbon Monoxide

The goal of the PSD program is to: 1) ensure economic growth while preserving existing air quality, 2) protect public health and welfare from adverse effects which might occur even at pollutant levels better than the NAAQS, and 3) preserve, protect, and enhance the air quality in areas of special natural recreational, scenic, or historic value, such as national parks and wilderness areas. Sources subject to PSD review are required by the CAA to obtain a permit before commencing construction. The permit process requires an extensive review of all other major sources within a 50-mile radius and all Class I areas within a 62-mile radius of the facility. Emissions from any new or modified source must be controlled using Best Available Control Technology. The air quality, in combination with other PSD sources in the area, must not exceed the maximum allowable incremental increase identified in Table C-5. National parks and wilderness areas are designated as Class I areas, where any appreciable deterioration in air quality is considered significant. Class II areas are those where moderate, well-controlled industrial growth could be permitted. Class III areas allow for greater industrial development. The areas surrounding Eglin Air Force Base and Hurlburt Field are classified as Class II. Currently there are no designated Class III areas in the United States.

Table C-5. Federal Allowable Pollutant Concentration Increases Under PSD Regulations

Pollutant	Averaging Time	Maximum Allowable Concentration ($\mu g/m^3$)		
		Class I	Class II	Class III
PM_{10}	Annual	4	17	34
	24-hour	8	30	60
SO_2	Annual	2	20	40
	24-hour	5	91	182
	3-hour	25	512	700
NO_2	Annual	2.5	25	50

Source: Title 40 CFR Part 51

Florida has a statewide air quality-monitoring network that is operated by both state and local environmental programs (FDEP, 2003). The air quality is monitored for carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter and sulfur dioxide. The monitors tend to be concentrated in areas with the largest population densities. Not all pollutants are monitored in all areas. The air quality monitoring network is used to identify areas where the ambient air quality standards are being violated and plans are needed to reduce pollutant concentration levels to be in attainment with the standards. Also included are areas where the ambient standards are being met but plans are necessary to ensure maintenance of acceptable levels of air quality in the face of anticipated population or industrial growth.

The end-result of this attainment/maintenance analysis is the development of local and statewide strategies for controlling emissions of criteria air pollutants from stationary and mobile sources. The first step in this process is the annual compilation of the ambient air monitoring results, and the second step is the analysis of the monitoring data for general air quality, exceedances of air quality standards, and pollutant trends.

The FDEP Northwest District operates monitors in several counties, including Bay, Escambia, Holmes, Leon, Santa Rosa, and Wakulla counties. Over the years of record there have been

exceedances (pollutant concentration greater than the numerical standard) of a NAAQS. However, there has not been a violation (occurrence of more exceedances of the standard than is allowed within a specified time period) of an ambient standard (FDEP, 2003).

Regulatory Comparisons

In order to evaluate the air emissions and their impact to the overall region of influence (ROI), the emissions associated with the construction activities were compared to the total emissions on a pollutant-by-pollutant basis for the ROI's 2002 NEI data. Potential impacts to air quality were then identified as the total emissions of any pollutant that equals 10 percent or more of the ROI's emissions for that specific pollutant. The 10 percent criteria approach is used in the General Conformity Rule as an indicator for impact analysis for non-attainment and maintenance areas, and although Walton County is attainment for the NAAQS, the General Conformity Rule's impact analysis was utilized to provide a consistent approach to evaluating the impact of the proposed actions emissions.

To provide a conservative evaluation, the impacts screening in this analysis used a more restrictive criteria than required in the General Conformity Rule. Rather than comparing emissions from construction activities to regional inventories (as required in the General Conformity Rule), emissions were compared to the individual parish potentially impacted, which is a smaller area.

Project Calculations

Construction Emissions

Construction emissions calculations were completed using the calculation methodologies described in the U.S. Air Force Air Conformity Applicability Model (ACAM). As previously indicated, a conformity determination is not required since Walton County is designated "attainment;" the ACAM was used to provide a level of consistency with respect to emissions factors and calculations.

The ACAM evaluates the individual emissions from different sources associated with the construction phases. These sources include grading activities, asphalt paving, construction worker trips, stationary equipment (e.g. saws and generators), nonresidential architectural coatings, and mobile equipment emissions (U.S. Air Force, 2003).

As a result of limited information, certain assumptions were made to develop the air quality analysis. The building construction, square footages, and timeframe to build used for this analysis are listed in Table C-6, Construction Assumptions. Based on these assumptions, the construction emissions were calculated using the calculation methodology expressed below.

Table C-6. Construction Assumptions

Facility and Practical Area	Square Footage	Timeframe to Build
Applied Instruction Building for WMDs and B/C	32,023	0-5
10 Training Sites for WMDs and B/C	115,592	0-5
Applied Instruction Building for Ground Ordnance and Tools and Methods	20,099	5-10
Applied Instruction Building for Core	18,500	5-10
11 Training Pavilions for various Divisions	Assumed 115,592	5-10
Expansion of existing galley in building 8840	1,389	0-5
Air Education and Training Command Facility for EOD Advanced Training	5,700	0-5
International training facility	Assumed 32,000	10+
Headquarters	Assumed 59,731	10+

WMD = Weapons of Mass Destruction; B/C = Biological/Chemical

Grading Activities

Grading activities are divided into grading equipment emissions and grading operation emissions. Grading equipment calculations are combustive emissions from equipment engines and are ascertained in the following manner.

VOC = .22 (lbs/acre/day) * Acres * DPY_1 / 2000

NO_x = 2.07 (lbs/acre/day) * Acres * DPY_1 / 2000

PM_{10} = .17 (lbs/acre/day) * Acres * DPY_1 / 2000

CO = .55 (lbs/acre/day) * Acres * DPY_1 / 2000

SO_2 = .21 (lbs/acre/day) * Acres * DPY_1 / 2000

Where Acres = number of gross acres to be graded during Phase I construction.

DPY_1 = number of days per year during Phase I construction which are used for grading.

2000 = conversion factor from pounds to tons.

All emissions are represented as tons per year.

Grading operations are calculated using a similar equation from the Sacramento Air Quality Management District and the South Coast Air Quality Management Districts (U.S. Air Force, 2003). These calculations include grading and truck hauling emissions.

PM10 (tons/yr) =60.7 (lbs/acre/day) * Acres * DPY_1 / 2000

Where Acres = number of gross acres to be graded during Phase1 construction.

DPY_1 = number of days per year during Phase I construction that are used for grading.

2000 = conversion factor from pounds to tons.

Calculations assumed that there were no controls used to reduce fugitive emissions. Also, it was assumed that construction activities would begin in CY 2012 and grading activities would represent 33 percent of that total. Therefore, 182 days was the duration established for grading operations. Emissions factors were derived from the Sacramento Air Quality Management District and the South Coast Air Quality Management District (U.S. Air Force, 2003).

Architectural Coatings

Non-residential architectural coating emissions are released through the evaporation of solvents that are contained in paints, varnishes, primers and other surface coatings.

VOC_{SF} (lbs/yr) = (SQR_GRSQF * 1.63)/2000

Where: SQR_GRSQF = square root of gross square feet of nonresidential building space to be constructed in the given year of construction.

1.63 = Emissions factor

2000 = conversion factor from pounds to tons

It was assumed that construction activities would occur within 548 days. After subtracting the grading activities from the estimated overall construction time, the actual construction period was reduced to 366 days. Emissions factors were derived from the Sacramento Air Quality Management District and the South Coast Air Quality Management District (U.S. Air Force, 2003).

Asphalt Paving

VOC emissions are released during asphalt paving and are calculated using the following methodology.

VOC_{PT} (tons/yr) = (2.62 lbs/acre) * Acres Paved / 2000

Acres Paved = total number of acres to be paved at the site.

2000 = conversion factor from pounds to tons.

It was assumed that approximately 10 percent of the area would be paved with asphalt. The specific emissions factors used in the calculations were available through Sacramento Air Quality Management and the South Coast Air Quality Management Districts (U.S. Air Force, 2003).

Construction Worker Trips

Construction worker trips during the construction phases of the project are calculated and represent a function of the number of residential units to be constructed and/or square feet of commercial construction.

Trips (trips/day) = .42 (trip/unit/day) * Area of training facilities

Total daily trips are applied to the following factors depending on the corresponding years.

Year 2005 through 2009:

VOC_E = .016 * Trips
NOx_E = .015 * Trips
$PM10_E$ = .0022 * Trips
CO_E = .262 * Trips

Year 2010 and beyond:

VOC_E = .012 * Trips
NOx_E = .013 * Trips
$PM10_E$ = .0022 * Trips
CO_E = .262 * Trips

To convert from pounds per day to tons per year:

VOC (tons/yr) = VOC_E * DPY_{II}/2000
NOx (tons/yr) = NOx_E * DPY_{II}/2000
PM10 (tons/yr) = $PM10_E$ * DPY_{II}/2000
CO (tons/yr) = CO_E * DPY_{II}/2000

Where: Commercial construction = total square footage of construction projects be constructed in the given year of construction.

2000 = conversion factor from pounds to tons

DPY_{II} = number of days per year during Phase II construction activities.

It was assumed that the total square footage of construction was estimated to be 154,704, 154,191, and 91,731 square feet for short-term, mid-term, and long term projects respectively. Emissions factors were derived from the Sacramento Air Quality Management District and the South Coast Air Quality Management District (U.S. Air Force, 2003).

Stationary Equipment

Emissions from stationary equipment occur when gasoline powered equipment (e.g. saws, generators, etc.) is used at the construction site.

$VOC = .198 * (GRSQFT) * DPY_{II} / 2000$

$NO_x = .137 * (GRSQFT) * DPY_{II} / 2000$

$PM_{10} = .004 * (GRSQFT) * DPY_{II} / 2000$

$CO = 5.29 * (GRSQFT) * DPY_{II} / 2000$

$SO_2 = .007 * (GRSQFT) * DPY_{II} / 2000$

Where GRSQF = Gross square feet of commercial buildings to be constructed during phase II.

DPY_{II} = number of days per year during Phase II construction.

2000 = conversion factor from pounds to tons.

It was assumed that the total square footage of construction was estimated to be 154,704, 154,191, and 91,731 square feet for short-term, mid-term, and long term projects respectively. Emissions factors were derived from the Sacramento Air Quality Management District and the South Coast Air Quality Management District (U.S. Air Force, 2003).

Mobile Equipment

Mobile equipment emissions include pollutant releases associated with forklifts, dump trucks, etc., used during Phase II construction.

$VOC = .17 * (GRSQFT) * DPY_{II} / 2000$

$NO_x = 1.86 * (GRSQFT) * DPY_{II} / 2000$

$PM_{10} = .15 * (GRSQFT) * DPY_{II} / 2000$

$CO = .78 * (GRSQFT) * DPY_{II} / 2000$

$SO_2 = .23 * (GRSQFT) * DPY_{II} / 2000$

Where: GRSQF = Gross square feet of training area to be constructed during Phase II.

DPY_{II} = number of days per year during Phase II construction.

2000 = conversion factor from pounds to tons.

It was assumed that the total square footage of construction was estimated to be 154,704, 154,191, and 91,731 square feet for short-term, mid-term, and long term projects respectively. Emissions factors were derived from the Sacramento Air Quality Management District and the South Coast Air Quality Management District (U.S. Air Force, 2003).

Vehicle Emissions

Vehicle emissions are generated from on-road base employee commuters, on-road government use and off-road base support vehicles. The total increase in population is 831 over a four year period.

On-road Base Employee Commute Emissions:
Emission Calculation:

$$E_p = F \times 2 \times (N \times COMDIST \times (1 - ONBASE) \times WORKDAYS \times \frac{EF_p}{454 \times 2000}$$

Where:

N = Number of personnel realigned

F = Fraction of the year the personnel operate

COMDIST = One-way commute distance, miles for off-base personnel

ONBASE = Fraction of personnel living on base

WORKDAYS = number of work days per year, assumed to be 230

EF_p = Emission factor for pollutant, p, grams/mile. These factors were determined from MOBILE 6 for total hydrocarbons (VOCs), CO, and NO_x for the chosen fleet mix.

2 = Number of commutes per work day

454 = Conversion factor from grams to pounds

2000 = Conversion factor from pounds to tons

On-road GOV Emissions:
Emission Calculation:

$$E_p = N \times F \times GOVVMT \times \frac{EF_p}{454 \times 2000}$$

Where:

N = Number of personnel realigned

F = Fraction of the year the personnel operate

GOVVMT = Per-employee VMT, miles/employee

EF_p = Emission factor for pollutant, p, grams/mile. These factors were determined from MOBILE 6 for total hydrocarbons (VOCs), CO, and NO_x for the chosen fleet mix.
454 = Conversion factor from grams to pounds

2000 = Conversion factor from pounds to tons

Off-Road Base Support Vehicles Emissions:
A variety of off-road support vehicles are used at typical Air Force Installations. There are many types of these vehicles both gasoline and diesel fueled. Since specific numbers and types of

vehicles for each base are difficult to obtain, emissions from this category are assumed to be proportional to personnel, with an emission factor derived from aggregate emissions for a typical base.

Emission Calculation:

$$E_p = N \times F \times \frac{EF_p}{2000}$$

Where: N = Number of personnel realigned

F = Fraction of the year the personnel operate

EF_p = Per employee emission factor, lb. Total emission for this category were derived from the 1992 emission inventory of March AFB and the total number of employees for 1992 at the base. The emission factors are as follows SO_2 = 0.24, PM_{10} = 0.34, CO = 7.91, VOC = 0.74.

2000 = Conversion factor from pounds to tons

National Emissions Inventory

The National Emissions Inventory (NEI) is operated under USEPA's Emission Factor and Inventory Group, which prepares the national database of air emissions information with input from numerous state and local air agencies, from tribes, and from industry. The database contains information on stationary and mobile sources that emit criteria air pollutants and hazardous air pollutants (HAPs). The database includes estimates of annual emissions, by source, of air pollutants in each area of the country on an yearly basis. The NEI includes emission estimates for all 50 states, the District of Columbia, Puerto Rico, and the Virgin Islands. Emission estimates for individual point or major sources (facilities), as well as county level estimates for area, mobile, and other sources, are available currently for years 1996 and1999 for criteria pollutants and HAPs.

Criteria air pollutants are those for which USEPA has set health-based standards. Four of the six criteria pollutants are included in the NEI database.

- Carbon Monoxide (CO)
- Nitrogen Oxides (NO_x)
- Sulfur Dioxide (SO_2)
- Particulate Matter (PM_{10} and $PM_{2.5}$)

The NEI also includes emissions of Volatile Organic Compounds (VOCs), which are ozone precursors, emitted from motor vehicle fuel distribution and chemical manufacturing, as well as other solvent uses. VOCs react with nitrogen oxides in the atmosphere to form ozone. The NEI database defines three classes of criteria air pollutant sources.

- Point Sources - Stationary sources of emissions, such as an electric power plant, that can be identified by name and location. A "major" source emits a threshold amount (or more)

of at least one criteria pollutant and must be inventoried and reported. Many states also inventory and report stationary sources that emit amounts below the thresholds for each pollutant.

