

**Environmental Assessment
Military Family Housing Privatization**

Tyndall Air Force Base, Florida



**Department of the Air Force
Air Education and Training Command
325th Training Wing
Tyndall Air Force Base, Florida**

July 2005

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14. ABSTRACT The purpose of the Proposed Action is to privatize military family housing (MFH) at Tyndall AFB. Privatizing MFH includes conveying 848 existing units to a privatization contractor and leasing the property on which the units are located to the contractor. This EA evaluates the No Action Alternative, the Proposed Action, the Maximum Development Alternative, and the cumulative impacts of other actions announced for the Base. Under the No Action Alternative, the 848 existing MFH units would not be conveyed to a privatization contractor and the units would continue to be used to house military personnel and dependents. Thirty-five surplus units would be demolished under the No Action Alternative to achieve the required inventory of 813 units. The Proposed Action and Maximum Development Alternative include conveying the 848 units and associated infrastructure and leasing the 495 acres associated with MFH to a privatization contractor. Under the Proposed Action Alternative, the contractor would demolish 560 units and construct 525 replacement units. The contractor would operate, maintain, and manage an inventory totaling 813 units. Under the Maximum Development Alternative, the contractor would demolish 848 units and construct 1,238 replacement units. No units would be renovated under the Maximum Development Alternative, and the privatization contractor would manage an inventory totaling 1,238 units. The privatization contractor would manage the housing development for a minimum of 50 years under the Proposed Action or Maximum Development Alternative. Resources considered in the impact analysis were: noise; land use, air quality infrastructure and utilities; biological resources; groundwater resources, earth resources hazardous materials and waste; cultural resources; socioeconomic resources environmental justice; and cumulative impacts.		
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Finding of No Significant Impact Military Family Housing Privatization Tyndall AFB, Florida

AGENCY

Department of the Air Force, Air Education and Training Command, 325th Training Wing, Tyndall Air Force Base (AFB), Florida.

BACKGROUND

Due to advancing age and continual deterioration, military family housing (MFH) units in the Shoal Point, Bay View, and Wood Manor neighborhoods at Tyndall AFB (the Base) require mechanical, electrical, and functional upgrades and expansions. Additionally, the MFH units in the Shoal Point and Bay View neighborhoods experience excessive noise from aircraft operations and are situated within the accident potential zones associated with the Air Installation Compatible Use Zone (AICUZ) program. Thus, action is needed to provide MFH at the Base that meets Air Force housing standards. An Air Force housing study determined that Tyndall AFB MFH meets Air Force privatization criteria as a means to upgrade the housing. Privatizing includes conveying existing units to a privatization contractor and leasing on-Base property to the contractor to demolish, construct, renovate, and/or maintain homes for military families.

Pursuant to National Environmental Policy Act (NEPA) guidance, 32 Code of Federal Regulations (CFR) 989 (*Air Force Environmental Impact Analysis Process*), and other applicable regulations, the Air Force completed an environmental assessment (EA) of the potential environmental consequences of the No Action Alternative, Proposed Action, and Maximum Development Alternative.

NO ACTION ALTERNATIVE

The existing MFH units will not be conveyed to a privatization contractor and the units will continue to be used to house military personnel and dependents. However, 35 units will be demolished and the Air Force will manage an inventory of 813 units. No MFH units will be constructed or renovated. There will be 103 fewer residents in MFH.

PROPOSED ACTION

The Air Force will convey 848 existing MFH units and associated infrastructure to a privatization contractor who will then demolish 560 units and construct 525 replacement units. The privatization contractor will manage a total of 813 units for a minimum of 50 years. There will be nine additional residents in MFH.

MAXIMUM DEVELOPMENT ALTERNATIVE

The Air Force will convey 848 existing MFH units and associated infrastructure to a privatization contractor who will then demolish all units and construct 1,238 replacement units. The privatization contractor will manage a total of 1,238 units for a minimum of 50 years. There will be 1,410 additional residents in MFH.

SUMMARY OF FINDINGS

EVALUATION OF THE NO ACTION ALTERNATIVE

Noise. Noise associated with demolition of the 35 units will be temporary and intermittent, lasting only as long as the demolition activities. There could be periods of time during which demolition noise will be discerned and provide minor annoyance to speech interference and loss of sleep for MFH personnel who normally sleep during the day. The primary source of noise throughout and after the project is completed will continue to be from aircraft operations. Units in the Shoal Point and Bay View neighborhoods not demolished will continue to be exposed to day-night average 80 A-weighted sound level measured in decibels and greater and will continue

to be incompatible with Air Force noise level reduction standards. No significant impacts will occur.

Land Use. Demolishing the 18 units in Bay View that are in accident potential zone (APZ) I will eliminate the existing incompatibility with AICUZ guidance which restricts housing in APZ I. The areas that will be vacated by demolition of the 35 surplus units could be re-categorized as open space to align with the other land use category for the APZs and the existing land use around the Bay View and Shoal Point neighborhoods. No significant impacts will occur.

Air Quality. The greatest emissions from construction activity will be nitrogen oxides (NO_x) (2.35 tons per year [tpy]), which equates to 0.02 percent of the NO_x emissions within Bay County. Emissions will be temporary and will be eliminated after demolition is completed. A conformity determination is not required. No significant impacts will occur.

Infrastructure and Utilities. Demands on the water, wastewater, electricity, and natural gas systems will not exceed the baseline levels since there will be no net change in personnel assigned to Tyndall AFB and because the systems serve both the Base and Bay County. The 2.2 percent decrease in impervious cover will correspond to a decrease in storm water runoff. Erosion control techniques will be used during demolition to minimize erosion and protect surface water quality. A storm water pollution prevention plan will be accomplished and implemented for the demolition activities. Demolition debris equates to 0.24 percent of the total remaining capacity of the landfill. The number of vehicles entering and exiting base will increase by approximately 30 vehicles during peak traffic periods; however, the existing roads will be able to accommodate the increased load. No significant impacts occur since the No Action Alternative will not substantially increase the demands on existing systems, resulting in the need for additional capacity or new systems.

Biological Resources. Demolition of the 35 units will occur in an urbanized area. Therefore, minimal disturbance to existing wildlife during demolition is expected. No significant adverse effects will occur since the No Action Alternative will not impact a threatened or endangered species, substantially diminish habitat for a plant or animal species, substantially diminish a regionally important plant or animal species, interfere substantially with wildlife movement or reproductive behavior, and/or result in a substantial infusion of exotic plant or animal species.

Groundwater Resources. Activities associated with the demolition of the 35 surplus units will not impact groundwater. No significant impacts will occur.

Earth Resources. Demolition will not cause any soil profile destruction. Use of best management practices such as rock berms, silt fences, and single point construction entries will minimize erosion during demolition. No significant impacts will occur.

Hazardous Materials and Waste. Contractors will use and store hazardous materials in accordance with Base procedures. Residents in the MFH units will continue to purchase hazardous materials for household uses, which is considered residential waste as exempted by regulatory guidance. Any hazardous waste generated will be handled in accordance with federal, state, and local laws and regulations and coordinated with the Tyndall AFB Environmental Flight. No installation restoration program (IRP) sites occur within the MFH neighborhoods. Asbestos-containing material (ACM) and lead-based paint (LBP) will be removed and disposed of in accordance with established regulations. The demolition contractor will disturb as little soil as possible. Soil will not be removed from the site without appropriate environmental testing and without written consent from the Base Commander or designee. No significant impacts are anticipated because the No Action Alternative will not result in noncompliance with applicable federal and Florida environmental quality regulations, cause waste generation that cannot be accommodated by current Tyndall AFB waste management capacities, or interfere with the IRP.

Cultural Resources. There are no known historic buildings, structures, or objects located in the MFH neighborhoods. It is possible that MFH demolition will occur in the Bay View neighborhood, a location for an identified archaeological site. The site has been severely disturbed by past activities and it is anticipated that no adverse effects will occur from demolition activities. Work in the immediate area will be suspended and the Tyndall AFB Environmental Flight will consult the State Historic Preservation Officer (SHPO) should historic materials or archaeological resources be discovered during demolition activities. Subsequent actions will follow the procedures outlined in the Tyndall AFB Integrated Cultural Resources Management

Plan. No significant impacts will occur because of the low probability for project activities to directly or indirectly affect historical or archaeological resources.

Socioeconomic Resources. There will be no overall change in Bay County population. The vacant housing units in Bay County will accommodate the 35 families that will be displaced. There will be no change in the number of students attending Bay County schools. The demolition activities will benefit sales volume, income, and employment in Bay County. No significant impacts will occur since the No Action Alternative will not result in substantial growth or concentration of population or the need for substantial additional housing or public services.

EVALUATION OF THE PROPOSED ACTION

Noise. The new housing units will be designed and constructed to meet Air Force noise level reduction criteria. The conclusions for the No Action Alternative apply. No significant impacts will occur.

Land Use. Continued use of the Wood Manor, Felix Lake, and Redfish Point neighborhoods for MFH is compatible with the General Plan. The Shoal Point and Bay View neighborhoods will be returned to Tyndall AFB after a short-term lease to the privatization contractor and could be re-categorized as open space to align with the existing land use category for the land around the neighborhoods. Re-categorization of the Redfish Point Extension and existing Saddle Club areas to housing-accompanied is consistent with the Tyndall AFB General Plan and does not conflict with the adjacent open space land uses. No significant impacts will occur.

Air Quality. The greatest annual emissions and greatest percentage of emissions within Bay County will be particulate matter equal to or less than 10 microns in aerodynamic diameter (PM₁₀) (76.02 tpy), which equates to 1.89 percent of the PM₁₀ emissions inventory. The conclusions for the No Action Alternative apply. No significant impacts will occur.

Infrastructure and Utilities. The net increase in on-Base population will be negligible; therefore, potable water usage and wastewater generation will not appreciably increase. Due to the reduction in housing, energy use will decrease. Storm water runoff will increase due to the 2.5 percent increase in impervious cover in the MFH neighborhoods. The increase in impervious cover is anticipated to occur from the new development and in the Redfish Point Extension and existing Saddle Club areas. The storm water conclusions for the No Action Alternative apply. Disposal of demolition and construction debris equates to 4.3 percent of the total remaining capacity of the landfill. Traffic congestion associated construction will be short-term and there will be no net increase in vehicles entering and exiting the Base during peak traffic periods. No significant impacts occur since the Proposed Action will not substantially increase the demands on existing systems, resulting in the need for additional capacity or new systems.

Biological Resources. The area adjacent to Redfish Point Extension has become more urbanized through residential development and supports wildlife that are more urban-adapted and disturbance-tolerant. There will be minimal disturbance to existing wildlife and a higher likelihood of wildlife tolerance to construction activities in these areas. Construction activities will have no adverse effect on the bald eagle that nests in a forested area north of the Felix Lake neighborhood and east of the Redfish Point Extension area. Effects on threatened and endangered species will be minimized by following the Tyndall AFB Integrated Natural Resources Management Plan. Wetlands delineation will be accomplished during the project design phase to accurately identify and map jurisdictional wetlands in the Redfish Point Extension. No project activities or new MFH units will be constructed in wetlands. Best management practices such as a silt fence will be implemented between the project area and any identified jurisdictional wetlands to prevent indirect effects on the wetlands. Construction activities will not occur within the 100-year floodplain. No significant adverse effects will occur.

Groundwater Resources. Pollutants could be generated from runoff from streets and parking areas. However, the aquifer is separated from recharge areas by clayey sand and hardpan layers and is much deeper. Storm water management practices and permits for construction will be implemented to reduce the potential for pollutants to enter groundwater. No significant impacts will occur.

Earth Resources. Construction activity in the Wood Manor and existing Saddle Club areas will occur within areas that have been disturbed and modified by prior MFH construction.

Geology will not change. Construction activity in the Redfish Point Extension will occur within an area that has not been disturbed by prior activities. The Community Development Plan for this neighborhood will be developed to minimize any disturbances to geology and soils. The best management practices identified for the No Action Alternative will be implemented. No significant impacts will occur.

Hazardous Materials and Waste. The conclusions for the No Action Alternative apply. The proposed MFH units will be constructed without any ACM or LBP. The privatization contractor will provide a LBP disclosure statement to new MFH residents. The privatization contractor will be responsible for having a competent risk assessor carry out a representative sampling for pesticides in the soil immediately surrounding the housing, gardens, and likely children's play areas prior to occupancy of newly constructed housing where soil was disturbed. The results of sampling or a risk assessment will be provided to the Air Force for approval prior to occupancy. No significant impacts are anticipated.

Cultural Resources. Although the Morehead archaeological site will not be conveyed to the privatization contractor, the site will be identified and clearly marked prior to construction activities since it could be surrounded by MFH privatization activities in the Redfish Point Extension. During construction activities precautions, in the form of barriers, signs, and erosion control measures will be implemented to protect the Morehead site. Since portions of the MFH neighborhoods are located within areas with high potential for archeological sites, it is possible that archeological artifacts could be encountered during construction. The discussion and analysis for Bay View for the No Action Alternative apply. In those undeveloped areas proposed for construction, a systematic archaeological survey will be conducted and coordinated with the SHPO prior to construction. No significant impacts will occur.

Socioeconomic Resources. The conclusions for the No Action Alternative apply. No significant impacts will occur.

EVALUATION OF THE MAXIMUM DEVELOPMENT ALTERNATIVE

The conclusions for the Proposed Action apply to noise, land use, biological resources, groundwater resources, earth resources, hazardous materials and waste, cultural resources, and socioeconomic resources for the Maximum Development Alternative.

Air Quality. The greatest annual emissions and greatest percentage of emissions within Bay County will be PM₁₀ (79.00 tpy), which equates to 1.96 percent of the PM₁₀ emissions inventory. The conclusions for the No Action Alternative apply. No significant impacts will occur.

Infrastructure and Utilities. Although on-Base water consumption will increase by 0.15 million gallons per day (mgd) due to the 1,410 additional persons, overall, regional water system consumption will decrease by 0.062 mgd due to the installation of water-efficient appliances in new houses. Although on-Base wastewater generation will increase by 0.08 mgd, there will be no net change in wastewater treated at the regional treatment plant because there will be a corresponding decrease in off-Base generation due to the reduction in residents. Demands on the electricity and natural gas systems will not exceed the baseline levels since there will be no net change in personnel assigned to Tyndall AFB and because the distribution systems serve both the Base and Bay County. The 10.6 percent increase in impervious cover will correspond to an increase in storm water runoff. The erosion control and storm water pollution prevention plan discussion for the No Action Alternative apply. Construction and demolition debris equates to 6.7 percent of the total remaining capacity of the landfill. Traffic congestion associated with the construction will be short-term. An estimated 333 fewer vehicles will enter and exit the Base during the peak traffic hours. No significant impacts will occur.

COASTAL ZONE CONSISTENCY

Based on the information, data, and analysis presented in the EA, activities associated with the No Action Alternative, Proposed Action, and Maximum Development Alternative will be consistent to the maximum extent practicable with the enforceable policies of the Florida Coastal Management Program.

ENVIRONMENTAL JUSTICE

Activities associated with the No Action Alternative, Proposed Action, and Maximum Development Alternative will not impose adverse environmental effects on adjacent populations. Therefore, no disproportionately high and adverse effects will occur to minority and low-income populations.

CUMULATIVE IMPACTS

Cumulative impacts were analyzed for nine other projects anticipated to occur during the same period as the Proposed Action. The same biophysical resource areas were analyzed for all alternatives for cumulative effects on the environment. No cumulative impacts will occur under the No Action Alternative, Proposed Action, or the Maximum Development Alternative.

PUBLIC INVOLVEMENT

A notice announcing a 30-day public comment period and the availability of the draft EA was published in the *Panama City News Herald* on May 1, 2005. Tyndall AFB received three letters with comments from federal and state agencies, which were incorporated into the EA. The letters and responses to comments are included in Appendix E of the EA.

DECISION

Based on my review of the facts and analyses contained in the attached EA and incorporated by reference, I conclude that implementation of the No Action Alternative, Proposed Action, or Maximum Development Alternative will not have a significant impact, either by itself or when considering cumulative impacts. Accordingly, requirements of NEPA, regulations promulgated by the Council on Environmental Quality, and 32 CFR 989 are fulfilled and an environmental impact statement is not required.



BRIAN D. DICKERSON, Colonel, USAF
Vice Commander, 325th Fighter Wing
Tyndall AFB, Florida

2 Sep 05

Date

**Environmental Assessment
Military Family Housing Privatization**

Tyndall Air Force Base, Florida

**Department of the Air Force
Air Education and Training Command
325th Training Wing
Tyndall Air Force Base, Florida**

July 2005



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COVER SHEET

ENVIRONMENTAL ASSESSMENT

Military Family Housing Privatization: Tyndall Air Force Base, Florida

Responsible Agency: Department of the Air Force, Air Education and Training Command, 325th Training Wing, Tyndall Air Force Base (AFB), Bay County, Florida.

Proposed Action: Military Family Housing Privatization at Tyndall AFB, Florida.

Written comments and inquiries regarding this document should be directed to: Mr. Herman Bell, 325th Fighter Wing Public Affairs Office, 445 Suwannee Road, Suite 129, Tyndall, AFB, Florida 32403-5425, telephone number 850-283-2983.

Report Designation: Environmental Assessment.

Abstract: The purpose of the Proposed Action is to privatize military family housing (MFH) at Tyndall AFB. Privatizing MFH includes conveying 848 existing units to a privatization contractor and leasing the property on which the units are located to the contractor. This EA evaluates the No Action Alternative, the Proposed Action, the Maximum Development Alternative, and the cumulative impacts of other actions announced for the Base. Under the No Action Alternative, the 848 existing MFH units would not be conveyed to a privatization contractor and the units would continue to be used to house military personnel and dependents. Thirty-five surplus units would be demolished under the No Action Alternative to achieve the required inventory of 813 units. The Proposed Action and Maximum Development Alternative include conveying the 848 units and associated infrastructure and leasing the 495 acres associated with MFH to a privatization contractor. Under the Proposed Action Alternative, the contractor would demolish 560 units and construct 525 replacement units. The contractor would operate, maintain, and manage an inventory totaling 813 units. Under the Maximum Development Alternative, the contractor would demolish 848 units and construct 1,238 replacement units. No units would be renovated under the Maximum Development Alternative, and the privatization contractor would manage an inventory totaling 1,238 units. The privatization contractor would manage the housing development for a minimum of 50 years under the Proposed Action or Maximum Development Alternative. Resources considered in the impact analysis were: noise; land use, air quality; infrastructure and utilities; biological resources; groundwater resources, earth resources, hazardous materials and waste; cultural resources; socioeconomic resources; environmental justice; and cumulative impacts.

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TABLE OF CONTENTS

COVER SHEET.....	CS-1
LIST OF TABLES	v
LIST OF FIGURES	vi
LIST OF FIGURES	vi
ACRONYMS AND ABBREVIATIONS.....	vii
CHAPTER 1 PURPOSE OF AND NEED FOR ACTION	1-1
1.1 Introduction.....	1-1
1.2 Purpose of and Need for Action.....	1-2
1.3 Location of the Proposed Action	1-3
1.4 Scope of the Environmental Review.....	1-3
1.5 Baseline Conditions	1-4
1.6 Coastal Zone Consistency.....	1-4
1.7 Environmental Justice.....	1-5
1.8 Applicable Regulatory Requirements	1-5
1.9 Organization of the Document.....	1-5
CHAPTER 2 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES	2-1
2.1 History of the Formulation of Alternatives.....	2-1
2.2 Alternatives Consideration.....	2-2
2.2.1 No Action Alternative	2-2
2.2.2 Privatize MFH Alternatives.....	2-2
2.3 Description of the No Action Alternative	2-3
2.4 Detailed Description of the Proposed Action	2-6
2.4.1 Demolish Existing MFH, Proposed Action.....	2-8
2.4.2 Construct New MFH, Proposed Action.....	2-9
2.4.3 Summary of Proposed Action MFH Activities	2-10
2.5 Maximum Development Alternative	2-11
2.5.1 Demolish Existing MFH, Maximum Development Alternative	2-12
2.5.2 Construct New MFH, Maximum Development Alternative	2-12
2.5.3 Summary of Maximum Development Alternative MFH Activities.....	2-12
2.6 Past, Present, and Reasonably Foreseeable Actions in the Region of Influence.....	2-13
2.7 Identification of the Preferred Alternative.....	2-14
2.8 Comparison of Environmental Effects of All Alternatives.....	2-15
2.9 Mitigation.....	2-15

CHAPTER 3 AFFECTED ENVIRONMENT	3-1
3.1 Installation History and Mission	3-1
3.2 Noise	3-2
3.2.1 Background Information	3-2
3.2.2 Existing Noise Levels	3-2
3.3 Land Use	3-3
3.4 Air Quality	3-4
3.4.1 Regulatory Requirements	3-4
3.4.2 Regional Air Quality	3-5
3.4.3 Bay County Emissions	3-5
3.5 Infrastructure and Utilities	3-6
3.5.1 Water Supply	3-6
3.5.2 Wastewater Treatment	3-6
3.5.3 Energy	3-7
3.5.4 Storm Water Management	3-7
3.5.5 Solid Waste Management	3-8
3.5.6 Transportation System	3-9
3.6 Biological Resources	3-10
3.6.1 Vegetation and Wildlife	3-10
3.6.2 Threatened and Endangered Species	3-10
3.6.3 Wetlands	3-11
3.6.4 Floodplains	3-11
3.7 Groundwater Resources	3-11
3.8 Earth Resources	3-13
3.8.1 Geology	3-13
3.8.2 Topography	3-13
3.8.3 Soil	3-13
3.9 Hazardous Materials and Waste	3-14
3.9.1 Hazardous Materials	3-14
3.9.2 Hazardous Waste	3-14
3.9.3 Installation Restoration Program	3-15
3.9.4 Asbestos	3-16
3.9.5 Lead-Based Paint	3-16
3.9.6 Pesticides	3-17
3.10 Cultural Resources	3-17
3.10.1 Historic Resources	3-18
3.10.2 Archaeological Resources	3-18
3.11 Socioeconomic Resources	3-19
3.11.1 Population	3-19

3.11.2	Housing.....	3-20
3.11.3	Education.....	3-21
3.11.4	Economy.....	3-21
CHAPTER 4 ENVIRONMENTAL CONSEQUENCES.....		4-1
4.1	Mission.....	4-1
4.2	Noise	4-1
4.2.1	No Action Alternative	4-1
4.2.2	Proposed Action	4-3
4.2.3	Maximum Development Alternative.....	4-4
4.2.4	Mitigation	4-4
4.2.5	Cumulative Impacts.....	4-4
4.3	Land Use	4-4
4.3.1	No Action Alternative	4-4
4.3.2	Proposed Action	4-5
4.3.3	Maximum Development Alternative.....	4-5
4.3.4	Mitigation	4-5
4.3.5	Cumulative Impacts.....	4-6
4.4	Air Quality	4-6
4.4.1	No Action Alternative	4-6
4.4.2	Proposed Action	4-8
4.4.3	Maximum Development Alternative.....	4-9
4.4.4	Mitigation	4-10
4.4.5	Cumulative Impacts.....	4-10
4.5	Infrastructure and Utilities	4-12
4.5.1	No Action Alternative	4-12
4.5.2	Proposed Action	4-15
4.5.3	Maximum Development Alternative.....	4-18
4.5.4	Mitigation	4-21
4.5.5	Cumulative Impacts.....	4-21
4.6	Biological Resources	4-26
4.6.1	No Action Alternative	4-26
4.6.2	Proposed Action	4-27
4.6.3	Maximum Development Alternative.....	4-29
4.6.4	Mitigation	4-29
4.6.5	Cumulative Impacts.....	4-29
4.7	Groundwater Resources	4-29
4.7.1	No Action Alternative	4-29
4.7.2	Proposed Action	4-30
4.7.3	Maximum Development Alternative.....	4-30

4.7.4	Mitigation	4-30
4.7.5	Cumulative Impacts.....	4-30
4.8	Earth Resources	4-30
4.8.1	No Action Alternative	4-30
4.8.2	Proposed Action	4-31
4.8.3	Maximum Development Alternative.....	4-31
4.8.4	Mitigation	4-32
4.8.5	Cumulative Impacts.....	4-32
4.9	Hazardous Materials and Waste.....	4-32
4.9.1	No Action Alternative	4-32
4.9.2	Proposed Action	4-34
4.9.3	Maximum Development Alternative.....	4-35
4.9.4	Mitigation	4-35
4.9.5	Cumulative Impacts.....	4-35
4.10	Cultural Resources	4-36
4.10.1	No Action Alternative	4-36
4.10.2	Proposed Action	4-36
4.10.3	Maximum Development Alternative.....	4-37
4.10.4	Mitigation	4-37
4.10.5	Cumulative Impacts.....	4-37
4.11	Socioeconomic Resources	4-37
4.11.1	No Action Alternative	4-38
4.11.2	Proposed Action	4-39
4.11.3	Maximum Development Alternative.....	4-41
4.11.4	Mitigation	4-43
4.11.5	Cumulative Impacts.....	4-43
CHAPTER 5 LIST OF PREPARERS.....		5-1
CHAPTER 6 PERSONS AND AGENCIES CONSULTED.....		6-1
CHAPTER 7 REFERENCES.....		7-1
 APPENDICES		
Appendix A	Coastal Zone Consistency Determination	
Appendix B	Noise Information	
Appendix C	Air Quality Information	
Appendix D	Interagency and Intergovernmental Coordination for Environmental Planning	
Appendix E	Public Involvement	

LIST OF TABLES

Table 2.3-1	Summary of Existing Tyndall AFB MFH Inventory	2-4
Table 2.4-1	Summary of Proposed Action MFH Demolition Activity	2-9
Table 2.4-2	Proposed Action MFH Units Construction.....	2-10
Table 2.4-3	Summary of Proposed Action MFH Units.....	2-11
Table 2.5-1	Maximum Development Alternative MFH Units Construction	2-12
Table 2.5-2	Summary of Maximum Development Alternative MFH Units	2-13
Table 2.6-1	Other Actions Considered for Cumulative Impact Purposes.....	2-14
Table 2.8-1	Summary of Environmental Impacts for the No Action Alternative, Proposed Action, and Maximum Development Alternative.....	2-17
Table 3.5-1	Baseline Emissions Inventory, Bay County, Florida	3-5
Table 3.6-1	Threatened and Endangered Plant and Animal Species	3-12
Table 3.11-1	Population Trends, 1990-2000	3-20
Table 3.11-2	Housing Characteristics, 2000	3-20
Table 3.11-3	Annual Civilian Labor Force, Employment, and Unemployment Rates	3-21
Table 3.11-4	Total Full-and Part-Time Employment by Major Industry Sector by Place of Work, Bay County, Florida, 2002	3-22
Table 4.2-1	Heavy Equipment Noise Levels Measured at 50 Feet	4-2
Table 4.4-1	No Action Alternative Emissions, Tyndall AFB	4-7
Table 4.4-2	Proposed Action Emissions, Tyndall AFB	4-8
Table 4.4-3	Maximum Development Alternative Emissions, Tyndall AFB.....	4-9
Table 4.4-4	No Action Alternative Cumulative Emissions, Tyndall AFB	4-11
Table 4.4-5	Proposed Action Cumulative Emissions, Tyndall AFB	4-11
Table 4.4-6	Maximum Development Alternative Cumulative Emissions, Tyndall AFB.....	4-12
Table 4.5-1	Summary of Maximum Development Alternative Water Usage.....	4-19
Table 4.11-1	EIFS Annual Economic Impacts, Tyndall AFB No Action Alternative.....	4-39
Table 4.11-2	EIFS Annual Economic Impacts, Tyndall AFB Proposed Action.....	4-41
Table 4.11-3	EIFS Annual Economic Impacts, Tyndall AFB Maximum Development Alternative	4-42
Table 4.11-4	Annual Cumulative Economic Impacts, Tyndall AFB	4-44

LIST OF FIGURES

Figure 1-1	Location of Tyndall AFB.....	1-7
Figure 2-1	Military Family Housing Areas	2-23
Figure 2-2	Wood Manor, Wood Manor East, Felix Lake, and Housing Maintenance Location Map.....	2-25
Figure 2-3	Redfish Point and Redfish Point Extension Location Map	2-27
Figure 2-4	Shoal Point and Bay View Location Map.....	2-29
Figure 2-5	Current and Proposed Saddle Club Location Map	2-31
Figure 2-6	Location of Additional Construction Actions at Tyndall AFB.....	2-33
Figure 3-1	Typical A-Weighted Noise Levels.....	3-23
Figure 3-2	Air Installation Compatible Use Zones.....	3-25
Figure 3-3	Wetlands and Floodplain	3-27
Figure 3-4	IRP Sites in the Vicinity of Military Family Housing	3-29
Figure 3-5	Probability Areas for Archaeological Sites.....	3-31

ACRONYMS AND ABBREVIATIONS

$\mu\text{g}/\text{m}^3$	microgram(s) per cubic meter
ACM	Asbestos containing materials
AETC	Air Education and Training Command
AFB	Air Force Base
AF FHMP	Air Force Family Housing Master Plan
AFI	Air Force Instruction
AICUZ	Air Installation Compatible Use Zone
ANSI	American National Standards Institute
APZ	accident potential zone
AQCR	air quality control region
CAA	Clean Air Act
CDP	Community Development Plan
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CES	Civil Engineering Squadron
CEH	Civil Engineering Housing
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
CONR	1st Air Force and Continental United States North American Aerospace Defense Command Region
CZMA	Coastal Zone Management Act
dBA	A-weighted sound level measured in decibels
DNL	Day-night average sound level
DoD	Department of Defense
DOPAA	Description of Proposed Action and Alternatives
EA	environmental assessment
EIAP	Environmental Impact Analysis Process
EIFS	Economic Impact Forecast System
EIS	environmental impact statement
EO	Executive Order
FAC	Florida Administrative Code
FCMP	Florida Coastal Management Program
FDEP	Florida Department of Environmental Protection
FIP	Federal implementation plan
FICON	Federal Interagency Committee on Urban Noise
FNAI	Florida Natural Areas Inventory
FONSI	Finding of No Significant Impact
ft^2	square feet
FY	fiscal year
gpd	gallons per day
HAZMO	Hazardous materials management office
HCP	Housing Community Profile
HRMA	Housing Requirements and Market Analysis
HUD	Housing and Urban Development
ICA	Intergovernmental Coordination Act
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
ICRMP	Integrated Cultural Resources Management Plan
INRMP	Integrated Natural Resources Management Plan
IRP	Installation Restoration Program

kWH	kilowatt-hours
LBP	lead-based paint
lbs	pound(s)
lbs/ft ³	pound(s) per cubic foot
L _p	sound pressure level
mcf	million cubic feet
MFH	military family housing
mgd	million gallons per day
MHPI	Military Housing Privatization Initiative
MILCON	military construction
MPWWTP	Military Point Waste Water Treatment Plant
MSW	municipal solid waste
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NFRAP	no further remedial action planned
NLR	noise level reduction
NOAA	National Oceanographic and Atmospheric Administration
NO _x	Nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OMB	Office of Management and Budget
OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyl
pCi/L	Pico Curies per liter
PM ₁₀	particulate matter equal to or less than 10 microns in aerodynamic diameter
PM _{2.5}	particulate matter equal to or less than 2.5 microns in aerodynamic diameter
ppm	parts per million
PMOA	Programmatic Memorandum of Agreement
PVC	polyvinyl chloride
RCRA	Resource Conservation and Recovery Act
RTV	rational threshold value
SHPO	State Historic Preservation Officer
SIP	state implementation plan
SOQ	senior officers quarters
SO _x	sulfur oxides
T&E	threatened and endangered
the Base	Tyndall AFB
tpy	tons per year
TSP	total suspended particulates
USAF	United States Air Force
USC	United States Code
USACE	United States Army Corps of Engineers
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VOC	volatile organic compound

CHAPTER 1 PURPOSE OF AND NEED FOR ACTION

This chapter provides the following: an introduction; statement of the purpose of and need for action; location of the action; summary of the scope of the environmental review; summary of baseline conditions to be used for the environmental evaluation in this environmental assessment (EA); statement on coastal zone consistency; a brief discussion of environmental justice; applicable regulatory requirements; and a summary of the organization of the document.

1.1 INTRODUCTION

More than 38 percent of Air Force-owned and operated military family housing (MFH) does not meet modern standards and requires either major renovation or replacement. Consequently, the Department of Defense (DoD) proposed, and Congress enacted, the Military Housing Privatization Initiative (MHPI) in the 1996 National Defense Authorization Act. This initiative offers the Air Force authority to address its housing needs by utilizing privately financed and privately built MFH constructed to market standards. The goal of the MHPI is to drastically reduce the time required to provide military members with quality, affordable housing and replace its aging inventory of housing units. The MHPI authorizations were extended by Congress from December 31, 2004 to December 31, 2012 to allow completion of all privatization projects identified in the Air Force Family Housing Master Plan (AF FHMP) for its installations.

The AF FHMP articulates the Air Force's investment strategy to meet housing needs through the use of traditional construction funding (*i.e.*, Congressionally appropriated funds for MFH construction through the military construction [MILCON] program) and privatization. The plan identifies the most cost effective and time-efficient investment option for each installation (*i.e.*, use of traditional construction options and/or the MHPI) to meet the housing requirements of military families consistent with Congressional and DoD directives. The Air Force recognizes that conditions that influence the AF FHMP are constantly changing. Accordingly, the AF FHMP allows for incorporation of changes in conditions and update of investment strategies, costs, and priorities.

The DoD tasked the Air Force with upgrading all required, inadequate housing by or before fiscal year (FY) 2007. Studies have projected 5,000 new housing units would be required to meet Air Force housing needs in addition to its current inventory of 104,000 units. It would cost the Air Force more than \$7 billion in family housing funds to attain its mandate from the DoD to upgrade the quality standard of existing MFH and construct 5,000 new MFH units. Sufficient funds are not projected to be available to meet these goals using traditional renovation and construction options; therefore, the Air Force has chosen privatization to meet these goals.

The two primary criteria for privatization are:

- Economic Feasibility "Scored" Cost. The Office of Management and Budget (OMB) directed that the "scored" cost for housing privatization shall

not exceed one third of the estimated MILCON cost to bring all housing units up to modern standards (referred to as a three-to-one leverage in budget authority). The scored cost is the amount of funds the OMB requires the Air Force to budget in the current FY to cover the federal government's costs (and potential costs) associated with loans, guarantees, and other financial obligations or future commitments being made.

- **Economic Feasibility and Life Cycle Costs.** Guidance requires that the life cycle costs associated with privatization be less than the life cycle costs for government ownership. The cost of privatization includes the OMB "scored" cost and the net present value of the expected Basic Allowance for Housing for service members living in the privatized units. The life cycle costs of government ownership include the MILCON cost and the net present value of maintenance, repair, utilities, management, and any other provided services.

Military family housing at Tyndall Air Force Base (AFB) (the Base) meets these two privatization criteria. Therefore, privatizing MFH is a viable option for Tyndall AFB.

1.2 PURPOSE OF AND NEED FOR ACTION

The purpose of the action is to provide MFH at Tyndall AFB that meets Air Force housing standards by privatizing the housing units in the MFH neighborhoods of Felix Lake, Redfish Point, Wood Manor, Bay View, Shoal Point, and Wood Manor East. The parcel commonly known as the Housing Maintenance area would also be privatized. Additionally, an adjacent undeveloped wooded area known as Redfish Point Extension would be available for housing development. The MFH units are in good to fair condition, depending on their locations. Redfish Point, Felix Lake, and Shoal Point units are in good condition. Units in Wood Manor (with the exception of 2715 Eagle Drive) and Bay View neighborhoods are generally in fair condition, but many of the criteria conditions for general suitability of the units are substandard.

Units in the Bay View and Shoal Point MFH neighborhoods are incompatible with land use guidance in the Air Force Air Installation Compatible Use Zone (AICUZ) program (USAF 2004b) because:

- They are located within the accident potential zones (APZ); and
- They are exposed to day-night average (DNL) 80 A-weighted sound level and greater noise, measured in decibels (dBA).

Privatization would accelerate the Base's ability to provide military families with access to safe, quality, affordable housing in a community in which they would choose to live. The action would provide suitable family housing for military personnel stationed at Tyndall AFB. The Air Force is committed to adequately housing its people and responsibly managing its housing resources because productivity and retention of United States Air Force (USAF) members greatly depend on such actions (per Air Force Policy Directive 32-60, *Housing*). Properly designed and furnished quarters providing some degree of individual privacy are essential to the successful accomplishment of the increasingly complicated and important jobs military personnel must perform. The 2003-

2008 Tyndall AFB Housing Requirements and Market Analysis (HRMA) projects total future housing requirements to be 813 units (USAF 2004a).

1.3 LOCATION OF THE PROPOSED ACTION

Tyndall AFB is located on the Gulf of Mexico in Bay County, 13 miles east of Panama City, Florida (see Figure 1-1, at the end of this chapter). The Base is approximately 18 miles long, 3 miles wide, and located on a peninsula bisected by U.S. Highway 98. Tyndall AFB is surrounded by water on the north, west, and south sides, which includes East Bay, St. Andrews Bay, and the Gulf of Mexico. Crooked Island West and East, and Shell Island are barrier islands on the Gulf side of the peninsula. Crooked Island West and East form St. Andrews Sound (USAF 2004b).