- Area Sources - Small point sources such as a home or office building, or a diffuse stationary source such as wildfires or agricultural tilling. These sources do not individually produce sufficient emissions to qualify as point sources. Dry cleaners are one example, i.e., a single dry cleaner within an inventory area typically will not qualify as a point source, but collectively the emissions from all of the dry cleaning facilities in the inventory area may be significant and therefore must be included in the inventory.
- Mobile Sources - Any kind of vehicle or equipment with a gasoline or diesel engine; airplane; or ship.

The main sources of criteria pollutant emissions data for the NEI are:

- For electric generating units: USEPA's Emission Tracking System/Continuous Emissions Monitoring Data (ETS/CEM) and Department of Energy fuel use data.
- For other large stationary sources: state data and older inventories where state data was not submitted.
- For on-road mobile sources: the Federal Highway Administration's (FHWA's) estimate of vehicle miles traveled and emission factors from USEPA's MOBILE Model.
- For non-road mobile sources: USEPA's NONROAD Model.
- For stationary area sources: state data, USEPA-developed estimates for some sources, and older inventories where state or USEPA data was not submitted.
- State and local environmental agencies supply most of the point source data. USEPA's Clean Air Market program supplies emissions data for electric power plants.

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APPENDIX D

TRAINING AREA (TA) D-51
MASTER DEVELOPMENT PLAN

EGLIN AIR FORCE BASE
Florida

FINAL

NAVY EXPLOSIVE ORDNANCE DISPOSAL SCHOOL

MASTER DEVELOPMENT PLAN FOR TEST AREA D-51

January 2008

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LIST OF ACRONYMS, ABBREVIATIONS, AND SYMBOLS

7SFG(A)	U.S. Army 7th Special Forces Group (Airborne)
96 ABW	96 Air Base Wing
96 ABW/CC	Commander, 96 Air Base Wing
96 ABW/XPS	96 Air Base Wing/Plans
96 CG/SCXP	96 Communications Squadron, Plans and Requirements Office
AETC	Air Education and Training Command
AFB	Air Force Base
AIB	Applied Instruction Building
B/C	Biological/Chemical
BRAC	Base Realignment and Closure
CBECS	Commercial Buildings Energy Consumption Survey
CHELCO	Choctawhatchee Electric Cooperative, Inc.
DoD	Department of Defense
EOD	Explosive Ordnance Disposal
ESS	Explosive Safety Submission
ft^2	Square Feet
FY	Fiscal Year
GIS	Geographic Information Systems
gpm	Gallons per Minute
HQ AF/A7	Headquarters Air Force/Installations and Mission Support
HQ AFMC/A8	Strategic Plans and Programs Directorate, Headquarters Air Force Materiel Command/
IDC	Installation Development Council
IED	Improvised Explosive Device
IT/NSS	Information Technology/National Security Systems
kWh	Kilowatt Hour
LAN	Local Area Network
MILCON	Military Construction
NAVSCOLEOD	Navy Explosive Ordnance Disposal School
pH	A measure of acidity
Q-D	Quantity Distance
RC3	Range Configuration Control Committee
RDESC	Range Development Executive Steering Committee
RF	Radio Frequency
TA	Test Area
UHF	Ultra High Frequency
U.S.	United States
USEPA	United States Environmental Protection Agency
UXO	Unexploded Ordnance
WMD	Weapons of Mass Destruction

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1. INTRODUCTION

The Navy Explosive Ordnance Disposal School (NAVSCOLEOD) at Eglin Air Force Base (AFB) is the sole source for basic explosive ordnance disposal (EOD) training for all Department of Defense (DoD) agencies. The NAVSCOLEOD trains officers and enlisted members of the United States (U.S.) Joint Service, international military students, and civilians in the best methods for location, identification, evaluation, recovery, rendering safe, and disposal of both foreign and domestic ordnance, including nuclear weapons.

The NAVSCOLEOD is planning to expand existing facilities within Test Area (TA) D-51 at Eglin AFB pending approval by the 96 Air Base Wing (96 ABW), Headquarters Air Force Materiel Command, and Headquarters Air Force. An approved increase in the overall size of the U.S. Army will result in a higher number of students attending the NAVSCOLEOD, beginning in fiscal year (FY) 2008 over the next five to ten years. The Navy and international community also have a requirement to increase the number of students scheduled to attend the NAVSCOLEOD. To accommodate the increases in student population, new facilities and practical areas will be required. The Navy and Air Force identified a need for a Master Development Plan to guide the future expansion of facilities at TA D-51.

This Master Development Plan for TA D-51 outlines the current and future situations at the NAVSCOLEOD and identifies requirements in facilities, practical areas, infrastructure, and utilities to accommodate the future growth. The Master Development Plan also delineates and defines current and future land use to guide changes within TA D-51. Finally, the Master Development Plan outlines a strategy and timeline for accomplishing new facility and practical area development and describes the changes in infrastructure and utilities required to support the new development. The strategy is divided into short-term, mid-term, and long-term approaches to both facility development and infrastructure/utility upgrades and changes.

TA D-51 is located in the southeastern portion of the Eglin Range (Figure 1).

The topography of the area is relatively flat with slopes that are less than 1 percent. The landscape is characterized by mild rises in land elevation, forming a very slight undulation to the land.

The soils in the area of TA D-51 are very deep, very strongly acidic (pH of 4.5 to 6.0) and are classified in the Lakeland Sand soil series. The soil is generally characterized by high sand content, low organic matter content, rapid infiltration, high permeability, and low fertility. Typically, the depth to the seasonal water table is more than 80 inches.

No surface waters occur within TA D-51. Smith Branch (a tributary to Long Creek) is located to the north of TA D-51, and Eagle Creek is located to the west of TA D-51. Both are outside of the fenced boundary of the test area. A small jurisdictional wetland (less than 1 acre) is located within TA D-51 along the southwestern boundary where a change in topography forms a ravine. The area is seasonally wet possibly due to an underground spring.

TA D-51 is located within the area of the Eglin Range classified as having "probable" unexploded ordnance (UXO) contamination. The probability of finding UXO contamination within TA D-51 is moderate to high.

The area surrounding TA D-51 is predominantly composed of the sand pine ecosystem. Previous to the NAVSCOLEOD locating at TA D-51 much of the test area was mechanically maintained as an open grassland/shrubland typical of Eglin test areas. When the NAVSCOLEOD was established, regular vegetation maintenance stopped, resulting in a regrowth of sand pine, scrub oaks, and an understory of native grasses and forbs. Periodic vegetation maintenance activities are conducted by NAVSCOLEOD to clear underbrush in the training practical areas of the test area. However, no prescribed fire is used to maintain vegetation within TA D-51.

No federally threatened or endangered species are known to occur within the fence line of TA D-51. However, the Okaloosa darter, a federally and state-listed endangered species, is known to occur in Smith Branch to the north of the test area. The state listed gopher tortoise, a species of special concern, could be found within TA D-51. The State of Florida is in the process of upgrading the gopher tortoise to threatened. A gopher tortoise survey will be required prior to any ground disturbance. Few to no cultural resources are expected to occur within TA D-51. The area overall has been classified as having a low probability of cultural resource occurrences.

Figure 1. Location of Test Area D-51

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2. CURRENT SITUATION

2.1 STUDENT AND STAFF POPULATION

The current student population attending the NAVSCOLEOD in a year is approximately 1,150. The branch of military of which a student is a member determines the length of time he or she attends the NAVSCOLEOD. The Navy syllabus is nine months, which includes a three-month underwater training division. The syllabus for the other military services is six months. A new class of 25 students starts at the school every six days.

Also part of the NAVSCOLEOD are approximately 300 staff who either teach courses and practical exercises or provide medical and administrative support. Support staff are currently located onsite at TA D-51 and on Eglin Main Base at the NAVSCOLEOD building 845 and barracks. On any given working day, TA D-51 has an average of 952 personnel onsite.

2.2 FACILITIES AND PRACTICAL AREAS

The NAVSCOLEOD consists of several buildings (Table 1) and largely undeveloped areas used for practical exercises (Figure 2). The classroom facilities and practical areas are clustered together for logistical and educational reasons. Immediately after the students learn a new technique, they leave the classroom, pick up their tools, and walk outside to the applicable practical area, which functions as their laboratory.

The practical areas are divided into explosive and nonexplosive areas. The explosive practical areas are used for detonating 1.25-pound blocks of C-4 explosives and other smaller charges. In addition, .50 caliber and shotgun shells are also used in the explosive practical areas. Nonexplosive practical areas are used for building identification skills and for a variety of teaching methods, including the use of tools and robotics for dismantling improvised explosive devices (IEDs).

Table 1. Facilities Located at Test Area D-51

Name of Facility	Building Number	Square Footage
Headquarters Building	8840	59,731
Operational Control Bunker	8841	900
IED and Ground Ordnance Training Facility	8843	31,474
Core and Air Ordnance Training Facility	8849	35,480
Facilities Maintenance Compound Administrative Building	8856	4,500
Facilities Maintenance Compound Pole Shed	8852	1,600
Facilities Maintenance Compound	8853	1,600
Facilities Maintenance Compound	8857	2,640
Facilities Maintenance Compound	8861	1,320

Source: Eglin AFB Real Property Records, 2007

2.3 INFRASTRUCTURE AND UTILITIES

Infrastructure and utilities supporting TA D-51 are currently central to Range Road and the road parallel to Range Road within the fenced compound (Figure 2). Electricity, water, natural gas, and communication lines are supplied to the main Headquarters building (building 8840), Core and Air Ordnance Training facility (8849), Operational Control Bunker (8841), IED and Ground Ordnance Training facility (8843), and the Facilities Maintenance Compound (8856) at the east end of Range Road.

2.3.1 Transportation

Primary access is provided to TA D-51 via Range Road 218, which also provides primary access to TA C-52 and the southeastern portion of the Eglin Range (Figure 2). Range Road 218 is a two-lane paved road that originates from State Highway 20 and passes through a mixed use area (commercial and higher density residential), an elementary school zone (Bluewater Bay Elementary School), and a low-density residential area prior to reaching the Eglin Range boundary. Centerline Road (Range Road 461) provides access through the center of TA D-51 and is a clay/gravel road. The Navy Construction Force ("Navy Seabees") is responsible for maintaining the range roads.

Range Road 218 usage is intermittently intense during morning and afternoon hours when people are going to and from work and dropping off and picking up children from school. The Eglin Range Road Plan (U.S. Air Force, no date) classified the number of vehicles using Range Road 218 per month as 1,501 to 5,000, making it one of the more frequently used roads on the Eglin Range. During the development of this Master Plan (U.S. Air Force, 2007), speeding was identified as a problem along Range Road 218. Speeding is particularly an issue since the road is frequently used by the community and military for biking and physical training.

An additional issue at TA D-51 is adequate space for student parking. The lack of designated parking for students has resulted in cars being parked in areas not intended for parking, such as along the fence line. A new parking lot is being constructed but is only expected to handle the current number of students. With the potential increase in students, additional parking will be required.

2.3.2 Water

Water is supplied to TA D-51 from a 1.5-inch well that draws water from the Floridan aquifer. The system was installed around 1985 (Ebel, 2007). The maximum capacity of the pump servicing the well is 50 gallons per minute (gpm). If operated 24 hours per day, the throughput would equal 72,000 gallons per day; however, pumps operated at a maximum rate are expected to need greater maintenance, and failures with corresponding loss of service would be anticipated. The Consumptive Use Permit specifies a maximum withdrawal of 115,000 gallons in a single day not to exceed 721,000 gallons monthly.

An above-ground water storage tank that stores approximately 150,000 gallons of water provides TA D-51 with potable water and fire protection. With the existing well and pump system, the above-ground storage tank takes approximately 72 hours to fill (Ebel, 2007). The water system

for potable water and fire protection is connected via the fire pump. During the first five months of 2007, the average daily water use at TA D-51 was approximately 8,700 gallons per day (Ebel, 2007). With an estimated daily population of 952 personnel, the water consumption rate is 9.1 gallons per person per day.

Several documented problems exist with the water system including the following:

- Explosive vibrations on the ground break the well piping (Ebel, 2005).
- High water pressure is needed to distribute water to the various buildings at TA D-51. Pressure reducing valves are needed in some buildings to keep internal plumbing from bursting (Ebel, 2005).
- When the pumps that direct potable water go offline, the fire pump turns on and surges the entire system. The surge results in emergency response from Eglin and Bluewater Bay Fire Departments (Nicoletti, 2005).

2.3.3 Wastewater

Wastewater disposal at TA D-51 is managed with four septic tank systems:

- Building 8840 – 12,500-gallon septic tank
- Building 8843 – 6,250-gallon septic tank
- Building 8849 – 10,000-gallon septic tank
- Building 8856 – 1,650-gallon septic tank

These systems were installed in approximately 1998 with the exception of the system for building 8840 which was installed in 1989. Other than standard pump-out operations, no other identified service has been necessary on these systems (Jackson, 2007). The estimated amount of wastewater generated is approximately 62% of the water use based on 2006 annual estimates. Extrapolating the amount of wastewater generated to the estimated daily population results in an average daily flow of 5.6 gallons per person or 5,360 gallons per day. This rate is lower than the generation rate of 15 gallons per person identified in Onsite Wastewater Treatment Systems Manual (United States Environmental Protection Agency [USEPA]/625/R-00/008, 2002) for schools.

Florida statutes limit the placement of septic systems to not closer than 200 feet from a public potable well serving a population with a sewage flow of more than 2,000 gallons per day (100 feet from a population with less than 2,000 gallons per day sewage flow). These placement limitations when combined with high density building construction can limit the effective use of septic systems.

2.3.4 Electrical

Choctawhatchee Electric Cooperative, Inc. (CHELCO) provides electric power to TA D-51 and the surrounding area of the Eglin range complex. In 2006, CHELCO supplied 721,658,833 kilowatt-hours (kWh) of electricity to the area. Electrical power is provided to

TA D-51 by radial feed from lines off of State Highway 20. TA D-51 is the first site along the radial feed prior to service to the remaining range sites. The substation that supports TA D-51 is not fully loaded. All service is provided via aboveground wooden poles. The electrical infrastructure is old and numerous repairs are needed annually to maintain service to the range areas (Dennis, 2007).

During FY 2006, TA D-51 used 3,125,120 kWh of electricity. When compared to the building square footage (173,942 square feet [ft^2]) supported by this service, the electrical consumption factor is 17.9 kWh/ft^2. This factor is lower than the 19.7 kWh/ft^2 value identified in the Commercial Buildings Energy Consumption Survey (CBECS) (2003) for federal buildings. The CBECS is a national survey conducted by the U.S. Department of Energy that collects information on U.S. commercial buildings, their energy-related building characteristics, and their energy consumption and expenditures.

2.3.5 Natural Gas

Natural gas is supplied by Okaloosa Gas on a contract basis. The size of the main gas supply line is determined based on the volume of gas needed for the area (Clark, 2007). During FY 2006, TA D-51 utilized 6.270 million cubic feet of natural gas. When compared to the building square footage (173,942 ft^2) supported by this service, the natural gas consumption factor is 36 cubic $feet/ft^2$. This factor is higher than the 31.4 cubic $feet/ft^2$ value identified in the CBECS (2003) for federal buildings.

2.3.6 Communication

Communication lines provide connectivity to telephones and the Local Area Network (LAN) computer lines for the main Headquarters building (building 8840), Core and Air Ordnance Training facility (8849), IED and Ground Ordnance Training facility (8843), and the Facilities Maintenance Compound (8856) at the east end of Range Road. Communication lines are a mixture of copper and fiber optic, with the copper gradually being upgraded to fiber optic.