1.4 SCOPE OF THE ENVIRONMENTAL REVIEW

The *National Environmental Policy Act* (NEPA) of 1969, as amended, requires federal agencies to consider environmental consequences in the decision-making process. The President's Council on Environmental Quality (CEQ) issued regulations to implement NEPA. The Air Force Environmental Impact Analysis Process (EIAP) is accomplished through adherence to the procedures set forth in CEQ regulations (40 Code of Federal Regulations [CFR] Sections 1500-1508) and 32 CFR 989 (*Air Force Environmental Impact Analysis Process*), July 15, 1999, and amended March 28, 2001. These federal regulations establish both the administrative process and substantive scope of the EIAP, which is designed to ensure that deciding authorities have a proper understanding of the potential environmental consequences of a contemplated course of action. CEQ regulations require that an EA:

- Briefly provide sufficient evidence and analysis to determine whether an environmental impact statement (EIS) or Finding of No Significant Impact (FONSI) should be prepared;
- Aid in agency's compliance with NEPA when no EIS is required; or
- Facilitate preparation of an EIS, when required.

The EA will analyze the potential environmental impacts that could result from implementation of the Proposed Action or an alternative (including demolition and construction), taking into consideration possible cumulative impacts from other actions in the area. The EA also will identify required environmental permits relevant to the Proposed Action or alternative actions. As appropriate, the affected environment and environmental consequences of the No Action Alternative, Proposed Action, and Maximum Development Alternative, may be described in terms of site-specific descriptions or regional overview. Finally, the EA will identify mitigation measures to prevent or minimize environmental impacts, if required.

The following biophysical resource areas were identified for study at Tyndall AFB: noise; land use (including aircraft clear zones); air quality; infrastructure and utilities (including water supply, wastewater treatment, energy, storm water management, solid waste management, and transportation); biological resources (including vegetation and wildlife, threatened and endangered species, wetlands, and floodplains); groundwater

resources, earth resources (including geology, topography, and soil); hazardous materials and hazardous waste management (including installation restoration program [IRP] sites, asbestos containing materials [ACM], lead-based paint [LBP], and pesticides); cultural resources (including historic and archaeological), socioeconomic resources; and environmental justice.

Safety and health impacts arising from construction and maintenance of the facilities will not be evaluated, as contractors would be responsible for compliance with applicable Occupational Safety and Health Administration (OSHA) regulations specifying appropriate protective measures for all employees. Although Tyndall AFB has some polychlorinated biphenyl (PCB) contamination, the MFH neighborhoods are PCB-free. Therefore, PCB will not be evaluated in this EA. Radon will also not be evaluated, as Bay County is located in an area where the United States Environmental Protection Agency (USEPA)-predicted average indoor screening level is less than 2 picoCuries per liter (pCi/L) (USEPA 2004). This information suggests that indoor radon concentrations in Bay County are below the USEPA action level of 4.0 pCi/L.

1.5 BASELINE CONDITIONS

Baseline conditions used for this EA are FY03; however, if FY03 data are not available, the most recent information will be used. It is estimated the existing MFH units would be conveyed to a privatization contractor in FY05 and that all activities would be completed approximately 5 years after initiation (*i.e.*, FY10). For analysis purposes, it is estimated that construction project activities would be distributed equally over the 5-year period. The analysis will be considered on an average annual basis for some resources (*e.g.*, potable water, wastewater, energy, municipal solid waste), while other resources such as construction waste will consider the entire 5-year construction period.

1.6 COASTAL ZONE CONSISTENCY

Pursuant to the Coastal Zone Management Act (CZMA), the National Oceanographic and Atmospheric Administration (NOAA) approved the Florida Coastal Management Program (FCMP) in 1981. In Florida, the enforceable policies consist of 23 Florida statutes administered by 11 state agencies and four of the five water management districts, and apply to activities occurring in or affecting the coastal zone. All federal development projects inside the coastal zone are automatically subject to consistency. Therefore, a Consistency Determination is required for this EA. Discussion and analysis concerning consistency determination for this EA is provided in Appendix A. The state has determined that the proposed activity is consistent with the FCMP; however, the state's final concurrence of the project's consistency with the FCMP will be determined during the environmental permitting stage. See Appendix E for comments from Florida Department of Environmental Protection concerning consistency with the FCMP.

1.7 ENVIRONMENTAL JUSTICE

Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, was issued by the President on February 11, 1994. In the EO, the President instructed each federal agency to make "...achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." Adverse is defined by the Federal Interagency Working Group on environmental justice as "...having a deleterious effect on human health or the environment that is significant, unacceptable, or above generally accepted norms." Based on analysis of impacts, a determination on significance of impacts will be made. If impacts would be significant, the Air Force would either prepare an EIS or not implement the proposal. Accordingly, environmental justice will be addressed either in a FONSI (after determination of significance of impacts) or in a Record of Decision based on an EIS.

1.8 APPLICABLE REGULATORY REQUIREMENTS

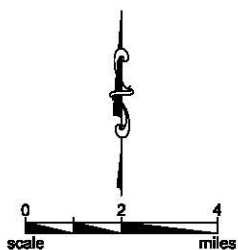
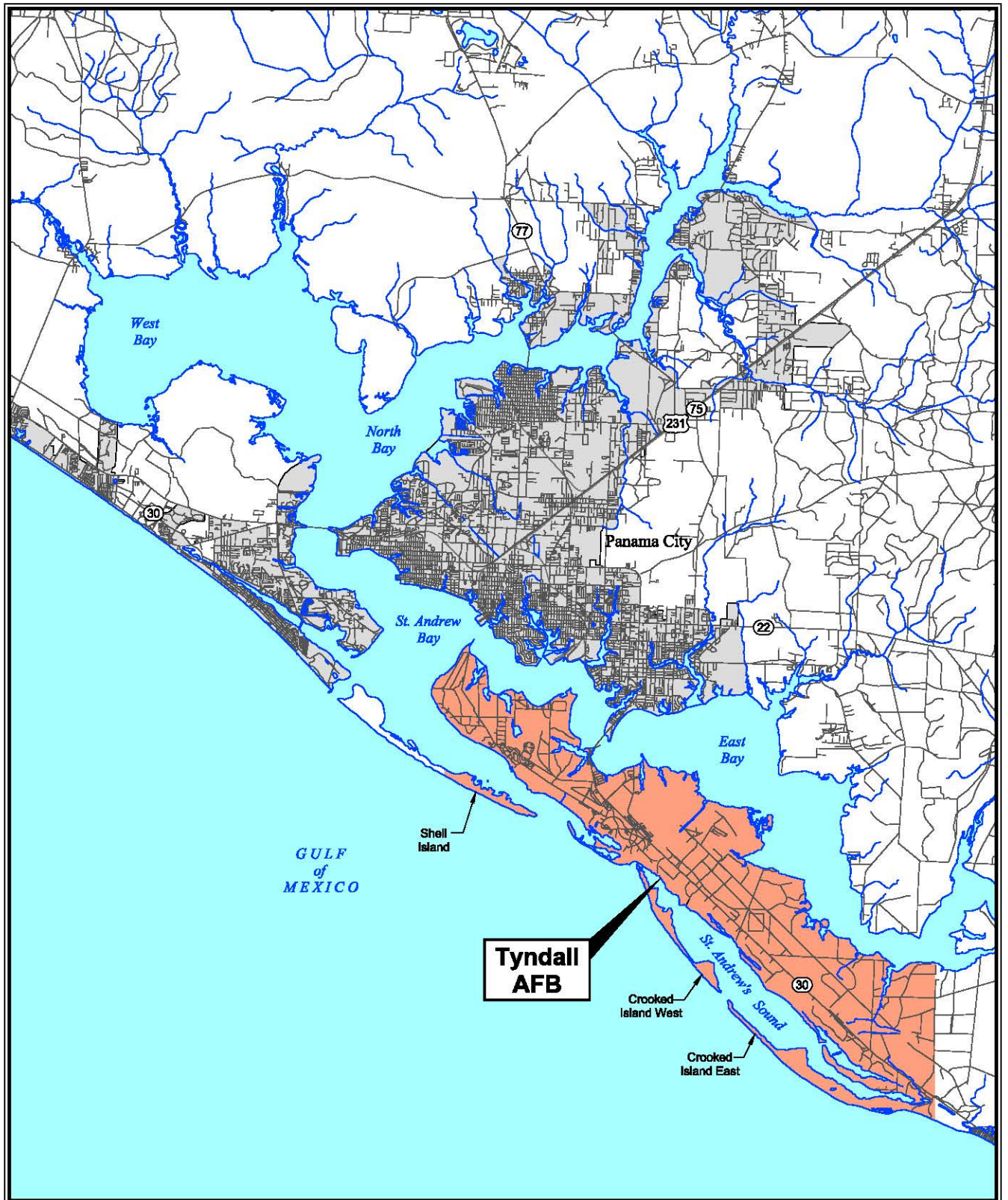
Additional permits and amendments to existing permits may be required by the Proposed Action and Maximum Development Alternative. It would be the demolition and construction contractor's responsibility to ensure that permits are identified and obtained from Base, local, state, and federal agencies. Tyndall AFB would coordinate permit requirements identified by the demolition and construction contractor during the project. The contractor would ensure that a storm water pollution prevention plan is completed and approved before initiating demolition or construction activities.

1.9 ORGANIZATION OF THE DOCUMENT

This EA is organized into seven chapters.

- | | |
|------------------|--|
| <i>Chapter 1</i> | Contains an introduction; a statement of the purpose of and need for action; the location of the action; scope of the environmental review; discussion of baseline conditions; coastal zone consistency; environmental justice; presentation of the applicable regulatory requirements; and the organization of the EA. |
| <i>Chapter 2</i> | Contains a history of the formulation of alternatives; describes the alternatives considered but eliminated from further consideration; details the proposed alternatives; presents information on past and reasonably foreseeable future actions; identifies the preferred alternative; and summarizes environmental impacts for all alternatives; and identifies necessary mitigation. |
| <i>Chapter 3</i> | Contains a general description of the biophysical resources and baseline conditions that potentially could be affected by the No Action Alternative, the Proposed Action, or the Maximum Development Alternative. |
| <i>Chapter 4</i> | Presents analysis of the environmental consequences. |

<i>Chapter 5</i>	Lists preparers of this document.
<i>Chapter 6</i>	Lists the persons and agencies consulted in preparation of this EA.
<i>Chapter 7</i>	Lists the sources of the information used in preparation of this EA.
<i>Appendix A</i>	Coastal Zone Consistency
<i>Appendix B</i>	Noise Information
<i>Appendix C</i>	Air Quality Information
<i>Appendix D</i>	Interagency and Intergovernmental Coordination for Environmental Planning
<i>Appendix E</i>	Public Involvement



FLORIDA

Figure 1-1

Location of Tyndall AFB

Tyndall AFB, Florida

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CHAPTER 2 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

This chapter discusses the following: formulation of alternatives; alternatives consideration; the No Action Alternative; the Proposed Action; the Maximum Development Alternative; other actions anticipated for Tyndall AFB during the time period associated with the MFH privatization activity; and a summary of environmental impacts.

2.1 HISTORY OF THE FORMULATION OF ALTERNATIVES

The Tyndall AFB draft Military Family Housing Community Profile (HCP) was prepared in 2003 (USAF 2003). The HCP is one of the building blocks for a base's Family Housing Master Plan. The goal of the HCP is to provide families with homes and communities that meet contemporary Air Force and local community standards of design and amenities that are also in accordance with local construction standards and building practices.

The HCP focuses on two objectives: improving the community areas and improving individual housing units. The intent of recommendations in the HCP is to provide adequate housing and a quality living environment for Air Force families. Recommendations are provided to bring the current inventory to the standards defined in the Air Force Family Housing Guide and to extend the life of a residence to 25 years. The HCP recommendations are intended to foster a sense of identification and belonging with the home, street, and neighborhood for each family, and to make housing areas attractive and a source of pride.

The Tyndall AFB HCP contains results of the MFH assessment to determine the condition of standard components of the community and infrastructure. The MFH units are in good to fair condition, depending on location of the units (USAF 2003).

Military family housing at Tyndall AFB consists of the Wood Manor, Wood Manor East, Felix Lake, Redfish Point, Bay View, and Shoal Point neighborhoods. The current MFH inventory is 924 units, while the 2003 Tyndall AFB HRMA projects future total MFH requirement as 813 units, indicating a surplus of housing units (USAF 2004a). The Air Force would retain 56 units in Wood Manor as temporary lodging facilities, and these units would not be conveyed to the privatization contractor. Additionally, the Air Force would demolish 18 housing units along the shoreline of Wood Manor before privatization and, therefore, the units would not be conveyed. Units 2349 and 2351 in the Bay View neighborhood would be converted into a heritage center and would not be conveyed to the privatization contractor. The two units would be removed from the Tyndall AFB MFH inventory. The Base would have an inventory of 848 MFH units after these three housing related actions would be completed.

Tyndall AFB identified 560 units in the Shoal Point, Bay View, and Wood Manor neighborhoods for demolition, to be replaced by 525 units only in the undeveloped Redfish Point Extension and Wood Manor neighborhoods. Replacement units in the

Wood Manor neighborhood would incorporate greater spacing between units than currently exists. The 287 units in the Felix Lake and Redfish Point neighborhoods, and the one unit in the Wood Manor neighborhood (MFH unit 2715, constructed in 1997), would remain as is and would not be renovated (Tyndall AFB 2004a, 2004b). Some units in the Wood Manor neighborhood were renovated in 1996 and could be renovated again to receive additional square footage.

To comply with DoD directives to provide the necessary improvements to MFH, the Air Force determined that the two criteria mentioned in Subchapter 1.1 have been met and that privatization is a potentially feasible option for MFH units.

2.2 ALTERNATIVES CONSIDERATION

Alternative authorities for providing MFH have been available through the Build-to-Lease Program (10 United States Code [USC] 2835), rental guarantees in accordance with 10 USC 2836, and leasing of non-excess property in accordance with 10 USC 2667. Because of changes in budget scoring rules and with the advent of housing privatization initiatives, these programs are no longer considered viable options.

Use of MILCON funding was identified as an alternative to keep the MFH within modern standards at Tyndall AFB. Projected budgets did not have sufficient funds for the MILCON option. Therefore, utilization of MILCON funding to correct the housing updates is not a viable solution.

For the reasons stated in the previous paragraphs, alternatives that would fund the actions to correct the deficiencies through the use of traditional funding are not viable. Thus, the Air Force should consider the No Action Alternative and other privatization alternatives.

2.2.1 No Action Alternative

Under the No Action Alternative, the anticipated MFH inventory of 848 MFH units and other recreational and maintenance facilities would not be privatized. The No Action Alternative would not fulfill the need for the Air Force to provide suitable housing for its military members, nor would it meet the HRMA-established inventory level of 813 units. The No Action Alternative, or maintaining the *status quo*, is not desirable because the majority of the Wood Manor MFH units are in fair condition, potentially requiring mechanical, electrical, and functional upgrades and expansions. Existing resources would not allow for renovation of the units to meet Air Force MFH housing standards.

2.2.2 Privatize MFH Alternatives

Two alternatives were identified for the privatization initiative:

- Convey 848 MFH units and associated infrastructure to a privatization contractor who would then demolish 560 units, construct 525 replacement units and, upon completion, manage a total of 813 units (Proposed Action); and

- Convey 848 MFH units and associated infrastructure to a privatization contractor who would then demolish all 848 units, construct 1,238 replacement units and, upon completion, manage a total of 1,238 units for 50 years (Maximum Development Alternative).

Both of these alternatives would be viable and will be assessed, respectively, as the Proposed Action and Maximum Development Alternative in the EA.

2.3 DESCRIPTION OF THE NO ACTION ALTERNATIVE

Under the No Action Alternative, all MFH units would remain Air Force property and no MFH units would be conveyed to a privatization contractor. Tyndall AFB would continue to operate and maintain the housing units under current budget constraints. However, the units would continue to be minimally adequate. Military personnel and dependents would continue to reside in the existing MFH units.

Tyndall AFB would have an inventory of 848 MFH units after the temporary lodging facility, heritage center, and demolition actions mentioned in Subchapter 2.1 are completed. Based on the total MFH requirement of 813 units (USAF 2004a), there would be a surplus of 35 MFH units. Therefore, 35 units would be demolished under the No Action Alternative to attain the HRMA-established inventory of 813 units that would be managed by Tyndall AFB. It is anticipated the Air Force would demolish 35 of the 54 units in the Bay View and Shoal Point neighborhoods located in the 80 dBA and greater noise zone and the APZs. Assuming the 35 units are fully occupied, it is estimated that on-Base MFH population would decrease by 103 persons and these 35 families would move off-Base, bringing the on-Base residents to 3,176 persons.

The MFH at Tyndall AFB is divided into five neighborhoods: Wood Manor, which includes Wood Manor East; Felix Lake; Redfish Point; Bay View; and Shoal Point (see Figure 2-1, at the end of this chapter). Housing areas on Tyndall AFB are located in the western portions of the Base, although the Bay View and Shoal Point neighborhoods are separate from the other three neighborhoods. The Housing Maintenance Facility, the Saddle Club, a 44.6-acre area which includes fencing, paddock, club house, track, stables and compost area (Building 3058) (hereinafter collectively referred to as the “Existing Saddle Club Area”) (USAF 2004b; Tyndall AFB 2004a), and an undeveloped wooded area north and west of the Redfish Point neighborhood (designated as the Redfish Point Extension) would also be included in the privatization action. Table 2.3-1 summarizes the existing Tyndall AFB MFH inventory after the completion of the temporary lodging facility, demolition, and heritage center actions mentioned in Subchapter 2.1.

It is estimated that, on average, each unit has approximately 1,275 square feet (ft²) of impervious cover associated with sidewalks, driveways, garages/car ports, and patios. Based on the anticipated inventory of 848 total units and 1,275 ft² of impervious surface per unit, there would be approximately 1,081,200 ft² of impervious cover for all MFH units. Using the existing housing area of 495 acres and assuming that 10 percent of this area is street pavement, approximately 49.5 acres (2,156,229 ft²) would be impervious cover, which equates to approximately 0.054 acres of impervious cover for streets per

housing unit ($49.5 / 924 = 0.054$). Thus, the baseline total area (i.e., the combined area of the units, sidewalks, etc., and streets) associated with the MFH would be 5,158,889 ft².

Wood Manor

Wood Manor consists of 503 housing units in a 162.8-acre area. Wood Manor is bounded by Thunderchief Drive, Sabre Drive, and Sentry Lane to the north, by Eagle Drive to the west, by building numbers 3125, 3127, 3166, 3167, 3171, and 3173 to the east, and by Eagle Drive, Beacon Beach Road, and the current senior officers quarters (SOQ) units along Eagle Drive to the south (see Figure 2-2, at the end of this chapter). The majority of the 503 units in the Wood Manor neighborhood were constructed between 1958 and 1970, and consist of duplexes and single-family units. One unit (2715) was constructed in 1997. The units are slab-on-grade, wood frame, wood and brick exterior finishes, with a combination of pitched asphalt shingle roofs and flat built-up roofs. Units were renovated as follows: 1982, 278 units received window replacements; 1996, the same 278 units received kitchen renovations; and in 1996, another 32 units received kitchen, bathroom, and ductwork renovations. A geothermal heating and cooling system was installed in 18 of these 32 units. None of the units have had whole house renovations (USAF 2004b, Tyndall AFB 2004a).

Table 2.3-1 Summary of Existing Tyndall AFB MFH Inventory

Neighborhood	No. of Units*	Bedrooms Per Unit Type	Square Footage of Unit (ft ²)**	Total Square Footage (ft ²)	Impervious Cover (ft ²)	Total Area and Impervious Cover (ft ²)
Wood Manor						
	138	2	1,920	264,960	175,950	440,910
	341	3	2,300	784,300	434,775	1,219,075
	13	4	2,700	35,100	16,575	51,675
Wood Manor East	4	3	2,300	9,200	5,100	14,300
Wood Manor SOQs	11	4	4,060	44,660	14,025	58,685
Subtotal	507	--	--	1,138,220	646,425	1,784,645
Felix Lake						
	44	2	1,920	84,480	56,100	140,580
	95	3	2,300	218,500	121,125	339,625
	56	4	2,700	151,200	71,400	222,600
Subtotal	195	--	--	454,180	248,625	702,805
Redfish Point						
	31	2	1,920	59,520	39,525	99,045
	39	3	2,300	89,700	49,725	139,425
	22	4	2,700	59,400	28,050	87,450
Subtotal	92	--	--	208,620	117,300	325,920
Bay View						
	32	2	1,920	61,440	40,800	102,240
	1	3	2,300	2,300	1,275	3,575
Subtotal	33	--	--	63,740	42,075	105,815
Shoal Point						
Subtotal	21	4	2,700	56,700	26,775	83,475
Totals	848	--	--	1,921,460	1,081,200	3,002,660

* The table shows the anticipated inventory.

** Based on most conservative square footage (highest square footage) per the two, three, or four bedroom house categories (Tyndall AFB 2004a).

Note: Impervious cover is estimated at 1,275 ft² per existing MFH unit.

Wood Manor East

Wood Manor East is located on the east side of the Wood Manor neighborhood, bounded by Beacon Beach Road to the northeast and Eagle Drive to the northwest, and the current entry road to Beacon Beach Yacht Club to the west. The site is 1.5 acres and has four single-family housing units built in 1958. Wood Manor East includes units 2701, 2703, 2705, and 2707. The southern boundary of Wood Manor East is a line connecting Beacon Beach Road to the entry road to Beacon Beach Yacht Club, just behind the four housing units (see Figure 2-2, at the end of this chapter). Construction includes wood frame on concrete slab, pitched asphalt shingle roof, and a combination of wood and brick finishes (USAF 2004b, Tyndall AFB 2004a).

Felix Lake

Felix Lake consists of 195 housing units in a 76.5-acre area bounded on the south by Andrews Loop, and on the north, east, and west by the housing units on the outer edge of Andrews Loop (see Figure 2-2, at the end of this chapter). The 195 total units in the Felix Lake neighborhood were constructed in 1997 and 1998 and consist of one and two-story multiplexes and single-family units. Construction is wood frame on concrete slab with pitched asphalt shingle roofs, and with an exterior finish consisting of a combination of vinyl and brick. Due to their recent construction, none of the Felix Lake units have been remodeled. There are four playgrounds, one full basketball court, two half basketball courts, and a centralized park within Felix Lake, all of which are interconnected by walkways (USAF 2004b; Tyndall AFB 2004a).

Redfish Point

The boundary of the Redfish Point neighborhood is behind the units on the north side of Kisling Loop; west of units 3656 and 3658 on Kisling Loop and Remembrance Road; Heritage Parkway to the south; and on the east side of the outer housing units on Harlow Drive (see Figure 2-3, at the end of this chapter). The neighborhood was constructed in 2000 and consists of 92 units, 68 of which are multiplexes and 24 are single-family units. Redfish Point encompasses approximately 45 acres. Construction is wood frame on concrete slab with pitched asphalt shingle roofs and combination of brick and vinyl finishes. None of the units have been renovated or remodeled. There are also two playgrounds with shelters and one full basketball court within Redfish Point, all of which are connected by walkways (USAF 2004b; Tyndall AFB 2004a).

Redfish Point Extension

Redfish Point Extension is an undeveloped wooded area located north of the existing Redfish Point neighborhood, and also includes land to the northwest of the existing Redfish Point neighborhood that completes Kisling Loop (see Figures 2-1 and 2-3, at the end of this chapter). Redfish Point Extension comprises 102.5 acres. There is an archeological site (Morehead Archeological Site) located within the boundaries of the extension that would not be conveyed as part of the privatization. The Florida Natural Areas Inventory (FNAI) has identified a sand pine scrub of exceptional quality located on undeveloped land immediately west of the Redfish Point Extension and recommends protection of this area from development (FNAI 2000).

Bay View

Bay View is bounded by U.S. Highway 98 to the west, and generally behind the units along Lincoln Drive. The southern boundary of Bay View follows Monroe Avenue starting at U.S. Highway 98, then south on Adams Street, and then east on Coolidge Avenue, intersecting with the eastern boundary of Lincoln Drive (see Figure 2-4, at the end of this chapter). The neighborhood was constructed in 1951, comprises 44.7 acres, and consists of 35 housing units of concrete masonry construction on concrete slabs (USAF 2004b; Tyndall AFB 2004a). There is an archaeological site located within the boundaries of this neighborhood.

Shoal Point

Shoal Point is bounded by U.S. Highway 98 to the west and by East Bay to the east. The northern boundary of Shoal Point consists of a line from East Bay to U.S. Highway 98 including Building 2301, while the southern boundary is a line from East Bay to U.S. Highway 98 including the neighborhood basketball court (facility number 2340) and playground (see Figure 2-4, at the end of this chapter). Shoal Point is 18.6 acres and consists of 21 housing units. Units in the neighborhood were originally constructed in the 1950s, and demolished to the foundation and reconstructed in 1993. The units are a slab-on-grade foundation, wood frame, pitched asphalt shingle roof, with a combination of wood and brick veneer siding finishes (USAF 2004b; Tyndall AFB 2004a).

Housing Maintenance Facility

The Housing Maintenance Facility consists of an administrative building and two maintenance warehouses located on the 2.4-acre site. The site is located southeast of the Wood Manor neighborhood on Prime Beef Road, between Sabre Drive and Beacon Beach Drive (see Figure 2-2, at the end of this chapter) (USAF 2004b; Tyndall AFB 2004a). Small amounts of paint, fertilizer, and pesticides for MFH maintenance are stored at the facility (Fatzner 2004).

Saddle Club

The Saddle Club is bounded by Sabre Drive to the north, the low tide line to the south, Building 3058 to the west, and open land adjacent to the western boundary of Wood Manor to the east (see Figure 2-5, at the end of this chapter).

2.4 DETAILED DESCRIPTION OF THE PROPOSED ACTION

Under the Proposed Action, the Air Force would convey 848 MFH units and the associated infrastructure to a privatization contractor selected under a competitive process. The Air Force would also lease the 495 acres of land associated with the MFH community to the privatization contractor. The privatization contractor would plan, design, develop, demolish, construct, own, operate, maintain, and manage for 50 years an 813 unit housing development that includes all paving, drainage, and any utilities conveyed by the Air Force or constructed by the contractor. It is anticipated the contractor would demolish 560 of the units and construct 525 replacement units on Tyndall AFB.

It is estimated that construction and demolition activities associated with the Proposed Action would be initiated during FY05 and would be completed within 5 years from the initiation of construction activities (i.e., FY10). The housing units to be conveyed are located within the five existing MFH neighborhoods shown in Figure 2-1 (at the end of this chapter).

Units would be constructed on the 102.5-acre area north and west of Redfish Point, called the Redfish Point Extension. In addition, SOQs in Wood Manor would be demolished and new units could be constructed at the existing Saddle Club area along with units for general officers and field grade officers. The existing Saddle Club would be relocated to a location west of and nearer to the golf course. Establishing the Saddle Club at the new location would be the responsibility of the Air Force and not the privatization contractor. See Figure 2-1 (at the end of this chapter) for the location of the golf course (identified by an arrow) in relation to the MFH areas. The Saddle Club is serviced with overhead electrical distribution and there is no natural gas service. Due to their recent construction and good condition, none of the Felix Lake and Redfish Point housing units would require action.

Under MFH privatization, the contractor is responsible for developing a Community Development Plan (CDP) that creates a network of neighborhoods within the community by creating a full range of compatible private and shared recreation and community-desired facilities, and provides efficient and separate vehicular and pedestrian traffic patterns. The CDP, to include neighborhood layout and unit design, would not be completed until late in the privatization contractor selection process or possibly later. Thus, the exact number of units in each neighborhood when all project activity is completed, as well as the design/floor plans for the units that would be constructed, is unknown at this time. Units would be designed and constructed to provide modern kitchen, living room, family room, bedroom, and bath configurations with ample interior and exterior storage.

The existing water, electric, natural gas, and storm water drainage systems, wastewater collection system, pavements, and street lighting would be conveyed to the privatization contractor. The privatization contractor may relocate and/or modernize any of these assets if the CDP requires.

The CDP would include street modifications (if required by the layout), garages and parking areas, curbs and gutters, sidewalks, street lights, grading, surface and storm drainage, landscaping where appropriate, and recreational spaces. The existing street layout would be used to the maximum extent possible.

The CDP would incorporate pollution prevention, energy, and water conservation and water quality initiatives into all facilities and activities where practicable. The objectives of the initiatives would be to improve waste reduction and management practices; energy efficiency and energy conservation practices; water resource conservation and management (e.g., drought tolerant plants); and recycling and reuse practices. Recyclable waste generated during construction would be recycled according to the type of material.

The CDP would identify vegetated areas to be marked for preservation before clearing activities would begin. Additionally, buffer zones would be either natural or established vegetation maintained during and after development of the housing areas and other amenities. Suggested buffer widths by the United States Department of the Interior, Fish and Wildlife Service, is contained in their comments to the Draft EA in Appendix E.

Site plans would be designed to avoid disturbances to wetlands, and no project activities would occur in wetlands. Wetlands delineation would be accomplished during the project design phase to accurately identify and map jurisdictional wetlands. Best management practices such as a silt fence would be installed between any identified jurisdictional wetlands and the project area to prevent indirect impact to wetlands. Fencing would be used to buffer equipment operations and other activities from the wetlands. The Air Force would be responsible for any wetlands delineation activities associated with establishing the Saddle Club at its proposed site, and would protect the site using best management practices.

Storm water runoff would be minimized to prevent off-site transport of sediments into Felix Lake, neighboring streams, and ponds using natural vegetation (existing trees, brushes, and grasses) as much as possible to provide a buffer zone to aide in benefiting water quality.

Entrances to construction sites would be stabilized before construction activities would begin. If a construction site entrance crosses a stream, swale, or other depression, a bridge or culvert should be provided to prevent erosion from unprotected banks, especially in the undeveloped Redfish Point Extension area.

Plans would comply with applicable federal, state, and local environmental laws and regulations, and Air Force guidance. The privatization contractor would obtain confirmatory samples to substantiate the presence of ACM and/or LBP if the Air Force does not have adequate records to substantiate the presence or absence of either of these materials. The ACM samples would be analyzed by a certified laboratory. The privatization contractor would prepare an asbestos disposal plan and submit it to Tyndall AFB for approval. Personnel handling ACM would be trained and certified in accordance with the State of Florida asbestos administrative code (Chapter 62-257). The new units would be constructed without ACM or LBP. The privatization contractor would be required to use asbestos-free materials.

2.4.1 Demolish Existing MFH, Proposed Action

Table 2.4-1 details the estimated number of units that would be demolished within each neighborhood, as well as the estimated maximum gross area. The privatization contractor would prepare and implement a demolition plan that provides a phased approach for demolition of existing units and infrastructure.

Table 2.4-1 Summary of Proposed Action MFH Demolition Activity

Neighborhood	No. of Units	Total Area Per Unit (ft ²)*	Total Area (All Units, ft ²)	Bedrooms Per Unit Type
Wood Manor				
	138	1,920	264,960	2
	341	2,300	784,300	3
	12	2,700	32,400	4
Wood Manor Senior Officers Quarters	11	4,060	44,660	4
Wood Manor East	4	2,300	9,200	3
Subtotal	506	--	1,135,520	--
Bay View*				
	32	1,920	61,440	2
	1	2,300	2,300	3
Subtotal	33	--	63,740	--
Shoal Point				
Subtotal	21	2,700	56,700	4
Totals	560	--	1,255,960	--

* Based on the most conservative square footage (i.e., highest square footage) per the two, three, or four bedroom house categories (Tyndall AFB 2004a).

Under the Proposed Action, 502 of the 503 units in the Wood Manor neighborhood would be demolished and replaced by 381 new units. The unit at 2715 Eagle Drive, constructed in 1997, would be retained in its current condition. All four of the Wood Manor East and all Shoal Point and Bay View units would be demolished. The Bay View and Shoal Point neighborhoods, as well as the Wood Manor East units, would be conveyed under a short-term lease prior to demolition. Once the short-term lease expires, the Bay View, Shoal Point, and Wood Manor East land would be returned to Tyndall AFB for future use and development. In addition, the SOQs currently located along the shoreline side of Wood Manor (see Figure 2-2, at the end of this chapter) could be demolished by the government outside of privatization and rebuilt at the existing Saddle Club area. In this case, the Air Force would relocate the Saddle Club to another location nearer to the golf course, as shown in Figure 2.2, at the end of this chapter.

Soil under and immediately surrounding housing units may contain both chlordane (a pesticide) and lead (from LBP). The privatization contractor would take precautions necessary during demolition to disturb as little of this soil as possible. Soil would not be removed from the site without appropriate environmental testing and prior written consent of the Base Commander or designee. The privatization contractor would ensure that all workers are aware of the potential presence of chlorinated pesticides and lead in the soil.

2.4.2 Construct New MFH, Proposed Action

The Air Force anticipates 525 units would be constructed in Wood Manor, Redfish Point Extension, and the existing Saddle Club area. According to current Air Education and Training Command (AETC) and Air Force guidance on density requirements for housing units, replacement units in the Wood Manor neighborhood would incorporate

greater spacing between units. Although there would be units constructed in the southern portion of the Redfish Point Extension to connect Kisling Loop, no units would be constructed within the current boundaries of the Redfish Point and Felix Lake neighborhoods. The constructed units would consist of a mixture of two-, three-, and four-bedroom single-family units and multiplex units. Table 2.4-2 lists the estimated maximum gross area for the 525 units when all project activities are complete.

Table 2.4-2 Proposed Action MFH Units Construction

Neighborhood	No. of Units	Total Area Per Unit (ft ²)*	Total Area (All Units, ft ²)	Bedrooms Per Unit Type
Wood Manor				
	74	1,920	142,080	2
	196	2,300	450,800	3
	83	2,700	224,100	4
Subtotal	353	--	816,980	--
Existing Saddle Club Area				
	8	2,700	21,600	4
	20	2,300	46,000	3
General Officers Quarters	2	4,060	8,120	4
Senior Officers Quarters	7	4,060	28,420	4
Subtotal	37	--	104,140	--
Redfish Point Extension				
	33	1,920	63,360	2
	72	2,300	165,600	3
	30	2,700	81,000	4
Subtotal	135	--	309,960	--
Totals	525	--	1,231,080	--

* Based on the most conservative square footage (i.e., highest square footage) per the two, three, or four bedroom house categories (Tyndall AFB 2004a).

All units would be equipped with high-energy efficiency heating, ventilation, and air conditioning systems. New foundations would have soil treated for termites in accordance with state law. The discussions in Subchapter 2.4.1 for pesticides and LBP in the soil would apply to construction activities.

The new units would be designed and constructed to comply with the Air Force noise level reduction (NLR) policy to attain interior DNL of 45 dBA. No units would be constructed in a DNL 75 dBA or greater noise exposure area.

2.4.3 Summary of Proposed Action MFH Activities

Table 2.4-3 summarizes the estimated maximum gross area for the 813 units when all project activities are complete. The table also compares the Proposed Action end total and the baseline condition for a net change.

Table 2.4-3 Summary of Proposed Action MFH Units

	No. of Units	Total Area (All Units, ft ²)	Impervious Cover (ft ²)	Total Area and Impervious Cover (ft ²)
Baseline	848	1,921,460	1,081,200	3,002,660
Demolish	560	1,255,960	714,000	1,969,960
Construct	525	1,231,080	866,250	2,097,330
Totals	813	1,896,580	1,233,450	3,130,030
Net Change	-35	-24,880	+152,250	+127,370

It is estimated that, on average, each newly constructed unit would have approximately 1,650 ft² of impervious cover associated with sidewalks, driveways, garages/car ports, off-street parking, and patios. Based on a final inventory of 813 units, there would be about 3,130,030 ft² of total impervious cover associated with the units. Although the existing street patterns may be altered to accommodate layout of the housing units, it is estimated there would be no increase in the surface area of streets within the MFH neighborhoods due to the overall reduction of 35 housing units. Impervious cover associated with streets would not exceed the current 2,156,229 ft². Thus, the Proposed Action total area (i.e., the combined area of the units, sidewalks, etc., and streets) associated with the MFH would be 5,286,259 ft². Altogether, the Proposed Action would have about 127,370 ft² more impervious cover than the baseline condition.

2.5 MAXIMUM DEVELOPMENT ALTERNATIVE

Under the Maximum Development Alternative, the Air Force proposes to convey 848 existing MFH units and associated infrastructure to a privatization contractor. The contractor would then demolish all 848 units and construct 1,238 replacement units on Tyndall AFB, which equates to 390 more housing units than the baseline condition. The total number of units in the Maximum Development Alternative exceeds the HRMA-established inventory of 813 units. Under the Housing Privatization Initiative, the privatization contractor may construct more units than required if there is a higher demand among Air Force personnel for MFH. The 1,238 units in the Maximum Development Alternative equate to the most recent maximum number of units on Tyndall AFB.

The replacement units would be located within the Redfish Point (45 acres), Redfish Point Extension (102.5 acres), Felix Lake (76.5 acres), and Wood Manor (162.8 acres) neighborhoods and the existing Saddle Club area (44.6 acres) (Figure 2-1, at the end of this chapter). All improvements and construction of units would be built on available acreage in these areas (431 acres). MFH units would not be rebuilt at the Shoal Point and Bay View neighborhoods because they are located in the APZ and within an 80 dBA and greater DNL noise exposure area. The Maximum Development Alternative also includes privatization of the 1,238 units for a 50-year term.

All housing units under the Maximum Development Alternative would be new construction. The privatization contractor would manage a total of 1,238 units. The Bay View and Shoal Point neighborhoods, as well as the Wood Manor East units, would be

conveyed under a short-term lease prior to demolition of the units. Once the short-term lease expires, the Bay View, Shoal Point, and Wood Manor East land would be returned to Tyndall AFB for future use and development. Other than the specific information concerning the numbers of units, the Proposed Action discussion in Subchapter 2.4 concerning the CDP, wetlands, storm water, and environmental laws and regulations applies to the Maximum Development Alternative.

2.5.1 Demolish Existing MFH, Maximum Development Alternative

All 848 units that would be conveyed under the Maximum Development Alternative would be demolished. Table 2.3-1 details the estimated number of units that would be demolished within each neighborhood, as well as the estimated maximum gross area. The privatization contractor would prepare and implement a demolition plan that provides a phased approach to demolition of existing units and infrastructure. The Proposed Action soil pesticide discussion in Subchapter 2.4.1 also applies to the Maximum Development Alternative.

2.5.2 Construct New MFH, Maximum Development Alternative

The Air Force anticipates 1,238 units would be constructed. Table 2.5-1 details the estimated maximum gross area for the 1,238 units when all project activities are complete. The Proposed Action construction activity discussion in Subchapter 2.4.2 would apply to the Maximum Development Alternative.

It is estimated the newly constructed units would consist of a mixture of two-, three-, and four-bedroom multiplex units, as follows: 42 percent for two-bedroom units, 38 percent for three-bedroom units, and 20 percent for four-bedroom units (USAF 2004a).

Table 2.5-1 Maximum Development Alternative MFH Units Construction

Designation	No. of Units	Total Area Per Unit (ft ²)*	Total Area (All Units, ft ²)
2 Bedroom Units	520	1,920	998,400
3 Bedroom Units	470	2,300	1,081,000
4 Bedroom Units	248	2,700	669,600
Totals	1,238	--	2,749,000

* Based on the most conservative square footage (i.e., highest square footage) per the two, three, or four bedroom house categories (Tyndall AFB 2004a).

2.5.3 Summary of Maximum Development Alternative MFH Activities

Table 2.5-2 summarizes the estimated maximum gross area for the 1,238 units when all project activities are complete. The table also summarizes the Maximum Development Alternative final state, following construction.

Table 2.5-2 Summary of Maximum Development Alternative MFH Units

	No. of Units	Total Area (All Units, ft ²)	Impervious Cover (ft ²)	Total Area and Impervious Cover (ft ²)
Baseline	848	1,921,460	1,081,200	3,002,660
Demolish	848	1,921,460	1,081,200	3,002,660
Construct	1,238	2,749,000	2,042,700	4,791,700
Totals	1,238	2,749,000	2,042,700	4,791,700
Net Change	+390	+827,540	+961,500	+1,789,040

It is estimated that, on average, each newly constructed unit would have approximately 1,650 ft² of impervious cover associated with sidewalks, driveways, garage/car port, off-street parking, and patios. Based on an inventory of 1,238 units and 1,650 ft² of impervious surface per unit, there would be about 4,791,700 ft² of impervious cover associated with the units under the Maximum Development Alternative. Although the existing street pattern may be altered to accommodate the layout of housing units, it is estimated there would be an increase in the surface area of streets within the MFH neighborhoods because there would be an overall increase of 390 housing units. Using 0.054 acres of impervious cover per housing unit, the impervious cover associated with streets would be about 21 acres (390 x 0.054 = 21), or 914,764 ft². Thus, the Maximum Development Alternative total area (i.e., the combined area of the units, sidewalks, etc., and streets) associated with the MFH would be 5,704,464 ft². Altogether, the Maximum Development Alternative would have about 547,575 ft² more impervious cover than the baseline condition.

As a result of constructing an additional 390 new housing units, there would be an increase of approximately 1,410 military family members living on-Base from implementation of the Maximum Development Alternative. This estimate is based on the two-, three-, and four-bedroom unit distribution percentages in Subchapter 2.5.2 and the assumption that a family of three would live in a two-bedroom unit, a family of four would reside in a three-bedroom unit, and a family of five would live in a four-bedroom unit. However, the exact number of persons is unknown at this time because the privatization plan for demolition and construction is not final.

2.6 PAST, PRESENT, AND REASONABLY FORESEEABLE ACTIONS IN THE REGION OF INFLUENCE

A cumulative impact, as defined by the CEQ (40 CFR 1508.7), is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of which agency (federal or non-federal) or person(s) undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Cumulative impacts most likely arise when a relationship exists between a proposed action and other actions are expected to occur in a similar location or during a similar time period. Actions occurring in the same location or in proximity to each other would be expected to have more potential for cumulative impacts than geographically

separated actions. Similarly, actions that coincide, even partially, in time would tend to offer a higher potential for cumulative impacts.

This EA includes an analysis to determine if the incremental impacts of the action, when added to other past, present, and reasonably foreseeable future actions, would result in cumulative impacts. The Air Force has no other planned or foreseeable future actions at the MFH areas. The housing area and the main Base are geographically separated by water from nearby communities such as Panama City. Therefore, past and future actions at the main Base would have little or no effect on local resources at the housing areas. However, actions at the main Base and MFH areas could affect the same regional resources (*e.g.*, air quality, solid waste, and socioeconomic resources).

Several construction projects have been identified for FY05 through FY09, based on the Tyndall AFB General Plan and information provided by AETC (USAF 2004b; Erwin 2004), for an estimation of cumulative impacts that would occur during the time period associated with the Proposed Action and Maximum Development Alternative. These actions are not related to the Proposed Action or Maximum Development Alternative evaluated in this EA, but are additional actions announced for the Base. The environmental impacts of these additional actions have or will be analyzed in separate NEPA documents and are addressed in this EA only in the context of potential cumulative impacts, if any. Table 2.6-1 lists the projects and the square footage for each project. Figure 2-6, at the end of this chapter, shows the general locations of these actions at Tyndall AFB. None of these projects would result in an overall increase in Base personnel.

Table 2.6-1 Other Actions Considered for Cumulative Impact Purposes

Project Title	Project No.	Estimated Project Start Date	Facility Size Construction (ft ²)
F-22 Operations Facility Addition	003001	FY05	38,750
F-22 Squadron Ops/Aircraft Maintenance Unit/Hangar	053001	FY05	37,975
AF Headquarters/Air Force Forces Center	033004	FY05	42,000
1st Air Force Operations Center	023003	FY06	30,010
Dormitory	013003	FY06	51,150
Fitness Center	023001	FY07	68,544
Highway 98 Overpass	033002	FY08	104,520*
Engine Shop	063001	FY08	59,965
Base Civil Engineering Complex	943001	FY09	111,826
Total	-	-	544,740

* Overpass square footage was calculated assuming two 15-foot wide lanes and 1,062 feet in length.

2.7 IDENTIFICATION OF THE PREFERRED ALTERNATIVE

The Proposed Action is the Preferred Alternative.

2.8 COMPARISON OF ENVIRONMENTAL EFFECTS OF ALL ALTERNATIVES

Table 2.8-1 summarizes the impacts of the No Action Alternative, the Proposed Action, and the Maximum Development Alternative. No cumulative impacts would occur from implementation of the nine other projects and the No Action Alternative, Proposed Action, or Maximum Development Alternative.

2.9 MITIGATION

No mitigation would be required.

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Table 2.8-1 Summary of Environmental Impacts for the No Action Alternative, Proposed Action, and Maximum Development Alternative

Resource	No Action Alternative	Proposed Action	Maximum Development Alternative
Noise	Noise associated with the demolition of the 35 surplus units would be temporary and intermittent, lasting only as long as the demolition activities. There could be periods of time during which demolition noise could be discerned and provide minor annoyance to speech interference and loss of sleep for MFH personnel who normally sleep during the day. The primary source of noise throughout and after the project is completed would continue to be from aircraft operations. Units in the Shoal Point and Bay View neighborhoods not demolished would continue to be exposed to DNL 80 dBA and greater and would continue to be incompatible with Air Force noise level reduction standards.	The analysis and conclusions for the No Action Alternative apply to the Proposed Action. Construction noise may be annoying at times. The new housing units would be designed and constructed to meet Air Force NLR criteria.	The analysis and conclusions for the No Action Alternative and Proposed Action apply to the Maximum Development Alternative.
Land Use	Demolishing the 18 units in Bay View that are in APZ I would eliminate the existing incompatibility with AICUZ guidance which restricts housing in APZ I. The areas that would be vacated by the demolition of 35 surplus units could be re-categorized as open space to align with the other land use category for the APZs and the existing land use around the Bay View and Shoal Point neighborhoods.	Continued use of the Wood Manor, Felix Lake, and Redfish Point neighborhoods for MFH would be compatible with the General Plan. The Shoal Point and Bay View neighborhoods would be returned to Tyndall AFB after a short-term lease to the privatization contractor and could be re-categorized as open space to align with the existing land use category for the land around the neighborhoods. Re-categorization of the Redfish Point Extension and existing Saddle Club area to housing-accompanied would be consistent with the Tyndall AFB General plan and would not conflict with the adjacent open space land uses.	The analysis and conclusions for the Proposed Action apply to the Maximum Development Alternative.

Table 2.8-1 Summary of Environmental Impacts for the No Action Alternative, Proposed Action, and Maximum Development Alternative (continued)

Resource	No Action Alternative	Proposed Action	Maximum Development Alternative
Air Quality	The greatest emissions from demolition activity would be nitrogen oxide (NO_x) (2.35 tons per year [tpy]), which equates to 0.02 percent of the NO_x emissions within Bay County. Emissions would be temporary and eliminated after the project is completed. A conformity determination would not be required because the associated emissions would not be expected to exceed or violate air quality standards.	The greatest annual emissions and greatest percentage of emissions within Bay County would be particulate matter equal to or less than 10 microns in aerodynamic diameter (PM₁₀) (76.02 tpy), which equates to 1.89 percent of the PM₁₀ emissions inventory. Discussions on the temporary nature of emissions and conformity determination analysis for the No Action Alternative apply.	The greatest annual emissions and greatest percentage of emissions within Bay County would be PM₁₀ (79.00 tpy), which equates to 1.96 percent of the PM₁₀ emissions inventory. Discussions on the temporary nature of emissions and conformity determination analysis for the No Action Alternative apply.
Infrastructure and Utilities	On-Base water consumption would be 0.011 million gallons per day (mgd) less than baseline conditions. On-Base wastewater generation would be 0.006 mgd less than baseline conditions. On-Base electrical usage would decrease by 3,734 kilowatt-hours (kWH) per day. On-Base natural gas usage would decrease by 0.17 million cubic feet (mcf) per month. Demands on the regional water, wastewater, electricity, and natural gas systems would not exceed the baseline levels since there would be no net change in personnel assigned to Tyndall AFB and because the distribution systems serve both the Base and Bay County. Impervious cover would decrease by 2.2 percent, which corresponds to a decrease in storm water runoff. Erosion control techniques would be used during demolition to minimize erosion and protect surface water quality. A storm water pollution prevention plan would be accomplished and implemented for the demolition activities. Demolition debris equates to 0.24 percent of the total remaining capacity of the landfill.	The change in water consumption would be negligible and would remain at or near the baseline usage of 1.28 mgd. The change in wastewater generation would be negligible and would remain at or near the baseline usage of 0.19 mgd. On-Base electrical usage would decrease by 1,344 kWH per day. On-Base natural gas usage would decrease by 0.061 mcf per month. Impervious cover would increase by 2.5 percent, which corresponds to an increase in storm water runoff. The erosion control and storm water pollution prevention plan discussion for the No Action Alternative apply.	Although on-Base water consumption would increase by 0.15 mgd, overall, regional water system consumption would decrease by 62,040 gallons due to the installation of water-efficient appliances in new houses. Although on-Base wastewater generation would increase by 0.08 mgd due to the 1,410 additional persons, there would be no net change in wastewater treated at the regional treatment plant because there would be a corresponding decrease in off-Base generation due to the corresponding reduction in residents. On-Base electrical usage would increase by 44,687 kWH per day. Natural gas usage would increase by 2.0 mcf per month. Impervious cover would increase by 10.6 percent, which corresponds to an increase in storm water runoff. The erosion control and storm water pollution prevention plan discussion for the No Action Alternative apply.

Table 2.8-1 Summary of Environmental Impacts for the No Action Alternative, Proposed Action, and Maximum Development Alternative (*continued*)

Resource	No Action Alternative	Proposed Action	Maximum Development Alternative
Infrastructure and Utilities (continued)	The number of vehicles entering and exiting base would increase by approximately 30 vehicles during peak traffic periods; however, the existing roads would be able to handle the increased load.	Demands on the regional electricity and natural gas systems would not exceed the baseline levels since there would be no net change in personnel assigned to Tyndall AFB and because the distribution systems serve both the Base and Bay County. Construction and demolition debris equates to 4.3 percent of the total remaining capacity of the landfill. Traffic congestion associated with construction would be short-term. There would be no net increase of vehicles entering or exiting the Base during peak traffic hours.	Demands on the regional electricity and natural gas systems would not exceed the baseline levels since there would be no net change in personnel assigned to Tyndall AFB and because the distribution systems serve both the Base and Bay County. Construction and demolition debris equates to 6.7 percent of the total remaining capacity of the landfill. Traffic congestion associated with the construction would be short-term. An estimated 333 fewer vehicles would enter and exit the Base during the peak traffic hours.
Biological Resources	Demolition of the 35 units would occur in an urbanized area. Therefore, there would be minimal disturbance to existing wildlife during demolition.	The area adjacent to Redfish Point Extension has become more urbanized through residential development and supports wildlife that are more urban adapted and disturbance tolerant. There would be minimal disturbance to existing wildlife and a higher likelihood of wildlife tolerance to construction activities in these areas.	The analysis and conclusions for the Proposed Action apply to the Maximum Development Alternative.

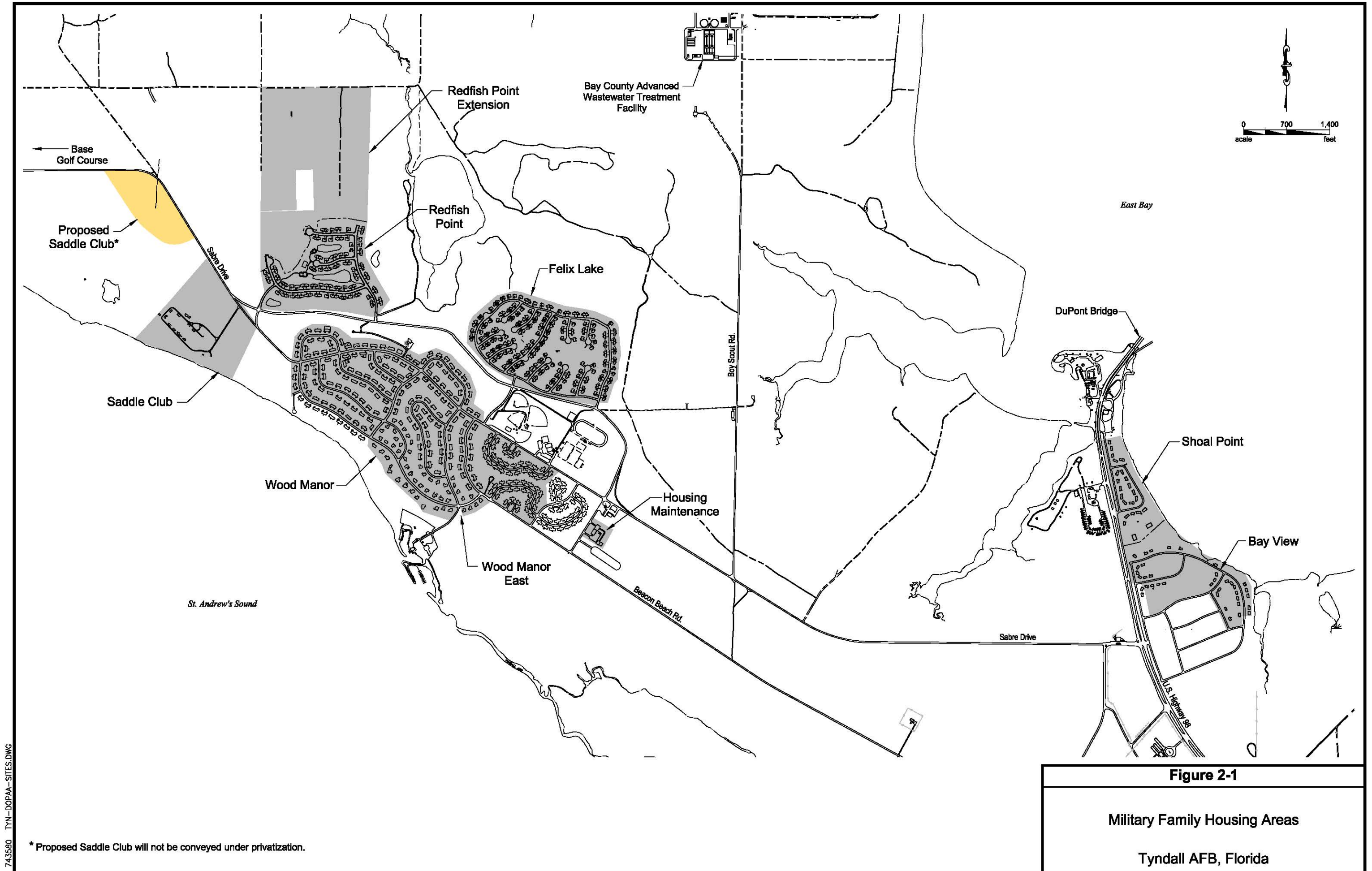
Table 2.8-1 Summary of Environmental Impacts for the No Action Alternative, Proposed Action, and Maximum Development Alternative (*continued*)

Resource	No Action Alternative	Proposed Action	Maximum Development Alternative
Biological Resources (continued)		Construction activities would not be anticipated to have an adverse effect on the bald eagle that nests in a forested area north of the Felix Lake neighborhood and east of the Redfish Point Extension area. A 1,500-foot buffer zone would be established surrounding any newly discovered eagle nests prior to construction. The impact on threatened and endangered species would be minimized by following the Tyndall AFB Integrated Natural Resources Management Plan. Wetlands delineation would be accomplished during the project design phase to accurately identify and map jurisdictional wetlands and new MFH units would not be constructed in wetlands. Best management practices such as a silt fence would be implemented between the project area and any identified jurisdictional wetlands and to prevent indirect impact to the wetlands. None of the subject housing units or proposed construction activities would be located within the 100-year floodplain.	
Groundwater Resources	Demolition activities associated with the demolition of the 35 surplus units would not impact groundwater.	Pollutants could be generated from runoff from streets and parking areas. However, the aquifer is separated from recharge areas by clayey sand and hardpan layers and is much deeper. Storm water management practices and permits for construction of roadways would be implemented to reduce the potential for pollutants.	The analysis and conclusions for the Proposed Action apply to the Maximum Development Alternative.
Earth Resources	Demolition would not cause any soil profile destruction. Use of best management practices such as rock berms, silt fences, and single point construction entries would minimize erosion during demolition.	Construction activity in the Woods Manor and existing Saddle Club areas would occur within areas that have been disturbed and modified by prior MFH construction; therefore, geology would not change. Construction activities at the Redfish Point Extension would occur within an area that has not been disturbed by prior activities. The CDP developed for the neighborhood would minimize any disturbances to the geology and soils.	The analysis and conclusions for the Proposed Action apply to the Maximum Development Alternative.

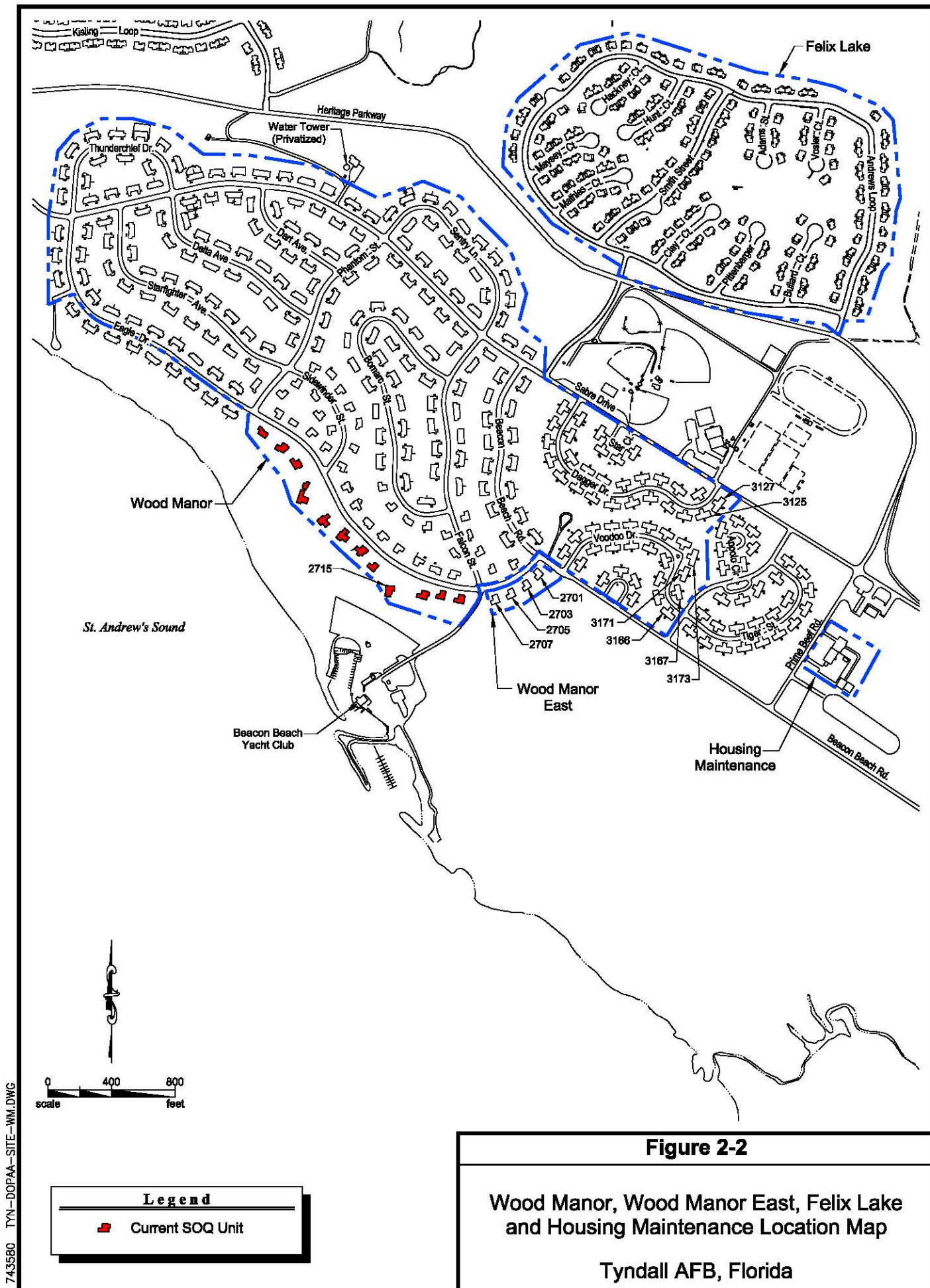
		The best management practices identified for the No Action Alternative would be implemented.	
Resource	No Action Alternative	Proposed Action	Maximum Development Alternative
Hazardous Materials and Wastes	Contractors would use and store hazardous materials in accordance with Base procedures. Residents in the MFH units would continue to purchase hazardous materials for household uses, which would be considered residential waste as exempted by regulatory guidance. Any hazardous waste generated would be handled in accordance with all federal, state, and local laws and regulations and coordinated with the Tyndall AFB Environmental Flight. No installation restoration (IRP) sites occur within the MFH neighborhoods. Asbestos and LBP would be removed and disposed of in accordance with established regulations. The demolition contractor would disturb as little soil as possible. Soil would not be removed from the site without appropriate environmental testing and without written consent from the Base Commander or designee.	The analysis and conclusions for the No Action Alternative apply. The proposed MFH units would be constructed without any ACM or LBP. The privatization contractor would provide a LBP disclosure statement to new MFH residents. LBP hazards would be abated if the LBP is not properly maintained. The privatization contractor would be responsible for having a competent risk assessor carry out a representative sampling for pesticides in the soil immediately surrounding the housing, gardens, and likely children's play areas prior to occupancy of newly constructed housing where soil was disturbed. The results of sampling or a risk assessment would be provided to the Air Force for approval prior to occupancy.	The analysis and conclusions for the Proposed Action apply to the Maximum Development Alternative.
Cultural Resources	There are no known historic buildings, structures, or objects located in the MFH neighborhoods. It is possible that demolition could occur in the Bay View neighborhood, a location for an identified archaeological site. The site has been severely disturbed by past activities and it is anticipated that no adverse effects would occur. Work in the immediate area would be suspended and the Tyndall AFB Environmental Flight would consult the State Historic Preservation Officer should historic materials or archaeological resources be discovered during demolition activities. Subsequent actions would follow the procedures outlined in the Tyndall AFB Integrated Cultural Resources Management Plan.	Although the Morehead archaeological site would not be conveyed to the privatization contractor, the site would be identified and clearly marked prior to construction activities since it could be surrounded by MFH privatization activities in the Redfish Point Extension. During construction activities precautions, in the form of barriers, signs, and erosion control measures would be taken to protect the Morehead site. Since portions of the MFH neighborhoods are located within areas with high potential for archeological sites, it is possible that archeological artifacts could be encountered during construction. In those areas previously disturbed, no systematic archaeological survey would be accomplished since resources that may have once existed are gone; however, in those undeveloped areas proposed for construction, a systematic archaeological survey would be conducted and coordinated with the SHPO prior to construction. The discussion and analysis for Bay View for the No Action Alternative apply.	The analysis and conclusions for the No Action Alternative and Proposed Action apply to the Maximum Development Alternative.

Table 2.8-1 Summary of Environmental Impacts for the No Action Alternative, Proposed Action, and Maximum Development Alternative (*continued*)

Resource	No Action Alternative	Proposed Action	Maximum Development Alternative
Socioeconomic Resources	It is anticipated the 103 residents displaced due to the reduction of 35 units would relocate within Bay County and that there would be no in-migration of workers to support demolition. Therefore, there would be no overall change in Bay County population. The vacant housing units in Bay County could accommodate the 35 families that would be displaced. There would be no change in the number of students attending Bay County schools. The demolition activities would benefit sales volume, income, and employment in Bay County.	The conclusions for the No Action Alternative apply.	The conclusions for the No Action Alternative apply.

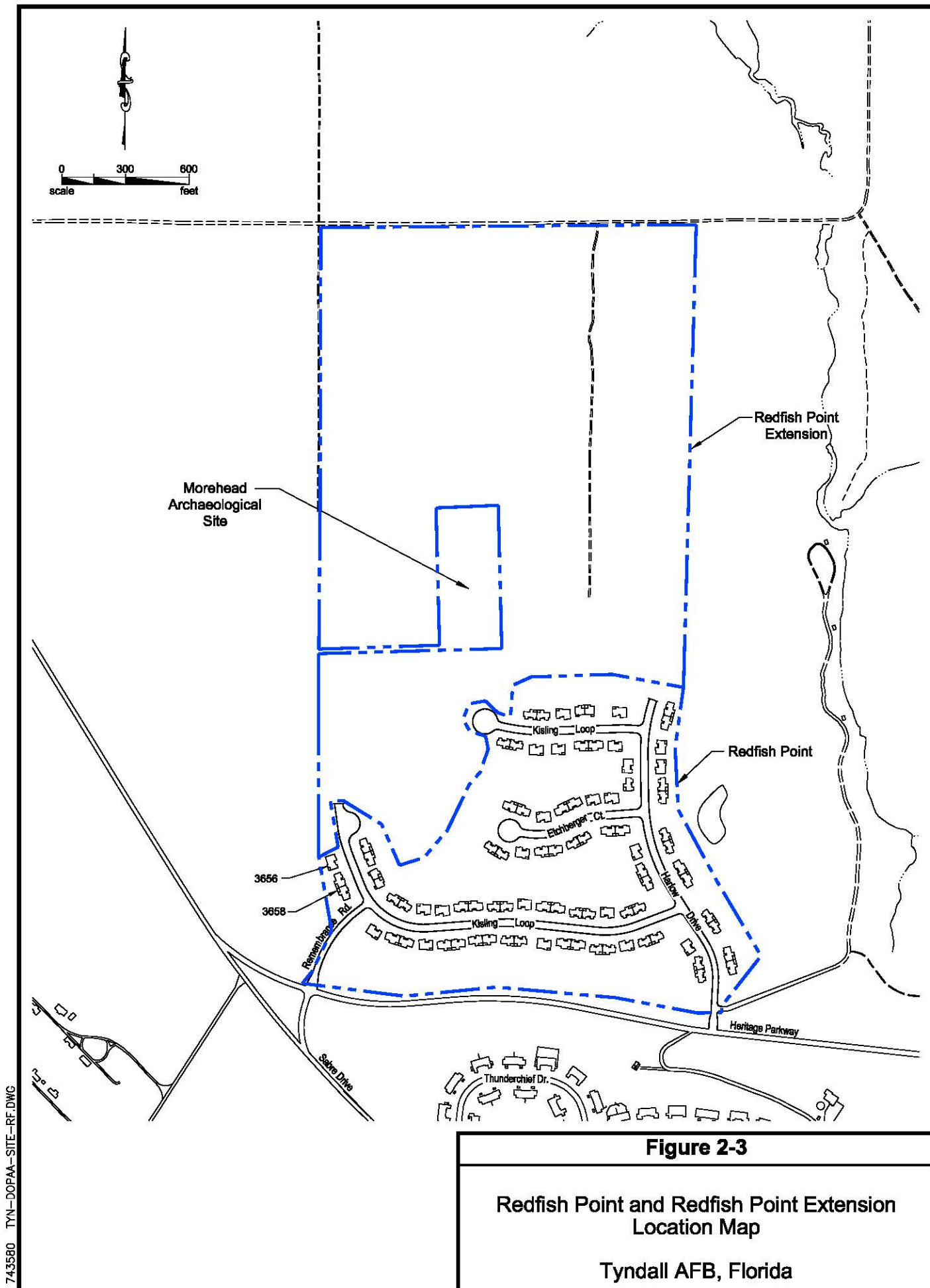


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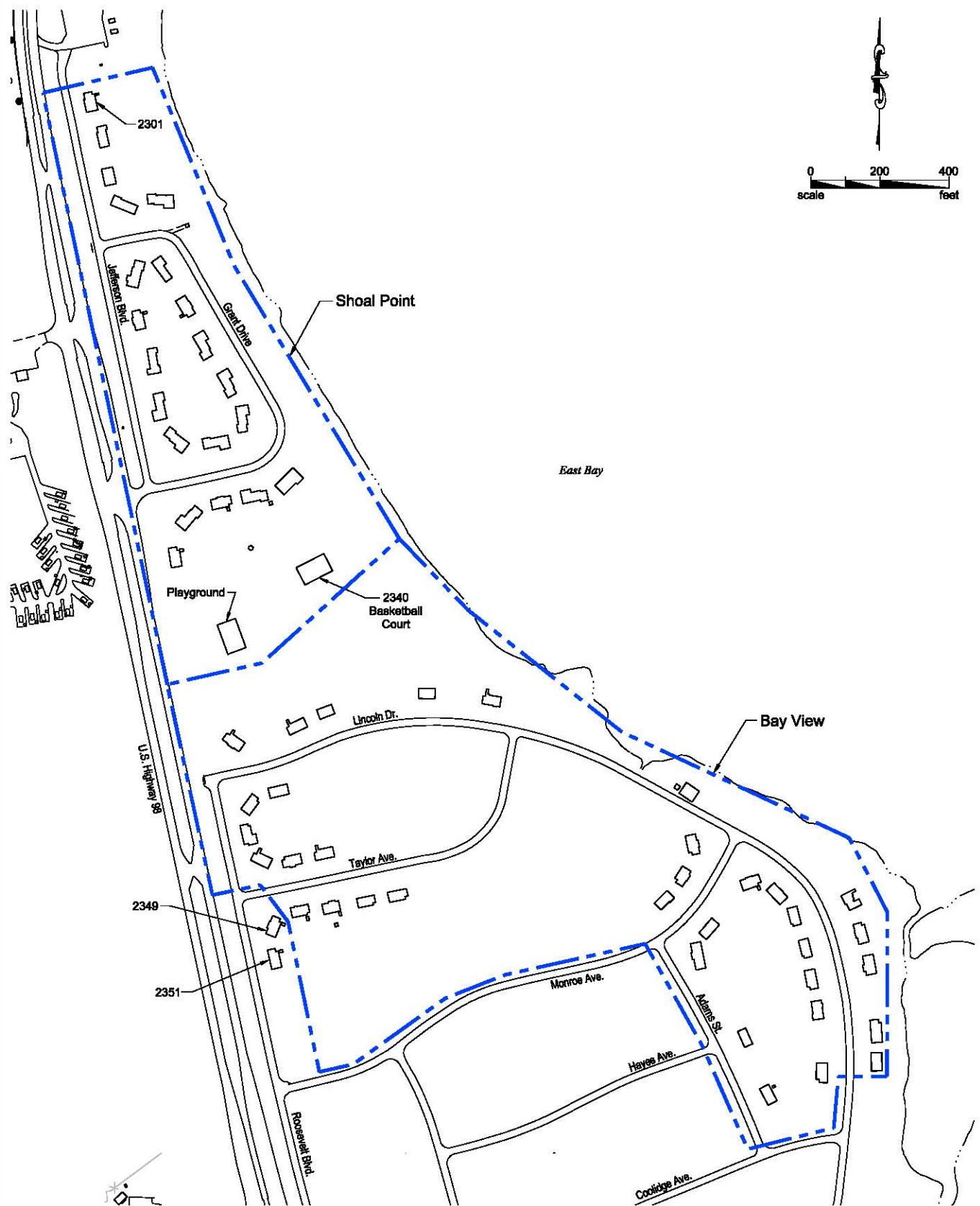
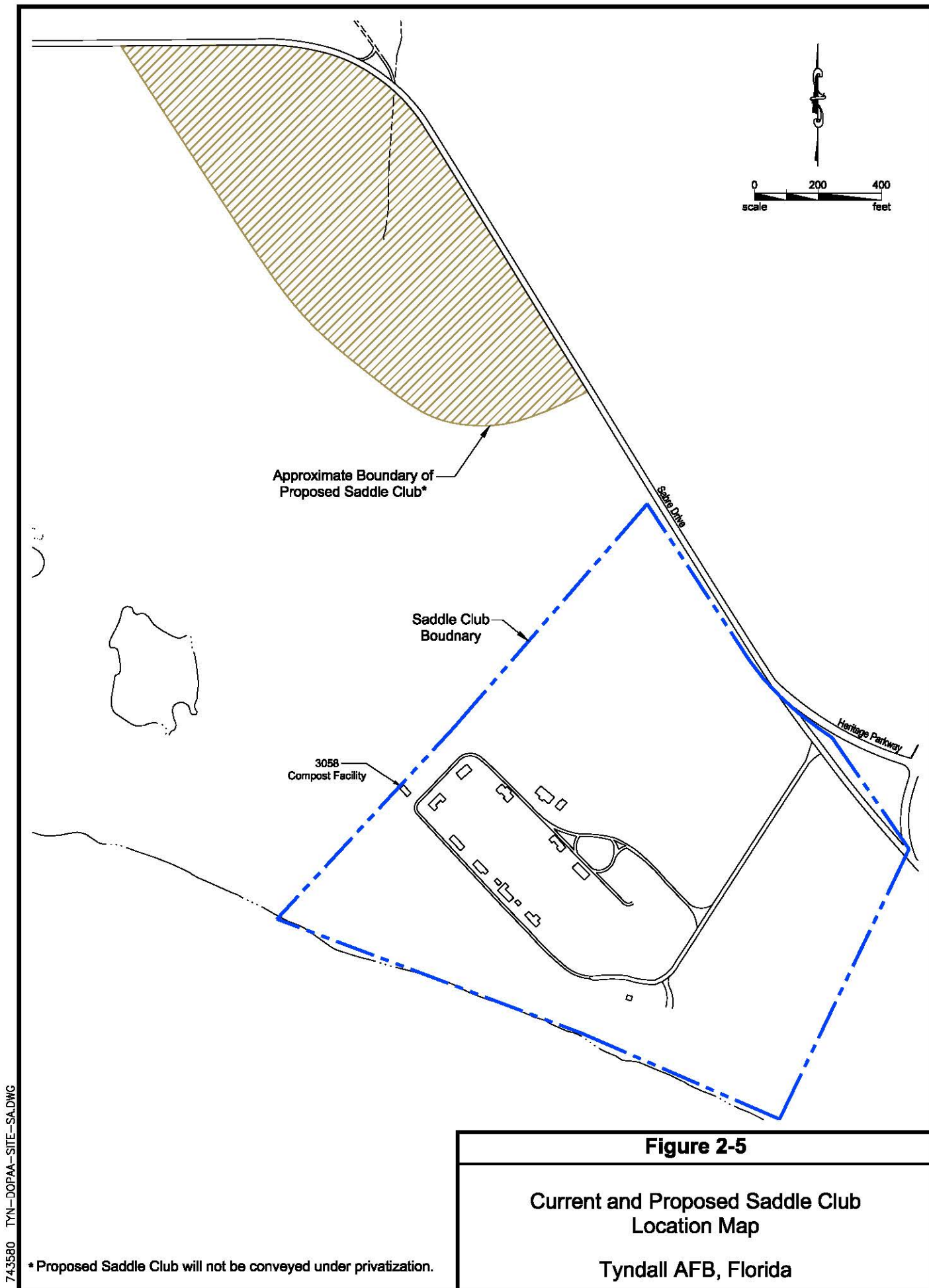


Figure 2-4

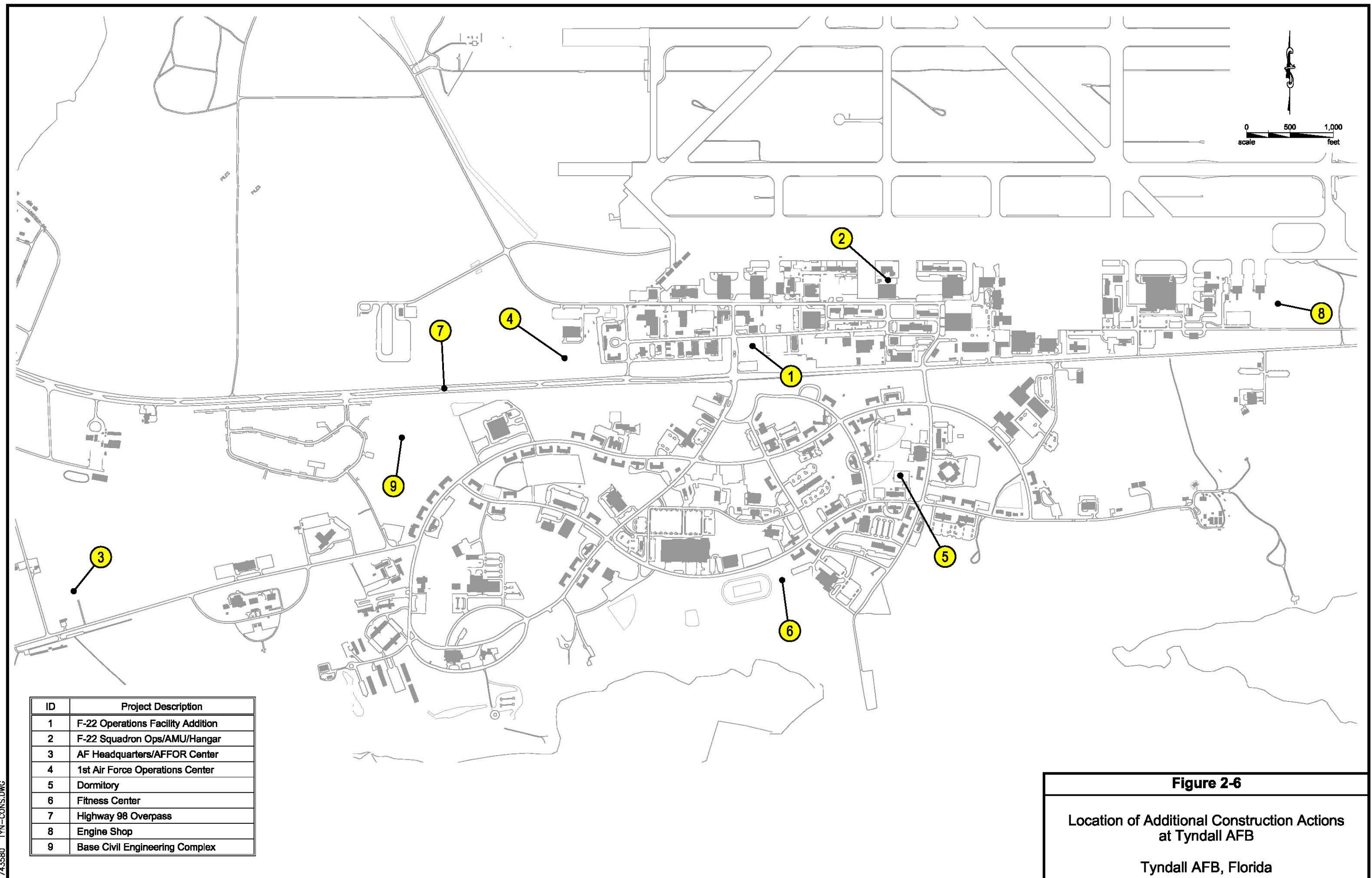
**Shoal Point and Bay View
Location Map**

Tyndall AFB, Florida

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CHAPTER 3 AFFECTED ENVIRONMENT

This chapter describes the existing environmental resources that could be affected by or could affect the No Action Alternative, the Proposed Action, and the Maximum Development Alternative. Only those specific resources relevant to potential impacts are described in detail. Baseline conditions used for this EA are discussed in Subchapter 1.5.