Currently the NAVSCOLEOD utilizes the Eglin radio trunking system for communication between buildings onsite at TA D-51 and from the practical areas to the same buildings. The Eglin trunking radio system utilizes the ultra high frequency (UHF) portion of the Radio Frequency (RF) spectrum (Giangrosso, 2007).

2.4 SERVICES AND MEDICAL SUPPORT

The services provided for students on TA D-51 are limited to the galley (dining facility) and medical support. The galley is located in building 8840 and is adequate to handle the current student and staff population.

Medical support is provided by Navy corpsmen and one doctor. The medical facilities are provided for handling minor cuts, bruises, or other ailments, and to stabilize emergency cases for transport to Eglin hospital (Jackson, 2007).

2.5 CURRENT LAND USE

The area within TA D-51 was classified into land use types based on current usage (Table 2). Based on that classification, a land use map was developed to establish clear boundaries for certain types of land use (Figure 2). Land uses can be classified as human-created land use and natural land use. Human-created land use includes the "built" environment such as residential, administrative, mission-related, or commercial areas, as well as less developed areas such as recreational or agricultural land. Natural land uses include categories such as forested, wetland, open space, and wildlife areas. On Eglin AFB, human-created land use is concentrated within the cantonment areas and on each of the test areas, including TA D-51. What is commonly referred to as the interstitial portions of the Eglin Range contain the bulk of the natural land use.

Table 2. Test Area D-51 Current Land Use Categories

Land Use Category	Definition
Developed	Containing administrative and instructional facilities, the facilities maintenance compound, and parking lots.
Undeveloped	Currently open, green space, or forested areas.
Practical – explosive	Areas within which mission activities utilize live munitions; included within the designated Quantity Distance (Q-D) Arc.
Practical – nonexplosive	Areas within which mission activities do not utilize live munitions.
Industrial	Storage areas for targets and other miscellaneous equipment; referred to as the "Bone-yard"
Seasonally Wet Area	Area subject to water inundation depending on rainfall; unsuitable for development.
Jurisdictional Wetland	Area containing some combination of hydrophytic plants, hydric soils, and hydrology that is saturated with water or covered by shallow water during the growing season creating wetland conditions; unsuitable for development.
Transportation Corridor	Public roads and Range roads
Utility Corridor	Areas within which electrical, natural gas, communication, water, and wastewater lines are located.

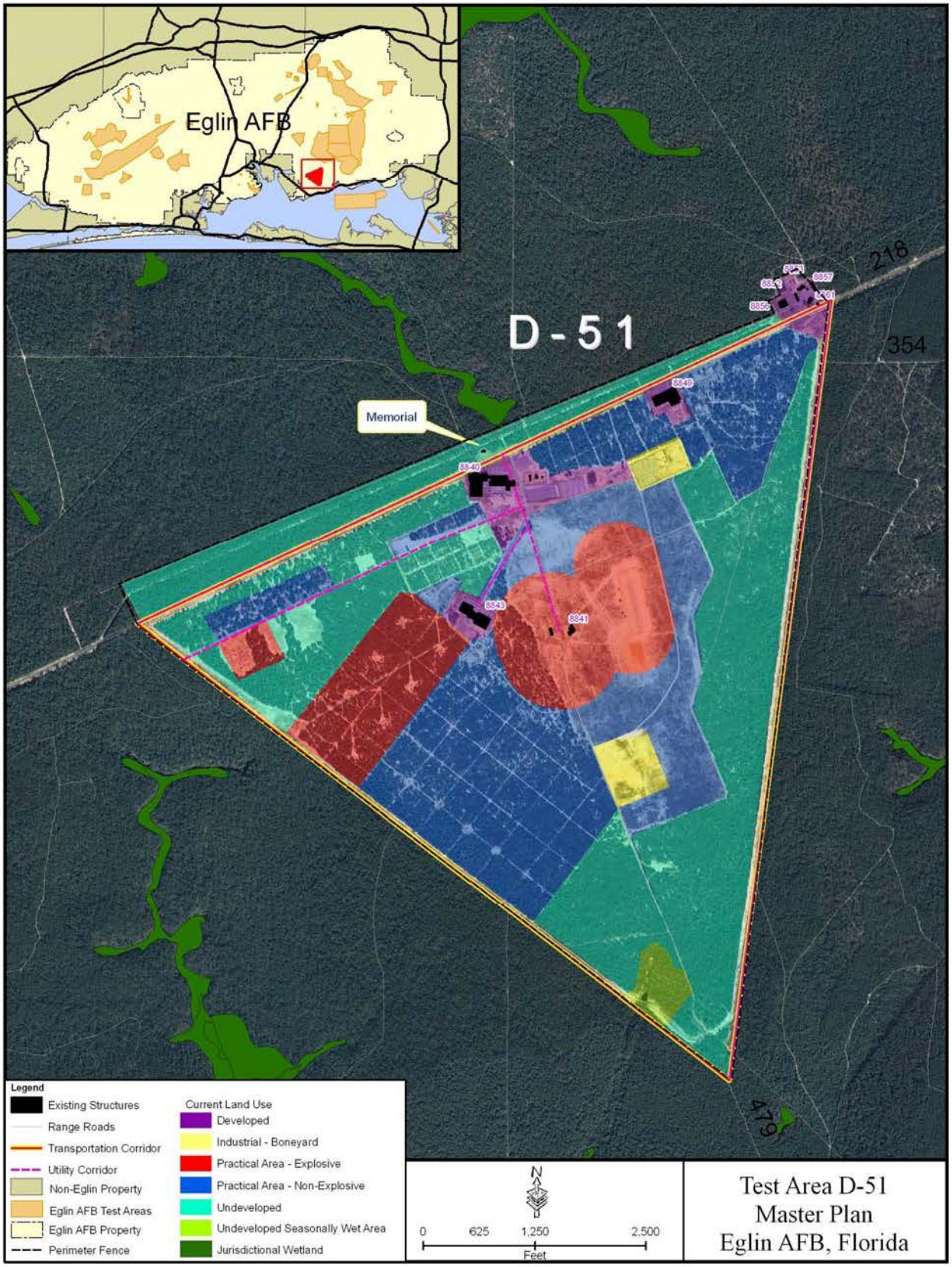

Figure 2. Current Land Use at Test Area D-51

3. FUTURE SITUATION

3.1 STUDENT AND STAFF POPULATION

The increase in student quotas would occur over a four-year period from FY 2008 to FY 2011, reaching 1861 by FY 2011 (Table 3). In FY 2008, approximately 203 new students would be accommodated by increasing the class size from 25 to 30. The 203 students would originate from the U.S. Navy (+40), the U.S. Army (+153), and the international community (+10). In FY 2009, approximately 492 new students would be accommodated by temporary classrooms established in close proximity to existing development within TA D-51. Of the 492 students, 427 would originate from the U.S. Army and 65 from the international community. In FY 2010 and 2011 the additional 16 students, all from the U.S. Army, would be absorbed into the existing system and all temporary classrooms would be established to handle the total number of new students (+711). Additionally, the schedule of starting new student classes would be shortened from one new class every six days to one new class every four days.

The number of staff is expected to increase by an estimated 120 to accommodate the increased number of quotas. This will occur over a three-year period (Table 3). The staff consists of 72 instructors, 34 Navy non-instructor staff, and 14 Army staff. To consolidate and offer better services to students, all of the staff would be consolidated at TA D-51.

Table 3. Increase in Annual Quotas and Staff by Fiscal Year and Branch of Service

Fiscal Year	Increase in Annual Student Quotas by Branch of Service	Increase in Staff
2008	203 (40 Navy, 153 Army, and 10 International)	33
2009	492 (427 Army, 65 International)	73
2010	4 (Army)	14
2011	12 (Army)	0
TOTAL	711	120

Source: Snowdon, 2007

Potentially associated with the NAVSCOLEOD is the proposed Air Education and Training Command (AETC) EOD facility. The facility will be the site for additional, Air Force-specific training to Air Force graduates of the NAVSCOLEOD. The training will qualify graduates in the use of unique Air Force systems and specialized explosive tools. The facility is slated for location either along Range Road 218 near the NAVSCOLEOD Maintenance Facility Compound (Figure 3) or on Eglin Main Base. With the new facility, an additional 120 students are expected to be present annually, or eight additional students at TA D-51 at any given time. Approximately 5 instructors will support the course. With the total increase in Army, Navy, International and Air Force student and staff population, at any one time on TA D-51 an average of 1,637 people would be expected.

3.2 FACILITY AND PRACTICAL AREA REQUIREMENTS

To accommodate the increase in student quotas, several new temporary and permanent facilities will be required (Table 4) (Jackson, 2007a). It is anticipated that construction would begin in FY 2012 when military construction (MILCON) funding is appropriated on a permanent Applied Instruction building (AIB) and practical area for the diagnosis, disabling, containment, and disposal of weapons of mass destruction and large, sophisticated IEDs. The AIB and practical area would be located in the southeastern area of TA D-51 and would cover approximately 4 acres. Other permanent facilities are proposed, but funding has not been secured yet for these facilities.

Three temporary classrooms will be established using trailers in FY 2007. Thirteen additional temporary classrooms will be established using trailers as soon as FY 2009. The Ground Ordnance Division's temporary classrooms and Weapons of Mass Destruction (WMD) Division's temporary classrooms will be placed in close proximity to building 8840. The Biological/Chemical (B/C) Division will be co-located with building 8843. The Core Division's temporary classrooms will be co-located with building 8849. Several temporary storage containers would be used in conjunction with the temporary classrooms. Temporary facilities will have a minimum separation of 15 feet, in accordance with Unified Facilities Criteria 3-600-01, Fire Protection Engineering for Facilities.

The proposed AETC facility would be a permanent structure approximately 5700 ft^2 containing classrooms, office space, and male/female bathrooms with showers. The building will have its own parking lot. Practical areas are associated with the AETC facility (Spendley, 2007). If sited at TA D-51, construction would begin on the facility in the short term (0-5 years).

Table 4. Proposed Future Facilities

Facility and Practical Area	Square Footage
Applied Instruction Building for Weapons of Mass Destruction (WMD) and Biological/Chemical (B/C)	32,023
10 Training Sites for WMD and B/C	115,592 (2.65 acres)
Applied Instruction Building for Ground Ordnance and Tools and Methods	20,099
Applied Instruction Building for Core	18,500
11 Training Pavilions for various Divisions	Unknown at this time
Expansion of existing galley in building 8840	1,389
Air Education and Training Command Facility for EOD Advanced Training	5,700
International Training Facility	Unknown at this time
Headquarters	Unknown at this time

Source: Jackson and Snowdon, 2007; DD-1391s in Appendix A
EOD = Explosive Ordnance Disposal

3.3 INFRASTRUCTURE AND UTILITY REQUIREMENTS

The increase in student and staff population at TA D-51 will require potential upgrades or modifications to existing infrastructure and utilities. As discussed in the current situation section, some of these systems are already nearing capacity. This section identifies the

infrastructure and utilities that need to be upgraded or modified, discusses options to accommodate the required changes, and provides recommended solutions based on a comparison of feasibility/safety/cost minimization criteria.

3.3.1 Transportation

The effects on transportation as a result of the increase in students and staff at TA D-51 revolve around levels of traffic on Range Road 218 and the current lack of available parking at TA D-51. Range Road 218 is already actively used. With the increasing number of students and staff, the number of cars using Range Road 218 would continue to grow. Speeding would likely continue to be a problem and would only worsen as traffic becomes heavier, slower, and potentially more frustrating to drivers. The increasing number of students and staff also creates the need for additional parking spaces at TA D-51.

Several options exist for handling the increase in traffic along Range Road 218. Options include upgrading the road, utilizing techniques and devices to slow traffic, or busing students from Eglin Main Base to TA D-51. The busing option also addresses the parking issue. Since the portion of Range Road 218 from State Highway 20 to the Eglin boundary is maintained by the City of Niceville, coordination would have to occur to identify viable options for the entire roadway. Providing a bike lane and an area designated for runners during any proposed upgrades could address the potential for conflicts between drivers and pedestrians.

The option being pursued by the Navy is busing students from the barracks located on Eglin Main Base to TA D-51. This would reduce the number of student cars on the road and reduce the need for additional parking at TA D-51. In the summer of 2007 the Navy requested sixteen buses each with a capacity of 36 people. The buses will be driven by either federal personnel or contractors. Bus service is expected to begin in FY2009 and to make three trips a day between Eglin Main Base and TA D-51 at 0530, 1330, and 1630.

Other options to address the parking issue include building a new parking lot, or encouraging/requiring students to carpool. Potential locations for a new parking lot include along Range Road (where overflow already occurs), outside the perimeter fence along the eastern boundary of TA D-51, or within the current bone-yard. However, using land within TA D-51 for parking is not necessarily a smart use of a limited resource. Locating a new parking lot outside the perimeter fence, however, would expand the footprint of TA D-51.

3.3.2 Water

Assuming the water usage rate would be the same for future operations, the average increase of 685 in daily personnel would result in an estimated increase in consumption of approximately 6,234 gallons per day, or a total consumption of nearly 14,900 gallons per day. The increased potable water demand would tax the existing water supply system. Although the increase would amount to less than 21 percent of the maximum pump capacity, the documented problems associated with the pressure necessary to supply water to each facility would remain and perhaps become amplified. In addition, the existing pump is over 20 years old and as a result, increased maintenance on the pump is likely to occur. The severity and frequency of necessary maintenance would be influenced by an increase in use.

In addition to the potable water demand, water would need to be available for fire suppression (both hose demand and sprinkler systems). The water demand required for sprinkler protection depends upon occupancy, discharge density, design area, type of sprinkler, type of construction, and other building features (DoD, 2006). New sprinkler systems that service areas greater than 1,500 ft^2 must be designed using hydraulic calculations. Additionally, the required system pressures must be determined using hydraulic calculations (including pipe friction losses and equivalent lengths of pipe for fittings and valves). The required discharge densities and areas of discharge can be determined for sprinkler system and water supply design requirements for sprinklered facilities within certain occupancy classifications (Table 5).

Table 5. Sprinkler System and Water Supply Design Requirements for Sprinklered Facilities

Occupancy Classification[a]	Sprinkler System		Hose Stream Allowance (gpm)	Duration of Supply (Minutes)
	Design Density (gpm/ft^2)	Design Area (ft^2)		
Light Hazard	0.10	3,000	250	60
Ordinary Hazard Group 1	0.15	3,000	500	60
Ordinary Hazard Group 2	0.20	3,000	500	90
Extra Hazard Group 1	0.30	3,000	750	120
Extra Hazard Group 2	0.40	3,000	750	120

Source: DoD, 2006

gpm = Gallons Per Minute; ft^2 = Square Feet; gpm/ft^2 = Gallons Per Minute Per Square Foot

[a] Light Hazard – small, scattered amounts of flammable liquids in closed containers not exceeding five gallons per fire area;

Ordinary Hazard Group 1 – modest, scattered amounts of flammable liquids in closed containers are allowable in quantities not to exceed 20 gallons per fire area;

Ordinary Hazard Group 2 – moderate, scattered amounts of flammable liquids in closed containers are allowable in quantities not to exceed 50 gallons per fire area;

Extra Hazard Groups/Special – Areas with special protection requirements, such as aircraft hangars, engine test cells, and ordnance plants.

While the majority of future construction efforts would require hydraulic calculations for the specific design specifications, the design value for light hazard occupancy yields an estimated total demand (sprinkler system plus hose stream) of approximately 373,400 gallons for the largest building (headquarters). Distribution systems need to be sized to accommodate fire flows plus domestic demand that cannot be restricted during fires. Typical distribution systems require the presence of a loop that would provide at least 50 percent of the required fire flow in case of a single break or treated water storage capacity adequate to supply domestic demand for 24 hours plus the maximum required fire flow demand. With an existing above-ground storage tank of only 150,000 gallons, an anticipated domestic demand of nearly 14,900 gallons per day, and a pump rate of 72,000 gallons per day, the existing storage capacity and distribution system would not meet the duration/supply design requirements based on preliminary estimates.

The following options are available to address future demands on the current water system:

- Construction of a water treatment plant within the vicinity of TA D-51 that could also serve other range areas. Further evaluation of the water demands for the surrounding Eglin range areas would be needed to determine the recommended water treatment plant size and distribution requirements. The fire suppression system could remain connected to the existing well and pump or could also be accommodated by the new water system.

- Upgrades to current infrastructure, including additional well(s) placed at the site to serve the future development.
- Additional above-ground storage tank or new, larger above-ground storage tank for fire flow demand.
- An additional well, located at TA C-1 within 9,900 feet of the TA D-51 water main, is potentially available to serve TA D-51 (Rogers, 2007). The pump capacity of this well is 30 gpm with the potential to increase due to a six-inch casing (Ebel, 2007). In addition, a water tower associated with this system stores approximately 75,000 gallons.
- Any new water system modifications will require advanced water metering to meet reporting requirements established by Energy Policy Act of 2005 (Mardis, 2007).

3.3.3 Wastewater

As with the water usage rate, the wastewater flow would be expected to increase with the planned future facilities. Assuming the water usage rate would be the same for future operations, the average increase of 685 in daily personnel would result in an estimated increase in the generation of wastewater between 3,836 and 10,275 gallons per day based on the existing usage and the USEPA factor, respectively. The corresponding total wastewater generation would be between 9,167 and 24,555 gallons per day. Additional septic systems would need to be designed and included in the structure site planning to accommodate the anticipated usage and flow. With the previously identified septic system placement restrictions, the new septic systems would need to retain the designated setbacks. In addition, septic system placement is dictated by soil conditions including slope and permeability. These factors combine to influence the size of the tank and the necessary drain field elevation and size.

A typical life cycle of new septic systems is between 20 and 25 years. With the existing systems at TA D-51 at approximately nine years, the design life is not quite half expired; however, alternative wastewater treatment methods such as a central range wastewater treatment facility may be beneficial to accommodate future growth.

Construction of a wastewater facility that would serve multiple range areas may be a cost-effective method for wastewater treatment. While maintenance on the current system has not been extensive, space limitations and future land development may influence the return on investment. Prior to establishing a new wastewater facility, evaluation of need, location, and size would be required. Additionally, coordination would be required with the 46 Test Wing, 96 ABW, 96 Civil Engineers, the Florida Department of Environmental Protection, and the Northwest Florida Water Management District. The Florida Department of Environmental Protection requires a permit for domestic treatment systems with design capacities greater than 10,000 gallons per day.

Another potential option for wastewater treatment would be to establish a connection to the sewer lines currently served by the Okaloosa County Water and Sewer Department. A 6 million gallon per day (MGD) treatment facility (Garnier facility) is currently serving the area near TA D-51. A larger capacity facility that will increase the wastewater treatment capacity in the area is expected to be completed within the next two years. Even with the existing wastewater

treatment facility, the additional wastewater flow from TA D-51 could be accommodated within the existing infrastructure (Mauzy, 2007). Additional sewer lines would be necessary to transfer wastewater from TA D-51 to the existing lines which are located approximately 2.5 miles from the northern portion of TA D-51. The cost associated with the pipeline and lift station would be under $200,000.00 (Mauzy, 2007). Additional evaluation would be necessary to determine the total wastewater flow from the surrounding range areas and the resulting demand on the Okaloosa County wastewater treatment facility should the service area expand.

3.3.4 Electrical

The estimated electrical service necessary to support the future facilities is between 1,574,663 and 1,733,009 kWh, based on the existing usage and the CBECS factor, respectively. The increased use would be approximately 53 percent above the current usage. Since the substation that supports TA D-51 is not fully loaded, it is expected that the substation could support the additional infrastructure without problems. However, the additional demand on the system within the Eglin range area is expected to result in additional repair services necessary to maintain electricity to the area. With TA D-51 as the first site along the radial line, an increase in demand and potential increase in service disruptions due to repairs may ultimately have larger impacts to additional range areas also served by the radial line. Additionally, advanced electrical meters must be installed to meet reporting requirements as established by Energy Policy Act of 2005 (Mardis, 2007).

In some areas, CHELCO performs maintenance of the lines and services all necessary repairs. However, CHELCO does not support service to the range beyond the substation. Determination of CHELCO service areas is dependent on the electrical requirements of the area and the need for additional support.

3.3.5 Natural Gas

The estimated natural gas service necessary to support the future facilities is between 2.597 and 2.977 million cubic feet based on the existing usage and the CBECS factor, respectively. The increased use would be approximately by 45 percent. Okaloosa Gas is able to accommodate increases in demand by altering supply, including increasing the supply line pipe size when necessary. No identified deficiencies in the current natural gas supply distribution have been identified. While the anticipated increase in natural gas would occur with the future facilities, no upgrades to the system were identified by Okaloosa Gas as necessary (Clark, 2007). However, advanced natural gas meters must be installed to meet reporting requirements as established by Energy Policy Act of 2005 (Mardis, 2007).

3.3.6 Communication

Communication lines that provide telephone and LAN connectivity will be necessary for the temporary trailers and the permanent facilities that will be constructed. The NAVSCOLEOD will submit Air Force Form 3215 Information Technology/National Security Systems (IT/NSS) Requirements Documents to 96 Communications Squadron, Plans and Requirements Office (96 CG/SCXP) for communication requirements. Supplying the proposed permanent facilities will require expanding the communication lines along the eastern boundary of TA D-51.

Continuing to upgrade the communication lines to fiber optic will be advantageous for the permanent facilities.

The increase in number of students will require additional radio channels for each of the two new student divisions. Eglin is procuring 10 new repeater channel systems to be added to the Eglin trunking system (currently utilized by the NAVSCOLEOD) by the end of FY 2008 or early FY 2009. To expand the radio capacity needed to accommodate the new divisions, NAVSCOLEOD can use a new network for each division to communicate internally and a common network to talk to a central point for safety, weather, or other common information (Giangrosso, 2007). A spectrum analysis may be required, depending on the final number of new channels needed by the NAVSCOLEOD. Close and timely coordination with the Eglin Spectrum Management Office is vital to ensuring the network support required for the increase in students.

3.4 SERVICES AND MEDICAL SUPPORT

To accommodate the increase in student quotas and staff, the galley must be enlarged by approximately 1,389 ft^2. The MILCON Form DD-1391 for the project that includes the galley enlargement (#P907) contains more details on the basis for the enlargement and can be found in Appendix E.

An increase in the number of Navy corpsmen and doctors will also be required to accommodate the increasing student quotas. These numbers are already incorporated into the increases described in Section 3.1. The current medical offices and examination rooms will be moved elsewhere to accommodate the increase in Navy corpsman and doctors. However, the space to which they will be moved already exists and will not require new construction (Jackson, 2007).

3.5 FUTURE LAND USE

Future land use on TA D-51 is based on the same land use classification used to define current land use (Section 2.4) with two exceptions. These exceptions are two new land use categories that have been added to the future land use definitions (Table 6) to account for the proposed permanent International Training facility and Practical Areas proposed. The designation of future land use within TA D-51 guides development within a planned design of how the test area can best provide facilities, practical areas, and infrastructure while avoiding conflicts with explosive safety buffers or environmentally sensitive areas such as wetlands. Based on the future land use classifications, a future land use map was created to establish clear boundaries for certain types of future land use (Figure 3).

Table 6. Test Area D-51 Future Land Use Categories

Land Use Category	Definition
Developed	Containing administrative and instructional facilities, the facilities maintenance compound, and parking lots.
Undeveloped	Currently open, green space or forested areas.
Practical – explosive	Areas within which mission activities utilize live munitions. Included within the designated Q-D Arc.
Practical – nonexplosive	Areas within which mission activities do not utilize live munitions.

Table 6. Test Area D-51 Future Land Use Categories, Cont'd

Land Use Category	Definition
Practical – foreign explosive	Area within the International Training Facility at which mission activities would utilize live munitions. Included within the designated Q-D Arc.
Practical – foreign nonexplosive	Area within the International Training Facility at which mission activities would not utilize live munitions.
Industrial	Storage areas for targets and other miscellaneous equipment; referred to as the "Bone-yard"
Seasonally Wet Area	Area subject to water inundation depending on rainfall; unsuitable for development.
Jurisdictional Wetland	Area containing some combination of hydrophytic plants, hydric soils, and hydrology that is saturated with water or covered by shallow water during the growing season creating wetland conditions; unsuitable for development.
Transportation Corridor	Public roads and Range roads.
Utility Corridor	Areas within which electrical, natural gas, communication, water and wastewater lines are located.

Q-D = Quantity Distance

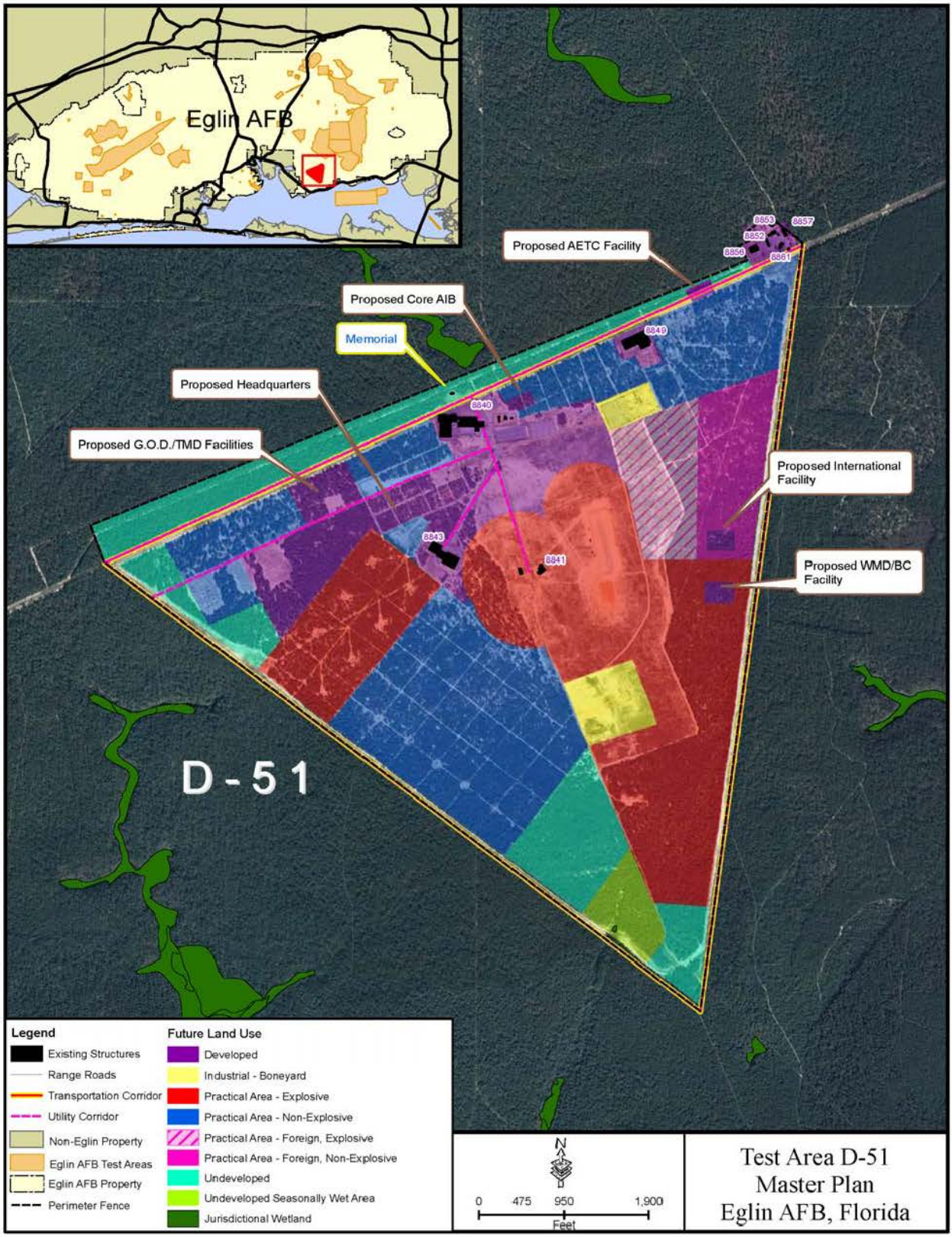

Figure 3. Future Land Use at Test Area D-51

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4. STRATEGY

To successfully implement the changes required to respond to the growth of the NAVSCOLEOD, a strategy is necessary. Since the new construction, upgrades to utilities, and changes to infrastructure must be accomplished over a period of several years, the strategy is divided into phases: short term, mid-term, and long term. Short-term plans encompass the next 0–5 years and can be predicted with a fair degree of certainty. Mid-term plans cover 5–10 years and can be predicted but are subject to changes. Long-term plans stretch beyond 10 years and are the least predictable due to the extended timeframe in which they try to anticipate needs and changes. The strategy and timing may change as conditions change, funding becomes available, and the student population fluctuates. However, similar to the guidance provided by the future land use map, this strategy is a guide to making incremental progress for modification of the NAVSCOLEOD.

NOTE: This section will be updated based on the decisions rendered in the Final Environmental Assessment for the Master Development Plan for TA D-51.

4.1 FACILITY DEVELOPMENT PLANS

Facility development plans include temporary and permanent buildings and associated practical areas. Requirements for development within TA D-51 depend on the resources known to occur and those discovered during onsite surveys. The Explosive Safety Submission (ESS) for the projected NAVSCOLEOD expansion provides the safety criteria to support future construction and training activities planned on and around TA D-51. Clearance and removal of munitions and explosives in accordance with the ESS must occur prior to construction (U.S. Air Force, 2007a). Additionally, gopher tortoise surveys must be conducted prior to any land clearing activities in preparation for the construction. If several active tortoise burrows are found, a permit from the state will be required in addition to relocation of the tortoises.

4.1.1 Short term (0–5 years)

- Establish 16 temporary classrooms: seven for the Ground Ordnance Division, three for the WMD Division, and six for the Core Division.
- Begin construction in FY 2012 on the AIB and practical areas for WMD.
- If sited at TA D-51, construction by the Air Force would begin on the AETC facility.

4.1.2 Mid-term (5–10 years)

- Begin construction on the AIB for Ground/Tools and Methods Division, and the AIB for the Core Division.
- Begin construction on the 11 training pavilions used to support the Divisions.

4.1.3 Long term (10+ years)

- Begin construction on the NAVSCOLEOD Headquarters building, the AIB for International Training, and practical areas for International Training.