3.1 INSTALLATION HISTORY AND MISSION

Humans lived in this region of Florida beginning 12,000 years ago. Since then, the region has been occupied by Native Americans, the French, English, and Spanish, and was finally purchased by the United States in 1821. Old Town St. Andrew, currently Panama City, was occupied by American settlers in the 1820s. During the Civil War era, the area became useful to both Confederate and Union forces; following the war, it became a retirement community for veterans. Following this time period and into the 20th century, the region was home to many industries, including lumber, ranching, naval stores, turpentine stills, seafood, and tourism (USAF 2004b). The housing areas are partially located in areas with a high probability for discovery of archaeological sites.

Tyndall AFB occupies a peninsula originally known as East Peninsula. Gradually, after the lumber and turpentine industries faltered, the population of East Peninsula subsided. In 1941, the U.S. Government acquired title to the East Peninsula and began demolishing the remaining settlements. Due to minimum fire protection and limited access to the peninsula, large fires occurred during subsequent years. Much of the timber that survived the fires was logged and processed through the Base-operated sawmill from 1944 to 1954. There was no reforestation program in effect during this time period (Tyndall AFB 1998).

Tyndall AFB began as a gunnery school and was officially opened on December 6, 1941 (the day before the attack on Pearl Harbor) as Tyndall Field. Tyndall Field was named after Francis B. Tyndall, a World War I fighter pilot and recipient of the Silver Star. In 1947, Tyndall Field became Tyndall AFB when the Air Force became a separate branch of the military. In the 1950s, the primary mission of the Base became that of a weapons deployment center. In the 1970s, Air Force Civil Engineering Support Agency moved to Tyndall AFB. Tactical Air Command also transferred to Tyndall AFB, which started its mission to help defend the southeastern United States. The 325th Fighter Weapons Wing was started at Tyndall AFB in 1981, later redesignated as the 325th Tactical Training Wing. Its mission included training in the F-101, F-106, F-15, and T-33 aircraft. Also during the 1980s, the 475th Weapons Evaluation Group was activated, consolidating the weapons system evaluation program. In the 1990s, the 1st Air Force and Continental United States North American Aerospace Defense Command Region (CONR) moved from Langley AFB, Virginia to Tyndall AFB. The Southeast Air Defense Sector is the sector of CONR stationed at Tyndall AFB. Also in the 1990s, the 325th Tactical Training Wing was redesignated the 325th Fighter Wing and Tyndall AFB and was transferred from the Air Combat Command to AETC. The Base was selected to host the F/A-22 Pilot Training mission, which began in 2003 (USAF 2004b).

In addition, Tyndall AFB is home to a variety of other non-Air Force organizations such as the Canadian Forces Detachment, 148th Fighter Wing of the Minnesota Air National Guard, and several civilian contractors. DoD agencies are also on Base, including the Defense Accounting Office, Army and Air Force Exchange Services, and the Defense Commissary Agency. Within the approximate 12,000 total population of Tyndall AFB, an estimated 4,190 are military personnel, 5,400 are military dependents, and about 2,700 are civilian employees. Approximately 8,100 retired military personnel live near Tyndall AFB (USAF 2004b).

Over time, Base activities were grouped into areas based on commonality of function and land use category. This grouping resulted in efficient clustering of commercial, administrative, and maintenance areas, and separated Base housing areas from Base functions incompatible with residential activities.

3.2 NOISE

3.2.1 Background Information

The characteristics of sound include parameters such as amplitude (loudness), frequency (pitch), and duration. Sound varies over an extremely large range of amplitudes. The decibel, a logarithmic unit that accounts for the large variations in amplitude, is the accepted standard unit for describing levels of sound.

Different sounds have different frequency contents. Because the human ear is not equally sensitive to sound at all frequencies, a frequency-dependent adjustment (*i.e.*, dBA) has been devised to measure sound similar to the way the human hearing system responds. The adjustments in amplitude, established by the American National Standards Institute (ANSI) (ANSI 1983), are applied to the frequency content of the sound. Figure 3-1, at the end of this chapter, depicts typical A-weighted sound pressure levels for various sources. For example, 65 dBA is equivalent to normal speech at a distance of 3 feet. Appendix B provides additional information, including a discussion of annoyance, speech interference, and hearing loss.

3.2.2 Existing Noise Levels

The primary source of noise at Tyndall AFB is from the Base's aircraft operations. Other noise sources in and around the Base include surface traffic and other training activities. During periods of no flying activity, noise results primarily from ground traffic movement, occasional construction, and similar sources. This noise is comparable to sounds that occur in typical communities. It is during periods of aircraft ground or flight activity that the noise environment changes. Existing noise levels are typical of an urban residential area near a major airport.

Air Force policy since 1978 has been to implement, where feasible, NLR measures in on-Base residential and public use buildings (USAF 1978). NLR measures are intended to reduce indoor noise levels to a DNL of 45 dBA or less. Recommended NLR is 25 dBA for units in the DNL 65 to 70 dBA noise zone, and 30 dBA for those in the DNL 70 to 75 dBA zone. Buildings constructed prior to implementation of the NLR Policy were not necessarily built to NLR standards. Since implementation of NLR

standards, all new buildings are designed and constructed to comply with the AICUZ land use compatibility guidelines (USAF 1999).

Noise exposure from the most recent aircraft noise modeling at Tyndall AFB ranges from DNL 80 dBA near the runways to 65 dBA on the outskirts of the Base. The Felix Lake, Wood Manor, and Redfish Point neighborhoods are located more than 1 mile from the aircraft operation areas. Modeled DNL for these areas is 65 dBA or less. Portions of the Felix Lake and Redfish Point neighborhoods are within the DNL 65-70 dBA noise exposure zone, but given their recent construction, were built to appropriate NLR standards. Existing housing in the Bay View and Shoal Point neighborhoods is much closer to aircraft operations areas. Units in these neighborhoods are within the DNL 80 dBA and greater noise exposure zone (USAF 2004b). The Bay View units were built prior to implementation of the NLR policy; therefore, the units were not built to NLR standards. Although the Shoal Point units were originally built prior to implementation of the Noise Reduction Policy, they were demolished and reconstructed in 1993. Therefore, the reconstructed units would have been subject to NLR standards.

Figure 3-2, at the end of this chapter, presents noise exposure from aircraft operations, the clear zones, and the APZs associated with the runways at Tyndall AFB. Figure 3-2 is based on information presented in the *Tyndall AFB General Plan* (USAF 2004b). Noise exposure may change when an update to the AICUZ study is completed based on F/A-22 and F-15 aircraft operations data. Currently, there is no estimated completion date for an updated AICUZ study.

3.3 LAND USE

Land use plans provide direction for development and improvement of Tyndall AFB. Land use planning is an effective tool in maximizing mission effectiveness, generally enhancing quality of life, and preserving quality of on-Base natural environments. A major part of land use planning involves combining compatible land uses and separating incompatible land uses. Efficient utilization of the limited land available is an indication of good land use planning. Existing land use categories at Tyndall AFB consist of airfield, airfield pavements, aircraft operations and maintenance, technical training, industrial, administrative and operations, community service, medical, housing-accompanied, housing-unaccompanied, outdoor recreation, open space, and water (USAF 2004b).

The lands currently occupied by the Wood Manor, Felix Lake, Redfish Point, Bay View, and Shoal Point neighborhoods are categorized as housing-accompanied, or MFH. The location of the proposed Redfish Point Extension is currently categorized as open space, and is generally a wooded undeveloped area with thick underbrush. The Saddle Club, located on the south side of Sabre Drive (Figure 2-5), is categorized as outdoor recreation (USAF 2004b). Units in the Bay View and Shoal Point neighborhoods are within the AICUZ-established APZs I and II (USAF 2004b).

The 18 units at the eastern end of the Bay View neighborhood (see Figures 2-4 and 3-2 at the end of this chapter) within APZ I are incompatible with AICUZ guidance which prohibits housing units in the APZ (USAF 1999). The 21 single-family units in

the Shoal Point neighborhood and the 15 single-family units on Taylor Avenue and Lincoln Drive in the Bay View neighborhood are in APZ II (see Figures 2-4 and 3-2). The suggested maximum density for single-family units in APZ II is 1 to 2 units per acre and the density can possibly be increased under a planned unit development where maximum lot coverage is less than 20 percent of the development (USAF 1999). Based on 21 units and 18.6 acres in Shoal Point, unit density in the neighborhood is 1.13 units per acre, a density that is compatible with AICUZ guidance when considering that a maximum of two units per acre is acceptable. It is estimated that about half of the 44.7 acres (*i.e.*, 22.35 acres) in the Bay View neighborhood are in APZ II. Based on 15 units and 22.35 acres, unit density is 0.67 units per acre, a density that is compatible with AICUZ guidance.

3.4 AIR QUALITY

Air quality in any given region is measured by the concentration of various pollutants in the atmosphere, typically expressed in units of parts per million (ppm) or in units of micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). Air quality is not only determined by the types and quantities of atmospheric pollutants, but also by surface topography, the size of the air basin, and by prevailing meteorological conditions. Appendix C contains additional air quality information.

3.4.1 Regulatory Requirements

The Clean Air Act (CAA) of 1970 directed the USEPA to develop, implement, and enforce strong environmental regulations that would ensure cleaner air for all Americans. To protect public health and welfare, the USEPA developed concentration-based standards called National Ambient Air Quality Standards (NAAQS). Promulgation of the CAA was driven by the failure of nearly 100 cities to meet the NAAQS for ozone and carbon monoxide and by the inherent limitations in previous regulations to effectively deal with these and other air quality problems. The USEPA established both primary and secondary NAAQS under the provisions of the CAA. Primary standards define levels of air quality necessary to protect public health with an adequate margin of safety. Secondary standards define levels of air quality necessary to protect public welfare (*e.g.*, soil, vegetation, property, and wildlife) from any known or anticipated adverse impacts.

The CAA does not make the NAAQS directly enforceable. However, it does require each state to promulgate a State Implementation Plan (SIP) that provides for “implementation, maintenance, and enforcement” of the NAAQS in nonattainment areas. The General Conformity Rule, published in 58 Federal Register 63214 (November 30, 1993) and codified at 40 CFR part 93, subpart B, requires federal agencies to prepare written conformity determinations for federal actions in or affecting nonattainment areas, except when the action is covered under the Transportation Conformity Rule or when the action is exempted because the total increase in emissions is below the threshold emissions limits. The General Conformity Rule applies to federal actions occurring in air basins designated as nonattainment for criteria pollutants or areas designated as maintenance areas. Federal actions occurring in air basins that are in attainment of the NAAQS are not subject to the Conformity Rule.

3.4.2 Regional Air Quality

Tyndall AFB is located within the Mobile (Alabama)-Pensacola-Panama City (Florida)-Gulfport (Mississippi) Interstate Air Quality Control Region (AQCR) (designated AQCR 5). This AQCR includes counties within Alabama, Florida, and Mississippi. Those counties in Florida include Bay, Calhoun, Escambia, Gulf, Holmes, Jackson, Okaloosa, Santa Rosa, Walton, and Washington. All Florida counties in AQCR 5, including Bay County, are classified by the USEPA as attainment or unclassified for all criteria pollutants. Unclassified indicates that air quality within the AQCR is better than the NAAQS, or cannot be classified and is treated as attainment.

According to Florida Administrative Code (FAC) Rule 17-4, new and existing air pollution sources are required to obtain construction and operation permits as necessary. Sources of emissions, as well as modifications or expansions to existing facilities, must obtain a permit unless specifically exempt.

3.4.3 Bay County Emissions

An accurate regional emissions inventory is needed to assess the potential contribution of a source or group of sources to regional air quality. An emissions inventory is an estimate of total mass emissions of pollutants generated from a source or sources over a period of time, typically 1 year. Since the regional air quality for AQCR 5 includes counties from three states, a more conservative approach would be to include emissions from the Bay County emissions inventory for comparison purposes in this EA. Emissions contributions from Bay County are a fraction of the total contributions to AQCR 5 as a whole.

Current emission quantities for Bay County, presented in Table 3.5-1, include stationary, significant, and grandfathered point sources. Quantities of air pollutants are generally measured in pounds (lbs) per year or tons per year (tpy). Emissions from mobile sources and insignificant or trivial area and volume sources have not been determined for Bay County.

Table 3.5-1 Baseline Emissions Inventory, Bay County, Florida

Criteria Air Pollutant	CO (tpy)	VOC (tpy)	NO _x (tpy)	SO _x (tpy)	PM ₁₀ (tpy)
Bay County Emissions ^a	5,123.00	2,618.00	9,478.00	59,306.00	4,022.00

Note: Volatile organic compound (VOC) is not a criterion pollutant. However, VOC is reported because, as an ozone precursor, it is a controlled pollutant.

CO=carbon monoxide.

NO_x=nitrogen oxides.

SO_x=sulfur oxides.

PM₁₀=particulate matter less than 10 microns in diameter.

^a Summarized from USEPA AirData Emissions for Bay County, Florida (AirData 2004).

Ozone (ground-level ozone), a major component of “smog,” is a secondary pollutant formed in the atmosphere by photochemical reactions involving previously emitted pollutants or precursors. Ozone precursors are mainly NO_x and volatile organic compounds (VOC). Therefore, to control ozone in the atmosphere, the effort is made to

control NO_x and VOC emissions. For this reason, NO_x and VOC emissions are calculated and reported in emissions inventories.

The typical emission sources at Tyndall AFB include boilers, fuel storage tanks, fuel dispensing, fuel loading racks, fuel system repair, fuel spills, furnaces, jet engine testing, abrasive blasting, aerospace ground equipment, welding, woodworking, fire training, entomology, solvent recovery, printed circuit lab, and propane usage (USAF 2004b). Tyndall AFB submitted an application to the Florida Department of Environmental Protection (FDEP) in September 1999 to begin operating as a minor source under a Federally Enforceable State Operating Permit, limiting emissions to below that of a major source. A major source is defined as a stationary source with total emissions of any criteria pollutant greater than the threshold of 250 tpy, thus requiring a Title V operating permit. The Federally Enforceable State Operating Permit was issued to the Base in May 2000 (Tyndall AFB 2003a). Tyndall AFB air emissions are included in the Bay County emissions data shown in Table 3.5-1.

3.5 INFRASTRUCTURE AND UTILITIES

3.5.1 Water Supply

Tyndall AFB purchases its drinking water for the main Base complex from Bay County Utilities, which supplies water to the Bay County area. The primary source of water for Bay County Utilities is Deer Point Lake. The main Base has four backup wells permitted for use by the State of Florida that can be used for potable water in case of emergency (USAF 2004b).

The Bay County water system distributed 8,760,000,000 gallons in 2003, an average of 24 million gallons per day (mgd). The maximum daily output for the Bay County water treatment plant is 50 mgd. Average daily per capita consumption for Bay County customers is 152 gallons (Bay County 2004a).

The Base owns and operates the 60-mile water distribution system that consists of mostly cast steel lines, but also includes cast iron, steel, and plastic pipe (USAF 2004b). Water is supplied to Tyndall AFB through a single pipeline that enters the Base at the Dupont Bridge. The water flows into a 5 million gallon above ground storage tank operated by Bay County on property leased by the Air Force. Water is pumped from the tank into Tyndall AFB's distribution system, which includes three elevated storage tanks. The elevated tanks have a total storage capacity of 650,000 gallons. The average daily consumption rate for Tyndall AFB is 1.28 mgd, and the average daily consumption per person is 108 gallons.

3.5.2 Wastewater Treatment

Wastewater generated at Tyndall AFB is discharged to the Bay County Military Point Waste Water Treatment Plant (MPWWTP) and permitted under a combined permit from the FDEP (Permit No. FL0167959-001-01) to discharge a total of 7.0 mgd. The existing sanitary sewer system has adequate capacity to handle the permitted flow (USAF 2004b). The average amount of wastewater treated at the MPWWTP was

3.5 mgd during 2003 (Bay County 2004b). The treated, clarified effluent is discharged into East Bay.

Tyndall AFB generates about 0.68 mgd of wastewater, which equates to about 9.7 percent of the Bay County MPWWTP capacity of 7 mgd. It is estimated 186,830 gallons of wastewater are generated each day (0.19 mgd) by the 3,279 MFH residents, or 57 gallons per person per day.

The Base's domestic sewage is collected in a predominantly gravity flow system consisting of approximately 50 miles of sewer mains. There are over 50 lift stations and force mains used to connect individual facilities into the system. All sewage on Base, except for housing, is pumped to the wet well at Building 1722. The sewage is then pumped to the Bay County MPWWTP. There are five lift stations within the boundaries of the MFH neighborhoods, including one each in Wood Manor, Felix Lake, Shoal Point, Bay View, and facility 2873 north of Wood Manor. MFH sewage is collected through the lift station at facility 2873, pumped through the 8-inch housing force main, and then tied into the 16-inch primary force main along Boy Scout Road leading to the Bay County MPWWTP. The Base's system consists of clay tile, steel, asbestos, and polyvinyl chloride (PVC) pipe.

3.5.3 Energy

Gulf Power Company supplies and regulates electrical service to Tyndall AFB from a field substation located on the west side of the Base. This substation is fed by two 44 kiloVolt lines. The Base is relocating all overhead lines underground (USAF 2004b). Average annual usage is 99,091,262 kilowatt-hours (kWH), an average of 271,483 kWH per day. Electrical consumption is 0.054 kWH per square foot per day when considering Base buildings contain five million ft² of space (USAF 2004b).

Natural gas is supplied to Tyndall AFB by TECO Peoples Gas and enters the Base from the south side of the Dupont Bridge by way of a 6-inch supply line (USAF 2004b). The distribution system consists mainly of the original steel lines, with replaced sections being polyethylene. The total system capacity is 6.7 million cubic feet (mcf) per day, or 201 mcf per month. The average annual on-Base usage is 150 mcf, with peak natural gas usage being 1.7 mcf per day (USAF 2004b). Based on 5 million ft² of space and 150 mcf per year (12.5 mcf per month), the average daily use per square foot of building space is 8.20×10^{-8} mcf.

3.5.4 Storm Water Management

Tyndall AFB storm water drainage primarily flows southward in areas south of U.S. Highway 98 and northward in areas north of the highway. The storm water collection system is a combination surface drainage in undeveloped areas and underground piping in developed regions of the Base. Surface drainage is adequate for most parts of the Base because water permeates into the sand quickly (USAF 2004b). However, during long periods of heavy rain, the sandy soil tends to erode. Felix Lake and Redfish Point have storm water treatment structures under FAC 62-25. Wood Manor neighborhood storm water drains into the St. Andrew's Sound while runoff from the Shoal Point and Bay View neighborhoods drains into East Bay. As mentioned in Subchapter 2.3, it is

estimated there are approximately 3,002,660 ft² of impervious cover (68.9 acres) in the MFH neighborhoods. Overall, Tyndall AFB has about 650 acres of impervious cover (USAF 2004b).

Tyndall AFB has a Municipal Separate Storm Sewer System Permit (Permit No. FLR04E004) and the Base meets current state and federal storm water permit requirements (Tyndall AFB 2003b). Storm water pollution prevention plans likely include the following erosion control techniques that would be used during demolition to minimize erosion.

- The construction sites would have silt fences surrounding the perimeters of the construction areas.
- Hay bales or other absorbent materials would be installed around storm drainage system inlets to prevent sediment or other contaminants from entering the storm water system during the project.
- The rate of runoff from the construction site would be retarded and controlled mechanically.
- Diversion ditches would be constructed to retard and divert runoff to protected drainage courses. If site characteristics present the potential for storm water sediment to enter the storm water system, drains in the area would be protected with silt fences, hay bales, or an approved equivalent.
- Storm water runoff would be minimized to prevent off-site transport of sediments into Felix Lake, neighboring streams, and ponds using natural vegetation (existing trees, brushes, and grasses) as much as possible to provide a buffer zone to aid in benefiting water quality.
- All entrances to construction sites would be stabilized before construction and further disturbance of the site begins. If a construction site entrance crosses a stream, swale, or other depression, a bridge or culvert would be provided to prevent erosion from unprotected banks.
- Use of swales and other treatment features to reduce discharge of pollutants. Designs of these treatment features should be based on Florida Development manual and treatment criteria for 62-65 FAC.

3.5.5 Solid Waste Management

Municipal solid waste (MSW) at Tyndall AFB is managed in accordance with guidelines specified in Air Force Instruction (AFI) 32-7042, *Solid and Hazardous Waste Compliance*. The AFI incorporates by reference, requirements of Subtitle D, 40 CFR Parts 240 through 244, 257, and 258, and other applicable federal regulations, AFIs, and DoD directives. In general, AFI 32-7042 establishes the requirement for installations to have a solid waste management program composed of the following: a solid waste management plan; procedures for handling, storage, collection, and disposal of solid waste; record-keeping and reporting; and pollution prevention.

Non-hazardous MSW at Tyndall AFB is collected by a private contractor. The MSW from MFH is collected by the contractor in 96-gallon containers and taken to the

Bay County Incinerator (Permit Number 0079596-004-SO) for energy recovery. Ninety-nine percent of the MSW collected is incinerated. The incinerator processes 490 tons of MSW per day and has a maximum capacity of 525 tons per day. It is closed for 2 weeks in October every year for maintenance. During this time, MSW is disposed at the Steelfield Landfill (Permit Number 007875-003-SO) located in Bay County. The landfill is divided into two cells; non-hazardous solid waste (Class One) and construction and demolition waste (Class Three). The Class One cell of the landfill receives 200 tons of ash waste per day from the incinerator (Bay County 2004a). Steelfield Landfill Class One cell has a projected life expectancy of 49 years beginning in 2004, or until 2053. All construction and demolition debris is disposed at the Steelfield Landfill Class Three cell. The cell receives 25 tons of waste per day. Construction waste is generated from construction, renovation, repair, and demolition of structures such as residential and commercial buildings and roads. Overall, construction and demolition waste is composed of wood products, asphalt, drywall, masonry, metals, plastics, earth, shingles, insulation, paper, and cardboard. The majority of the waste is wood, paper and cardboard, and drywall. The Class Three cell landfill has a projected life expectancy of 25 years beginning in 2004 (Bay County 2004c).

Two more Class Three cells are scheduled to open in the next few years. It is expected a permit will be issued for Cell 26 and the cell will be ready for operation in the early part of 2005. Cell 27 is slated for opening in the next few years. The design capacity of Cell 26 is 2,675,310 cubic yards (Bay County 2004c). Assuming a cubic yard of a mixture of burnable and non-burnable materials of construction debris weighs an average of 1,500 pounds (Wilson 1977), the capacity of Cell 26 would be 4,012,965,000 pounds or 2,006,483 tons. The capacity of Cell 27 has yet to be determined.

Solid waste records provided by Tyndall AFB indicate that non-hazardous waste generated for calendar year 2003 was 3,880 tons. Of that amount, 99 percent was incinerated; leaving 39 tons that were landfilled. The Base also generated 236 tons of construction and demolition debris that was landfilled at the Steelfield Landfill Class Three cell. MFH accounted for approximately 37 percent of the total non-hazardous waste in 2003, or 1,430 tons. Based on the anticipated 848 MFH unit inventory, each unit generates approximately 280 pounds of solid waste per month. Using these data, about 237,440 pounds of solid waste would be generated each month in the 848 MFH units considered as the baseline for this action. About 2.5 pounds of solid waste are generated each day per person.

3.5.6 Transportation System

Tyndall AFB is located southeast of the Panama City metropolitan area. U.S. Highway 98 bisects the middle of the peninsula where Tyndall AFB is located. The highway serves as the main artery for the transportation system. Access to the highway is limited to a few intersections. U.S. Highway 98 crosses East Bay at Dupont Bridge, connecting Tyndall AFB to mainland Florida.

The area of the Base north of U.S. Highway 98 has a good existing transportation system. The system is a grid sheet pattern that serves the area well. The road network

south of U.S. Highway 98 consists of the original road system built in 1941. No changes were made to the road network as changes were made to the Base south of the highway. Beacon Beach Road and Sabre Drive were relocated around the Wood Manor MFH neighborhood to relieve congestion and provide safer and efficient traffic flow (USAF 2004b). The Redfish Point and Felix Lake neighborhoods each have two roads that link to Sabre Drive. Sabre Drive serves as the main artery to and from the MFH neighborhoods and provides access to the rest of the Base and U.S. Highway 98. The Bay View and Shoal Point neighborhoods have direct access to U.S. Highway 98.

3.6 BIOLOGICAL RESOURCES

3.6.1 Vegetation and Wildlife

Slash pine and longleaf pine are the predominant tree species at Tyndall AFB and in Bay County. Sparse pine stands in the county and at Tyndall AFB have been clearcut and replaced with slash pines. Water tolerant hardwoods are also prevalent due to soil and hydrological conditions. These include sand pine, water oak, sweetbay, black gum, red maple, black willow, alder, and cypress. The understory at the Base typically consists of sawpalmetto, rosemary, sparse pineland threeawn, huckleberry, and gallberry (Tyndall AFB 1998). The FNAI has identified a sand pine scrub of exceptional quality adjacent to the Redfish Point Extension, and recommends protection of this area from development (FNAI 2000).

Fauna at Tyndall AFB typically include raccoon, rabbit, armadillo, opossum, skunk, bobcat, gray fox, otter, songbirds, wading birds and shorebirds, reptiles, and amphibians. Wildlife game species at the Base include white-tailed deer, squirrel, turkey, bobwhite quail, and waterfowl (Tyndall AFB 1998). Sport freshwater and saltwater fish species in the vicinity of Tyndall AFB include largemouth bass, bluegill, redbreasted sunfish, catfish, speckled trout, redfish, and mackerel (Tyndall AFB 1999).

3.6.2 Threatened and Endangered Species

The potential for threatened and endangered (T&E) or special status species to occur in the housing area is low due to development and general lack of wildlife habitat. The Redfish Point Extension consists of an undeveloped wooded area with thick underbrush, which provides ample habitat for T&E species. Surveys of the previously vacant areas currently occupied by the Felix Lake and Redfish Point neighborhoods were conducted in March-April 1993 to determine the presence of T&E plant and animal species. Two management concern plant species, the Gulf Coast lupine and the large-leaved joint weed, were found within the surveyed sites. In addition, gopher tortoises, a management concern species, were found within the sites. United States Fish and Wildlife Service (USFWS) recommended an additional survey for the Eastern indigo snake, a threatened species known to inhabit gopher tortoise holes during cooler months. No Eastern indigo snakes were found (Tyndall AFB 1999). Table 3.6-1 contains the T&E plant and animal species that potentially occur on Tyndall AFB. The MFH areas do not contain suitable habitat for many of these species.

The Florida Fish and Wildlife Conservation Commission conduct annual surveys of Tyndall AFB for bald eagle nests. The surveys are conducted via helicopter and the results are reported to Tyndall AFB Natural Resources personnel for monitoring throughout the year (Mobley 2005). A bald eagle is currently nesting in a forested area on the eastern side of Felix Lake approximately 0.25 miles north of the Felix Lake neighborhood. The Redfish Point and proposed Redfish Point Extension neighborhood are located approximately 0.4 miles directly west of the bald eagle's nest and outside the 1,500-foot bald eagle buffer zone established by the Base (USAF 2005).

3.6.3 Wetlands

There are many types of wetlands on Tyndall AFB, accounting for 40 percent of the land. The predominant wetland type is designated Palustrine-Forested. Although wetlands occur adjacent to MFH neighborhoods, the majority of neighborhoods are not within any of the designated wetlands boundaries (USAF 2004b). A small portion of the northeast corner of the Felix Lake neighborhood and portions of the northern half of Redfish Point Extension are within a designated Palustrine-Forested Wetlands area. Also, small portions of southern Shoal Point and northern Bay View neighborhoods include Estuarine Wetlands. Figure 3-3, at the end of this chapter, is based on a National Wetlands Inventory map and shows the wetlands areas in the vicinity of the MFH neighborhoods. However, National Wetlands Inventory maps typically do not show the precise location of wetlands. Therefore, areas should be physically assessed to ensure an accurate wetland line prior to any development.

3.6.4 Floodplains

The 100-year floodplain lies within and along the eastern boundaries of Shoal Point and Bay View neighborhoods. The floodplain affects the areas associated with the shorelines of the peninsula, but does not account for tidal surge flood areas (USAF 2004b). Tropical storms can produce torrential rains and tidal surges that cause flooding. Tidal surge heights at Beacon Beach have historically reached 5.9, 8.4, 11.2, 14.9, and 17.4 feet above national geodetic vertical data for category 1, 2, 3, 4, and 5 hurricanes, respectively (Tyndall AFB 2004d). Historical tidal surge heights along the Shoal Point and Bay View shoreline have reached 4.0, 6.0, 7.8, 9.8, and 12.7 feet above national geodetic vertical data for category 1, 2, 3, 4, and 5 hurricanes, respectively (Tyndall AFB 2004d). Figure 3-3, at the end of this chapter, depicts the 100-year floodplain for areas in the vicinity of the MFH neighborhoods.

3.7 GROUNDWATER RESOURCES

The approximate average depth to groundwater at Tyndall AFB is 1 to 15 feet, with the general flow direction moving northeast and southwest following the overall topographical slope of the Base. Two aquifer systems are present at the Base. The upper aquifer temporarily stores percolated rainfall, and is approximately 100 feet thick, depending on the frequency and severity of rainfall events. The second aquifer, the

Table 3.6-1 Threatened and Endangered Plant and Animal Species

	Federal Status	State Status		Federal Status	State Status
ANIMAL SPECIES			PLANT SPECIES		
FISH			Apalachicola dragonhead		T
Gulf sturgeon	T	SSC	Bog Tupelo	MC	
BIRDS			Chapman's butterwort	MC	
American oystercatcher		SSC	Chapman's crownbeard		T
Peregrine falcon		E	Dew thread sundew		E
Bald eagle	T	T	Giant water dropwort	MC	
Black skimmer		SSC	Godfrey's golden	MC	T
Brown pelican		SSC	Gulf coast lupine	MC	
Least tern		T	Harper's yellow-eyed grass		T
Little blue heron		SSC	Henry's spider lily	MC	E
Osprey		SSC	Large-leaved jointweed	MC	T
Piping plover	T	T	Quillwort yellow-eyed grass		E
Reddish egret		SSC	Southern milkweed		T
Snowy egret		SSC	Spoon-leafed sundew		LT
Snowy plover		T	Thick-leaved water willow	MC	E
Southeastern American kestrel		T	Violet-flowered butterwort	T	E
Tricolor heron		SSC			
White ibis		SSC			
REPTILES					
Alligator snapping turtle		SSC			
American alligator	T	SSC			
Gopher tortoise		SSC			
Green sea turtle	E	E			
Hawksbill sea turtle	E	E			
Kemp's Ridley turtle	E	E			
Leatherback sea turtle	E	E			
Loggerhead sea turtle	T	T			
MAMMALS					
Choctawhatchee beach mouse	E	E			
Florida black bear		T			
Manatee	E	E			
St. Andrew beach mouse	E	E			

MC Candidate for Endangered and Threatened Species List
E Endangered Species
SSC Species of Special Concern
T Threatened Species

Floridian Aquifer, is approximately 1,100 feet thick and separated from the upper aquifer by a low permeability layer approximately 150 feet thick. Potable water within the Floridian Aquifer underlying Tyndall AFB exists only between depths of 250 to 500 feet (Tyndall AFB 1999).

3.8 EARTH RESOURCES

3.8.1 Geology

Unconsolidated sands and clayey sands from the Pliocene age (10 million years ago) to a more recent age extend to approximately 110 feet below Tyndall AFB. These sands are moderately permeable and are able to transmit water readily, although occasional clayey sand and hardpan layers occurring at varying depths within the formation impede the downward movement of groundwater (Tyndall AFB 1999).