4.2 INFRASTRUCTURE AND UTILITY PLANS

Infrastructure and utility plans include the transportation system, electrical, natural gas, water, wastewater, and communication systems.

4.2.1 Short term (0–5 years)

- Establish electrical and communication utilities for the 16 temporary classrooms.
- Complete any utility upgrades required for the AIB WMD building.
- Implement student busing from the barracks on Eglin Main Base to TA D-51.
- Coordinate closely with 96 ABW, 46 TW, 96 Ground Combat Training Squadron and the Army 7th Special Forces Group (Airborne) (7SFG [A]) (relocating as a result of Base Realignment and Closure [BRAC] actions) to determine the possibility for establishing a water and wastewater treatment facility in the vicinity of TA D-51 that would service the three entities. The 7SFG is proposing to establish several training ranges in the vicinity of TA C-53 and the southern portion of TA C-52. Further evaluation of the water demands for the surrounding Eglin range area would be needed to determine the recommended water treatment plant size and distribution requirements. The fire suppression system could remain connected to the existing well and pump or could also be accommodated by the new water system.
- Coordinate with the Eglin Spectrum Management Office to secure additional networks for increased communication needs.
- Install additional potable water well(s) at TA D-51 to serve the future development or access the existing well and water tower at TA C-1.

4.2.2 Mid-term (5–10 years)

To be determined.

4.2.3 Long term (10+ years)

To be determined.

4.3 SERVICES AND MEDICAL SUPPORT

The services provided on TA D-51 are limited to the galley (dining facility) and medical support. Medical support facilities are provided for handling minor cuts, bruises, or colds, and to stabilize emergency cases for transport to a hospital. Due to the limited change related to services and medical support, no mid- or long term changes are expected.

4.3.1 Short term (0–5 years)

- Enlarge existing galley in building 8840 by approximately 1,389 ft^2.
- Relocate the existing medical offices and examination rooms to a larger, already existing space.

4.4 COORDINATION REQUIRED

Successful implementation and completion of the described strategy is dependent on coordination within the existing Eglin AFB planning system. The steps within the planning system that must be completed are as follows:

- Customer contacts 96 Air Base Wing/Plans (96 ABW/XPS) via e-mail, formal memo or personal visit with the request to study a proposed mission or training area expansion, the extent and timeline of the expansion, and any MILCON involved.
- 96 ABW/XPS provides the customer with the Eglin beddown questionnaire.
- 96 ABW/XPS contacts the appropriate committees involved: Executive Council, Mission Enhancement Committee, Installation Development Council, Space Management Committee, Range Configuration Control Committee (RC3), and/or the Range Development Executive Steering Committee (RDESC).
- Eglin corporate review is received from the Air Armament Center committee structure.
- 96 ABW/XPS and customer prepare a package that is sent to Commander, 96 Air Base Wing (96 ABW/CC) for his review/approval/ disapproval.
- 96 ABW/XPS submits a request for site survey with documentation to Strategic Plans and Programs Directorate, Headquarters Air Force Materiel Command (HQ AFMC/A8).
- Headquarters Air Force/Installations and Missions Support (HQ AF/A7) issues a site control number and approval for the site survey.
- Customer brings in a team to meet with Eglin functional area experts.
- The formal beddown request and package is received with descriptions of the:
  - → Proposal.
  - → Justification.
  - → Description of activity.
  - → Summary of supporting documentation.
  - → Timetable for beddown.
  - → Funding authority.
  - → Status of the Environmental Impact Analysis.
- Final beddown approval is withheld until the Environmental Impact Analysis Process is completed.

As of September 2007, the NAVSCOLEOD completed the following steps in the planning process (Jackson, 2007b):

- An Air Force Form 332, Civil Engineering Work Request, and Air Force Form 813, Environmental Impact Analysis, were submitted to the 96th Civil Engineering Group (96 CEG). No formal memo or personal visit with 96 ABW/XPS was conducted.
- Representatives from 96 ABW/XPS, the RC3 and the Installation Development Council (IDC) were present at the kickoff meeting for the Master Plan and EA.
- The RC3 and the RDESC were briefed on the Master Development Plan along with future projects scheduled for installation at TA D51.
- The remaining actions to be taken are 96ABW/CC and HQ AFMC approval/disapproval. No request for beddown required. Beddown request required when request to erect facilities is submitted.

4.5 TIMELINE AND SCHEDULE FOR PROJECTS

Initial steps have been taken to begin the planning process for several of the future proposed facilities, infrastructure requirements, and service-driven enlargements. The first step was initiating development of this Master Development Plan to guide future decisions within TA D-51. The next phase is drafting and submitting the MILCON DD-1391 forms which will initiate the broader planning and funding process. Two MILCON DD-1391 forms are in draft stage for the proposed projects. MILCON Project #906 contains the request to construct the WMD AIB, the associated training sites, and any required utility upgrades (Appendix A). MILCON Project #907 contains the request to construct the Core AIB, the Ground/Tools and Methods AIB, associated training pavilions, any required utility upgrades, and the enlargement of the galley (Appendix A).

Other proposed projects for TA D-51 have been through the Eglin planning process and were approved for further consideration. The MILCON Project #FTFA 03-1112 for the AETC facility to be located potentially at TA D-51 was approved and is waiting for funding (Appendix E).

Creation of a specific project list and timeline will be completed in consultation with NAVSCOLEOD personnel after finalization of the Environmental Assessment for the Master Development Plan for TA D-51. This is because the final decisions on how to proceed with new facilities, utility changes and services provided are dependent on the decisions rendered in the Final Environmental Assessment and Finding of No Significant Impact.

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APPENDIX E

MILITARY CONSTRUCTION PROJECT DATA SHEET (DD FORM 1391)

1. Component NAVY	**FY 2010 MILITARY CONSTRUCTION PROGRAM**	2. Date 17 JUL 2007
3. Installation(SA) and Location/UIC: N60508(EG) NAS WHITING FLD MILTON FL (EGLIN AFB EOD SCHOOL) EGLIN A.F.B., FLORIDA	4. Project Title Applied Inst Facility-WMD Training	

5. Program Element	6. Category Code 17120	7. Project Number P906	8. Project Cost ($000) 33,737

9. COST ESTIMATES

Item	UM	Quantity	Unit Cost	Cost($000)
APPLIED INST FACILITY-WMD TRAINING (156,023 SF)	m2	14,495		19,640
SIMULATED EXPLOSIVE TRAINING SITE #1 (6,146 SF)	m2	571	1,537.46	(880)
SIMULATED EXPLOSIVE TRAINING SITE #2 (7,287 SF)	m2	677	1,497.64	(1,010)
SIMULATED EXPLOSIVE TRAINING SITE #3 (25,338 SF)	m2	2,354	664.97	(1,570)
SIMULATED EXPLOSIVE TRAINING SITE #4 (12,163 SF)	m2	1,130	1,340.89	(1,520)
SIMULATED EXPLOSIVE TRAINING SITE #5 (33,174 SF)	m2	3,082	419.13	(1,290)
SIMULATED EXPLOSIVE TRAINING SITE #6 (5,705 SF)	m2	530	2,070.39	(1,100)
SIMULATED EXPLOSIVE TRAINING SITE #7 (10,419 SF)	m2	968	1,567.44	(1,520)
SIMULATED EXPLOSIVE TRAINING SITE #8 (3,197 SF)	m2	297	1,556.60	(460)
SIMULATED EXPLOSIVE TRAINING SITE #9 (7,556 SF)	m2	702	1,238.95	(870)
SIMULATED EXPLOSIVE TRAINING SITE #10 (4,607 SF)	m2	428	1,673.52	(720)
VEHICLE STORAGE COVERED (8,407 SF)	m2	781	57.47	(40)
APPLIED INSTRUCTION BUILDING (32,023 SF)	m2	2,975	2,082.76	(6,200)
BUILT-IN EQUIPMENT	LS			(780)
TECHNICAL OPERATING MANUALS	LS			(180)
INFORMATION SYSTEMS	LS			(560)
ANTI-TERRORISM/FORCE PROTECTION	LS			(540)
LEED AND EPACT 2005 COMPLIANCE	LS			(400)
SUPPORTING FACILITIES				9,580
ELECTRICAL UTILITIES	LS			(1,430)
MECHANICAL UTILITIES	LS			(1,450)
PAVING AND SITE IMPROVEMENTS	LS			(3,330)
SITE PREPARATIONS	LS			(2,070)
ENVIRONMENTAL MITIGATION	LS			(1,200)
PCAS (.5%) OF PRIMARY FACILITY	LS			(100)

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Level: INITIAL **Draft: POM-10** **17-JUL-07**

1. Component	FY 2010 MILITARY CONSTRUCTION PROGRAM	2. Date
NAVY		17 JUL 2007

3. Installation(SA) and Location/UIC: N60508(EG)	4. Project Title
NAS WHITING FLD MILTON FL (EGLIN AFB EOD SCHOOL) EGLIN A.F.B., FLORIDA	Applied Inst Facility-WMD Training

5. Program Element	6. Category Code	7. Project Number	8. Project Cost ($000)
	17120	P906	33,737

SUBTOTAL				29,220
CONTINGENCY (5%)				1,460
TOTAL CONTRACT COST				30,680
SIOH (6.5%)				1,990
SUBTOTAL				32,670
DESIGN/BUILD - DESIGN COST (4%)				1,170
CONGRESSIONAL ADJUSTMENT	LS			-103
TOTAL REQUEST ROUNDED				33,737
TOTAL REQUEST				33,737
EQUIPMENT FROM OTHER APPROPRIATIONS (NON ADD)				(4,771)

Guidance Unit Cost Analysis

Cat Code	Facility	OSD Guid.	Guid. Cost	Guid. Size	Project Scope	Room Size Fctr	Area Size Fctr	Cost Fctr	Esc. Factor	Unit Cost
21440	VEHICLE STORAGE COVERED		63.85	781 m2	781 m2	1.0000	.900	1.000000000		57.47
17120	APPLIED INSTRUCTION BUILDING	*	2,374.00	2300 m2	2975 m2	.9748	.900	1.000000000		2,082.76
17410	SIMULATED EXPLOSIVE TRAINING SITE #1		1,365.87	1784 m2	571 m2	1.1440	.900	1.093266606		1,537.46
17410	SIMULATED EXPLOSIVE TRAINING SITE #2		1,260.00	3537 m2	677 m2	1.2080	.900	1.093266606		1,497.64
17410	SIMULATED EXPLOSIVE TRAINING SITE #3		531.06	35795 m2	2354 m2	1.2726	.900	1.093266606		664.97
17410	SIMULATED EXPLOSIVE TRAINING SITE #4		1,069.85	19865 m2	1130 m2	1.2738	.900	1.093266606		1,340.89
17410	SIMULATED EXPLOSIVE TRAINING SITE #5		347.45	19161 m2	3082 m2	1.2260	.900	1.093266606		419.13
17410	SIMULATED EXPLOSIVE TRAINING SITE #6		1,914.63	1784 m2	530 m2	1.1520	.900	1.042968750		2,070.39
17410	SIMULATED EXPLOSIVE TRAINING SITE #7		1,432.36	3537 m2	968 m2	1.1658	.900	1.042968750		1,567.44
17410	SIMULATED EXPLOSIVE TRAINING SITE #8		1,300.63	34005 m2	297 m2	1.2750	.900	1.042968750		1,556.60
17410	SIMULATED EXPLOSIVE TRAINING SITE #9		1,035.21	19865 m2	702 m2	1.2750	.900	1.042968750		1,238.95
17410	SIMULATED EXPLOSIVE TRAINING SITE #10		1,398.32	18203 m2	428 m2	1.2750	.900	1.042968750		1,673.52

Anti-Terriorism/Force Protection-costs were derived from Milcon 101 Student Guide, 3-6 February 2003, AT/FP section, slide 42

Applied Instruction, Weapons of Mass Destruction Training Facility and training sites-costs were derived from DoD Facilities Pricing Guide, UFC-3-701-07 April 2007

The costs for communication and capacity for new equipment were included as additional costs for the project. Telephone instruments, computer systems and furniture are not included in the definition of construction in the DoD Facilities Pricing Guide.

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The Area Cost Factor has been increased by 10% (.82 x 1.10 = .902) to reflect cost increases induced by the influence of the Hurricane Katrina recovery effort and the current bid results for milcon projects in this geographical locale.

10. Description of Proposed Construction:

The Using Activity for this project is planned to be: NAS WHITING FLD MILTON FL.

Construct new Applied Instruction Facilities, vehicular storage facility and develop (10) ten simulated training sites at explosive training range. The applied instruction facilities will include level A electronic classrooms with workbenches, level C type classrooms to accommodate new student loading, high bay spaces for indoor training, electronic workshop, construction/maintenance training area, equipment and ordnance storage, command posts for exercise preparation, tool-gear issue, equipment staging and storage, maintenance spaces, administrative offices, classified storage vault, laundry facilities and common areas. The functions listed above will be supported by training spaces to include storage rooms, locker space, conference room, and computer rooms for legacy servers. Administrative functions will incorporate division, supervisory and instructor office spaces, advanced ECR preparatory stations, student break room and instructor lounge areas.

Building construction to include: reinforced foundation slab-on-grade, concrete masonry walls, steel frame structure, metal stud partition walls, standing seam metal roofs, double glazed insulated aluminum framed windows, wall, floor and ceiling finishes, heating, ventilation, and air-conditioning, complete electrical system to include electrical equipment, wiring and lighting, fire protection and detection system, telephone, computer, television cabling and conduit, intrusion detection system, lightning protection, and supporting facilities for pavements, utilities, a covered vehicle holding area, and other related site work.

Simulated explosive training site mock-ups will include structures representing residential dwellings, commercial businesses, public transportation, utility facilities, and other structures representative of the weapons of mass destruction training program. Each site will include clearing and grubbing, paving, parking, curbs and gutters, landscaping, drainage, lighting for night exercises, access and egress from the area. The construction of this project will provide physical security measures for anti-terrorism force protection in accordance with current guidance construction standards.

Notes: Typical training facilities: Walls will be constructed of high strength/pressure concrete. Electrical power and night lighting capabilities will be provided. Watering stations will be provided at each explosive training site.

Mock-ups could include but not limited to the partial front entrance to a current day sports stadium, city block/urban simulation, a cut-away portion to an underground city subway system, auditorium and theater, recruit barracks, bus station, dependent school,

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weapons RTD&E, hospital, data center, nuclear repair shop, missile production, ammunition production, communications facility, air defense and security force building, aviation operations building, aircraft support facility, harbor control facility, general purpose simulator facility, aircraft maintenance hangar, bulk fuel liquid storage, ammunition storage, installation,hazardous materials storage, installation, medical warehouse, dispensary and clinic, officer unaccompanied personnel housing, police station, bank and credit union and electrical power source. City block formation similar to mount facilities.

11. Requirement: 97936 m2 **Adequate:** 0 m2 **Substandard:**

FACILITY PLANNING DATA:

Category Code	Requirement	UM	Adequate	Substandard	Inadequate	Deficit/ Surplus
17410 MANEUVER/TRAINING AREA, LIGHT FORCES	9279	m2	0			-9,279
17410 MANEUVER/TRAINING AREA, LIGHT FORCES	9279	m2	0			-9,279
17410 MANEUVER/TRAINING AREA, LIGHT FORCES	9279	m2	0			-9,279
17410 MANEUVER/TRAINING AREA, LIGHT FORCES	9279	m2	0			-9,279
17410 MANEUVER/TRAINING AREA, LIGHT FORCES	9279	m2	0			-9,279
17410 MANEUVER/TRAINING AREA, LIGHT FORCES	9279	m2	0			-9,279
17410 MANEUVER/TRAINING AREA, LIGHT FORCES	9279	m2	0			-9,279
17410 MANEUVER/TRAINING AREA, LIGHT FORCES	9279	m2	0			-9,279
17410 MANEUVER/TRAINING AREA, LIGHT FORCES	9279	m2	0			-9,279
17410 MANEUVER/TRAINING AREA, LIGHT FORCES	9279	m2	0			-9,279
21440 VEHICLE HOLDING SHED	2342	m2	0			-2,342
17120 APPLIED INSTRUCTION BUILDING	2804	m2	0			-2,804

NOTES:

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Notes:

Training sites will be located within a fenced training area that meet safety and security requirements of high-risk training and classified programs.

Mock-up training buildings: Walls need shall be high strength and/or high pressure concrete, pitched concrete roofs, poured concrete walls from foundation to 4'-0" above finish floor, hollow metal doors and plexiglass windows. Power and water shall be provided at each training site.

Training mock-ups will include a partial or an entire structure representative of a sports stadium, a cut-away portion to an underground city subway system, auditorium and theater, recruit barracks, bus station, dependent school, weapons RTD&E, hospital, data center, nuclear repair shop, missile production, ammunition production, communications facility, air defense aircraft fueling facility, security force building, aviation operations building, aircraft support facility, harbor control facility, general purpose simulator facility, aircraft maintenance hangar, bulk fuel liquid storage, ammunition storage, installation,hazardous materials storage, installation, medical warehouse, dispensary and clinic, officer unaccompanied personnel housing, police station, bank and credit union and electrical power source. Outline of proposed facility groups for individual sites below.

Site #1: 571 m2
- Fac Code-1311 Communications
- Fac Code-1402 Air Defense
- Fac Code-1446 Security Force Building

Site #2: 677 m2
- Fac Code-2136 Nuclear Repair Shop
- Fac Code-2211 Missile Production
- Fac Code-2261 Ammunition Production

Site #3: 2354 m2
- Fac Code-3151 Weapons RTD&E Facility
- Fac Code-5100 Hospital
- Fac Code-6104 Data Center

Site #4: 1130 m2
- Fac Code-7218 Recruit Barracks
- Fac Code-7341 Bus Station
- Fac Code-7352 Dependent School

Site #5: 3082 m2
- Fac Code-7524 Sports Stadium

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Fac Code-6200 Administrative (underground)
Fac Code-8601-Subway
Fac Code-7431 Auditorium & Theater

Site #6: 600 m2
Fac Code-1211 Aircraft Fueling Facility
Fac Code-1412 Aviation Operations Building
Fac Code-1467 Aircraft Support Facility

Site #7: 711 m2
Fac Code-1611 Harbor Control Facility
Fac Code-1724 General Purpose Simulator Facility
Fac Code-2111 Aircraft Maintenance Hangar

Site #8: 2236 m2
Fac Code-4111 Bulk Fuel Liquid Storage
Fac Code-4221 Ammunition Storage, Installation
Fac Code-4423 Hazardous Materials Storage, Installation

Site #9: 1187 m2
Fac Code-5306 Medical Warehouse
Fac Code-5500 Dispensary and Clinic
Fac Code-7240 Officer Unaccompanied Personnel Housing

Site #10: 2928 m2
Fac Code-7313 Police Station
Fac Code-7347 Bank and Credit Union
Fac Code-8111 Electrical Power Source

All costs and guidance sizes were derived from the DoD Facility Pricing Guide, UFC 3-701-06 & 07, 30 March 2006 & April 2007 to reflect actual building types and their individual unit costs. A percentage of each facility was calculated and dimensioned to ensure correct building footprint and placement on sites.

Temporary Facilities:

Reference: Department of Defense Instruction, Number 4165.56, paragraphs 5.2.1. Interim Facility Requirements, subparagraphs 5.2.1.1. thru 5.2.1.1.6., and 5.2.1.2 thru 5.2.1.2.3.

All relocatable buildings will be provided and installed with approved Quadrennial Defense Review (QDR)funds. This project does not provide appropriations for temporary facilities.

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However, the project has been designed and developed to replace any temporary facilities when enacted.

In accordance with the schedule, these temporary facilities will be in place NLT (no later than) fiscal years 2007. Initial cost will include the purchase of the temporary facilities, utilities, setup, and tranportation to the site. They will be in use until this Milcon project, P906 has been approved, funded and constructed. When the BOD has been scheduled and accepted by the using agency, the temporary facilities will be removed and the permanent facilities occupied.

Maintenance and repair costs will be budgeted for by the using agency for the period of time they are in use.

Five (5) temporary classrooms and supporting facilities will be provided to begin instruction and training. Classroom size will be approximately 26'-8" x 32'-4". For supporting facilities a net to gross factor of 1.45 required. Total square footage required: (5) x 862 ea. = 4310 SF x 1.45 = 6,250 SF

User Requirements:

1. Design for lowest maintenance for all simulated explosive sites and facilities; Replace plexiglas windows, doors and painting of facilities periodically. Site maintenance as required.
2. Provide plexiglass for use as windows. Hollow metal doors and frames
3. Poured, solid, reinforced concrete walls up to 4'-0" AFF (above finished floor)to protect against explosive devices
4. Concrete roofs for application of troop and equipment loads
5. Water and electricity shall be provided to each site
6. Retaining wall constructed in front on new applied instruction building

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SCOPE:

The project scope is derived from the P-80 for category code 171.20 using planning factors for classroom, laboratory, support spaces, simulated explosive training sites and vehicular storage spaces. The Basic Facilities Requirement (BFR) was calculated to determine the total training requirements for the project.

PROJECT:

Construct Applied Instruction and Weapons of Mass Destruction training facilities for Basic EOD course expansion and associated (simulated) training range sites. These required facilities will provide training for EOD team members from the Air Force, Navy, Army, Marine Corps, International and other Federal agency personnel in Weapons of Mass Destruction detection and disposal.

(Current Mission)

REQUIREMENT:

Adequate facilities to support training requirements for an annual throughput of 1150 students. The increase in students on the current operating environment requires: Modification and expansion of the existing basic EOD course and the addition of the WMD course content.

- Course length will increase from 131 training days to 143 training days.
- Course content will be revised significantly to meet current and future threats.
- The mission and objective of the Weapons of Mass Destruction Division is to train and evaluate Joint Service Explosive Ordnance Disposal Team Members and selected Federal agency personnel in the skills to detect, classify, diagnose, and conduct reach back in varied environments in direct support of Department of Defense National Response Plans.

Training in the use of specialized equipment and procedures to detect, classify, diagnose and conduct reach back is mandated by the 2006 Quadrennial Defense Review (QDR). DoD Directive 5160.62 establishes the DoD EOD Program Board which has oversight of common Joint EOD technology and training requirements. This training requirement has been validated by the Technical Training Acceptance Board (TTAB) via a curriculum review board (CRB) and approved by the EOD program board, letter 8027, Ser N85XA/29, dated 331 January 2007.

Instruction will include: Improvised and foreign Weapons of Mass Destruction (WMD)/Chemical Biological Nuclear and Explosive (CBRNE) devices.

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CURRENT SITUATION:

Mission capability gap:

Since 9/11 and the impacts of the Global War on Terror, there is unified agreement of the need to increase student throughput and expand the basic EOD School curriculum to include additional instruction in Improvised and Foreign Weapons of Mass Destruction (WMD)/Chemical Biological Nuclear and Explosive (CBRNE) Devices. Adequate facilities do not exist to support the new training requirements. This new program would provide training in the use of specialized equipment and procedures to detect, classify, diagnose, and conduct reach back in various environments. Project P906 has been developed to expand and construct a Weapons of Mass Destruction Training complex to include new Applied Instruction facilities and explosive training pits and associated explosive training sites. Individual training sites will facilitate building mock-ups simulating residential dwellings, commercial businesses, public transportation, utilities, base camps, and other types of structures in support of this new program curriculum. The critical war fighting needs of all Federal Agencies are contingent upon development of this training at NAVSCOLEOD. Meeting the requirements of the mandated 2006 Quadrennial Defense Review and accomplishing the annual throughput of 1150 students is crutial to lessening the loss of military and civilian lives globally. Funding for these training requirements should not be delayed until the POM-10 programming cycle.

IMPACT IF NOT PROVIDED:

Without this project, the Joint EOD community will be unable to meet the required mission essential capabilities mandated under the 2006 QDR.

ADDITIONAL: Economic Alternatives Considered:

A. Status Quo:

a. Not considered to be a viable alternative. EOD training must expand to provide the Joint Services with this capability.

B. Renovation/Modernization:

b. This is not a viable alternative. There are no spaces available to convert this specialized training requirement. Existing training spaces at Eglin AFB are fully utilized.

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C. Lease:

c. This is not a viable alternative: The facility needs to be highly secure and located conveniently to the existing basic and expanded courses and training ranges to make efficient use of existing infrastructure and course support.

D. New Construction:

d. This action is the preferred alternative. The facility can be sized and configured to match the requirement. It can be located near the current NAVSCOLEOD training facilities on Eglin Range D-51, which will enhance training efficiency, provide security for mission sensitive equipment, and simplify range oversight and maintenance.

E. Other Alternatives:

e. Alternate sights for this training have been considered. However, since this requirement expands and lengthens an existing course of instruction managed by NAVSCOLEOD, the only feasible conclusion is to construct the training facilities on range D51.

F. Analysis Results:

New construction is the only reasonable alternative that will meet the training requirements mandated by the 2006 Quadrennial Defense Review (QDR).

12. Supplemental Data:

Site Approval:

[ ] Yes, obtained date:

[X] No, expected date: 09/2008

Issues (If yes, please provide discussion under issue):

Yes No

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	X	DDESB, AICUZ, Airfield, EMR, or wetlands
	X	Endangered species/sensitive habitat
	X	Air quality
	X	Cultural/archeological resources
X		Clearing of trees
	X	Known contamination at selected site
	X	Operational problems
	X	Traffic patterns impact
X		Existing utilities upgrade
X		Ordnance sweep required prior to Construction

-DDESB approval required for ESQD arc.
-Some tree clearing required for explosive training range and access roads.
-Electrical distribution and communications must be extended to site. Provide well water and septic at site.

Planning (If no, please provide an explanation):

Yes	No	
X		Consistent w/ Master Plan or Base/Regional Dev.

Host Nation Approval:

- [ ] Required
  Approval Date:
  Expected Date:
- [X] Not Required

National Capital Region Approval:

- [ ] Required
  Approval Date:
  Expected Date:
- [X] Not Required

NEPA Documentation:

Yes	No	
	X	Complete

AFF 813 (request for environmental analysis) submitted 9/17/01.

Level of NEPA:

Yes	No	
	X	Categorical Exclusion
X		Environmental Assessment(EA)
	X	Environmental Impact Statement(EIS)
	X	Memorandum of Negative Decision

Mitigation Issues:

Yes	No	
	X	Wetlands replacement/enhancement

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[ ] [X] Hazardous waste
[ ] [X] Contaminated soil/water
[X] [ ] Other

Noise. Sound modeling will be performed to determine best siting.

Environmental Cleanup:
[ ] Required
Start Date:
Completion Date:
[X] Not Required

Project Issues:

Yes	No	
[ ]	[X]	System safety
[ ]	[X]	Soils - foundation and seismic conditions
[X]	[ ]	Construction/operational permits
[ ]	[X]	Local air quality/wastewater permits
[ ]	[X]	Complies with Final Governing Standard (Environmental standard for Spain, Italy & Greece)
[ ]	[X]	Land Acquisition (i.e. location, quantity)
[X]	[ ]	Technical Operating Manuals
[ ]	[X]	Feasibility/Constructibility in FY
[ ]	[X]	Historical Preservation
[ ]	[X]	Does the facility have an overhead crane requirement?
[ ]	[X]	Navy Crane Center contacted to assist with dev. of crane estimate (lifting capacity < 10-tons)?
[ ]	[X]	Navy Crane Center contacted to coord. procurement and timelines (lifting capacity >= 10-tons)?

Project supports high risk training. Safety is of considerable concern.

Yes	No	
[ ]	[X]	Physical Security:

[ ] Shielding
[ ] SCIF
[X] Fencing
[X] IDS
[ ] Other Type:

BUDGET ESTIMATE SUMMARY SHEET:

Item	UM	Quantity	Unit Cost	Total Cost
BUILT-IN EQUIPMENT	LS			782,593
Emergency generators (NAIB)	EA	2.00	80,000.00	160,000
Fire pumps (NAIB)	EA	4.00	155,648.28	622,593

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Item	UM	Quantity	Unit Cost	Total Cost
Special Construction Features:				
TECHNICAL OPERATING MANUALS	LS			184,622
OMSI (1% of project)	LS	1	184,621.86	184,622
INFORMATION SYSTEMS	LS			563,733
NEW APPLIED INSTRUCTION BUILDING		1	0.01	0
Mass notification	m2	2975	10.17	30,256
Cable TV wiring	m2	2975	30.79	91,600
Fiber optic wiring	m2	2975	39.76	118,286
Telephone wiring	m2	2975	36.08	107,338
Public address	m2	2975	34.61	102,965
Intrusion detection	m2	2975	38.08	113,288
ANTI-TERRORISM/FORCE PROTECTION	LS			538,650
AT/FP 2.7% (primary facility)	LS	1	538,650.00	538,650
LEED AND EPACT 2005 COMPLIANCE	LS			399,000
Leed & Epact 2005 (2% primary)	LS	1	399,000.00	399,000
Utilities and Site Improvements:				
ELECTRICAL UTILITIES	LS			1,431,361
SIMULATED TRAINING SITES (10)		1	0.01	0
Overhead service (STS)	m	1449	109.11	158,100
Pole hardware (STS)	EA	49	3,267.00	160,083
Site distribution (STS)	m	966	313.80	303,131
Night lighting (STS)	EA	50	3,656.40	182,820
Transformers (STS)	EA	10	4,620.17	46,202
NEW APPLIED INSTRUCTION BUILDING		1	0.01	0
Connect to existing power source	m2	2975	11.46	34,094
OH Electrical service (NAIB)	m	1027	118.08	121,268
Pole hardware (NAIB)	EA	34	3,267.00	111,078
Training building transformer (NAIB)	EA	1	18,000.00	18,000
Electrical communication (NAIB)	m	1027	254.11	260,971
Exterior lighting (NAIB)	EA	10	3,561.30	35,613
MECHANICAL UTILITIES	LS			1,453,660
SIMULATED TRAINING SITES (10)		1	0.01	0
Water distribution to each site (STS)	m	2177	233.21	507,698
Connect to existing water source	m2	10743	4.65	49,955
NEW APPLIED INSTRUCTION BUILDING		1	1.00	1
Fire Main w/hydrant (NAIB)	m	1027	252.48	259,297
Stationary tank for RP & Potable water (NAIB)	EA	1	90,000.00	90,000
Sanitary sewer (NAIB)	m	1027	154.94	159,123
Connect to existing sewer main	m2	2975	16.81	50,010
Water & backflow preventer (NAIB)	m	1027	227.14	233,273