Poorly cemented shell beds of the Intracoastal Formation lie below the unconsolidated and clayey sands. This formation occurs at depths from 110 feet to approximately 330 feet, and contains abundant fossils, quartz sand, and calcium carbonate grains cemented by crystalline calcite and clay. The upper portion of this formation, like the deeper portions of the sand layer above this formation, is of the Pliocene Age. The lower portion of the formation is of the Miocene age (greater than 10 million years ago). The upper Pliocene portion of this formation is relatively impermeable, while the lower Miocene portion is highly permeable. Highly permeable limestone of the Miocene age occurs below the Intracoastal Formation to depths often exceeding 600 feet (Tyndall AFB 1999).

3.8.2 Topography

Tyndall AFB lies within the Coastal Lowland section of the Atlantic Coastal Plain physiographic province. The maximum elevation of Tyndall AFB is 20 to 30 feet above mean sea level and is located along a ridge that generally follows U.S. Highway 98 (Tyndall AFB 1999). Southwest of the ridge are areas within the Beach Dunes and Wave-Cut Bluffs physiographic region, while northeast of the ridge are areas within the Flatwoods Forest physiographic region. Surface features prevalent within the Beach Dunes and Wave-Cut Bluffs physiographic region include estuaries, lagoons, spits, barrier islands, and sand dunes. Surface features within the Flatwoods Forest physiographic region consist of nearly flat land covered with pine vegetation. Spot topographic elevations range between 13 and 20 feet above mean sea level in the MFH areas (Tyndall AFB 1999).

3.8.3 Soil

Tyndall AFB soil is generally considered sandy and acidic, with moderate to good productivity for timber. The soil underlying the MFH areas is Kureb-Resota-Mandarin (USAF 2004b).

The landscape of the Kureb-Resota-Mandarin soil is primarily one of nearly level to gently sloping ridges along the coastline. Drainage of the soil ranges from excessively drained, moderately well drained, and somewhat poorly drained. The soil is sandy to a depth of 80 inches or more, some of which are organic stained sandy layers (USAF 2004b). The Kureb-Resota-Mandarin soil underlying the housing areas is approximately 28 percent Kureb soil, 28 percent Resota soil, 28 percent Mandarin soil, and 16 percent soil of minor extent.

3.9 HAZARDOUS MATERIALS AND WASTE

3.9.1 Hazardous Materials

Hazardous materials are those substances defined by the United States Department of Transportation (USDOT) (49 CFR 105.5). The Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) (42 USC 6901, *et seq.*), that was further amended by the Hazardous and Solid Waste Amendments of 1984, defines hazardous waste. In general, both hazardous materials and waste include substances that, because of their quantity, concentration, physical, chemical, or infectious characteristics, may present substantial danger to public health or welfare or to the environment when released or otherwise improperly managed.

Management of hazardous materials at Air Force installations is established primarily by AFI 32-7086, *Hazardous Materials Management*. The AFI incorporates the requirements of federal regulations, other AFIs, and DoD directives, for reduction of hazardous material uses and purchases.

Hazardous materials are managed by the Base's Hazardous Materials Management Office (HAZMO). Base personnel are also required to maintain an accurate file of Material Safety Data Sheets for all hazardous materials used. Use of a hazardous materials inventory program reduces the need to store large quantities of hazardous materials on Base and allows these materials to be ordered on an as-needed basis (USAF 2004b).

Residents of the Tyndall AFB housing areas may purchase cleaning supplies and other chemicals for personal use that contain constituents classified as hazardous materials. However, the Base does not track these purchases and the quantity of these materials is unknown. Small quantities of residential-type hazardous and non-hazardous substances (*e.g.*, gasoline, maintenance and cleaning products, and commercially available pesticides) likely are present in the housing units.

3.9.2 Hazardous Waste

Unless otherwise exempted by Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) regulations, RCRA Subtitle C (40 CFR Parts 260 through 270 and 280) regulations are administered by the USEPA and are applicable to management of hazardous waste. Hazardous waste must be handled, stored, transported, disposed, or recycled in accordance with these regulations.

Hazardous waste generated at the Base includes: antifreeze, paint, stripping elements, acids, batteries, oils, contaminated fuels, and spent solvents. Hazardous waste accumulation points are Base facilities where hazardous waste is generated and small quantities are stored. Two accumulation sites, the flightline fire station (facility 319) and the primary hazardous waste accumulation site (facility 6011), are the only places where more than 55 gallons of hazardous waste can be stored. Hazardous waste is transported off-Base by a contractor and disposed in accordance with applicable directives. Personnel at facilities 319 and 6011 maintain spill cleanup readiness (USAF 2004b). No accumulation points occur within 1 mile of the MFH areas.

3.9.3 Installation Restoration Program

The Air Force established the IRP in 1983 to identify, characterize, and evaluate past (pre January 1984) disposal sites and remediate contamination on its installations as needed to control migration of contaminants and potential hazards to ecological resources, human health, and the environment in accordance with CERCLA requirements. IRP goals are to protect human health and the environment by cleaning up and restoring Air Force sites where past activities created contamination from toxic and hazardous substances, low-level radioactive materials, petroleum, oil and lubricants. Current IRP efforts are aimed at characterizing all active sites, determining future remedial actions, and implementing interim removal or remediation actions to reduce risks and eliminate contamination sources. Air Force policy is that sites where contamination has not entirely occurred after January 1984 are covered under the IRP. Sites where all contamination has occurred since January 1984 are remediated under the Compliance Cleanup program.

There are three former IRP sites (LF001, LF002, and LF003) within a 1-mile radius of the MFH areas, one of which is located adjacent to the Bay View neighborhood. Figure 3-4, at the end of this chapter, shows the location of the three sites.

Wherry Landfill

Wherry Landfill (LF001) is located southeast of the Bay View neighborhood and was initially identified in 1981. The landfill reportedly received general refuse and mess hall waste from 1943 to 1948 (USAF 2004b). A Remedial Investigation Work Plan was issued January 2003 followed by field activities that included soil and groundwater sampling in February 2003. Analytical data suggest that no addressed risk to human health exists because constituent levels are very low. Accordingly, the Base is seeking no further remedial action planned (NFRAP) status for the Wherry Landfill/LF001.

Sabre Drive Landfill

Sabre Drive Landfill (LF002) is located west of the Bay View neighborhood across U.S. Highway 98. The groundwater near the coastal ridge along U.S. Highway 98 may be as deep as 15 feet and generally flows northeast and southwest from the ridge. The site has already undergone remedial investigations and has regulatory concurrence for closure (McLernan 2004). The landfill received general refuse from 1943 to 1965 and was initially identified in 1981 (USAF 2004b). Confirmatory sampling was completed in October 2000 and no criteria were exceeded. NFRAP recommendation was submitted to, and approved by FDEP and USEPA Region IV, in July 2002.

Beacon Beach Landfill

Beacon Beach Road Landfill (LF003) is located southeast of the Wood Manor neighborhood, on the southern side of Sabre Drive. The site has undergone remedial investigations and regulatory concurrence for closure is pending (McLernan 2004). The landfill received general refuse without a liner from 1952 to 1965 and was initially identified in 1981 (USAF 2004b). A Remedial Investigation Work Plan was issued January 2003, followed by field activities that included soil and groundwater sampling in February 2003. Analytical data indicate that none of the target compounds were detected

above regulatory limits. Tyndall AFB is seeking NFRAP. This landfill is pending closure with regulatory concurrence and requires no further remedial actions.

3.9.4 Asbestos

Asbestos management at Air Force installations is established in AFI 32-1052, *Facility Asbestos Management*. AFI 32-1052 incorporates by reference applicable requirements of 29 CFR 669 *et seq.*, 29 CFR 1910.1025, 29 CFR 1926.58, 40 CFR 61.140, Section 112 of the CAA, and other applicable AFIs and DoD directives. AFI 32-1052 requires installations to develop an asbestos management plan for the purpose of maintaining a permanent record of the current status and condition of all ACM in the installation's inventory of facilities and documenting all asbestos management efforts. In addition, the AFI requires installations to develop an asbestos operating plan that details how the installation would conduct asbestos-related projects. Asbestos is regulated by the USEPA with the authority promulgated under OSHA, 29 USC §§669 *et seq.* Emissions of asbestos fibers to ambient air are regulated under Section 112 of the CAA.

Four asbestos surveys have been conducted at Tyndall AFB. None of the four studies included the MFH areas. Units in the Wood Manor and Bay View neighborhoods were constructed when ACM was commonly used; therefore, ACM could be present in those units. ACM mitigation is conducted during major building renovations (USAF 2004b). Each building is assessed for ACM risk, and based on the assessment, ACM is encapsulated, removed, or left in place.

3.9.5 Lead-Based Paint

The Residential Lead-Based Paint Hazard Reduction Act of 1992, Subtitle B, Section 408 (commonly called Title X), was passed by Congress on October 28, 1992, and regulates the use and disposal of LBP at federal facilities. Federal agencies are required to comply with all applicable federal, state, interstate, and local laws relating to LBP activities and hazards.

Lead-based paint management at Air Force installations is established in the Air Force policy and guidance on LBP in facilities. The policy incorporates by reference the requirements of 29 CFR 1910.1025, 29 CFR 1926, 40 CFR 50.12, 40 CFR 240 through 280, the CAA, Public Law 102-550, and other applicable federal regulations. This policy requires each installation to develop and implement a facility management plan for identifying, evaluating, managing, and abating LBP hazards.

Random sampling associated with renovations of MFH units in 1995 yielded a few positive results, but no eminently dangerous situations (USAF 2004b). There are indications of LBP in window and door frames, but neither chip samples nor soil samples were taken during the surveys. Currently, a pamphlet written by the USEPA is distributed to resident families by the 325th Civil Engineering Squadron/Civil Engineering Housing (CES/CEH) to provide the families with information on the dangers of possible LBP in older homes. A statement of disclosure providing information on LBP hazards associated with the leased units is given to residents in housing units built before 1978. The occupant acknowledges disclosure with a signature.

3.9.6 Pesticides

Pesticides at Tyndall AFB are managed under the Base's *Pest Management Plan*, as established by DoD Directive 4150.7. The plan emphasizes inspection and integrated pest management techniques. The Base pest management program includes inspection and control-as-necessary of household pests, structural pests, stored product pests, public health pests, ornamental and turf pests, and monitoring of pest control contracts. All Base pest management and golf course personnel who apply pesticides on Base property are required to be DoD certified to ensure that pesticides are applied according to the directions for the product.

Historically, pesticides have been used in Air Force MFH areas to control disease vectors and minimize damage to structures by termites. Based on the age of the MFH, it is likely that chlordane and other pesticides may exist in the soil beneath and surrounding the existing structures in MFH areas due to the probable application of these pesticides prior to the 1980s.

3.10 CULTURAL RESOURCES

Cultural resources are prehistoric and historic sites, structures, districts, artifacts, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or any other reason. Cultural resources are divided into two categories: (1) historical resources (historic buildings and structures) and (2) archaeological resources (prehistoric, historic, and traditional). In addition to NEPA, the primary laws pertaining to the treatment of cultural resources during environmental analysis are the National Historic Preservation Act (especially Sections 106 and 110), the Archaeological Resources Protection Act, the American Indian Religious Freedom Act, and the Native American Graves Protection and Repatriation Act.

Only those cultural resources determined to be potentially significant are subject to protection from adverse impacts resulting from an undertaking. To be considered significant, cultural resources must meet one or more of the criteria that would make that resource eligible for inclusion in the National Register of Historic Places (NRHP). The term "eligible for inclusion in the National Register" includes both properties formally determined as a historic place by the Secretary of the Interior and all other properties that meet NRHP listing criteria specified in Department of Interior regulations (36 CFR 60.4). Therefore, sites not yet evaluated may be considered potentially eligible for the NRHP and, as such, afforded the same regulatory consideration as nominated properties. Whether prehistoric, historic, or traditional, significant cultural resources are referred to as "historic properties."

Cultural resources management at Air Force installations is established in AFI 32-7065, *Cultural Resources Management*. AFI 32-7065 details compliance requirements for protecting cultural resources, including preparation of an Integrated Cultural Resources Management Plan (ICRMP). Tyndall AFB completed an ICRMP in 2003. Additionally, the National Park Service updated the 1996 Archaeology Inventory Historic Preservation Plan to Department of Interior standards in 2004.

3.10.1 Historic Resources

Historic settlement in the area of Tyndall AFB occurred in the early 19th century. The primary economic resources for early settlements established in the 1820s through the 1840s were production of timber, beeswax, candles, honey, and cotton. Most of the settlements in the area during this period were located in the northern portion of the St. Andrew Bay area.

During the Civil War period (1861-1865), production of salt for the Confederacy became the primary economic resource. This prompted Union forces to invade, raid, and destroy the local salt works. The Union established a prison camp at Redfish Point to imprison Union Naval blockade runners. At this time, this was the only settlement located on what is now the Tyndall AFB area.

During the late 19th and early 20th centuries, more areas of Tyndall AFB were settled. The new developments included hotels, a crab and scallop factory, two fish camps, a lodge with cabins, and many small commercial fishing operations. Also at this time, turpentine manufacturing became an economic resource. It is documented that at least three turpentine factories were located on present day Tyndall AFB lands. Twenty-two various sites from the late 19th and early 20th centuries have been recorded on Tyndall AFB (Tyndall AFB 2003b).

A comprehensive facilities survey was conducted at Tyndall AFB in 1996. The survey found 604 buildings under the Base's jurisdiction that were built before 1955. Of these 604 buildings, three were deemed eligible for the NRHP. The structures were the Commander's Residence (Building 2715), Chapel #1, and the Golf Course Clubhouse (Building 3029). The structures were nominated for inclusion on the NRHP in 1976 and 1995 but the nominations were found to be insufficient and the buildings were not accepted. It was determined that the remaining 604 buildings were of commonplace design and construction and were not eligible. No historic buildings, structures, or objects are located in the housing privatization areas.

One hundred and twenty WWII era buildings and 32 Cold War buildings were also assessed during the 1996 survey. Of the 152 buildings, 19 were evaluated as being potentially eligible for the NRHP. However, the 152 WWII era and Cold War buildings are not part of the privatization project.

3.10.2 Archaeological Resources

The cultural resources chronology of the Tyndall AFB region extends into the past for approximately 14,000 years. Major divisions of prehistoric occupation in the region are the Paleo-Indian period (approximately 12,000 B.C. – 8,000 B.C.), the Archaic period (8,000 B.C. – 1,000 B.C.), the Woodland Stage (1,000 B.C. – A.D. 1,200), and the Mississippian Stage (A.D. 1,200 - 1700) (Tyndall AFB 2003c).

Archeological research has been accomplished on Tyndall AFB for over 100 years. Approximately 14 formal surveys have been conducted on land now covered by the Base. The majority of the surveys focused on coastal area sites. The first and only modern Phase 1 archeological survey was conducted in 1993. The survey identified several inland sites of interest that may warrant further investigation (Tyndall AFB 2003c).

A systematic cultural resource assessment was accomplished on a 300-acre parcel near Felix Lake in 1993. The land surveyed included the 76.5 acres on which the Felix Lake neighborhood was constructed in 1997. The assessment identified areas of high and low probability to contain archeological sites (Tyndall AFB 2003c). Figure 3-5, at the end of this chapter, depicts the archeological areas.

In 1984, a survey was conducted along the shoreline area adjoining a stream in the Bay View neighborhood (refer to Figure 3-5, at the end of this chapter). The survey revealed remnants of prehistoric artifact scattered throughout the area including aboriginal ceramics and shell food remains. The survey also noted that the area was severely disturbed due to erosion activity and residential and commercial activities (USAF 2005).

In 1994, test excavations were conducted at the Morehead site located in the Redfish Point Extension (refer to Figure 3-5). The excavation revealed remnants from the Archaic period. Several portions of the site were deemed eligible for the NRHP. The Morehead site lies in the area proposed for the Redfish Point Extension. The site is being reviewed by the National Park Services Archeological Center to determine its eligibility as a protected site. The Morehead site would be conveyed with the Redfish Point Extension land if the site is not eligible for the NRHP (Keegan 2004).

3.11 SOCIOECONOMIC RESOURCES

3.11.1 Population

Tyndall AFB is located in the Panama City Metropolitan Statistical Area, which comprises Bay County, and the major Cities of Panama City and Lynn Haven. The estimated population for Bay County in 2003 was 154,827, a 4 percent increase since 2000, with a projected population of 176,600 by 2015. In-migration accounts for the majority of population increase. Approximately 16 percent of the Bay County population is minority.

As indicated in Table 3.11-1 the population of Bay County was 148,217 in 2000, an increase of approximately 17 percent from 1990. The City of Lynn Haven grew at a faster rate, while Panama City had a very modest 6 percent increase during that same time period. During the 1990-2000 time period, population for the entire State of Florida increased 24 percent.

The current on-Base day-time population approximates 12,000, which includes 4,190 military personnel, 5,400 military dependents, and 2,700 civilian employees. Approximately 8,100 military retirees reside in the vicinity of Tyndall AFB.

Table 3.11-1 Population Trends, 1990-2000

Geographic Area	Estimated Population, 2003	Percent Population Change (1990-2000)	2000 Population	1990 Population
Bay County	154,827	16.7	148,217	126,994
Panama City	NA	5.9	36,417	34,378
Lynn Haven	NA	33.9	12,451	9,298

NA : Data not available at this geographic level.

Source: U.S. Department of Commerce, U.S. Census Bureau, 2000 Census.

3.11.2 Housing

Table 3.11-2 portrays the housing characteristics for Bay County, Panama City, and Lynn Haven. According to the 2000 U.S. Census there were 78,435 housing units in Bay County, a 19 percent increase from 1990. Approximately 20 percent of these units were in Panama City. Almost 70 percent of the housing units in Bay County are owner-occupied, with a lower owner-occupancy rate in Panama City and a higher owner-occupancy rate in Lynn Haven. Approximately 24 percent of the housing units in Bay County were classified as vacant in the 2000 U.S. Census. However, almost one-half of the vacant units are classified as seasonal, recreational, or occasional use.

The median value of owner-occupied housing varies widely throughout Bay County. The overall median value for owner-occupied housing in Bay County is \$83,700 according to the 2000 U.S. Census, with median values of \$75,200 in Panama City and \$96,300 in Lynn Haven. Median household income also varies widely, with Bay County having a median household income of \$36,092 in 2000. Similar to the owner-occupancy rates, Panama City has a lower median household income and Lynn Haven a higher household income. The percentage of the population below the poverty level in 2000 in Bay County was 12.7 percent compared to 11.7 percent for the State of Florida.

Table 3.11-2 Housing Characteristics, 2000

Jurisdiction	Total Housing Units	Percent Owner-Occupied	Percent Vacant	Median Value (Owner-Occupied)	Median Monthly Contract Rent	Median Household Income
Bay County	78,435	69	24	\$83,700	\$442	\$36,092
Panama City	16,548	58	10	\$75,200	\$435	\$31,572
Lynn Haven	5,243	77	7	\$96,300	\$417	\$42,105

Source: U.S. Department of Commerce, U.S. Census Bureau, 2000 Census.

3.11.3 Education

The Bay County School District serves the entire of Bay County, including Tyndall AFB. The district has 36 public schools with an enrollment approximating 27,000 students. The district includes 20 elementary schools; six middle schools; five senior high schools; four special purpose schools; and one vocational-technical facility. The Tyndall Elementary School, located on Tyndall AFB, has an enrollment of approximately 800 students. The district has an on-going capital improvements program, and constructs and updates facilities as the community's growth pattern dictates. The district has begun an aggressive program to renovate and construct school buildings as a result of the passage of a sales tax referendum in 1998, with classroom additions and renovations completed on 27 schools by the end of 2003.

3.11.4 Economy

Table 3.11-3 portrays the labor force, employment, and unemployment rate for Bay County. The 2003 average annual civilian labor force of 71,864 represents an 11 percent increase from 1995. Total employment in Bay County in 2003 was approximately 68,000, with an unemployment rate of 5.4 percent. The annual average unemployment rate for the State of Florida in 2003 was 5.2 percent.

Table 3.11-3 Annual Civilian Labor Force, Employment, and Unemployment Rates

Jurisdiction	Labor Force, 2003	Employment, 2003	Unemployment Rate 2003
Bay County	71,864	67,977	5.4

Source: U.S. Department of Labor, Bureau of Labor Statistics, 2003.

Table 3.11-4 displays the distribution of employment by industry sector in Bay County in 2002. The total employment in Bay County was greater than the labor force indicated in Table 3.11-3 because (1) the employment in Table 3.11-4 is based on place of work – which is Bay County, and (2) the civilian labor force does not include military personnel. There is a net in-migration of labor from the surrounding counties for employment in Bay County.

Bay County's economic base is well diversified and represents a broad range of various industry sectors. As indicated in Table 3.11-4 the services and retail trade sectors account for 56 percent of the employment in Bay County. The tourism industry is a primary economic engine with four million annual visitors, and generates an economic impact of \$1.5 billion annually. The government sector is also a major employer comprising 17 percent of the county's employment in 2002. Federal civilian and military employment accounts for almost one-half of the government employment in Bay County.

Tyndall AFB, Bay County School Board, and the Navy's Coastal Systems Station are the largest local contributors to Bay County's economic base. Tyndall AFB contributes significantly to the Bay County economy through its direct employment and purchases of goods and supplies from local businesses. The total annual estimated economic impact of Tyndall AFB within a 50-mile radius of the Base is \$301 million.

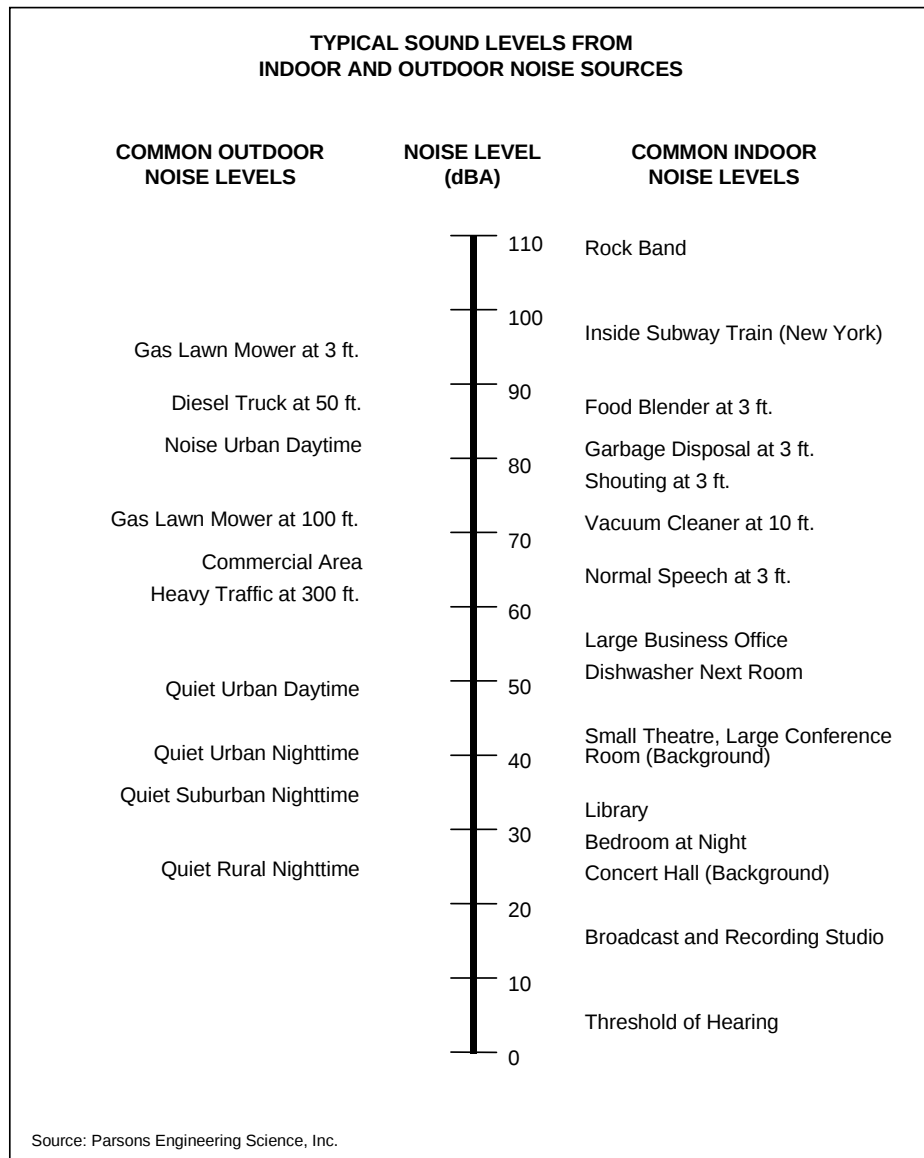
Excluding retirees, the annual military payroll is \$123 million with the annual civilian payroll being \$38 million. In addition, the Base has annual contracts with local businesses and entities totaling \$67 million.

Table 3.11-4 Total Full-and Part-Time Employment by Major Industry Sector by Place of Work, Bay County, Florida, 2002

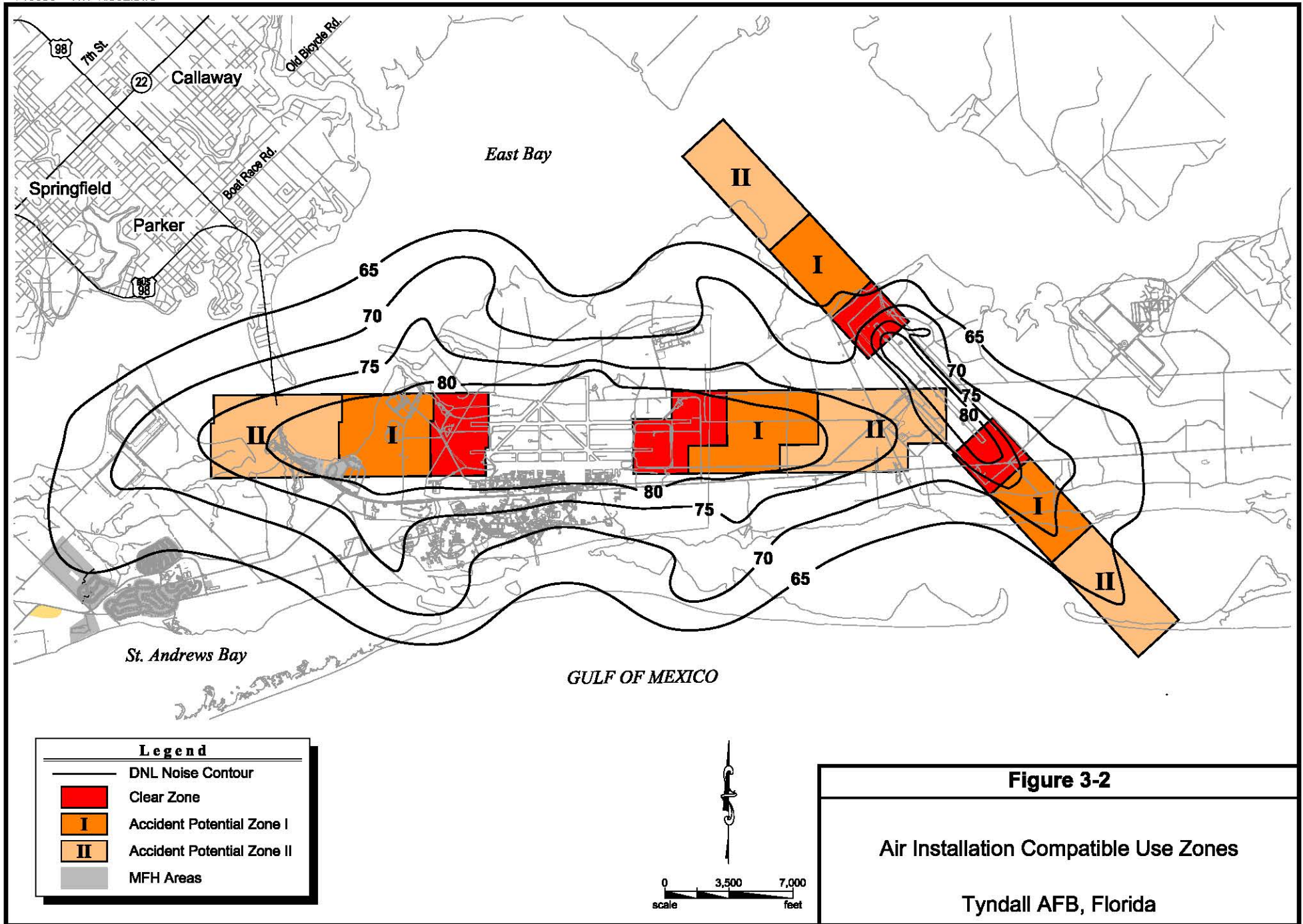
Industry Sector	Total Employment, 2002	Percent of Total Employment
Farming	99	Negligible
Agriculture, Forestry, Fisheries	588	<1
Mining	47	Negligible
Construction	6,465	7
Manufacturing	3,284	4
Transportation, Communication, Utilities	1,789	2
Wholesale Trade	2,731	3
Retail Trade	20,760	24
Financial, Insurance, Real Estate	7,818	9
Services	27,957	32
Government	15,128	17
Total	86,667	100

Source: U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Accounts, 2003.

Figure 3-1 Typical A-Weighted Noise Levels



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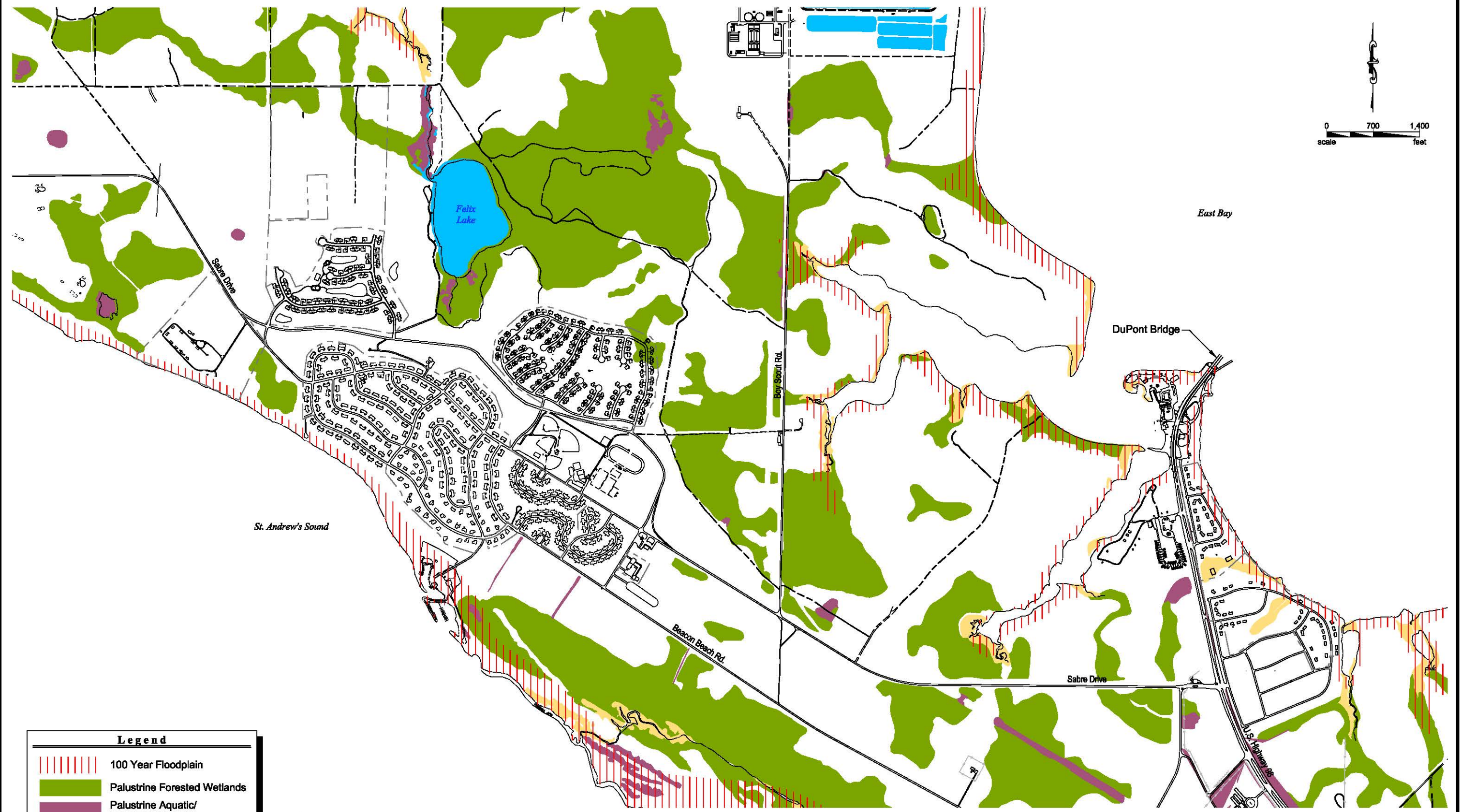
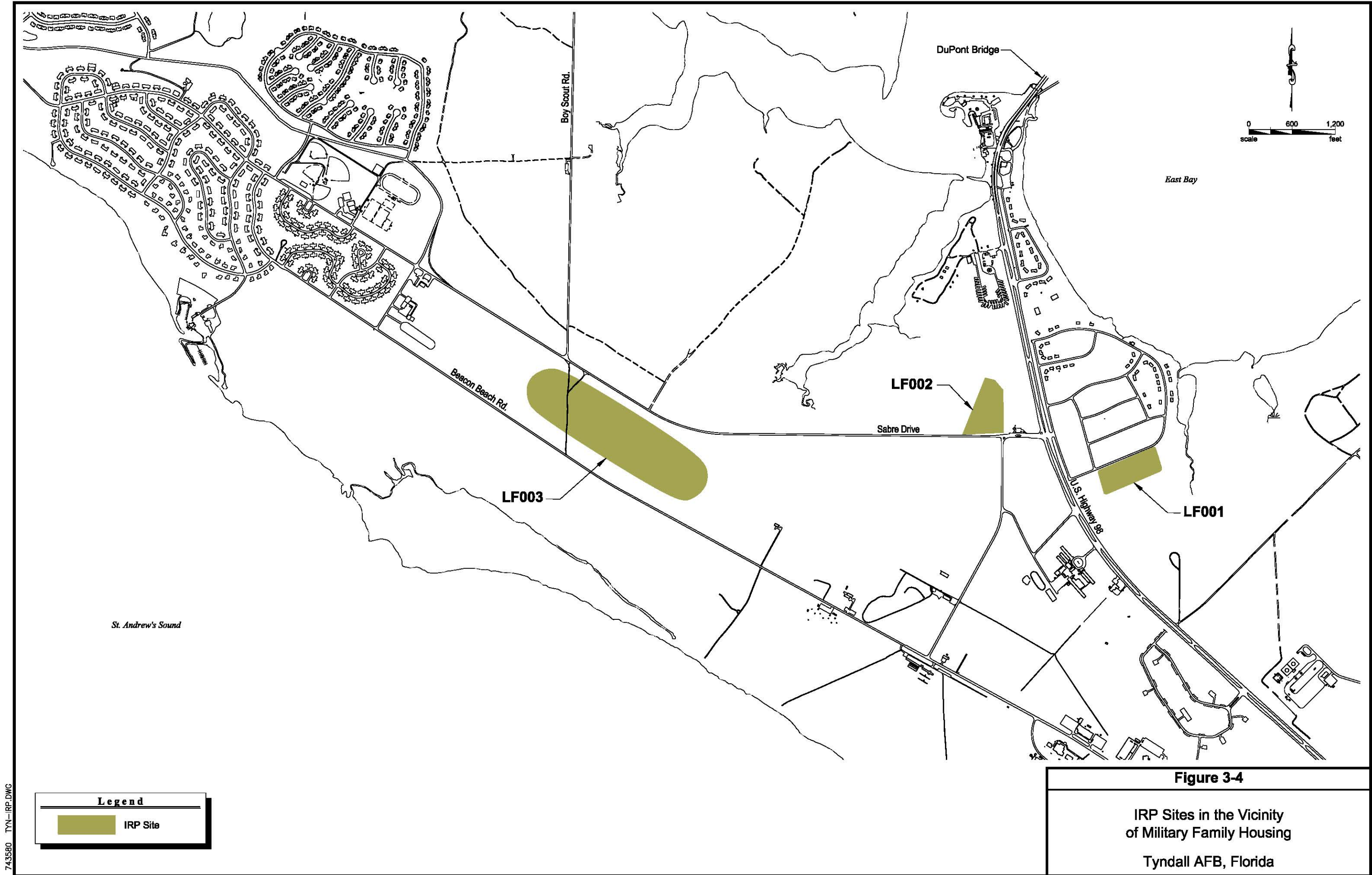


Figure 3-3

Wetlands and Floodplain

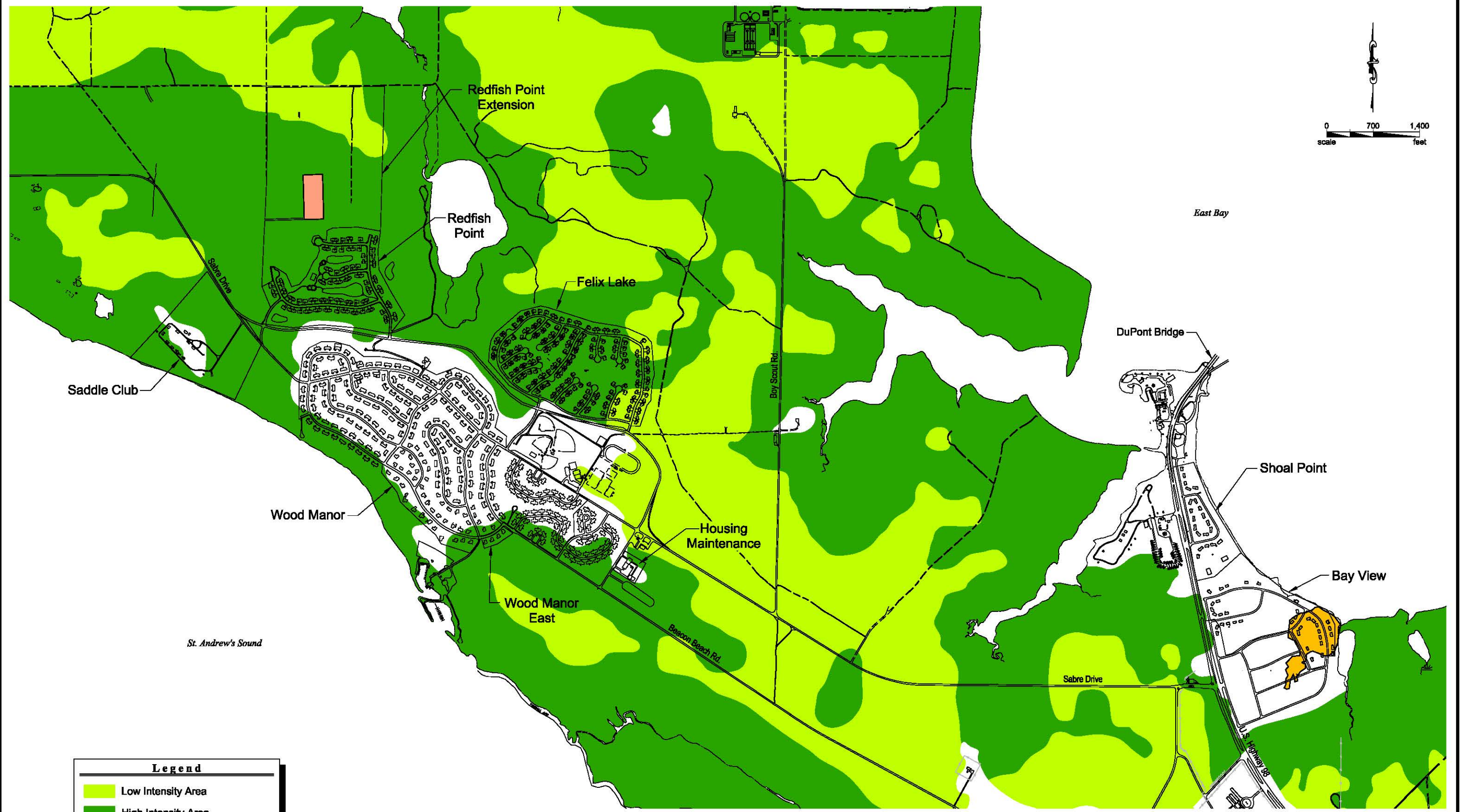
Tyndall AFB, Florida

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Legend	
	Low Intensity Area
	High Intensity Area
	Morehead Archaeological Site
	Site 8BY137 Archaeological Site

Figure 3-5

Probability Areas for Archaeological Sites

Tyndall AFB, Florida

Source: 325CES/CEV

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CHAPTER 4 ENVIRONMENTAL CONSEQUENCES

This chapter provides analysis of the environmental consequences of the No Action Alternative, Proposed Action, and Maximum Development Alternative.

4.1 MISSION

Although demolition and construction activities, as well as management of the MFH units, would be accomplished by a privatization contractor, the housing activities associated with the Proposed Action and Maximum Development Alternative would be consistent with those of the baseline condition. The quality of housing would be improved under the Proposed Action and Maximum Development Alternative and would meet Air Force standards, benefiting the Base mission. The No Action Alternative would not fulfill the need for the Air Force to provide suitable housing for its military members and is not desirable because the majority of the Wood Manor MFH units are in fair condition, potentially requiring mechanical, electrical, and functional upgrades and expansions. Existing resources would not allow for renovation of the units to meet Air Force MFH housing standards.

4.2 NOISE

The following evaluation criteria were used to determine the impacts of noise:

- The degree to which noise levels generated by demolition and construction activities would be greater than the ambient noise levels;
- The degree to which there would be annoyance, speech interference, and loss of sleep; and
- The proximity of noise-sensitive receptors, such as MFH units, to the noise source.

4.2.1 No Action Alternative

Under the No Action Alternative, the MFH units would not be privatized and the units would continue to be maintained by the Air Force. However, 35 units would be demolished.

Assuming that noise from equipment radiates equally in all directions, the sound intensity would diminish inversely as the square of the distance from the source. Therefore, in a free field (no reflections of sound), the sound pressure level decreases 6 decibels with each doubling of the distance from the source. Under most conditions, reflected sound will reduce the attenuation due to distance. Therefore, doubling the distance may only result in a decrease of 4 to 5 decibels (AIHA 1996). Table 4.2-1 shows the anticipated sound pressure levels at a distance of 50 feet for miscellaneous heavy equipment.

Table 4.2-1 Heavy Equipment Noise Levels Measured at 50 Feet

Equipment Type	Number Used ¹	Generated Noise Levels, L_p (dB) ²
Bulldozer	1	88
Backhoe (rubber tire)	1	80
Front Loader (rubber tire)	1	80
Concrete Truck	1	75
Concrete Finisher	1	80
Crane	1	75
Asphalt Spreader	1	80
Roller	1	80
Flat Bed Truck (18 wheel)	1	75
Scraper	1	89
Trenching Machine	1	85

1 Estimated number in use at any time.

2 L_p = sound pressure level

Source: CERL 1978.

Housing units would be demolished under the No Action Alternative. The primary source of noise from this activity would be from equipment and vehicles involved in demolition work. Typical noise levels generated by these activities range from 75 to 89 dBA at 50 feet from the source. Sensitive receptors in the vicinity of these short-term activities could include occupied housing units not yet demolished and near the equipment being operated.

For analysis purposes, it is estimated the shortest distance between a demolition noise source and a residence would be about 100 feet. Conservatively, outdoor noise at an occupied residence could range from as high as 71 to 85 dB at 100 feet from the source. However, the noise level could be lower if the sound is not reflected. Indoor noise levels are generally 18 to 27 dBA lower than outdoor noise levels because building structures attenuate the outdoor noise levels. It is anticipated that demolition activities would occur between 7:30 a.m. and 4:30 p.m., 5 days per week for the duration of the project. The noise would be temporary and occur only during the hours that demolition activity would occur and would cease when the project is completed.

Based on data in Table B-1 in Appendix B, 61 percent of the persons exposed to DNL 85 dBA could be highly annoyed from the demolition noise. No hearing loss would be anticipated for persons outdoors because they would not be exposed to DNL equal to or greater than 75 dBA for 40 years of exposure at 16 hours per day, the level at which hearing loss could occur. Sleep interference is unlikely because demolition activities would occur during daytime.

Elevated noise levels can interfere with speech, causing annoyance or communication difficulties. Based on a variety of studies, DNL 75 dBA indicates a good probability for frequent speech disruption. This level produces ratings of “barely acceptable” for intelligibility of spoken material. Persons conducting conversations within the project area could have their speech disrupted by demolition-generated noise. Speech disruption would be temporary, lasting only as long as the noise-producing event.

The primary source of noise at Tyndall AFB would continue to be from aircraft operations. It is assumed the types of aircraft that operate at Tyndall AFB and the level

of operations experienced under the baseline would occur under the No Action Alternative. Therefore, noise exposure from aircraft operations would remain at the baseline condition. It should be noted that noise from flying activities would tend to mask the noise generated by construction projects for the same exposure area. The perception would be that construction noise likely would not be discernible during periods of aircraft operations. However, there could be periods of time during which demolition noise could be discerned and provide minor annoyance. This condition would occur when demolition activity is underway and flying activity is low.

Housing units in portions of the Bay View and Shoal Point neighborhoods that would not be demolished to attain the HRMA-established inventory would continue to be exposed to DNL 80 dBA or greater. The Bay View housing units were constructed prior to initiation of Air Force NLR policy and were not constructed to NLR standards. These units would continue to be incompatible with NLR standards. The Shoal Point units, reconstructed in 1993, would have been subject to NLR standards, and likely are compatible with NLR standards. Portions of the Redfish Point and Felix Lake neighborhoods are within the DNL 65 dBA noise contour. It is anticipated that units in these neighborhoods meet the Air Force NLR criteria due to their recent construction. The remaining housing neighborhoods would continue to be exposed to DNL 65 dBA or less.

4.2.2 Proposed Action

Housing units would be demolished, constructed, and renovated under the Proposed Action. The equipment operating conditions, noise receptors, analysis conditions, assumptions, and methodologies used for the No Action Alternative noise analysis were used for the Proposed Action analysis.

Outdoor noise at an occupied residence could range from as high as 71 to 85 dBA at 100 feet from the source and the noise level could be lower if the sound is not reflected. Indoor noise levels would generally be 18 to 27 dBA lower than outdoor noise levels. The noise would be temporary and occur only during hours that construction, demolition, or renovation activity would occur and would cease when the project is completed.

As with the No Action Alternative, no hearing loss would be anticipated for persons outdoors, sleep interference is unlikely, and there is good probability for frequent speech disruption. However, speech disruption would be temporary, lasting only as long as the noise-producing event.

As with the No Action Alternative, the primary source of noise at Tyndall AFB would continue to be from aircraft operations and the aircraft operations assumptions and masking described for the No Action Alternative apply to the Proposed Action. No units would be constructed in the DNL 75 dBA and greater noise exposure area, and units in the Shoal Point and Bay View neighborhoods would be demolished, thereby removing incompatibility with the Air Force NLR policy.

To achieve an indoor noise level of DNL 45 dBA or less, MFH units that would be constructed in the Redfish Point Extension, a portion of which is exposed to DNL 65-70 dBA, would be designed and constructed to achieve the Air Force's NLR policy of

reducing interior noise by 25 dBA. Portions of the Redfish Point and Felix Lake neighborhoods would continue to be within the DNL 65-70 dBA noise exposure area. It is anticipated that the units in these neighborhoods meet the Air Force NLR criteria due to their recent construction. The remaining housing neighborhoods and Existing Saddle Club Area would continue to be exposed to DNL 65 dBA or less.

4.2.3 Maximum Development Alternative

Demolition and construction activities under the Maximum Development Alternative would be the same as those for the No Action Alternative and the Proposed Action. However, under this alternative, a greater number of units would be demolished and constructed within the same 5-year period resulting in the likelihood that more heavy equipment would be used than in the No Action Alternative and the Proposed Action. Assuming that two pieces of equipment could be operating at any one time and taking into account that noise would not be reflected, outdoor noise at an occupied residence could range from as high as 74 to 88 dBA at 100 feet from the source. The analysis and conclusions associated with equipment operation for the No Action Alternative and the Proposed Action apply to the Maximum Development Alternative. The development plan for the Maximum Development Alternative would establish MFH units in the same neighborhoods as the Proposed Action. Therefore, the NLR policy discussion for the Proposed Action applies to the Maximum Development Alternative.

4.2.4 Mitigation

No mitigation would be required because new MFH units would be constructed to meet Air Force NLR standards.

4.2.5 Cumulative Impacts

It is estimated that the shortest distance between one of the other actions and a MFH neighborhood would be approximately 3,000 feet. This distance would preclude cumulative noise impacts from construction-related activities because the equipment sound from the other action sites and privatization activities would attenuate to levels that would not produce hearing loss, annoyance, or speech disruption impacts would be anticipated.

4.3 LAND USE

Factors considered in land use analysis include:

- Would the action require a new land use category in the Base General Plan?
- Would re-categorization of land as a result of the action cause incompatible land uses?

4.3.1 No Action Alternative

Under the No Action Alternative, the MFH units would not be privatized and the units would continue to be maintained by the Air Force. There would be no change in management of the remaining land use resources, as described in Subchapter 3.3.

Subchapter 2.3 states that the 35 units that would be demolished would be in the Bay View and Shoal Point neighborhoods. As mentioned in Subchapter 3.3, there are 18 units at the eastern end of the Bay View neighborhood located in APZ I that are incompatible with AICUZ guidance for the APZ. Removal of the 18 Bay View units would eliminate the APZ I incompatibility. It is assumed the remaining 17 units that would be demolished would be in Shoal Point, leaving four units in APZ II. The resulting density of the four units within APZ II would be 0.21 unit per acre and would continue to be compatible with AICUZ guidance for the APZ. None of the 15 Bay View units that are in APZ II would be demolished. Therefore, the unit density would remain at the baseline density of 0.67 units per acre, a density that would continue to be compatible with AICUZ guidance. The areas that would be vacated by the demolition of the 35 surplus units could be re-categorized as open space to align with the existing land use category for the APZs and the other land use around the Bay View and Shoal Point neighborhoods.

4.3.2 Proposed Action

The Wood Manor, Felix Lake, and Redfish Point neighborhoods are designated as housing-accompanied in the Tyndall AFB General Plan (USAF 2004b). Thus, continued use of these neighborhoods for MFH would be compatible with the General Plan.

The Bay View and Shoal Point neighborhoods would be conveyed to the privatization contractor under a short-term lease. During the period of the lease, this land would remain as family housing. The land would be returned to Tyndall AFB and could be re-categorized as open space to align with the existing land use category for the land around the Bay View and Shoal Point neighborhoods.

The Redfish Point Extension is currently categorized as open space, and the existing Saddle Club area is designated as outdoor recreation. These areas would be categorized as housing-accompanied. Categorization as housing-accompanied would be consistent with the Tyndall AFB General plan and would not conflict with the adjacent open space land uses.

4.3.3 Maximum Development Alternative

As with the Proposed Action, MFH units would be located in the same areas within the neighborhoods as the existing units, and demolition and construction activities would be the same. Therefore, the analysis and conclusions for the Proposed Action apply to the Maximum Development Alternative. No units would be constructed in the Bay View and Shoal Point neighborhoods, but units could be constructed in the Redfish Point Extension and at the Saddle Club. The Redfish Point Extension and Saddle Club would be re-categorized as housing-accompanied, a category in the General Plan. Categorization as MFH would not conflict with adjacent land uses. The location of the Bay View and Shoal Creek neighborhoods within the APZs would restrict development in accordance with AICUZ guidance.

4.3.4 Mitigation

No land use impacts were identified. No mitigation actions would be required at these locations.

4.3.5 Cumulative Impacts

It is estimated that the shortest distance between one of the other actions and a MFH neighborhood would be approximately 3,000 feet. This distance would eliminate the potential for incompatibility between the land uses associated with the MFH alternatives and the other actions.

4.4 AIR QUALITY

Evaluation criteria considered in air quality analysis include:

- Would emissions from the action cause or contribute to a violation of any national, state, or local ambient air quality standard; and
- Would emissions from the action represent 10 percent or more in affected AQCR or county emissions inventory to be considered regionally significant?

4.4.1 No Action Alternative

Emissions would continue to be generated by Tyndall AFB activities such as aircraft operations, aircraft maintenance, vehicle, boiler, generator, and fueling operations, and industrial processes. Emissions from these activities would continue at approximately the baseline levels. Additionally, emissions would be generated by the demolition of 35 MFH units.

Fugitive dust from ground disturbing activities and combustive emissions would be generated by equipment operation during MFH demolition. The quantity of uncontrolled fugitive dust emissions from a construction site is proportional to the area of land being worked and the level of construction activity. The USEPA has estimated that uncontrolled fugitive dust emissions from ground-disturbing activities would be emitted at a rate of 80 lbs of total suspended particulates (TSP) per acre per day of disturbance (USEPA 1995). In a USEPA study of air sampling data at a distance of 50 meters downwind from construction activities, PM₁₀ emissions from various open dust sources were determined based on the ratio of PM₁₀ to TSP sampling data. The average PM₁₀ to TSP ratios for top soil removal, aggregate hauling, and cut and fill operations is reported as 0.27, 0.23, and 0.22, respectively (USEPA 1988). Using 0.24 as the average ratio for purposes of analysis, the emission factor for PM₁₀ dust emissions becomes 19.2 lbs per acre per day of disturbance. Fugitive dust emissions from demolition activities would be generated primarily from building dismemberment, debris loading, and debris hauling. The USEPA has established a recommended emission factor of 0.011 lbs of PM₁₀ per square foot of demolished floor area. This emission factor is based on air sampling data taken from the demolition of a mix of commercial brick, concrete, and steel buildings (USEPA 1988).

The USEPA also assumes that 230 working days are available per year for construction (accounting for weekends, weather, and holidays), and that only half of these working days would result in uncontrolled fugitive dust emissions at the emitted rate described above (USEPA 1995). The demolition emissions presented in Table 4.4-1 include the estimated annual PM₁₀ emissions associated with the No Action Alternative at

Tyndall AFB. These emissions would produce slightly elevated short-term PM₁₀ ambient air concentrations. The USEPA estimates that the effects of fugitive dust from construction activities would be reduced significantly with an effective watering program. Watering the disturbed area of the construction site with approximately 3,500 gallons per acre per day would reduce TSP emissions as much as 50 percent (USEPA 1995).

Table 4.4-1 No Action Alternative Emissions, Tyndall AFB

Criteria Air Pollutant	CO (tpy)	VOC (tpy)	NO _x (tpy)	SO _x (tpy)	PM ₁₀ (tpy)
Bay County Emissions ^a	5,123.00	2,618.00	9,478.00	59,306.00	4,022.00
No Action Alternative					
Demolition	0.48	0.67	2.35	0.25	1.19
No Action Alternative Emissions as Percent of Bay County Emissions	0.01%	0.03%	0.02%	<0.01%	0.03%

^a Summarized from USEPA AirData Emissions for Bay County, Florida (AirData 2004).

Note: VOC is not a criteria air pollutant. However, VOC is reported because, as an ozone precursor, it is a controlled pollutant

Specific information describing the types of equipment required for a specific task, the hours the equipment is operated, and the operating conditions vary widely from project to project. For purposes of analysis, these parameters were estimated using established cost estimating methodologies for construction and experience with similar types of construction projects (Means 2003). Combustive emissions from equipment exhausts were estimated by using USEPA approved emissions factors for heavy-duty diesel-powered equipment (USEPA 1985). The emissions presented in Table 4.4-1 include the estimated annual emissions from equipment exhaust associated with the No Action Alternative at Tyndall AFB. It is estimated the demolition activity would last less than one year. Emissions are calculated for a one-year period to align with baseline emissions data, which are for one year. As with fugitive dust emissions, combustion emissions would produce slightly elevated air pollutant concentrations. However, the effects would be temporary, fall off rapidly with distance from the proposed construction site, and would not result in any long-term impacts.

Review of data in Table 4.4-1 for Bay County indicates that the greatest volume of emissions from No Action Alternative activities would occur to NO_x (2.35 tpy), which equates to 0.02 percent of the NO_x emissions within Bay County. Emissions from the No Action Alternative in Bay County fall below 10 percent of the Bay County emissions inventory. Emissions above 10 percent of the inventory would be considered regionally significant by the USEPA if the county were nonattainment for any of the criteria pollutants as stated in 40 CFR 51, Subpart W, Section 852. However, Bay County is in attainment. As mentioned in Subchapter 3.4.1, federal actions occurring in air basins that are in attainment of the NAAQS are not subject to the Conformity Rule and a Conformity Determination would not be required.

As with the baseline condition, it is likely emissions would continue to occur from gas-fired furnaces and hot water heaters in the remaining units. However, it is anticipated

that the emissions would be less than those from the baseline because there would be 35 fewer units with furnaces and water heaters. The reduction in emissions cannot be calculated because the specifications for the furnaces and hot water heaters are not known.

4.4.2 Proposed Action

Military family housing units would be demolished, constructed, and renovated under the Proposed Action. The methodologies identified and used to estimate the emissions for demolition and equipment operation for the No Action Alternative emissions were used for the Proposed Action. The total estimated project emissions were calculated and then divided by five to get the anticipated average annual emissions to align with baseline emissions data, which are for one year. Table 4.4-2 details the anticipated annual emissions for the Proposed Action.

Table 4.4-2 Proposed Action Emissions, Tyndall AFB

Criteria Air Pollutant	CO (tpy)	VOC (tpy)	NO _x (tpy)	SO _x (tpy)	PM ₁₀ (tpy)
Bay County Emissions ^a	5,123.00	2,618.00	9,478.00	59,306.00	4,022.00
Proposed Action					
Construction/Demolition	11.06	4.27	31.18	3.37	76.02
Proposed Action Emissions as Percent of Bay County Emissions	0.22%	0.16%	0.33%	0.01%	1.89%

^a Summarized from USEPA AirData Emissions for Bay County, Florida (AirData 2004).

Note: VOC is not a criteria air pollutant. However, VOC is reported because, as an ozone precursor, it is a controlled pollutant

The construction emissions presented in Table 4.4-2 include the estimated annual emissions from construction equipment exhaust associated with the Proposed Action at Tyndall AFB. It is estimated the construction, demolition, and renovation activity would last about 5 years and that ground disturbing activities would occur about half of the project duration. As with fugitive dust emissions, combustion emissions would produce slightly elevated air pollutant concentrations. However, the effects would be temporary, fall off rapidly with distance from the proposed construction site, and would not result in any long-term impacts.

Emissions would also be expected from asphalt paving operations. The primary pollutant from asphalt paving is carbon monoxide (CO); however, minor emissions of other criteria pollutants can be expected. To determine potential emissions from asphalt paving operations, it was assumed that the unit weight of asphalt concrete is 149 pounds per cubic foot (lbs/ft³). The quantity of asphalt concrete required for each construction project is based on an assumed pavement depth of 6 inches. The USEPA has established emission factors for CO, VOCs, sulfur oxides (identified as SO_x), NO_x, and PM₁₀ of 0.340, 0.017, 0.005, 0.025, and 0.020 lbs of pollutant per ton of asphalt concrete, respectively. Expected emissions from asphalt paving are included in the Proposed Action construction emissions in Table 4.4-2. Emissions from paving would last only as long as the duration of construction activity and fall off rapidly with distance from the construction site.

Review of data in Table 4.4-2 for Bay County indicates that the greatest annual emissions and greatest percentage of emissions within the county from the Proposed Action activities would be PM₁₀ (76.02 tpy), which equates to 1.89 percent of the PM₁₀ emissions inventory. Emissions from the Proposed Action in Bay County fall below 10 percent of the Bay County emissions inventory. Emissions above 10 percent of the inventory would be considered regionally significant by the USEPA if the county were nonattainment for any of the criteria pollutants as stated in 40 CFR 51, Subpart W, Section 852. However, Bay County is in attainment. As mentioned in Subchapter 3.4.1, federal actions occurring in air basins that are in attainment of the NAAQS are not subject to the Conformity Rule and a Conformity Determination would not be required.

As with the baseline condition, it is likely emissions would occur from gas-fired furnaces and hot water heaters in the newly constructed units as well as the remaining, unrenovated units. However, it is anticipated that the emissions would be less than those from the baseline because the privatization contractor would require that the newly constructed units have more efficient furnaces and hot water heaters than the furnaces and heaters in the units that would be demolished. The reduction in emissions cannot be calculated because the specifications for the new furnaces and hot water heaters are not known.

4.4.3 Maximum Development Alternative

The types of demolition, construction, and paving activities for the Maximum Development Alternative would be identical to the Proposed Action. The only difference between the two alternatives is that a greater number of houses would be demolished and constructed under the Maximum Development Alternative than the Proposed Action. The methodologies identified and used to estimate the No Action Alternative and Proposed Action emissions were used for the Maximum Development Alternative. The Proposed Action discussion for furnace and hot water heater operation applies. Table 4.4-3 details the anticipated annual emissions for the Maximum Development Alternative.

Table 4.4-3 Maximum Development Alternative Emissions, Tyndall AFB

Criteria Air Pollutant	CO (tpy)	VOC (tpy)	NOx (tpy)	SOx (tpy)	PM10 (tpy)
Bay County Emissions ^a	5,123.00	2,618.00	9,478.00	59,306.00	4,022.00
Maximum Development Alternative					
Construction/Demolition	24.38	7.97	65.62	7.11	79.00
Maximum Development Alternative Emissions as Percent of Bay County Emissions	0.48%	0.30%	0.69%	0.01%	1.96%

^a Summarized from USEPA AirData Emissions for Bay County, Florida (AirData 2004).

Note: VOC is not a criteria air pollutant. However, VOC is reported because, as an ozone precursor, it is a controlled pollutant

Review of data in Table 4.4-3 for Bay County indicates that the greatest annual emissions and greatest percentage of emissions within the county from the Maximum Development Alternative activities would be PM₁₀ (79.00 tpy), which equates to

1.96 percent of the PM₁₀ emissions inventory. Emissions from the Maximum Development Alternative in Bay County fall below 10 percent of the Bay County emissions inventory. Emissions above 10 percent of the inventory would be considered regionally significant by the USEPA if the county were nonattainment for any of the criteria pollutants as stated in 40 CFR 51, Subpart W, Section 852. However, Bay County is in attainment. As mentioned in Subchapter 3.4.1, federal actions occurring in air basins that are in attainment of the NAAQS are not subject to the Conformity Rule and a Conformity Determination would not be required.

4.4.4 Mitigation

Emissions would not exceed or violate air quality standards. Neither a conformity determination nor mitigation would be required.

4.4.5 Cumulative Impacts

The same criteria used to calculate the No Action Alternative and the Proposed Action air emissions were used to determine cumulative emissions should the No Action Alternative, Proposed Action, or Maximum Development Alternative be implemented. The total estimated emissions for the other actions were calculated and then divided by six to get the anticipated average annual emissions used in the analysis. Emissions are calculated for a one-year period to align with baseline emissions data, which are for one year. As indicated in Subchapter 2.6, nine other projects would be accomplished during the same time period as these alternatives.

No Action Alternative Cumulative Emissions

Table 4.4-4 presents the cumulative emissions from the No Action Alternative and the nine other construction projects. Review of data in Table 4.4-4 for Bay County indicates that the greatest annual emissions should the No Action Alternative be implemented would be NO_x (53.99 tpy), which equates to 0.57 percent of the NO_x emissions within Bay County. Cumulative emissions in Bay County fall below 10 percent of the Bay County emissions inventory. Emissions above 10 percent of the inventory would be considered regionally significant by the USEPA if the county were nonattainment for any of the criteria pollutants as stated in 40 CFR 51, Subpart W, Section 852. However, Bay County is in attainment. As mentioned in Subchapter 3.4.1, federal actions occurring in air basins that are in attainment of the NAAQS are not subject to the Conformity Rule and a Conformity Determination would not be required.

Table 4.4-4 No Action Alternative Cumulative Emissions, Tyndall AFB

Criteria Air Pollutant	CO (tpy)	VOC (tpy)	NO _x (tpy)	SO _x (tpy)	PM ₁₀ (tpy)
Bay County Emissions ^a	5,123.00	2,618.00	9,478.00	59,306.00	4,022.00
No Action Alternative Cumulative Emissions					
No Action Alternative	0.48	0.67	2.35	0.25	1.19
Other Actions	21.20	4.18	51.64	1.18	1.69
Total Annual Emissions	21.68	4.85	53.99	1.43	2.88
Total Annual Emissions as Percent of Bay County Emissions	0.42%	0.18%	0.57%	<0.01%	0.07%

^a Summarized from USEPA AirData Emissions for Bay County, Florida (AirData 2004).

Note: VOC is not a criteria air pollutant. However, VOC is reported because, as an ozone precursor, it is a controlled pollutant

Proposed Action Cumulative Emissions

Table 4.4-5 presents the cumulative emissions from the Proposed Action and the nine other construction projects. Review of data in Table 4.4-5 for Bay County indicates that the greatest annual emissions should the Proposed Action be implemented would be NO_x (82.82 tpy), which equates to 0.87 percent of the NO_x emissions within Bay County. The criteria pollutant with the greatest percentage of emissions within Bay County is PM₁₀ with 1.93 percent. Cumulative emissions in Bay County fall below 10 percent of the Bay County emissions inventory. Emissions above 10 percent of the inventory would be considered regionally significant by the USEPA if the county were nonattainment for any of the criteria pollutants as stated in 40 CFR 51, Subpart W, Section 852. However, Bay County is in attainment. As mentioned in Subchapter 3.4.1, federal actions occurring in air basins that are in attainment of the NAAQS are not subject to the Conformity Rule and a Conformity Determination would not be required.

Table 4.4-5 Proposed Action Cumulative Emissions, Tyndall AFB

Criteria Air Pollutant	CO (tpy)	VOC (tpy)	NO _x (tpy)	SO _x (tpy)	PM ₁₀ (tpy)
Bay County Emissions ^a	5,123.00	2,618.00	9,478.00	59,306.00	4,022.00
Proposed Action Cumulative Emissions					
Proposed Action	11.06	4.27	31.18	3.37	76.02
Other Actions	21.20	4.18	51.64	1.18	1.69
Total Annual Emissions	32.36	8.45	82.82	4.55	77.71
Total Annual Emissions as Percent of Bay County Emissions	0.63%	0.32%	0.87%	0.01%	1.93%

^a Summarized from USEPA AirData Emissions for Bay County, Florida (AirData 2004).

Note: VOC is not a criteria air pollutant. However, VOC is reported because, as an ozone precursor, it is a controlled pollutant

Maximum Development Alternative Cumulative Emissions

Table 4.4-6 presents the cumulative emissions from the Maximum Development Alternative and the nine other action projects. Review of data in Table 4.4-6 indicates that the greatest annual emissions should the Maximum Development Alternative be

implemented would be NO_x (117.18 tpy), which equates to 1.24 percent of the NO_x emissions within Bay County. The criteria pollutant with the greatest percentage of emissions within Bay County is PM₁₀ with 2.01 percent. Cumulative emissions in Bay County fall below 10 percent of the Bay County emissions inventory. Emissions above 10 percent of the inventory would be considered regionally significant by the USEPA if the county were nonattainment for any of the criteria pollutants as stated in 40 CFR 51, Subpart W, Section 852. However, Bay County is in attainment. As mentioned in Subchapter 3.4.1, federal actions occurring in air basins that are in attainment of the NAAQS are not subject to the Conformity Rule and a Conformity Determination would not be required.

Table 4.4-6 Maximum Development Alternative Cumulative Emissions, Tyndall AFB

Criteria Air Pollutant	CO (tpy)	VOC (tpy)	NOx (tpy)	SOx (tpy)	PM10 (tpy)
Bay County Emissions ^a	5,123.00	2,618.00	9,478.00	59,306.00	4,022.00
Maximum Development Alternative Cumulative Emissions					
Maximum Development Alternative	24.38	7.97	65.72	7.11	79.00
Other Actions	21.20	4.18	51.64	1.18	1.69
Total Annual Emissions	45.58	12.15	117.18	8.29	80.69
Total Annual Emissions as Percent of Bay County Emissions	0.89%	0.46%	1.24%	0.01%	2.01%

^a Summarized from USEPA AirData Emissions for Bay County, Florida (AirData 2004).

Note: VOC is not a criteria air pollutant. However, VOC is reported because, as an ozone precursor, it is a controlled pollutant

4.5 INFRASTRUCTURE AND UTILITIES

Effects on the infrastructure and utilities were evaluated using the following criteria:

- Changes in consumption, generation, and usage; and
- Demand on existing system.

4.5.1 No Action Alternative

The number of MFH units would decrease by 35 units to a total of 813 units. Based on the bedroom mix of the remaining units and the following occupancy assumptions, it is estimated that the number of people residing in the MFH would decrease by 103 people to a total residential population of 3,176 persons.

- Three people would occupy a two-bedroom unit.
- Four people would occupy a three bedroom unit.
- Five people would occupy a four bedroom unit.

Water Supply

On-Base water consumption associated with the No Action Alternative would decrease due to the reduction in on-Base residents. Assuming the baseline consumption

rate of 108 gallons per day per person, the decrease of on-Base water consumption would be 11,124 gallons per day (0.011 mgd) or a 0.86 percent decrease when compared to the Base's average daily consumption of 1.28 mgd.

It is assumed that the persons who would relocate to off-Base housing due to the reduction in on-Base units would consume water at the same rate as on-Base and the water they would consume would be supplied by the Bay County Utilities, the same entity that supplies the Base. Since there would be no net change in the number of assigned personnel at Tyndall AFB under the No Action Alternative, it is estimated regional water consumption would not exceed baseline levels.

Water would be used for dust suppression during demolition activities in almost all of the Bay View neighborhood (33 units) and a small portion of the Shoal Point neighborhood (two units). Based on the parcel acreages (see Section 2.3), a total of approximately 33.1 acres (70 percent of Bay View or 31.3 acres, and 10 percent of Shoal Point or 0.3 acres) would be disturbed by the project. Assuming that these units would be demolished over a one-year period, approximately 0.04 mgd could be used to control fugitive dust, increasing the daily usage from 1.28 to 1.32 mgd, which equates to 2.6 percent of the Bay County Water Treatment Plant's maximum output of 50 mgd. Water application for dust control would be discontinued when ground disturbing activities are completed.

Wastewater Treatment

As a result of a decrease in on-Base population, on-Base wastewater generation under the No Action Alternative would decrease by 5,871 gallons per person (0.006 mgd) or 0.88 percent less than baseline generation of 0.68 mgd by the Base. It is assumed that the persons who would relocate to off-Base housing due to the reduction in on-Base units would generate wastewater at the same rate as on-Base and the wastewater would be treated at the MPWWTP, the same plant that treats the Base's wastewater. Since there would be no net change in the number of assigned personnel at Tyndall AFB under the No Action Alternative, it is estimated regional wastewater generation would not exceed baseline levels.

Energy

Under the No Action Alternative, building space would decrease by the 69,140 ft². The resulting decrease in square footage would have a beneficial impact on the on-Base energy consumption. Based on the baseline consumption of 0.054 kWh per square foot per day and the reduction in space, the No Action Alternative would decrease usage by 3,734 kWh per day. This would equate to an approximate 1.4 percent decrease when compared to the average daily baseline electrical consumption of 271,483 kWh per day. It is assumed that the persons who would relocate to off-Base housing due to the reduction in on-Base units would consume electricity at the same rate as on-Base and the electricity they would consume would be supplied by Gulf Power Company, the same entity that supplies the Base. Since there would be no net change in the number of assigned personnel at Tyndall AFB under the No Action Alternative, it is estimated regional electricity consumption would not exceed baseline levels.

The No Action Alternative would decrease on-Base natural gas usage by 0.17 mcf per month. This would equate to an approximate 1.36 percent decrease when compared to the Base's average monthly baseline natural gas consumption of 12.5 mcf. It is assumed that the persons who would relocate to off-Base housing due to the reduction in on-Base units would consume natural gas at the same rate as on-Base and the natural gas they would consume would be supplied by TECO, the same entity that supplies the base. Since there would be no net change in the number of assigned personnel at Tyndall AFB under the No Action Alternative, it is estimated regional natural gas consumption would not exceed baseline levels.

Storm Water Management

It is assumed demolition of the 35 units would occur in the Bay View and Shoal Point neighborhoods. Using information provided in Table 2.3-1 in Subchapter 2.3, the total area and impervious cover would decrease by 113,765 (2.6 acres). The decrease in impervious cover equates to 2.2 percent of the baseline 5,158,889 ft² of impervious cover in the MFH neighborhoods. It is anticipated the decrease in storm water runoff would occur in the Bay View and Shoal Point neighborhoods.

Personnel from 325 CES/CEV would comply with the Base's Municipal Separate Storm Sewer System permit to reduce discharge of pollutants to the maximum extent possible. Land disturbing activities of 1 acre or more would require a National Pollutant Discharge Elimination System (NPDES) construction permit with a storm water pollution prevention plan that complies with FDEP Document No. 62-621.300(4)(a). Additionally, the requirements of FAC 62-65 would be followed. Under the No Action Alternative, personnel from 325 CES/CEV would comply with these requirements. The best management practices described in Subchapter 3.5.4 would be used.

Solid Waste Management

The MFH units would not be conveyed to a privatization contractor, and the existing 848 units would continue to be used for MFH. Demolition of 35 surplus units would occur to reduce the MFH inventory to the HRMA-established level. Analysis of the impacts associated with the proposed demolition activities is based on the following assumptions:

- Approximately 92 pounds of demolition debris are generated for each ft² of floor area of demolished structures (U.S. Army Corps of Engineers [USACE] 1976);
- Debris would be disposed 5 days per week (260 days per year) over the 5-year project.