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Item	UM	Quantity	Unit Cost	Total Cost
Natural gas (NAIB)	m	1027	67.50	69,323
Connect to gas main	m2	2975	11.76	34,986
PAVING AND SITE IMPROVEMENTS	LS			3,331,546
SIMULATED TRAINING SITES (10)		1	0.01	0
Asphalt paving (STS)	m2	21334	48.58	1,036,406
Grassing (STS)	AC	8	1,535.22	12,282
Access roads-gravel (STS)	m2	25093.38	20.86	523,448
Drainage swales (STS)	m2	30928.3	17.83	551,452
Main branch access road	m2	8117	47.31	384,015
Access road from main highway	m2	8391	47.31	396,978
NEW APPLIED INSTRUCTION BUILDING		1	0.01	0
Paved surfaces (NAIB)	m2	1338.29	52.57	70,354
Drainage (NAIB)	m	165.24	230.75	38,129
Walks & steps	m2	303.9	124.05	37,699
Landscaping (NAIB)	m2	607.94	26.03	15,825
Access road (NAIB)	m2	446.1	52.57	23,451
VEHICLE STORAGE COVERED		1	0.01	0
Paved surfaces	m2	781	52.57	41,057
Drainage	m2	781	256.39	200,241
SITE PREPARATIONS	LS			2,071,107
SIMULATED TRAINING SITES (10)		1	0.01	0
Clearing & grubbing (STS)	AC	24	2,711.68	65,080
Grading and compaction (STS)	m2	242917	7.46	1,812,161
Road access (STS)	AC	37	2,711.68	100,332
NEW APPLIED INSTRUCTIION BUILDING		1	0.01	0
Clearing & grubbing (NAIB)	AC	2	2,641.15	5,282
Grading/Compaction (NAIB)	m2	4140	8.07	33,410
Site cleanup	m2	4140	9.41	38,957
VEHICLE STORAGE COVERED		1	0.01	0
Clearing & grubbing	AC	1	2,934.61	2,935
Grading & compaction	m2	781	8.07	6,303
Cleanup site	m2	781	9.46	7,388
ENVIRONMENTAL MITIGATION	LS			1,198,963
Mitigation	AC	24	49,956.78	1,198,963
PCAS (.5%) OF PRIMARY FACILITY	LS			99,905
PCAS (.5%) of primary facility	m2	14500	6.89	99,905

A. Estimated Design Data:

1. Status:

(A) Date design or Parametric Cost Estimate started	06/2008
(B) Date 35% Design or Parametric Cost Estimate complete	08/2008
(C) Date design completed	11/2008

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3. Installation(SA) and Location/UIC: N60508(EG)	4. Project Title
NAS WHITING FLD MILTON FL (EGLIN AFB EOD SCHOOL) EGLIN A.F.B., FLORIDA	Applied Inst Facility-WMD Training

5. Program Element	6. Category Code	7. Project Number	8. Project Cost ($000)
	17120	P906	33,737

(D) Percent completed as of September 2008	0%
(E) Percent completed as of January 2009	0%
(F) Type of design contract	Design Build
(G) Parametric Estimate used to develop cost	Yes
(H) Energy Study/Life Cycle Analysis performed	No
2. Basis:	
(A) Standard or Definitive Design	No
(B) Where design was previously used	P903
3. Total cost (C) = (A) + (B) = (D) + (E):	
(A) Production of plans and specifications	$212
(B) All other design costs	$1,700
(C) Total	$1,912
(D) Contract	$1,869
(E) In-house	$43
4. Contract award:	12/2008
5. Construction start:	04/2009
6. Construction complete:	11/2010

B. Equipment associated with this project which will be provided from other appropriations:

Major Equipment	Funding Source	Fund Year	Installation Start-End Mo/Yr	Shakedown Start-End Mo/Yr	IOC Date Mo/Yr	Cost
Building furnishings	OMN	2010				126,647
Electronic classrooms	OMN	2010				600,000
Kit C - Demolition	OPN	2010				316,100
Kit D - Recon & Render Safe	OPN	2010				1,057,300
Kit K - 5 Andros MK V-A1 Robot	OPN	2010				1,362,500
Kit L - 5 Andros MK VI-A Robot	OPN	2010				970,100
Vehicles, Tools, Equip. & PPE	OMN	2010				337,900

JOINT USE CERTIFICATION:

The Regional Commander certifies that this project has been considered for joint use potential. Joint Use is recommended.

Activity POC: Dave Garner Phone No: 850-983-9102

Attachments:

MILCON CHECKLIST
Economic Analysis
Site Plan
Facility Planning Document(s)/P-80 Calculations

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5. Program Element	6. Category Code	7. Project Number	8. Project Cost ($000)
0805976N	17120	P907	15,427

9. COST ESTIMATES

Item	UM	Quantity	Unit Cost	Cost($000)
APPLIED INST FAC-EOD COURSE EXP-U.S. ARMY (62,205 SF)	m2	5,779		10,750
APPLIED INSTRUCTION BUILDING (41,915 SF)	m2	3,894	2,037.03	(7,930)
VEHICLE STORAGE COVERED (16,802 SF)	m2	1,561	54.13	(80)
DINING SUPPORT FACILITY (1,389 SF)	m2	129	3,918.46	(510)
NMCI SERVICE ROOM (2,099 SF)	m2	195	1,908.80	(370)
BUILT-IN EQUIPMENT	LS			(470)
TECHNICAL OPERATING MANUALS	LS			(100)
INFORMATION SYSTEMS	LS			(760)
ANTI-TERRORISM/FORCE PROTECTION	LS			(320)
LEED AND EPACT 2005 COMPLIANCE	LS			(210)
SUPPORTING FACILITIES				2,750
ELECTRICAL UTILITIES	LS			(600)
MECHANICAL UTILITIES	LS			(980)
PAVING AND SITE IMPROVEMENTS	LS			(790)
SITE PREPARATIONS	LS			(180)
ENVIRONMENTAL MITIGATION	LS			(150)
PCAS (.5%) PRIMARY FACILITY	LS			(50)
SUBTOTAL				13,500
CONTINGENCY (5%)				680
TOTAL CONTRACT COST				14,180
SIOH (5.7%)				810
SUBTOTAL				14,990
DESIGN/BUILD - DESIGN COST (4%)				540
CONGRESSIONAL ADJUSTMENT	LS			-103
TOTAL REQUEST ROUNDED				15,427
TOTAL REQUEST				15,427
EQUIPMENT FROM OTHER APPROPRIATIONS (NON ADD)				(1,800)

Guidance Unit Cost Analysis

Cat Code	Facility	OSD Guid.	Guid. Cost	Guid. Size	Project Scope	Room Size Fctr	Area Size Fctr	Cost Fctr	Esc. Factor	Unit Cost
13117	NMCI SERVICE ROOM		2,191.00	139 m2	195 m2	.9680		.900	1.000000000	1,908.80
72210	DINING SUPPORT FACILITY	*	3,418.00	2000 m2	129 m2	1.2738		.900	1.000000000	3,918.46
21440	VEHICLE STORAGE COVERED		63.85	781 m2	1561 m2	.9420		.900	1.000000000	54.13
17120	APPLIED INSTRUCTION BUILDING	*	2,374.00	2300 m2	3894 m2	.9534		.900	1.000000000	2,037.03

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3. Installation(SA) and Location/UIC: N60508(EG)	4. Project Title
NAS WHITING FLD MILTON FL (EGLIN AFB EOD SCHOOL) EGLIN A.F.B., FLORIDA	Applied Inst Fac-EOD Course Exp-U.S. Army

5. Program Element	6. Category Code	7. Project Number	8. Project Cost ($000)
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Anti-Terriorism/Force Protection-costs were derived from Milcon 101 Student Guide, 3-6 February 2003, AT/FP section, slide 42

Dining Support, Vehicle Storage and Applied Instruction facilities costs were derived from DoD Facilities Pricing Guide, UFC-3-701-07 April 2007

The costs for communication and capacity for new equipment were included as additional costs for the project. Telephone instruments, computer systems and furniture are not included in the definition of construction in the DoD Facilities Pricing Guide.

The Area Cost Factor has been increased by 10% (.82 x 1.10 = .902) to reflect cost increases induced by the influence of the Hurricane Katrina recovery effort and the current bid climate for milcon projects in this geographical locale.

10. Description of Proposed Construction:

The Using Activity for this project is planned to be: NAS WHITING FLD MILTON FL.

Construct new applied instruction facilities, dining support facility and vehicle storage covered. The applied instruction facilities will include level A electronic classrooms with workbenches, level C type classrooms to accommodate new student loading, command posts for exercise preparation, tool-gear issue, equipment staging and storage, maintenance spaces, administrative offices, classified storage vaults, and common areas. The functions listed above will be supported by training spaces to include storage rooms, locker space, and computer rooms for legacy servers. Administrative functions will incorporate division, supervisory and instructor office spaces, advanced ECR preparatory stations, student break room and instructor lounge areas.

Building construction to include: reinforced foundation slab-on-grade, concrete masonry walls, steel frame structure, metal stud partition walls, standing seam metal roofs, double glazed insulated aluminum framed windows, wall, floor and ceiling finishes, heating, ventilation, and air-conditioning, complete electrical system to include electrical equipment, wiring and lighting, fire protection and detection system, telephone, computer, television cabling and conduit, intrusion detection system, lightning protection, and supporting facilities for pavements, utilities, a covered vehicle holding area, and other related site work.

Construct a 1,040 square foot addition to the existing dining facility building 8840. The existing facility has a current seating capacity of 190 based on 2,280 NSF/12SF/seat. Capacity is 4 service periods/meal x 190 = a total of 760. In accordance with milcon project P905, BEQ EOD School Phase II, the new requirement of 902 billets can be reduced by a factor of .90. This will decrease the total requirement to 812 dining seats. With the existing capacity of 760, the new total requirement is 812-760 = 52 total seats. Total square footage requirement is 52 seats x 20 GSF per seat = 1,040 SF.

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NAS WHITING FLD MILTON FL (EGLIN AFB EOD SCHOOL) EGLIN A.F.B., FLORIDA	Applied Inst Fac-EOD Course Exp-U.S. Army

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11. Requirement: 5472 m2 **Adequate:** 0 m2 **Substandard:**

FACILITY PLANNING DATA:

Category Code		Requirement	UM	Adequate	Substandard	Inadequate	Deficit/ Surplus
13117	TELECOMMUNICATIONS CENTER	195	m2				
17120	APPLIED INSTRUCTION BUILDING	3586	m2	0			-3,586
72210	ENLISTED DINING-FACILITY	129	m2	0			-129
21440	VEHICLE HOLDING SHED	1562	m2	0			-1,562

NOTES:

Notes:

Temporary Facilities:

Reference: Department of Defense Instruction, Number 4165.56, paragraphs 5.2.1. Interim Facility Requirements, subparagraphs 5.2.1.1. thru 5.2.1.1.6., and 5.2.1.2 thru 5.2.1.2.3.

All relocatable buildings will be provided and installed with approved funding by the U.S. Army. This project does not provide appropriations for temporary facilities. However, the project has been designed and developed to replace any temporary facilities when enacted.

In accordance with the schedule, these temporary facilities will be in place NLT (no later than) fiscal year 2008. Initial cost will include the purchase of the temporary facilities, utilities, setup, and tranportation to the site. They will be in use until this Milcon project, P907 has been approved, funded and constructed. When the BOD has been scheduled and accepted by the using agency, the temporary facilities will be removed and the permanent facilities occupied.

Maintenance and repair costs will be budgeted for by the using agency for the period of time they are in use.

Fifteen (15) temporary classrooms and supporting facilities will be provided to begin instruction and training. Classroom size will be approximately 26'-8" x 32'-4". For supporting facilities a net to gross factor of 1.45 required. Total square footage required: (15) x 862 ea. = 12930 SF x 1.45 = 18749 SF

SCOPE:

The project scope is derived from the P-80 and UFC 2-000-05N 31 January 2005 for category code 171.20 using planning factors for classroom, laboratory, dining, vehicle storage (covered) and support spaces. The Basic Facilities Requirement (BFR) was calculated to determine the total training requirements for the project.

PROJECT:

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Construct applied instruction training facilities, addition to existing dining support facility and vehicle storage covered for Basic EOD course expansion. These required facilities will provide training for EOD team members from the Air Force, Navy, Army, Marine Corps, International and other Federal agency personnel in basic explosive ordnance disposal skills.

(Current Mission)

REQUIREMENT:

Adequate facilities to support training requirements for an annual throughput of 1746 students. The increase in students on the current operating environment requires expansion of the existing basic EOD course.

- Student throughput will increase from 1150 to 1746
- The mission and objective of the basic EOD course is to train Joint Service Explosive Ordnance Disposal Team Members and selected Federal agency personnel in the skills to detect, classify, diagnose, and render safe unexploded ordnance including IED's in varied environments in direct support of Department of Defense National Response Plans.

Training in the use of specialized equipment and procedures to detect, classify, diagnose and render safe unexploded ordnance including IED's is mandated by DoD Directive 5160.62. DoD Directive 5160.62 establishes the DoD EOD Program Board which has oversight of common Joint EOD technology and training requirements. This training seat increase has been requested by the U.S. Army to the executive manager of the DoD/EOD program board, letter dated 5 April 2007, (DEPARTMENT OF THE ARMY, OFFICE OF THE CHIEF OF ORDNANCE, For Executive Manager for DoD EOD/CREW Technology and Training (CNO N85X), Commander Naval Sea Systems Command, 1333 Isaac Hull Avenue SE, Stop 501, Washington Navy Yard, Washington DC 20376-5011).

Instruction will include: Improvised and foreign Weapons of Mass Destruction (WMD)/Chemical Biological Nuclear and Explosive (CBRNE) devices.

U.S. Army quota requirements breakdown by fiscal year:

Current: FY-07 = 495
Projected: FY-08 = 636
FY-09 = 1,028
FY-10 = 1,082
FY-11 = 1,091

Total Seat Increase = 596

CURRENT SITUATION:

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Mission capability gap:

Since 9/11 and the impacts of the Global War on Terror, there is unified agreement of the need to increase student throughput. Adequate facilities do not exist to support the U.S. Army's new throughput requirements. Project P907 has been developed to expand and construct new applied instruction facilities. The critical war fighting needs of all Federal Agencies are contingent upon throughput expansion at NAVSCOLEOD. Meeting the requirements of the mandated EOD Force Design Update (FDU) approved on 30 October 06, 2006 and accomplishing the annual throughput of 1746 students is crutial to lessening the loss of military and civilian lives globally. Funding for these training requirements should not be delayed until the next POM/PR programming cycle.

IMPACT IF NOT PROVIDED:

Without this project, the U.S. Army will not be able to meet it's approved EOD Force Design Update (FDU).

ADDITIONAL: Economic Alternatives Considered:

A. Status Quo:

a. Not considered to be a viable alternative. EOD training must expand to provide the U.S. Army's increased student throughput between fiscal years FY-08 thru FY-11 and beyond.

B. Renovation/Modernization:

b. This is not a viable alternative. There are no spaces available to convert this specialized training requirement. Existing training spaces at Eglin AFB are fully utilized.

C. Lease:

c. This is not a viable alternative: The facility needs to be highly secure and located conveniently to the existing basic and expanded courses and training ranges to make efficient use of existing infrastructure and course support.