It is estimated 113,765 ft² would be demolished and 5,233 tons of debris would be generated by the No Action Alternative. These wastes would consist of building debris and construction materials such as concrete, metals (roofing, reinforcement bars, conduit, piping, *etc.*), fiberglass (roofing materials and insulation), cardboard, plastics (polyvinyl chloride piping, packaging material, shrink wrap, *etc.*), and lumber.

It is assumed the demolition debris would be disposed in the Steelfield Landfill Class Three cell. As mentioned in Subchapter 3.5.5, the landfill has a remaining projected life

expectancy of 25 years, with an average disposal rate of 25 tons per day. Based on an average disposal of 312 days per year (i.e., 6 days per week) for 25 years, there would be 7,800 days when debris could be disposed in the landfill. Thus, the total remaining capacity of the landfill is estimated at 195,000 tons. The total capacity of the new Class Three cell at Steelfield Landfill, Cell 26, is estimated at 2,006,483 tons. Combined with the current Class Three cell at the Steelfield Landfill, this results in a total Class Three cell capacity of 2,201,483 tons. This estimate is considered low because it assumes the landfill is receiving waste daily at a rate equal to its maximum daily capacity. It is estimated that the projected disposal associated with the demolition of the 35 surplus units equates to 0.24 percent of the total remaining capacity.

Although 5,233 tons of debris would be generated, this amount is conservative because it suggests that all waste could be disposed in a landfill. It is assumed the contractor would recycle materials to the maximum extent possible, thereby reducing the amount of construction and demolition debris disposed in the landfill. Additionally, some of the waste would be incinerated, as discussed in Subchapter 3.5.5. The assumptions and calculations above provide the most conservative estimate of solid waste generated under the Proposed Action.

It is assumed that the persons who would relocate to off-Base housing due to the reduction in on-Base units would generate solid waste at the same rate as on-Base and the waste they would generate would be treated at the Bay County Incinerator, the same disposal point for Base-generated solid waste. Since there would be no net change in the number of assigned personnel at Tyndall AFB under the No Action Alternative, it is estimated regional solid waste generation by personnel would not exceed baseline levels.

Transportation

Traffic congestion that could occur from the MFH demolition projects would be short-term and would be eliminated when the demolition activities are completed. Under the No Action Alternative, 35 families would relocate to off-Base housing. Assuming that one person per household works on Base and there would be 35 fewer housing units on-Base, 35 additional workers would enter and exit the Base each workday. Assuming an average vehicle occupancy of 1.17 passengers per vehicle, an estimated 30 additional vehicles would enter and exit the Base during peak traffic periods.

4.5.2 Proposed Action

The number of MFH units would decrease by 35 units to a total of 813 units. Although the number of units would decrease under the Proposed Action, the number of residents in the MFH would increase by nine people to a total residential population of 3,288 persons when using the occupancy assumptions listed for the No Action Alternative.

Water Supply

Subchapter 2.4 summarizes the number of units and the bedrooms per unit type to be conveyed and built under the Proposed Action. The Proposed Action would increase the number of three and four bedroom units over what is in the current inventory, thereby increasing the number of people in MFH. Since there would be nine additional residents,

the increase in water consumption associated with the Proposed Action would be negligible, and water consumption would remain at or near the baseline usage of 1.28 mgd. In addition, the newly constructed units would have water saving toilets, shower heads, and faucets installed. The newer units of the current housing inventory have low-flow water devices. It is estimated that the use of water saving devices reduces indoor consumption by as much as 39 percent (TWRI 1992). The savings in water cannot be calculated since the exact flow rates for the devices are unknown. Overall, water consumption would not exceed baseline conditions.

Water would be used for dust suppression during construction. It is assumed that approximately 70 percent of the project area (249 acres) would be disturbed during construction, resulting in an average of 49.9 acres being disturbed. Approximately 0.06 mgd per year could be used to control fugitive dust, increasing the daily usage from 1.28 to 1.34 mgd, which equates to 2.67 percent of the capacity of the Bay County Water Treatment Plant. Water application for dust control would be discontinued when ground disturbing activities are completed.

Wastewater Treatment

Under the Proposed Action, it is estimated that the number of residents in MFH would increase by nine to a total of 3,288 persons. With the addition of nine residents, the increase in wastewater generation would be negligible, and wastewater generation would remain at or near the baseline generation rate of 0.19 mgd. Newly constructed units associated with the Proposed Action would have water saving toilets, shower heads, and faucets installed, reducing indoor consumption of water, and corresponding to a reduction in wastewater generation. The exact amount of savings from wastewater generation cannot be calculated since the flow rates for the devices are unknown. Overall, wastewater generation would not exceed baseline conditions.

Energy

Under the Proposed Action, building space would decrease by 24,880 ft². Based on the baseline consumption of 0.054 kWh per square foot per day and the reduction in space, the Proposed Action would decrease electricity usage by 1,344 kWh per day. This would equate to an approximate 0.5 percent decrease when compared to the average daily baseline electrical consumption of 271,483 kWh per day.

When considering the baseline average daily use of 8.20×10^{-8} mcf per square foot and the reduction of space, the Proposed Action would decrease natural gas usage by 0.061 mcf of natural gas per month. This would equate to an approximate 0.5 percent decrease when compared to the average monthly baseline natural gas consumption of 12.5 mcf.

Storm Water Management

All proposed demolition and construction activities would occur within the MFH neighborhoods as well as in the Redfish Point Extension and existing Saddle Club areas. As mentioned in Subchapter 2.4.3, it is anticipated that total impervious cover within the MFH neighborhoods would increase by approximately 127,370 ft² (2.9 acres). The increase in impervious cover equates to 2.5 percent of the baseline 5,158,889 ft² of

impervious cover in the MFH neighborhoods. It is anticipated the increase in storm water runoff would occur from the new development and in the Redfish Point Extension and existing Saddle Club areas. Curbs and gutters installed during any street and off-street parking construction would be connected to the existing storm water system. If required, a new storm water system or connections would be designed and constructed to comply with current regulations including 62-25 FAC and 40 CFR 122. The Municipal Separate Storm Sewer System permit, NPDES permit, pollution prevention plan preparation, and Florida requirements mentioned for the No Action Alternative apply. The privatization contractor would coordinate these requirements with 325 CES/CEV personnel. The best management practices described in Subchapter 3.5.4 would be used.

Solid Waste Management

Under the Proposed Action, the Air Force proposes to convey 848 existing MFH units to a privatization contractor. The contractor would then demolish 560 units and construct 525 replacement units. Analysis of the impacts associated with the proposed demolition and construction activities is based on the following assumption and the assumptions listed for the No Action Alternative:

- Approximately 4 pounds of construction debris is generated for each ft² of floor area for new structures (Davis 1995).

Solid waste would be generated from implementation of the Proposed Action. Based on information in Subchapter 2.4, 2,097,330 ft² would be constructed and 1,969,960 ft² would be demolished. Based on these data and assumptions, it is estimated that 94,812 tons of debris would be generated by the Proposed Action.

It is assumed the debris would be disposed in the Steelfield Landfill Class Three cells for construction and demolition waste. As mentioned in the No Action Alternative discussion, the total remaining capacity of the landfill is estimated at 2,201,483 tons. The projected disposal from the Proposed Action (94,812 tons) equates to 4.3 percent of the estimated total remaining capacity.

Although 94,812 tons of debris would be generated, this amount is conservative because it suggests that all waste could be disposed in a landfill. The recycling discussion and analysis for the No Action Alternative apply.

It is estimated there would be about nine more residents in MFH under the Proposed Action. Thus, on-Base solid waste generation would increase because there would be more MFH residents. It is anticipated that the residents who would move into MFH would continue to generate solid waste at the same rate as they did when residing off-Base. Additionally, it is assumed the solid waste generated by personnel residing in on- and off-Base housing is treated at the Bay County Incinerator. Since there would be no net change in the numbers of on- and off-Base residents under the Proposed Action, it is estimated there would be no change in personally generated solid waste.

Transportation

The Proposed Action would not change the overall number of personnel assigned to Tyndall AFB nor would the on-Base transportation system be impacted. Short-term

traffic congestion from the MFH construction and demolition projects would occur. Congestion resulting from the Proposed Action attributable to the construction would be short-term, thereby minimizing the potential for impacts.

The number of persons living on-Base would be increased by an estimated nine people. It is estimated there would be no net increase in vehicles entering and exiting the Base during peak traffic periods. Traffic congestion from the MFH construction projects would occur; however, it would be short-term thereby minimizing the potential for impacts.

4.5.3 Maximum Development Alternative

The number of MFH units would increase from 848 units to a total of 1,238 units. Using the assumptions listed for the No Action Alternative, it is estimated that the number of people residing in the MFH would increase by 1,410 people to a total residential population of 4,689 persons.

Water Supply

Assumptions used in the water consumption analysis include:

- 1,410 persons currently residing off-Base would move on-Base and occupy the additional 390 units;
- The 1,410 persons currently reside off-Base in an area served by the Bay County MPWWTP;
- The 1,410 persons currently residing off-Base use potable water from Bay County at an average rate of 152 gallons per person per day (Bay County 2004a);
- The newer units of the current inventory of MFH units have low-flow water devices installed;
- All the privatized MFH units would have low-flow water devices installed; and
- Average daily per capita consumption for privatized MFH units would continue at the baseline rate of 108 gallons per day per person.

Table 4.5-1 summarizes the Maximum Development Alternative water consumption based on the occupancy assumptions listed above. The average daily consumption within the Base system would increase by 152,280 gallons a day (1,410 persons x 108 gallons per day = 0.15 mgd), or from 1.28 to 1.43 mgd. The 0.15 mgd increase equates to an 11.7 percent increase when compared to the baseline condition, and the 1.43 mgd equates to 2.86 percent of the Bay County water treatment plant capacity.

Although consumption of Base-provided water would increase because more persons would reside in privatized housing than now reside in MFH, overall regional annual water consumption for Bay County under the Maximum Development Alternative would decrease by 62,040 gallons (0.06 mgd) due to the use of low-flow water saving devices that would be installed in all newly constructed units. See Subchapter 4.5.2 for discussion of these devices.

Table 4.5-1 Summary of Maximum Development Alternative Water Usage

	Formula for Calculating Water Consumption	Gallons per Day (gpd)
Baseline Condition Water Consumption		
Consumption by baseline off-Base persons who would reside in privatized housing under the Maximum Development Alternative.	1,410 persons x 152 gpd	214,320
Consumption by baseline on-Base persons who would remain in privatized housing under the Maximum Development Alternative.	3,279 x 108 gpd	354,132
Total daily baseline consumption by persons who would reside in privatized housing under the Maximum Development Alternative.	--	568,452
Maximum Development Alternative Water Consumption		
Consumption by privatized housing residents	4,689 x 108 gpd	506,412
Net change in water consumption under the Maximum Development Alternative.	Baseline –Maximum Development Alternative gpd	-62,040

Assuming the same methodology as the Proposed Action, approximately 70 percent of the project area would be disturbed, and water would be used for dust suppression during construction. Under the Maximum Development Alternative, a total of 302 acres would be disturbed by the project, resulting in an average of 60 acres per year being disturbed. Approximately 0.07 mgd could be used to control fugitive dust, increasing the daily usage from 1.43 mgd to 1.50 mgd, which equates to 3.0 percent of the Bay County water treatment plant capacity. Water application for dust control would be discontinued when ground disturbing activities are completed.

Wastewater Treatment

It is assumed that the 1,410 persons who would occupy the additional 390 privatized MFH units would move into MFH housing from an area that is served by the MPWWTP. It is also assumed that these 1,410 persons would generate wastewater in their off-Base residences at the same rate as MFH residents under the baseline condition (*i.e.*, 57 gallons per person per day). Therefore, generation of MFH wastewater would increase due to more residents on Base. An additional 80,070 gallons per day (0.08 mgd) would be generated on-Base above the baseline condition.

However, it is assumed there would be a corresponding decrease in off-Base wastewater generation as a result of fewer off-Base residents. The result would be no net change in wastewater treated at the MPWWTP.

Newly constructed units associated with the Maximum Development Alternative would have water saving toilets, shower heads, and faucets installed, reducing indoor consumption of water, and corresponding to a reduction in wastewater generation. The exact amount of savings from wastewater generation cannot be calculated since the flow rates for the devices are unknown. Overall, wastewater generation would not exceed baseline conditions.

Energy

Under the Maximum Development Alternative, an additional 827,540 ft² of building space would be added in the form of MFH. Based on the baseline electrical consumption

of 0.054 kWh per square foot per day and the additional space, the Maximum Development Alternative would increase electricity usage by 44,687 kWh per day. This would equate to an approximate 16.5 percent increase when compared to the average daily baseline electrical consumption of 271,483 kWh per day.

When considering the baseline average daily use of 8.20×10^{-8} mcf per square foot, the Maximum Development Alternative would increase natural gas usage by 2.0 mcf per month. This would equate to an approximate 16.5 percent increase when compared to the average monthly baseline natural gas consumption of 12.5 mcf.

Storm Water Management

All proposed demolition and construction activities would occur within the existing MFH neighborhoods and in the Redfish Point Extension and existing Saddle Club areas. As mentioned in Subchapter 2.5.3, it is anticipated that impervious cover within the MFH neighborhoods would increase by approximately 547,575 ft² (12.6 acres). The additional impervious cover equates to 10.6 percent of the baseline 5,158,889 ft² of impervious cover in the MFH neighborhoods. Therefore, the amount of storm water runoff could increase accordingly. However, the amount of runoff could be less depending on the actual number of units constructed and the impervious cover associated with the additional streets. The Proposed Action discussion for curb and gutter, off-street parking, storm water system design and control, and storm water pollution prevention plan requirements applies. The Municipal Separate Storm Sewer System permit, NPDES permit, pollution prevention plan preparation, and Florida requirements mentioned for the No Action Alternative apply. The privatization contractor would coordinate these requirements with 325 CES/CEV personnel. The best management practices described in Subchapter 3.5.4 would be used.

Solid Waste Management

Under the Maximum Development Alternative, the Air Force proposes to convey 848 existing MFH units to a privatization contractor. The contractor would then demolish all 848 units and construct 1,238 replacement units. The analysis for the alternative is based on the same assumptions and data used to evaluate the No Action Alternative and Proposed Action.

Based on information in Subchapter 2.5 and assumptions, 4,791,700 ft² would be constructed and 3,002,660 ft² would be demolished. It is estimated that 147,705 tons of debris would be generated by the Maximum Development Alternative. This projected disposal amount equates to 6.7 percent of the estimated total remaining capacity of the Class Three cells at the landfill.

Although 147,705 tons of debris would be generated, this amount is conservative because it suggests that all waste could be disposed in a landfill. The recycling discussion and analysis for the No Action Alternative apply.

It is estimated there would be about 1,410 more residents in MFH under the Maximum Development Alternative. Thus, on-Base solid waste generation would increase because there would be more MFH residents. It is anticipated that the residents who would move into MFH would continue to generate solid waste at the same rate as

they did when residing off-Base. Additionally, it is assumed the solid waste generated by personnel residing in on- and off-Base housing is treated at the Bay County Incinerator. Since there would be no net change in the numbers of on- and off-Base residents under the Maximum Development Alternative, it is estimated there would be no change in personally generated solid waste.

Transportation

The Maximum Development Alternative would not change the overall number of personnel assigned to Tyndall AFB nor would the on-Base transportation system be impacted. Similar to the Proposed Action, short-term traffic congestion from the MFH construction and demolition projects would occur.

The number of personnel living on-Base would increase by an estimated 1,410 persons. Assuming that one person per household works on-Base and there would be 390 new housing units on-Base, 390 fewer vehicles would enter and exit the Base each workday. Assuming an average vehicle occupancy of 1.17 passengers per vehicle, an estimated 333 fewer workers would enter and exit the Base each workday during peak traffic periods.

Traffic would increase in the MFH neighborhoods. However, the privatization contractor's CDP would include design features to improve traffic flow within the MFH neighborhoods.

4.5.4 Mitigation

The action would increase demands on the existing systems, but would not exceed the capacities of existing utility systems. Therefore, no mitigation would be required.

4.5.5 Cumulative Impacts

The criteria used to calculate the impacts for the No Action Alternative, Proposed Action, and Maximum Development Alternative were used for cumulative impact analysis. As indicated in Subchapter 2.6, nine other projects would be accomplished during the same time period as the No Action, Proposed Action, and Maximum Development Alternative. The following data and assumptions apply to the cumulative impact analysis.

- No additional personnel would be added or would relocate to the Bay County area or Tyndall AFB.
- A total of about 544,740 ft² of space would be constructed under other actions on Tyndall AFB.
- No demolition projects are being considered under the other actions.

No Action Alternative

Water Supply

Water consumption would be the same as described in the No Action Alternative because no additional personnel would be added under the other actions. However, water

would be used for dust suppression during construction. Approximately 104,520 ft² of pavement for the Highway 98 Overpass project described in Table 2.6-1 would not require dust suppression. Assuming 1.5 times the actual area of construction (660,330 ft²), 15.2 acres would be disturbed and would require water for dust control. Demolition of the 35 units is assumed to occur during a one-year period, whereas construction of the nine other projects would occur over 5 years. Therefore, for a 1-year period the No Action Alternative and the other action projects would occur simultaneously. As discussed in Subchapter 4.5.1, approximately 0.04 mgd could be used to control fugitive dust for the No Action Alternative. For the nine other projects, approximately 15.2 acres would be disturbed over the 5-year period, resulting in an average of 3 acres per year being disturbed or approximately 0.0034 mgd to control fugitive dust. Therefore, the total amount of water required to control fugitive dust could be 0.0434 mgd, increasing the daily usage from 1.28 to 1.32 mgd or 2.6 percent of the Bay County water treatment plant capacity. Water application for dust control would be discontinued when ground disturbing activities are completed.

Wastewater Treatment

Wastewater generation would be the same as described in the No Action Alternative because no additional personnel would be added under the other actions.

Energy

A net increase of 440,220 ft² of building space would be added by the other actions. Thus, an additional 371,080 ft² of building space (69,140 ft² decrease from the No Action Alternative and 440,220 ft² from the other actions) would be added at Tyndall AFB should the No Action Alternative be implemented. The 440,220 ft² used for the other actions is less than the total area listed for the other actions in Table 2.6-1 because electricity and natural gas would not be needed to heat or cool the estimated 104,520 ft² associated with the overpass.

When considering the baseline consumption of 0.054 kWh per square foot per day and the additional space, electricity usage would increase by 20,038 kWh per day should the No Action Alternative be implemented. This would equate to an approximate 7.4 percent increase when compared to the average daily baseline electrical consumption of 271,483 kWh per day.

When considering the baseline average daily use of 8.20×10^{-8} mcf per square foot and the additional space, natural gas usage would increase by 0.93 mcf per month should the No Action Alternative be implemented. This would equate to an approximate 7.4 percent increase when compared to the average monthly baseline natural gas consumption of 12.5 mcf.

Storm Water Management

It is anticipated storm water runoff in the main area of the Base would increase due to the additional 544,740 ft² of impervious cover associated with the other actions. The main area of the base and the MFH neighborhoods are in separate drainage areas due to the distance between the two areas. Therefore, no cumulative storm water management impacts would be anticipated. The best management practices listed for the No Action

Alternative would be used. The Municipal Separate Storm Sewer System permit, NPDES permit, pollution prevention plan preparation, and Florida requirements mentioned for the No Action Alternative apply. Contractors for the other actions would coordinate these requirements with 325 CES/CEV personnel.

Solid Waste Management

A total of 544,740 ft² of space would be constructed under the other actions and 113,765 ft² would be demolished under the No Action Alternative. Based on these data and the assumptions in Subchapters 3.5.5 and 4.5.2 it is estimated that 1,089 tons of debris would be generated by the other actions. Cumulatively, a total of 6,322 tons of solid waste would be generated (5,233 tons from the No Action Alternative and 1,089 from the other actions), which equates to 0.3 percent of the estimated total capacity of the Steelfield Landfill Class Three cells for construction and demolition waste. As with the No Action Alternative, the contractor would recycle materials to the maximum extent possible, thereby reducing the amount of construction and demolition debris disposed in the landfill. Therefore, the discussion and analyses for the No Action Alternative apply.

Solid waste generation by personnel would be the same as described in the Proposed Action because no additional personnel would be added under the other actions.

Transportation

Short-term congestion could occur from construction and demolition related activity. However, this congestion would be eliminated when the activity is completed. The long-term transportation discussion would be the same as described for the No Action Alternative because no additional personnel would be added under the other actions.

Proposed Action

Water Supply

Water consumption would be the same as described in the Proposed Action because no additional personnel would be added under the other actions. However, water would be used for dust suppression during construction. Assuming that 70 percent of the project area would be disturbed during construction, a total of 264.2 acres (249 acres from the Proposed Action and 15.2 acres from the other action projects), or an average of 53 acres per year would require water for dust control. Approximately 0.06 mgd could be used to control fugitive dust, increasing the daily usage from 1.28 to 1.34 mgd or 2.7 percent of the Bay County water treatment plant capacity. Water application for dust control would be discontinued when ground disturbing activities are completed.

Wastewater Treatment

Wastewater generation would be the same as described in the Proposed Action because no additional personnel would be added under the other actions.

Energy

A net increase of 440,220 ft² of building space would be added by the other actions. Thus, an additional 415,340 ft² of building space (24,880 ft² decrease from the Proposed

Action and 440,220 ft² from the other actions) would be added at Tyndall AFB under the Proposed Action cumulative condition. The 440,220 ft² used for the other actions is less than the total area listed for the other actions in Table 2.6-1 because electricity and natural gas would not be needed to heat or cool the estimated 104,520 ft² associated with the overpass.

When considering the baseline consumption of 0.054 kWh per square foot per day and the additional space, electricity usage would increase by 22,428 kWh per day should the Proposed Action be implemented. This would equate to an approximate 8.26 percent increase when compared to the average daily baseline electrical consumption of 271,483 kWh per day.

When considering the baseline average daily use of 8.20×10^{-8} mcf per square foot and the additional space, natural gas usage would increase by 1.03 mcf per month should the Proposed Action be implemented. This would equate to an approximate 8.29 percent increase when compared to the average monthly baseline natural gas consumption of 12.5 mcf.

Storm Water Management

The conditions for the Proposed Action and the other actions are identical to that discussed for the No Action Alternative and the other actions. Therefore, the No Action Alternative cumulative impacts discussion and analysis apply.

Solid Waste Management

A total of 544,740 ft² of space would be constructed under the other actions and 3,130,030 ft² would be constructed and demolished under the Proposed Action. Based on these data and the assumptions in Subchapters 3.5.5 and 4.5.2, it is estimated that 1,089 tons of debris would be generated by the other actions. Cumulatively, a total of 95,901 tons of solid waste would be generated (94,812 tons from the Proposed Action and 1,089 from the other actions), which equates to 4.4 percent of the estimated total capacity of the Steelfield Landfill Class Three cells for construction and demolition waste. As with the Proposed Action, the contractor would recycle materials to the maximum extent possible, thereby reducing the amount of construction and demolition debris disposed in the landfill. Therefore, the discussion and analyses for the Proposed Action apply.

Solid waste generation by personnel would be the same as described in the Proposed Action because no additional personnel would be added under the other actions.

Transportation

Short-term congestion could occur from construction related activity. However, this congestion would be eliminated when the construction activity is completed. The long-term transportation discussion would be the same as described for the Proposed Action because no additional personnel would be added under the other actions.

Maximum Development Alternative

Water Supply

Water consumption would be the same as described in the Maximum Development Alternative because no additional personnel would be added under the other actions. However, water would be used for dust suppression during construction. Assuming 70 percent of the project area would be disturbed, a total 317.2 acres (302 acres under the Maximum Development Alternative and 15.2 acres associated with other action projects), or an average of 63 acres per year, would require water for dust control. Approximately 0.07 mgd could be used to control fugitive dust, increasing the daily usage from 1.43 to 1.50 mgd, which equates to 3.0 percent of the Bay County water treatment plant capacity. Water application for dust control would be discontinued when ground disturbing activities are completed.

Wastewater Treatment

Wastewater generation would be the same as described in the Maximum Development Alternative because no additional personnel would be added under the other actions.

Energy

A net increase of 440,220 ft² of building space would be added by the other actions. Thus, an additional 1,267,760 ft² of building space (827,540 ft² from the Maximum Development Alternative and 440,220 ft² from the other actions) would be added at Tyndall AFB under the Maximum Development Alternative cumulative condition. The 440,220 ft² used for the other actions is less than the total area listed for the other actions in Table 2.6-1 because electricity and natural gas would not be needed to heat or cool the estimated 104,520 ft² associated with the overpass.

Based on the baseline consumption of 0.054 kWh per square foot per day and the additional space, electricity usage would increase by 68,459 kWh per day should the Maximum Development Alternative be implemented. This would equate to an approximate 25.2 percent increase when compared to the average daily baseline electrical consumption of 271,483 kWh per day.

When considering the baseline average daily use of 8.20×10^{-8} mcf per square foot and the additional space, natural gas usage would increase by 3.12 mcf per month should the Maximum Development Alternative be implemented. This would equate to an approximate 25.3 percent increase when compared to the average monthly baseline natural gas consumption of 12.5 mcf.

Storm Water Management

The conditions for the Maximum Development Alternative and the other actions are identical to that discussed for the No Action Alternative and the other actions. Therefore, the No Action Alternative cumulative impacts discussion and analysis apply.

Solid Waste Management

A total of 544,740 ft² of space would be constructed under the other actions and 7,794,360 ft² would be constructed and demolished under the Maximum Development Alternative cumulative condition. Based on these data and the assumptions in Subchapters 3.5.5 and 4.5.2, it is estimated that 1,089 tons of debris would be generated by the other actions. Cumulatively, a total of 148,794 tons of solid waste would be generated (147,705 tons from the Maximum Development Alternative and 1,089 tons from the other actions), which equates to 6.8 percent of the estimated total capacity of the Steelfield Landfill Class Three cells for construction and demolition waste. As with the Maximum Development Alternative, the contractor would recycle materials to the maximum extent possible, thereby reducing the amount of construction and demolition debris disposed in the landfill. Therefore, the discussion and analyses for the Maximum Development Alternative apply.

Solid waste generation by personnel would be the same as described in the Maximum Development Alternative because no additional personnel would be added under the other actions.

Transportation

Short-term congestion could occur from construction related activity. However, this congestion would be eliminated when the construction activity is completed. The long-term transportation discussion would be the same as described for the Maximum Development Alternative because no additional personnel would be added under the other actions.

4.6 BIOLOGICAL RESOURCES

Biological resources analyses used the following evaluation criteria to assess the impacts of the alternatives:

- Diminish habitat for a plant or animal species;
- Diminish regionally important plant or animal species;
- Interfere with wildlife movement or reproductive behavior; and
- Development within a floodplain area.

4.6.1 No Action Alternative

Under the No Action Alternative, the MFH units would not be privatized and the units would continue to be maintained by the Air Force. Demolition of 35 surplus units would occur to reduce the MFH inventory to the HRMA-established level of 813 units. Demolition of the units would occur in an urbanized area. Therefore, there would be minimal disturbance to existing vegetation and wildlife during demolition activities. It is anticipated the area vacated by demolition of the 35 units would be left as open space within the MFH neighborhood and would provide habitat typical of an urban housing area. The remaining units would continue to be used to house military families. Plant and animal species resources, to include T&E species, would not change from baseline conditions. As identified in Figure 3-3 at end of chapter, the only existing MFH

neighborhood in which wetlands occur is the northeastern corner of Felix Lake. It is doubtful any of the units in the Felix Lake neighborhood would be demolished since they were constructed in 1997 and 1998 and, therefore, would be retained as is because they meet housing standards.

4.6.2 Proposed Action

Vegetation and Wildlife

The Proposed Action construction, and demolition activities associated with the Bay View, Shoal Point, and Wood Manor neighborhoods, and the existing Saddle Club Area, would occur within developed, maintained areas with highly modified and disturbed landscape typical of urban residential or recreational areas.

The Proposed Action construction activities associated with the Redfish Point Extension would occur on currently vacant, undeveloped, and densely vegetated mesic and xeric uplands of sandhill and scrub. Vegetative clearing would be required for housing, and roadway and utility easements. This area would be more likely to contain a relatively larger number and greater diversity of wildlife compared to the more urban habitats of the existing housing areas. Construction activities associated with the Redfish Point Extension would not directly affect the undeveloped property located immediately west of the proposed MFH area and identified in the FNAI as a sand pine scrub of exceptional quality. The area west of the proposed MFH area is a Sand Pine Plantation, which is part of the Base's forestry program, and has been harvested in the past and will continue to be harvested in the future. The most recent topographic maps (1994) reveal that a small portion near the center of the area between the two properties is flat, but the majority of Redfish Point Extension slopes away from the adjacent undeveloped land towards the Redfish Point Neighborhood and Felix Lake. Therefore, secondary and indirect impacts from storm water runoff to this area would not be expected.

The areas south of the Redfish Point Extension have become more urbanized through residential development and support wildlife that are potentially more urban adapted and disturbance tolerant. Therefore, it is likely existing wildlife would be tolerant of construction activities. The areas north, west, and east of the Redfish Point Extension would remain undisturbed, providing refuge and habitat during construction periods once development of the Redfish Point Extension has occurred. The designated hunting areas in the Redfish Point Extension would be reduced, as would be the habitat for deer. There would be a likelihood of increased probability of deer/car strikes and deer and human interactions in the newly developed areas.

As previously discussed in Subchapter 2.4, the Bay View and Shoal Point neighborhoods, as well as the Wood Manor East units, would be conveyed under a short-term lease prior to demolition. Once the short-term lease expires, the land would be returned to Tyndall AFB for future use and development. The Florida Fish and Wildlife Service recommends that restoration of longleaf pine vegetation communities be considered within the demolition areas that would be conveyed back to the Air Force.

Threatened and Endangered Species

The Proposed Action construction activities associated with the Redfish Point Extension would occur on vacant, undeveloped, and densely vegetated land. Past surveys for T&E species near the Redfish Point Extension identified two plant species (Gulf Coast lupine, large-leaved joint weed) of management concern by USFWS. One reptile species (Gopher tortoise) is listed as a Species of Special Concern by the Florida Fish and Wildlife Conservation Commission (Tyndall AFB 1999). The potential impact on these species would be minimized by following the Tyndall Integrated Natural Resources Management Plan (INRMP).

The bald eagle that is currently nesting in a forested area on the eastern side of Felix Lake is approximately 0.25 mile north of the Felix Lake neighborhood. Since there would be no new development in the Felix Lake neighborhood under the Proposed Action, it is unlikely there would be increased human interactions with the bald eagle or that there would be a reduction in the amount of nesting and roosting habitats available for the bald eagle.

The eastern most boundary of the proposed Redfish Point Extension is approximately 0.4 mile (2,100 feet) west of the bald eagle's nest and outside the 1,500-foot bald eagle buffer zone commented by the USFWS. However, it is unlikely that human interactions with the bald eagle would create an adverse effect since the distance to the nest would be greater than the existing distance from the nest to the Felix Lake neighborhood, a relationship that has not produced an adverse effect. Annual surveys for bald eagle nests conducted by Tyndall AFB Natural Resources personnel would continue. A 1,500-foot buffer zone would be established surrounding any nests discovered prior to construction. Any activity that could potentially cause threat or encroachment of T&E Species would require formal Section 7 consultation with the USFWS.

Wetlands

Portions of the extreme northern and northeastern portions of the proposed Redfish Point Extension are within a designated Palustrine-Forested Wetlands area. Although no project activities would occur within a wetland, wetlands delineation would be accomplished during the project design phase to accurately identify and map jurisdictional wetlands. The site plan for the MFH units would be designed to avoid construction in wetlands. Best management practices such as a silt fence would be implemented between any identified jurisdictional wetlands and the project area to prevent indirect impact to the wetlands. Fencing would be used to buffer equipment operations and other activities from wetlands.

Floodplains

None of the subject housing units or proposed construction activities would be located within the 100-year floodplain. Therefore, the Proposed Action construction and demolition activities would not be affected by floodplains nor would the activities affect floodplains.

4.6.3 Maximum Development Alternative

The project area and activities associated with the Maximum Development Alternative are similar to that for the Proposed Action except that a greater number of units would be constructed in the existing neighborhoods, Redfish Point Extension, and the existing Saddle Club. The discussion and analyses for the Proposed Action apply. However, the Maximum Development Alternative could possibly diminish habitat, or interfere with wildlife movement or reproductive behavior due to the 390 additional units that would be constructed. Procedures outlined in the most recent Tyndall AFB INRMP (scheduled for completion in the Spring 2005) would be followed prior to project activities to sample, identify, and if necessary, relocate any T&E plant and animal species found on Redfish Point Extension or at the existing Saddle Club Area (Mobley 2004).

4.6.4 Mitigation

No adverse effects would be anticipated. Therefore, no mitigation would be necessary.

4.6.5 Cumulative Impacts

It is estimated that the shortest distance between one of the other actions and a MFH neighborhood would be approximately 3,000 feet. This distance would eliminate the potential for cumulative biological resources effects because the actions associated with the No Action Alternative, Proposed Action, and Maximum Development Alternative and the other actions would not occur in the same area.

4.7 GROUNDWATER RESOURCES

In considering the impacts on groundwater resources, the following evaluation criteria were examined:

- The degree to which the groundwater levels could be impacted; and
- The potential for contamination of groundwater.

4.7.1 No Action Alternative

Under the No Action Alternative, MFH units would not be privatized and the units would continue to be maintained by the Air Force. Demolition of 35 surplus units would occur to reduce the MFH inventory to the HRMA-established requirement of 813 units. Non-point source pollutants would continue to be generated primarily from runoff from streets and parking areas. Runoff from the MFH neighborhoods would not affect potable water since the source is Deer Point Lake. The Floridian Aquifer is separated from local recharge areas by 150 feet of clayey stratum, and is much deeper than the shallow water table aquifer. Except for possible irrigation in common areas and housing, it is unlikely groundwater would be used under the No Action Alternative. Activities in the MFH areas do not contaminate groundwater systems.

4.7.2 Proposed Action

The existing MFH areas and the proposed units in the Redfish Point Extension and existing Saddle Club area would be served by asphalt roadways. Construction and use of these roads would generate oils and other pollutants that could be carried by storm water run-off to adjacent shallow groundwater recharge areas. Storm water management practices and permits for construction of roadways would be implemented to reduce potential infiltration of point source and non-point source pollutants. The discussion and analysis for the No Action Alternative apply.

4.7.3 Maximum Development Alternative

The project area and activities associated with the Maximum Development Alternative are similar to that for the Proposed Action except that a greater number of units would be constructed in the existing neighborhoods, Redfish Point Extension, and the existing Saddle Club area. The discussion, analysis, and conclusions for the Proposed Action apply to the Maximum Development Alternative.

4.7.4 Mitigation

No impacts would be anticipated. Therefore, no mitigation would be required.

4.7.5 Cumulative Impacts

It is estimated that the shortest distance between one of the other actions and a MFH neighborhood would be approximately 3,000 feet. Thus, the No Action Alternative, Proposed Action, and Maximum Development Alternative and the other actions would not occur in the same area. The separation between project areas would minimize the potential for cumulative storm water runoff impacts and it is not anticipated ground water would be withdrawn for any of the actions.

4.8 EARTH RESOURCES

The following are evaluation criteria to assess impacts on earth resources:

- The potential to disrupt the ground surface and destroy the soil profile through excavation and removal of rock and soil in the construction of facilities; and
- The potential to increase erosion caused by the disturbance of the ground surface during the construction and demolition of facilities.

4.8.1 No Action Alternative

Under the No Action Alternative, the MFH units would not be privatized and the units would continue to be maintained by the Air Force. Demolition of 35 surplus units would occur to reduce the MFH inventory to the HRMA-established level of 813 units. Soil surrounding the surplus units has been previously disturbed and soil profile destruction would not be anticipated. Use of best management practices such as rock berms, silt fences, and single point construction entries would minimize erosion during

demolition. Grass and other landscaping would be reestablished in the disturbed areas immediately after completion of demolition, thereby reducing the potential for erosion.

The remaining units would continue to be used to house military families. Facilities activities in the MFH areas would be limited to routine maintenance, and no large-scale construction activities would be anticipated. Thus, there would be no additional soil disturbance.

4.8.2 Proposed Action

The Proposed Action would potentially alter topography during construction of the new MFH units. Geology would not change as a result of the Proposed Action. Construction activity in Wood Manor and the existing Saddle Club area would occur within an area in which the soil has been disturbed and modified by prior MFH construction. Construction activity at the Redfish Point Extension would occur within an area that has not been disturbed by prior activities. However, it is anticipated the CDP for the Extension would minimize disturbance of the topography and soils to retain as much of the natural setting as possible to make the neighborhood appealing to residents. The contractor would ensure a storm water pollution prevention plan is completed and approved before initiating activities. The plan likely would include the following erosion control techniques that would be used during demolition and construction to minimize erosion.