D. New Construction:

d. This action is the preferred alternative. The facility can be sized and configured to match the requirement. It can be located near the current NAVSCOLEOD training facilities on Eglin Range D-51, which will enhance training efficiency, provide security for mission

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sensitive equipment, and simplify range oversight and maintenance.

E. Other Alternatives:

e. Alternate sights for this training have been considered. However, since this requirement expands and lengthens an existing course of instruction managed by NAVSCOLEOD, the only feasible conclusion is to construct the training facilities on range D51.

F. Analysis Results:

New construction is the only reasonable alternative that will meet the U.S. Army's EOD Force Design Update (FDU) effective October 30, 2006 whereby increasing the Army's manning requirements for active and reserve components.

12. Supplemental Data:

Site Approval:

[ ] Yes, obtained date:
[X] No, expected date: 09/2008

Issues (If yes, please provide discussion under issue):

Yes	No	
[ ]	[X]	DDESB, AICUZ, Airfield, EMR, or wetlands
[ ]	[X]	Endangered species/sensitive habitat
[ ]	[X]	Air quality
[ ]	[X]	Cultural/archeological resources
[X]	[ ]	Clearing of trees
[ ]	[X]	Known contamination at selected site
[ ]	[X]	Operational problems
[ ]	[X]	Traffic patterns impact
[X]	[ ]	Existing utilities upgrade
[X]	[ ]	Ordnance sweep required prior to Construction

-DDESB approval required for ESQD arc.
-Some tree clearing required for explosive training range and access roads.
-Electrical distribution and communications must be extended to site. Provide well

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5. Program Element	6. Category Code	7. Project Number	8. Project Cost ($000)
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water and septic at site.

Planning (If no, please provide an explanation):

Yes	No	
X		Consistent w/ Master Plan or Base/Regional Dev.

Host Nation Approval:

	Required
	Approval Date:
	Expected Date:
X	Not Required

National Capital Region Approval:

	Required
	Approval Date:
	Expected Date:
X	Not Required

NEPA Documentation:

Yes	No	
	X	Complete

AFF 813 (request for environmental analysis) submitted 9/17/01.

Level of NEPA:

Yes	No	
	X	Categorical Exclusion
X		Environmental Assessment(EA)
	X	Environmental Impact Statement(EIS)
	X	Memorandum of Negative Decision

Mitigation Issues:

Yes	No	
	X	Wetlands replacement/enhancement
	X	Hazardous waste
	X	Contaminated soil/water
X		Other

Noise. Sound modeling will be performed to determine best siting.

Environmental Cleanup:

	Required
	Start Date:
	Completion Date:
X	Not Required

Project Issues:

Yes	No	
	X	System safety

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	X	Soils - foundation and seismic conditions
X		Construction/operational permits
	X	Local air quality/wastewater permits
	X	Complies with Final Governing Standard (Environmental standard for Spain, Italy & Greece)
	X	Land Acquisition (i.e. location, quantity)
X		Technical Operating Manuals
	X	Feasibility/Constructibility in FY
	X	Historical Preservation
	X	Does the facility have an overhead crane requirement?
	X	Navy Crane Center contacted to assist with dev. of crane estimate (lifting capacity < 10-tons)?
	X	Navy Crane Center contacted to coord. procurement and timelines (lifting capacity >= 10-tons)?

Project supports high risk training. Safety is of considerable concern.

Yes	No	
	X	Physical Security:
		Shielding
		SCIF
X		Fencing
X		IDS
		Other Type:

BUDGET ESTIMATE SUMMARY SHEET:

Item	UM	Quantity	Unit Cost	Total Cost
BUILT-IN EQUIPMENT	LS			471,297
Emergency generators	EA	2.00	80,000.00	160,000
Fire pumps	EA	2.00	155,648.28	311,297
Special Construction Features:				
TECHNICAL OPERATING MANUALS	LS			95,268
OMSI (1% of project)	LS	1	95,267.84	95,268
INFORMATION SYSTEMS	LS			755,482
NEW APPLIED INSTRUCTION BUILDING		1	0.01	0
Mass notification system	m2	3715	11.05	41,051
Cable TV wiring	m2	3715	31.61	117,431
Fiber optic wiring	m2	3715	40.82	151,646
Telephone wiring	m2	3715	37.04	137,604
Public address	m2	3715	35.53	131,994
Intrusion detection	m2	3715	47.31	175,757
ANTI-TERRORISM/FORCE PROTECTION	LS			321,512
AT/FP (2.7% of facility)	LS	1	321,511.78	321,512

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5. Program Element	6. Category Code	7. Project Number	8. Project Cost ($000)
0805976N	17120	P907	15,427

Item	UM	Quantity	Unit Cost	Total Cost
LEED AND EPACT 2005 COMPLIANCE	LS			210,582
LEED & Epact 2005 (2% Primary)	LS	1	210,581.64	210,582
Utilities and Site Improvements:				
ELECTRICAL UTILITIES	LS			599,951
NEW APPLIED INSTRUCTION BUILDING		1	0.01	0
Connect to existing power source (NAIB)	m2	3715	11.46	42,574
Electrical-communication (NAIB)	m	1028.32	234.81	241,460
Lighting-building exterior (NIB)	EA	15	3,290.76	49,361
OH Electrical service (NAIB)	m	1028.32	109.11	112,200
Pole hardware (NAIB)	EA	35	3,354.24	117,398
Training building transformer (NAIB)	EA	2	18,480.67	36,961
MECHANICAL UTILITIES	LS			982,523
NEW APPLIED INSTRUCTION BUILDING		1	0.01	0
Sanitary sewer (NAIB)	m	1028.32	159.07	163,575
Connect to sanitary main (NAIB)	m2	3715	16.81	62,449
Water & backflow preventer (NAIB)	m	1028.32	233.21	239,815
Connect to water main	m2	3715	4.65	17,275
Natural gas (NAIB)	m	1028.32	68.93	70,882
Connect to gas main (NAIB)	m2	3715	11.76	43,688
Fire main w/hydrant (NAIB)	m	1028.32	259.22	266,561
Stationary tank for FP & Potable Water (NAIB)	EA	1.28	92,403.33	118,276
PAVING AND SITE IMPROVEMENTS	LS			794,637
NEW APPLIED INSTRUCTION BUILDING		1	0.01	0
Paved surfaces (NAIB)	m2	1713.01	48.58	83,218
Drainage (NAIB)	m	211.51	236.91	50,109
Walks & Steps (NAIB)	m2	389	127.36	49,543
Landscaping (NAIB)	m2	778.16	26.72	20,792
Access roads (NAIB)	m2	6628	48.58	321,988
VEHICLE STORAGE & DINING FACILITY		1	0.01	0
Paved surfaces	m2	2621	52.57	137,786
Drainage	m	443.14	256.39	113,617
Parking (dining facility)	m2	335	52.57	17,611
SITE PREPARATIONS	LS			178,200
NEW APPLIED INSTRUCTION BUILDING		1	0.01	0
Clearing site & stump removal (NAIB)	AC	2.5	2,711.68	6,779
Grading/compaction (NAIB)	m2	6723	7.46	50,154
Site Cleanup (NAIB)	m2	6723	9.46	63,600
VEHICLE STORAGE & DINING FACILITY		1	0.01	0
Clearing site and stump removal	AC	2	2,934.61	5,869
Grading/compaction	m2	2956	8.07	23,855

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0805976N	17120	P907	15,427

Item	UM	Quantity	Unit Cost	Total Cost
Site Cleanup	m2	2956	9.46	27,964
ENVIRONMENTAL MITIGATION	LS			146,752
Mitigation	AC	3	48,917.31	146,752
PCAS (.5%) PRIMARY FACILITY	LS			51,118
PCAS (.5% of primary facility)	m2	3715	13.76	51,118

A. Estimated Design Data:

1. Status:	
(A) Date design or Parametric Cost Estimate started	06/2008
(B) Date 35% Design or Parametric Cost Estimate complete	08/2008
(C) Date design completed	11/2008
(D) Percent completed as of September 2008	0%
(E) Percent completed as of January 2009	0%
(F) Type of design contract	Design Build
(G) Parametric Estimate used to develop cost	Yes
(H) Energy Study/Life Cycle Analysis performed	No
2. Basis:	
(A) Standard or Definitive Design	No
(B) Where design was previously used	P903, P906
3. Total cost (C) = (A) + (B) = (D) + (E):	
(A) Production of plans and specifications	$67
(B) All other design costs	$537
(C) Total	$604
(D) Contract	$590
(E) In-house	$14
4. Contract award:	12/2009
5. Construction start:	04/2010
6. Construction complete:	11/2011

B. Equipment associated with this project which will be provided from other appropriations:

Major Equipment	Funding Source	Fund Year	Installation Start-End Mo/Yr	Shakedown Start-End Mo/Yr	IOC Date Mo/Yr	Cost
Building furnishings & dining facility equipment	OMN	2010				167,824
Electronic Classrooms	OMN	2010				1,200,000
Vehicles, Tools, Equipment & PPE	OMN	2010				432,512

JOINT USE CERTIFICATION:

The Regional Commander certifies that this project has been considered for joint use potential. Joint Use is recommended.

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Level: INITIAL **Draft: POM-10** **16-AUG-07**

1. Component	FY 2010 MILITARY CONSTRUCTION PROGRAM	2. Date
NAVY		16 AUG 2007

3. Installation(SA) and Location/UIC: N60508(EG)	4. Project Title
NAS WHITING FLD MILTON FL (EGLIN AFB EOD SCHOOL) EGLIN A.F.B., FLORIDA	Applied Inst Fac-EOD Course Exp-U.S. Army

5. Program Element	6. Category Code	7. Project Number	8. Project Cost ($000)
0805976N	17120	P907	15,427

Activity POC: Dave Garner-PRI/DJI NAS Whiting Field Phone No: 850-983-9102

Attachments:

MILCON CHECKLIST
Economic Analysis
Site Plan
Facility Planning Document(s)/P-80 Calculations
R19 (Bachelor Housing Survey)
Other
PHOTOGRAPHS
Army EOD Increase LTR.
DoD EOD Program Board Ltr WMD TRNG
EOD RRA Facility Report - FINAL
EODRecognizedNatDefAuthFY08
ITRO EOD RRA MAY 07 ATTENDEES
Manpower - ITRO EOD APPENDIX A MAY 07

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Level: INITIAL **Draft: POM-10** **16-AUG-07**

DRAFT 1

1. COMPONENT AIR FORCE	FY 2010 MILITARY CONSTRUCTION PROJECT DATA (computer generated)		2. DATE
3. INSTALLATION AND LOCATION EGLIN AIR FORCE BASE, FLORIDA		4. PROJECT TITLE CONSTRUCT EOD TRAINING FACILITY	
5. PROGRAM ELEMENT 85976	6. CATEGORY CODE 171-621	7. PROJECT NUMBER FTFA031112A	8. PROJECT COST ($000) 1,800

classroom borrowed from the Navy in the existing NAVSCOLEOD building. There is no practical training area. Since both courses often run simultaneously, temporary teaching facilities must be arranged to accommodate one of the courses. Neither course is able to meet its practical training requirements.

IMPACT IF NOT PROVIDED: Without a new facility, the EOD AF Unique and Craftsman courses will continue to share a single, borrowed classroom and will struggle to locate temporary teaching facilities when the classroom is not available. Training deficiencies will be reported for each course due to the lack of practical exercises/training. EOD Airmen, NCOs and Officers who often deploy to Iraq or Afghanistan within 3-6 months of graduation will not receive the training they need to be adequately prepared for apprentice duties in the field and deployment from their first stations. The current EOD operations tempo and deployment frequency make the EOD AF Unique course a vital follow-on requirement to NAVSCOLEOD. Similarly, the AF EOD Craftsman Course will not adequately prepare new EOD team leaders for their vital role in the war effort. Commonly, a single team leader will perform operations on 120-150 responses while in Iraq. It is critical that these team leaders have the practical training necessary to perform their duties safely and effectively in a real-world combat environment.

ADDITIONAL: This project meets the criteria/scope specified in AF Manual 32-1084, Facility Requirements. Project is to provide all design features for handicapped accessibility in accordance with the Americans with Disabilities Act standards and to comply with antiterrorism force protection measures and standards as delineated in Unified Facilities Criteria (UFC) 4-010-01 DoD Minimum Antiterrorism Standards for Buildings, dated 8 October 2003, and updates as applicable, along with installation physical security and force protection plans. Some highlights include an 82 foot stand off, integrated window and door glazing systems, and air intakes 3m above grade. Project will include Mass Notification System as specified in UFC 4-021-01 Design and O&M: Mass Notification Systems. Seismic planning and design is to comply with Technical Instruction 809-04. Project is to meet energy conservation standards and sustainable development concepts for LEED certification, to include variable frequency drives on air handling equipment, energy efficient lighting, high efficiency motors, utility metering with the ¿turtle¿ system and the Invensys Building Systems Network 8000 System or compatible to tie in with the Eglin direct digital controls (DDC) system. Utility metering is included. Project also will meet fire protection standards in UFC 3-600-01 Design: Fire Protection for Facilities, NFPA (National Fire Protection Association) 101-2003: Life Safety Code, and International Building Code. Project also will comply with most recent version of Eglin Air Force Base Architectural Compatibility Plan and will be designed to withstand up to at least 140 mph winds for hurricane-resistance. Base Civil Engineer: Col Dennis D. Yates DSN 872-2876. Facility: 530 SM = 5,700 SF.

JOINT USE CERTIFICATION: This facility can be used by other components on an "as available" basis; however, the scope of the project is based on Air Force requirements.

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DRAFT 1

1. COMPONENT AIR FORCE	FY 2010 MILITARY CONSTRUCTION PROJECT DATA (computer generated)		2. DATE
3. INSTALLATION AND LOCATION EGLIN AIR FORCE BASE, FLORIDA		4. PROJECT TITLE CONSTRUCT EOD TRAINING FACILITY	
5. PROGRAM ELEMENT 85976	6. CATEGORY CODE 171-621	7. PROJECT NUMBER FTFA031112A	8. PROJECT COST ($000) 1,800

DENNIS D. YATES, Col, USAF (Date)
Commander, 96th Civil Engineer Group

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DRAFT 1

1. COMPONENT	FY 2010 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
EGLIN AIR FORCE BASE, FLORIDA	CONSTRUCT EOD TRAINING FACILITY

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
85976	171-621	FTFA031112A	1,800

12. SUPPLEMENTAL DATA:

a. Estimated Design Data:

(1) Status:

(a) Date Design Started	
(b) Parametric Cost Estimates used to develop costs	YES
* (c) Percent Complete as of 01 JAN 2009	
* (d) Date 35% Designed	
(e) Date Design Complete	
(f) Energy Study/Life-Cycle analysis was/will be performed	YES

(2) Basis:

(a) Standard or Definitive Design -	NO
(b) Where Design Was Most Recently Used -	

(3) Total Cost (c) = (a) + (b) or (d) + (e):

	($000)
(a) Production of Plans and Specifications	0
(b) All Other Design Costs	0
(c) Total	0
(d) Contract	0
(e) In-house	0

(4) Construction Contract Award

(5) Construction Start

(6) Construction Completion

* Indicates completion of Project Definition with Parametric Cost Estimate which is comparable to traditional 35% design to ensure valid scope, cost and executability.

b. Equipment associated with this project provided from other appropriations:
N/A

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