- Earthwork would be planned and conducted in such a manner to minimize the duration of the exposure of unprotected soil.
- Side slopes and back slopes would be protected immediately upon completion of rough grading. Protection would be provided by accelerated growth of permanent vegetation, temporary vegetation, mulching, or netting.
- Slopes too steep for stabilization by other means would be stabilized by hydroseeding, mulch anchored in place, covering by anchored netting, sodding, or such combination of these and other methods as may be necessary for effective erosion control.
- Use of best management practices such as rock berms, silt fences, and single point construction entries would minimize erosion during demolition and construction.
- Grass and other landscaping would be reestablished in the disturbed areas immediately after completion of construction, thereby reducing the potential for erosion.

4.8.3 Maximum Development Alternative

The project area and activities associated with the Maximum Development Alternative are similar to that for the Proposed Action except that a greater number of MFH units would be constructed in the existing neighborhoods, Redfish Point Extension, and existing Saddle Club area. The discussion, analysis, and conclusions for the Proposed Action apply to the Maximum Development Alternative.

4.8.4 Mitigation

No impacts would occur and no mitigation would be required.

4.8.5 Cumulative Impacts

It is estimated that the shortest distance between one of the other actions and a MFH neighborhood would be approximately 3,000 feet. This distance would eliminate the potential for cumulative earth resources impacts because the actions associated with the No Action Alternative, Proposed Action, and Maximum Development Alternative and the other actions would not occur in the same area.

4.9 HAZARDOUS MATERIALS AND WASTE

The following evaluation criteria were used to assess the alternatives with regard to hazardous materials and waste:

- Could the action require materials that could not be accommodated by existing guidance?
- Would the action cause waste generation that could not be accommodated by current Tyndall AFB waste management capacities?
- Would the action interfere with Tyndall AFB IRP?
- Would the action cause non-compliance with existing LBP, ACM, and pesticide management practices?

4.9.1 No Action Alternative

Hazardous Materials

The demolition contractor could use products containing hazardous materials for equipment operation (*e.g.*, hydraulic fluid) during demolition activities. Contractors would be required to use and store hazardous materials in accordance with Base procedures. Any hazardous materials to be used or maintained on-Base would be coordinated and approved by the HAZMO. Residents in the MFH units would continue to purchase hazardous materials for household uses, which would be considered residential waste as exempted by RCRA and would not impact the Base's hazardous waste management program.

Hazardous Wastes

The demolition contractor would maintain records of all waste determinations, including appropriate results of analysis performed, substances and sample locations, date and time of collection, and other pertinent data as required by 40 CFR Part 280, Section 74 and 40 CFR, Part 262, Subpart D. Any hazardous waste generated would be handled in accordance with all federal, state, and local laws and regulations, including RCRA requirements for waste management and USDOT requirements for waste transport and coordinated with the Tyndall AFB Environmental Flight.

In the event of a spill of any amount or type of hazardous material or waste (petroleum products included), the contractor would take immediate action to contain and

clean up the spill, in accordance with the 325th CES Spill Prevention Control and Countermeasures Plan (Tyndall AFB 2004c). Contractor spill cleanup personnel would be trained and certified to perform spill cleanup. The contractor would be responsible for proper characterization and disposal of any waste and cleanup materials generated. All waste and associated cleanup material would be removed from the project site and transported and/or stored in accordance with regulations until final disposal. Fueling and lubrication of equipment would be conducted in a manner that affords maximum protection against spills. Secondary containment is required around temporary fuel oil or petroleum storage tanks larger than 660 gallons.

Installation Restoration Program

As mentioned in Subchapter 3.9.3, there are three IRP sites located near the MFH areas.

Wherry Landfill

The direction of groundwater movement generally parallels the slope of terrain, flowing northeast and southwest from a high area near the coastal ridge (Tyndall AFB 1999). Therefore, it is doubtful that any contamination from this landfill would affect the Bay View housing area. As stated in Subchapter 3.9.3, analytical data suggest that no addressed risk to human health exists because constituent levels are very low. Accordingly, the Base is seeking NFRAP status for the Wherry Landfill/LF001.

Sabre Drive Landfill

Due to the depth and flow direction of the groundwater, it is doubtful that any contamination from this landfill would have any effect on MFH in the area. This landfill has been closed with regulatory concurrence and requires no further remedial actions.

Beacon Beach Landfill

The groundwater generally flows southwest and away from the housing areas; therefore, it is doubtful that any contamination from this landfill would affect the MFH area. Analytical data indicate that none of the target compounds were detected above regulatory limits. Tyndall AFB is seeking NFRAP. This landfill is pending closure with regulatory concurrence and requires no further remedial actions.

Asbestos

The demolition contractor would be responsible for all ACM removal. All friable ACM would be removed by a licensed asbestos abatement contractor using glove bag techniques just prior to actual demolition of the building. If this procedure were used, asbestos-containing areas would not require polyethylene containment and negative pressure. Non-friable ACM could be disposed as solid waste along with other construction debris as long as the landfill is permitted to accept non-friable ACM. Non-friable ACM would be moistened just prior to removal to minimize airborne fibers. All debris mixed with ACM debris must be kept wet and must be sent to an asbestos-approved landfill. ACM that occurs in any of the remaining units would be managed in accordance with existing directives.

Lead-Based Paint

Lead-based paint would be removed and disposed of by the demolition contractor in accordance with existing regulations. The Base would continue to manage LBP as described in Subchapters 3.9.5.

Pesticides

The demolition contractor would take care to disturb as little soil as possible. Of particular concern would be earth disturbing activities such as grading and leveling. Soil would not be removed from the site without appropriate environmental testing and without written consent from the Base Commander or designee. The Base would continue to manage pesticides in accordance with the procedures described in Subchapter 3.9.6.

4.9.2 Proposed Action

Hazardous Materials

Products containing hazardous materials would be procured and used during the proposed demolition and construction of the MFH units. The construction and demolition activities for the Proposed Action would be identical to the No Action Alternative demolition activities. Therefore, the discussion and analysis for the No Action Alternative apply.

Hazardous Wastes

The construction and demolition activities for the Proposed Action would be identical to the No Action Alternative demolition activities. Therefore, the discussion and analysis for the No Action Alternative apply.

Installation Restoration Program

The discussion, analysis, and conclusions for the No Action Alternative apply to the Proposed Action.

Asbestos

The ACM discussion for the No Action Alternative applies. Additionally, the proposed MFH units would be constructed without any ACM.

Lead-Based Paint

As part of the privatization process, the government prepares an environmental baseline survey, disclosing all known information on LPB in the MFH units to be conveyed. Results from any LBP hazard risk assessment would also be provided to potential privatization contractors.

Under the Proposed Action, privatization contractors would manage LBP remaining in the privatized MFH units in accordance with applicable regulations. This includes providing a disclosure statement on LBP to new tenants, and abating LBP hazards that develop if the LBP is not properly maintained. Removal of LBP during demolition and

maintenance activities, and disposal of LBP debris would be the responsibility of the contractor. Maintenance and construction activities would not use LBP.

Pesticides

Although a privatization contractor would manage the housing units under the Proposed Action, it is anticipated that the contractor would apply pesticides similar to those applied by the Air Force. Pesticides would be applied according to the instructions for the product and would be applied by certified personnel. New foundations would have soil treated for termites in accordance with state law, to include a certificate of termite treatment by the provider.

The privatization contractor would exhibit caution during demolition, disturbing as little soil as possible. Of particular concern would be earth disturbing activities such as grading, leveling, and trenching. The privatization contractor would not remove any soil from the site without appropriate environmental testing and without written consent from the Base Commander or designee. Prior to occupancy of newly constructed housing where soil was disturbed, the privatization contractor would be responsible for having a competent risk assessor carry out a representative sampling for pesticides in the soil immediately surrounding the housing, gardens, and likely children's play areas. The results of sampling or a risk assessment would be provided to the Air Force for approval prior to occupancy.

4.9.3 Maximum Development Alternative

The project area and activities associated with the Maximum Development Alternative are similar to that for the Proposed Action except that a greater number of units would be constructed in the existing neighborhoods, Redfish Point Extension, and the existing Saddle Club area. Therefore, the discussion, analyses, and conclusions for hazardous materials, hazardous wastes, IRP, ACM, LBP, and pesticides for the Proposed Action apply to the Maximum Development Alternative.

4.9.4 Mitigation

Neither the No Action Alternative, Proposed Action, nor the Maximum Development Alternative would cause noncompliance with environmental quality regulations, generate waste that could not be accommodated by current Tyndall AFB hazardous materials and waste management capacities, nor interfere with IRP management. ACM, LBP, and pesticides would be managed according to Base or Air Force policies. No mitigation would be required.

4.9.5 Cumulative Impacts

The types of projects anticipated under the other actions would be similar to those expected under the No Action Alternative, Proposed Action, and Maximum Development Alternative. The construction contractor for the other projects would comply with the applicable regulatory guidance described for the No Action Alternative and the Proposed Action. The activities at the other facilities would be managed in accordance with

applicable Tyndall AFB plans for hazardous materials, hazardous waste, IRP, ACM, LBP, and pesticides.

4.10 CULTURAL RESOURCES

The following evaluation criteria were used to assess the impacts of the actions on cultural resources:

- The potential for construction activities to directly or indirectly affect historical or archaeological resources;
- The potential for discovery of archaeological sites during construction; and
- The potential for adverse impacts on known and unknown archaeological sites.

4.10.1 No Action Alternative

Under the No Action Alternative, the MFH units would not be privatized and the units would continue to be maintained by the Air Force. Demolition of 35 surplus units would occur in order to reduce the MFH inventory to the HRMA-established level of 813 units. It is possible that demolition could occur in the Bay View neighborhood, a location for an identified archaeological site. As mentioned in Subchapter 3.10.2, the area has been severely disturbed by past activities and it is anticipated that no adverse effects would occur. Should historic materials or archaeological resources be discovered during demolition activities, work in the immediate area would be suspended and the Tyndall AFB Environmental Flight would consult the State Historic Preservation Officer. Subsequent actions would follow guidance provided in 36 CFR 800 and other relevant laws, regulations, and standard operating procedures outlined in the ICRMP.

4.10.2 Proposed Action

Historic Resources

There are no known historic buildings, structures, or objects located in the proposed project areas on Tyndall AFB.

Archaeological Resources

Although the Morehead site would not be conveyed to the privatization contractor, the site would be identified and clearly marked prior to construction activities since it could be surrounded by MFH privatization activities in the Redfish Point Extension (see Figure 3-5). During construction activities, precautions in the form of barriers, signs, and erosion control measures would be taken to protect the Morehead site. Since portions of the MFH neighborhoods are located within areas with high potential for archeological sites (Figure 3-5), it is possible that archeological artifacts could be encountered during construction. The discussion and analysis for Bay View under the No Action Alternative apply.

In those areas previously disturbed, no systematic archaeological survey would be accomplished since resources that may have once existed are gone; however, in those

undeveloped areas proposed for construction, a systematic archaeological survey would be conducted and coordinated with the SHPO prior to construction.

4.10.3 Maximum Development Alternative

The project area and activities associated with the Maximum Development Alternative are similar to that for the No Action Alternative and the Proposed Action except that a greater number of MFH units would be constructed in the existing neighborhoods, Redfish Point Extension, and the existing Saddle Club area. The discussion, analysis, and conclusions for the No Action Alternative and Proposed Action apply to the Maximum Development Alternative.

4.10.4 Mitigation

Neither the No Action, Proposed Action, nor the Maximum Development Alternative would cause noncompliance with the Base's ICRMP or other regulatory guidance. No mitigation would be required.

4.10.5 Cumulative Impacts

It is estimated that the shortest distance between one of the other actions and a MFH neighborhood would be approximately 3,000 feet. This distance would eliminate the potential for cumulative cultural resources effects because the actions associated with the No Action Alternative, Proposed Action, and Maximum Development Alternative and the other actions would not occur in the same area. All archaeological resources would be managed in accordance with the ICRMP.

4.11 SOCIOECONOMIC RESOURCES

The DoD standard (operations and maintenance) and construction models of the USACE Economic Impact Forecast System (EIFS) were used to forecast the impacts of the Proposed Action and Maximum Development Alternatives. The standard model estimates the impacts of ongoing mission and operations as well as assessment of changes in operations. The construction model predicts the economic impacts of the expenditures and employment from construction activities. Using a technique termed the rational threshold value (RTV), EIFS estimates are compared to historic trends for each economic indicator (business volume [using non-farm income], personal income, employment, and population) to determine impacts. The RTV model analyzes annual changes since 1969, and establishes analysis criteria based on historic deviations in the value of these four socioeconomic indicators. The EIFS calculates both positive and negative RTVs. This assessment assumes impacts would occur within Bay County. An impact to socioeconomic resources would occur if the existing housing, education, and economic sectors could not accommodate the population, housing, education, and economic changes resulting from the action.

4.11.1 No Action Alternative

Population

The on-Base MFH population would decrease by 103 people to a total population of 3,176 residents. It is likely these 103 persons would relocate within Bay County, the county within which the Base is located. Additionally, it is assumed that the local labor pool is more than sufficient to supply the necessary labor for project demolition and there would be no in-migration of construction workers. For these reasons, there would be no overall change in the county population.

Housing

Housing for military families who would be displaced due to demolition of the 35 surplus units could be accommodated by the 18,824 vacant units in Bay County. It is anticipated there would be no in-migration or temporary relocation of construction laborers into the area. Thus, there would be no additional off-Base housing demand resulting from project demolition.

Education

Although it is anticipated there would be a slight decrease in the number of students attending the on-Base elementary school due to the reduction of 35 MFH units, the overall number of students would remain at or very close to the baseline condition because not all the students who would relocate off-Base attend the on-Base elementary school. The other students who currently reside on-Base, who attend Bay County schools, and who would relocate off base would continue to attend schools in the county. It is anticipated there would be no additional students associated with construction workers since there would be no in-migration or temporary relocation of construction laborers into the area. For these reasons, there would be no change in the number of students attending Bay County schools.

Economy

Direct and indirect short-term beneficial economic impacts would be realized by the regional and local economy during the demolition phase of the No Action Alternative. Employment generated by construction activities would result in wages paid, an increase in business sales volume, and expenditures for local and regional services, materials and supplies.

Using employment and income multipliers developed with a comprehensive regional/local database combined with economic export base techniques, the EIFS model estimates the regional economic impacts with respect to changes in employment generated, and expenditures directly and indirectly resulting from project construction. The EIFS model evaluates economic impacts in terms of regional change in sales (business) volume, employment and personal income.

As indicated in Table 4.11-1, the direct annual regional economic impacts of project demolition consist of increases of \$304,871 in business volume (sales); 6 jobs in the construction, retail trade, services and industrial sectors; and, \$161,199 in direct personal income. Direct employment reflects those workers who would accomplish demolition

activities. Personal income represents the earnings of employees in the demolition, retail, wholesale and service establishments who are initially or directly affected by the project activity. The increase in business volume reflects increases in the sales of goods, services, and supplies associated with project construction activity.

Table 4.11-1 EIFS Annual Economic Impacts, Tyndall AFB No Action Alternative

	Direct Impacts	Indirect Impacts	Total
Construction Impacts			
Sales (Business) Volume	\$304,871	\$520,024	\$824,895
Income	\$161,199	\$109,689	\$270,888
Employment	6	3	9

Source: Economic Impact Forecast System.

Table 4.11-1 also portrays the indirect annual regional impacts on secondary sales, employment and income generated by the employment and business activity directly associated with project construction. The direct increase in sales and employment generates secondary sales of \$520,024; creates an additional three jobs indirectly in the retail trade, services and industry sectors; and results in an additional \$109,689 in indirect income. Indirect employment pertains to those jobs in the retail, wholesale, and service industries generated as a result of the proposed project. Income is indirectly impacted as a result of the indirect increase in sales and employment resulting from the initial economic impacts.

The EIFS model also includes an RTV profile used in conjunction with the forecast models to assess the significance of impacts of an activity for a specific geographic area. For each variable (sales volume, employment, income, and population), the current time-series data available from the U.S. Department of Commerce Bureau of Economic Analysis (USDOC 2000, 2001) are calculated along with the annual change, deviation from the average annual change, and the percent deviation for each of these variables, which then defines a threshold for significant annual regional economic impacts for a variable. Within the EIFS model, the RTV is calculated for each of these variables when assessing the regional economic impacts of a specific project. If the RTV for a particular variable associated with the impacts of a specific project exceeds the maximum annual historic deviation for that variable, then the economic impacts are considered to be significant. If the RTV for a variable is less than the maximum annual historic deviation for that variable, then the regional economic impacts are not considered significant. With respect to the EIFS model assessment of the economic impacts of construction under the No Action Alternative, the RTVs for each of the four variables (population, sales volume, income, employment) were found to be significantly less than the regional RTVs. For this reason, project construction associated with the No Action Alternative would not result in significant annual local or regional economic impacts.

4.11.2 Proposed Action

Population

The on-Base MFH population would increase by nine people to a total population of 3,288 residents. It is likely these nine persons live in Bay County under the baseline.

Additionally, it is assumed that the local labor pool is more than sufficient to supply the necessary labor for project construction and there would be no in-migration of construction workers. For these reasons, there would be no overall change in the county population.

Housing

Housing for military families who would be displaced due to the 35-unit reduction in MFH could be accommodated by the 18,824 vacant units in Bay County. It is anticipated there would be no in-migration or temporary relocation of construction laborers into the area. Thus, there would be no additional off-Base housing demand resulting from project construction.

Education

The net change in MFH population would be about nine persons and not all these persons would be elementary school age. Therefore, it is anticipated the number of students attending the on-Base elementary school would remain at or very close to the baseline condition and that any additional students likely would be living off-Base and attending Bay County schools under the baseline. The students associated with the 35 families who currently attend Bay County schools and who would relocate off base due to the overall reduction in MFH units would continue to attend schools in the county. It is anticipated there would be no additional students associated with construction workers since there would be no in-migration or temporary relocation of construction laborers into the area. For these reasons, there would be no change in the number of students attending Bay County schools.

Economy

The methodology described for the No Action Alternative was also used to estimate economic impacts under the Proposed Action. The estimated construction cost (capital costs) for project implementation and annual average income for construction laborers were the inputs used in the execution of the EIFS construction model. The estimated construction cost is \$87.4 million. Since the economic projections generated by the EIFS model are on an annual basis, the primary model input for construction costs (\$87.4 million) was pro-rated over an estimated 5-year construction period. The economic region of influence is considered to be Bay County.

As indicated in Table 4.11-2, the direct annual regional economic impacts of project construction over this 5-year period consist of increases of \$9,453,365 in business volume (sales); 179 jobs in the construction, retail trade, services and industrial sectors; and, \$4,952,352 in direct personal income. Direct employment reflects those workers who would accomplish demolition and construction activities. Personal income represents the earnings of employees in the construction, retail, wholesale and service establishments who are initially or directly affected by the construction activity. The increase in business volume reflects increases in the sales of goods, services, and supplies associated with project construction activity.

Table 4.11-2 EIFS Annual Economic Impacts, Tyndall AFB Proposed Action

	Direct Impacts	Indirect Impacts	Total
Construction Impacts			
Sales (Business) Volume	\$9,453,365	\$15,976,190	\$25,429,550
Income	\$4,952,352	\$ 3,369,880	\$8,322,232
Employment	179	92	271

Source: Economic Impact Forecast System.

Table 4.11-2 also portrays the indirect annual regional impacts on secondary sales, employment and income generated by the employment and business activity directly associated with project construction. The direct increase in sales and employment generates secondary sales of \$15,976,190; creates an additional 92 jobs indirectly in the retail trade, services and industry sectors; and results in an additional \$3,369,880 in indirect income. Indirect employment pertains to those jobs in the retail, wholesale, and service industries generated as a result of the proposed project. Income is indirectly impacted as a result of the indirect increase in sales and employment resulting from the initial economic impacts.

With respect to the EIFS model assessment of the economic impacts of construction under the Proposed Action, RTVs for each of the four variables (population, sales volume, income, and employment) were found to be significantly less than the regional RTVs. For this reason, project construction associated with the Proposed Action would not result in significant annual local or regional economic impacts.

4.11.3 Maximum Development Alternative

Population

The on-Base MFH population would increase by 1,410 people to a total population of 4,689 residents. It is likely these 1,410 persons live in Bay County under the baseline. Additionally, it is assumed that the local labor pool is more than sufficient to supply the necessary labor for project construction and there would be no in-migration of construction workers. For these reasons, there would be no overall change in the county population.

Housing

There would be a net gain of 390 MFH units on-Base under the Maximum Development Alternative. These additional units would be occupied by military families currently living off-Base. Thus, there would be an equal number of off-Base housing units that would become vacant under this alternative. According to the 2000 U.S. Census, there are over 78,000 housing units in Bay County. Excluding rental housing units for seasonal, recreational, or occasional use, there are approximately 18,824 vacant housing units in Bay County. Thus, vacating of 390 off-Base housing units would represent less than 1 percent of the local housing supply, and be equivalent to approximately 2 percent of the current number of vacant housing units in Bay County. It is anticipated there would be no in-migration or temporary relocation of construction laborers into the area.

Education

The students associated with the families who would occupy the 390 additional units likely live off-Base in areas in which the students attend Bay County School District schools, the same district that on-Base students attend. The additional non-elementary grade students would continue to attend Bay County schools and would be transported to off-Base schools just as is done for non-elementary grade students currently living in MFH units. It is possible that some of the elementary grade students would have to be transported to off-Base schools if the on-Base school could not accommodate them. It is anticipated there would be no additional students associated with construction workers since there would be no in-migration or temporary relocation of construction laborers into the area. For these reasons, there would be no change in the number of students attending Bay County schools.

Economy

The methodology described for the Proposed Action was also used to estimate economic impacts under the Maximum Development Alternative. The estimated construction cost is \$257 million pro-rated over a 5-year construction period. The economic Region of Influence is considered to be Bay County.

As indicated in Table 4.11-3, the direct annual regional economic impacts of project construction over this 5-year period consist of increases of \$28,082,640 in business volume (sales); 541 jobs in the construction, retail trade, services and industrial sectors, and \$14,916,860 in direct personal income. The latter value represents the earnings of employees in the construction, retail, wholesale, and service establishments who are initially or directly affected by construction activity. The increase in business volume reflects increases in the sales of goods, services, and supplies associated with project construction activity.

**Table 4.11-3 EIFS Annual Economic Impacts,
Tyndall AFB Maximum Development Alternative**

	Direct Impacts	Indirect Impacts	Total
Construction Impacts			
Sales (Business) Volume	\$28,082,640	\$47,459,660	\$75,542,300
Income	\$14,916,860	\$10,010,730	\$24,927,590
Employment	541	273	814

Source: Economic Impact Forecast System.

Table 4.11-3 also portrays the indirect annual regional impacts on secondary sales, employment and income generated by the employment and business activity directly associated with project construction. The direct increase in sales and employment generates secondary sales of \$47,459,660; creates an additional 273 jobs indirectly in the retail trade, services, and industry sectors, and results in an additional \$10,010,730 in indirect income. Income is indirectly impacted as a result of the indirect increase in sales and employment resulting from the initial economic impacts.

With respect to the EIFS model assessment of the economic impacts of construction under the Maximum Development Alternative, RTVs for each of the four variables

(population, sales volume, income, and employment) were found to be significantly less than the regional RTVs. For this reason, project construction associated with the Maximum Development Alternative would not result in significant annual local or regional economic impacts.

4.11.4 Mitigation

The Bay County housing inventory would accommodate the need for off-Base units under the No Action, Proposed Action, and the Maximum Development Alternative. The privatization project would not cause a shortage of classroom space nor increase the population to a level that would require local communities to increase services. All three alternatives would benefit the local sales, income, and employment sectors. Therefore, no mitigation would be necessary.

4.11.5 Cumulative Impacts

Population

As with the No Action Alternative, Proposed Action, and Maximum Development Alternative, there would be no additional personnel assigned to Tyndall AFB under the other actions and there would be no in-migration of construction workers for the other actions. Therefore, there would be no population cumulative impacts and Bay County population would not change for any of the alternatives and other actions.

Housing

There would be no in-migration of construction workers for the other actions and no housing would be required for the workers. Therefore, there would be no housing cumulative impacts for any of the alternatives and other actions.

Education

Since there is no increase in population from other action projects, there would be no change in student enrollment in the Bay County School District. Additionally, there would be no net increase or decrease in student enrollment in the Bay County School District under the No Action Alternative, Proposed Action, or the Maximum Development Alternative. For these reasons, there would be no education cumulative impacts for any of the alternatives and other actions.

Economy

The cumulative impacts represent the combined impacts of the construction under each alternative and other actions. The cumulative impacts of each alternative combined with other actions are presented in Table 4.11-4. As indicated in the table, positive economic impacts would be anticipated when combining the No Action Alternative, Proposed Action, and Maximum Development Alternative, respectively, with the other actions. The EIFS Model uses an employment/income multiplier of 2.69 for Bay County as the multiplier effect on total sales volume.

Table 4.11-4 Annual Cumulative Economic Impacts, Tyndall AFB

	Direct Impacts	Indirect Impacts	Total
No Action Alternative and Other Actions Cumulative Impacts			
Sales (Business Volume)			
No Action Alternative	\$304,871	\$520,024	\$824,895
Other Actions	\$9,150,320	\$15,464,040	\$24,614,360
Cumulative Impact	\$9,455,191	\$15,984,064	\$25,439,255
Income			
No Action Alternative	\$161,199	\$109,689	\$270,888
Other Actions	\$4,770,096	\$3,261,852	\$8,031,948
Cumulative Impact	\$4,961,295	\$3,371,541	\$8,302,836
Employment			
No Action Alternative	6	3	9
Other Actions	173	89	262
Cumulative Impact	179	92	271
Proposed Action and Other Actions Cumulative Impacts			
Sales (Business Volume)			
Proposed Action	\$9,453,365	\$15,976,190	\$25,429,550
Other Actions	\$9,150,320	\$15,464,040	\$24,614,360
Cumulative Impact	\$18,603,685	\$31,440,230	\$50,043,910
Income			
Proposed Action	\$4,952,352	\$ 3,369,880	\$8,322,232
Other Actions	\$4,770,096	\$3,261,852	\$8,031,948
Cumulative Impact	\$9,722,448	\$6,631,732	\$16,354,180
Employment			
Proposed Action	179	92	271
Other Actions	173	89	262
Cumulative Impact	352	181	533
Maximum Development Alternative and Other Action Cumulative Impacts			
Sales (Business Volume)			
Maximum Development Alternative	\$28,082,640	\$47,459,660	\$75,542,300
Other Actions	\$9,150,320	\$15,464,040	\$24,614,360
Cumulative Impact	\$37,232,960	\$62,923,700	\$100,156,660
Income			
Maximum Development Alternative	\$14,916,860	\$10,010,730	\$24,927,590
Other Actions	\$4,770,096	\$3,261,852	\$8,031,948
Cumulative Impact	\$19,686,776	\$13,272,582	\$32,959,538
Employment			
Maximum Development Alternative	541	273	814
Other Actions	173	89	262
Cumulative Impact	714	362	1,076

Source: Economic Impact Forecast System.

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CHAPTER 6 PERSONS AND AGENCIES CONSULTED

The following persons and agencies were consulted during preparation of this EA.

Federal Agencies

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**APPENDIX A
COASTAL ZONE CONSISTENCY DETERMINATION**

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COASTAL ZONE CONSISTENCY

Federal activity in, or affecting, a coastal zone requires preparation of a Coastal Zone Consistency Determination, in accordance with the federal Coastal Zone Management Act of 1972, as amended (Public Law 92-583), and implemented by the NOAA. The CZMA was passed to preserve, protect, develop and, where possible, restore or enhance the nation's natural coastal zone resources, which include wetlands, floodplains, estuaries, beaches, dunes, barrier islands, coral reefs, and fish and wildlife and their habitat. The CZMA also requires management of coastal development to minimize the loss of life and property caused by improper development in a coastal zone. Responsibility for administering the coastal zone management programs has been delegated to states that have developed state-specific guidelines and requirements, or enforceable policies. The Florida Coastal Management Program (FCMP), was approved by NOAA in 1981. A federal agency must ensure that activities within the coastal zone are consistent with that state's coastal zone management program.

In Florida, the enforceable policies consist of 23 Florida statutes (Table A-1 below) administered by 11 state agencies and four of the five water management districts, and apply to activities occurring in or affecting the coastal zone. The entire State of Florida is defined as being within the coastal zone. The State of Florida's federal consistency review is conducted jointly by its FCMP member agencies. The review process is coordinated by the Florida Department of Environmental Protection (FDEP), which serves as the state's lead coastal agency pursuant to §306(c) of the CZMA. The Air Force is responsible for making the final coastal zone consistency determinations for its activities within the state, and the FCMP member agencies will review the coastal zone consistency determination.

Tyndall AFB is located within the coastal zone of Florida, therefore a CZMA Consistency Determination is required for the Proposed Action and Maximum Development Alternative. The criteria used to determine consistency and the significance of impacts to the coastal zone are based on 23 Florida Statutes, or the enforceable policies of the FCMP. The Proposed Action and Maximum Development Alternative must be consistent, to the maximum extent practicable, with the enforceable policies of the FCMP.

Table A-1 Enforceable Policies of the FCMP

Chapter 161, Coastal Construction	Chapter 370, Living Resources: Saltwater Fisheries
Chapter 163, Part II, Local Government: Growth Policy; County and Municipal Planning; Land Development Regulation	Chapter 372, Living Resources: Freshwater
Chapter 186, State and Regional Planning	Chapter 373, Water Resources
Chapter 252, Disaster Preparedness	Chapter 375, Multipurpose Outdoor Recreation; Land Acquisition, Management and Conservation
Chapter 253, State Lands	Chapter 376, Pollutant Discharge Prevention and Removal
Chapter 258, Outdoor Recreation	Chapter 377, Energy Resources: Oil and Gas Production
Chapter 259, Land Conservation Action of 1972	Chapter 380, Developments of Regional Impact
Chapter 260, Recreational Trails System	Chapter 381, Public Health, General Provisions
Chapter 267, Historical Resources	Chapter 388, Anthropod Control
Chapter 288, Tourism and Economic: Commercial Development and Capitol Improvements	Chapter 403, Environmental Control
Chapter 334, Public Transportation	Chapter 582, Soil and Water Conservation
Chapter 339, Public Transportation: Transportation Finance and Planning	

(FDEP 2004)

No Action

Under the No Action Alternative, the MFH units would not be privatized and the units would continue to be maintained by the Air Force. Demolition of 35 surplus units would occur to reduce the MFH inventory to the HRMA-established level of 813 units. Units most likely to be demolished would be the ones closest to the shoreline in the Bay View neighborhood, which would benefit the shoreline.

Proposed Action and Maximum Development Alternative

The analysis and discussion presented is applicable to both the Proposed Action and the Maximum Development Alternative due to the similarities of the alternatives. The majority of the 23 Florida Statutes used for consistency determination were not applicable to the Proposed Action and Maximum Development Alternative. There were six statutes that remained potentially applicable and were evaluated further for consistency. The Maximum Development Alternative would involve more demolition and replacement construction than the Proposed Action, but would be consistent to the maximum extent practicable with the enforceable policies of the FCMP. Proposed Action and Maximum Development Alternative consistency with the six statutes is summarized in Table A-2 below.

Table A-2 Coastal Zone Consistency for the Proposed Action and Maximum Development Alternative

Statute	Consistency
Chapter 161, Coastal Construction	Consistent. No construction would be below the mean high water line, nor would constructed housing interfere with public use of any beaches.
Chapter 267, Historical Resources	Consistent. Historical and archaeological resources are discussed in Subchapter 4.10 of this EA.
Chapter 373, Water Resources	Consistent. In consideration of water supply, storm water management, wetlands and floodplains, and groundwater management: discussed in Subchapters 4.5, 4.6, and 4.7 of this EA.
Chapter 267, Pollutant Discharge Prevention and Removal	Consistent. In consideration of wastewater treatment, storm water management, and hazardous materials and wastes: discussed in Subchapters 4.5 and 4.9 of this EA.
Chapter 403, Environmental Control	Consistent. In consideration of pollution control for air, storm water, and hazardous wastes and materials: discussed in Subchapters 4.4, 4.5 and 4.9 of this EA.
Chapter 582, Soil and Water Conservation	Consistent. In consideration of soil erosion and storm water management: discussed in Subchapter 4.7 and 4.8 of this EA.

The Air Force forwarded the Description of Proposed Action and Alternatives to the Florida Department of Environmental Protection on August 26, 2004. The Department's response on October 12, 2004 stated that "the state has determined that the ... project is consistent with the Florida Coastal Management Program." Appendix D contains the Air Force's letter to the Department and the Department's response.

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APPENDIX B NOISE INFORMATION

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NOISE INFORMATION

Noise is defined as sound that is undesirable because it interferes with speech and hearing, is intense enough to damage hearing, or is otherwise annoying. Noise levels often change with time. To compare sound levels over different time periods, several descriptors have been developed that take into account this time-varying nature. These descriptors are used to assess and correlate the various impacts of noise on humans.

The day-night average sound level (DNL) metric is a measure of the total community noise environment. DNL is the average A-weighted sound level over a 24-hour period, with a 10 dBA (A-weighted sound level measured in decibels) adjustment added to the nighttime levels (between 10:00 p.m. and 7:00 a.m.). This adjustment is an effort to account for increased human sensitivity to nighttime noise events. DNL was endorsed by the United States Environmental Protection Agency (USEPA) for use by federal agencies and has been adopted by the Department of Housing and Urban Development (HUD), Federal Aviation Administration, and DoD. DNL is an accepted unit for quantifying annoyance to humans by general environmental noise, including aircraft noise. The Federal Interagency Committee on Urban Noise (FICON) developed land use compatibility guidelines for noise (USDOT 1980). Compatible or incompatible land use is determined by comparing the predicted DNL level at a site with the recommended land uses.

Methods used to quantify the impacts of noise, such as annoyance, speech interference, and health and hearing loss, have undergone extensive scientific development during the past several decades. The most reliable measures are noise-induced annoyance and hearing loss. The impacts of noise exposure are summarized in the following paragraphs.

Annoyance. Noise annoyance is defined by the USEPA as any negative subjective reaction to noise by an individual or group. Table B-1 presents the results of over a dozen studies of the relationship between noise and annoyance levels. This relationship has been suggested by the National Academy of Sciences (NAS 1977) and was reevaluated (Fidell *et al.* 1988) for use in describing people's reaction to semi-continuous (transportation) noise. These data are shown to provide a perspective on the level of annoyance that might be anticipated. For example, 15 to 25 percent of persons exposed on a long-term basis to DNL of 65 to 70 dBA would be expected to be highly annoyed by noise events.

Speech Interference. One of the ways noise affects daily life is by prevention or impairment of speech communication. In a noisy environment, understanding speech is diminished when speech signals are masked by intruding noises. Reduced speech intelligibility also may have other impacts. For example, if speech understanding is interrupted, performance may be reduced, annoyance may increase, and learning may be impaired. Elevated noise levels can interfere with speech, causing annoyance or communication difficulties. Based on a variety of studies, a DNL of 75 dBA indicates a good probability for frequent speech disruption. This level produces ratings of "barely acceptable" for intelligibility of spoken material. Increasing the level of noise to 80 dB reduces the intelligibility to zero, even if people speak in loud voices.

Table B-1 Percentage of Persons Highly Annoyed by Noise Exposure

Noise Exposure Zone (DNL dBA)	Percentage of Persons Highly Annoyed
<65	<15
65-70	15-25
70-75	25-37
75-80	37-52
>80	61

Note: Noise impacts on individuals vary. The “low” numbers above indicate individuals with higher tolerance of noise while the “high” numbers indicate individuals with higher sensitivity to noise.

Source: Adapted from NAS 1977.

Hearing Loss. Hearing loss is measured in decibels and refers to a permanent auditory threshold shift of an individual’s hearing. The USEPA (USEPA 1974) recommended a limiting daily equivalent energy value or equivalent sound level of 70 dBA to protect against hearing impairment over a period of 40 years. This daily energy average would translate into a DNL value of approximately 75 dBA or greater. Based on a USEPA study, hearing loss is not expected in people exposed to a DNL of 75 dBA or less (USEPA 1974). The potential for hearing loss involves direct exposure to DNL levels above 75 dBA on a regular, continuing, long-term basis. FICON states that hearing loss due to noise: 1) may begin to occur in people exposed to long-term noise at or above a DNL of 75 dBA; 2) will not likely occur in people exposed to noise between a DNL of 70 and 75 dBA; and 3) will not occur in people exposed to noise less than a DNL of 70 dBA (USDOT 1980).

An outdoor DNL of 75 dBA is considered the threshold above which the risk of hearing loss is evaluated. Following guidelines recommended by the Committee on Hearing, Bioacoustics, and Biomechanics, the average change in the threshold of hearing for people exposed to DNL equal to or greater than 75 dBA was evaluated. Results indicated that an average of 1 dBA hearing loss could be expected for people exposed to DNL equal to or greater than 75 dBA. For the most sensitive 10 percent of the exposed population, the maximum anticipated hearing loss would be 4 dBA. These hearing loss projections must be considered conservative as calculations are based on an average daily outdoor exposure of 16 hours (7:00 a.m. to 10:00 p.m.) over a 40-year period. It is doubtful any individual would spend this amount of time outdoors within the DNL equal to or greater than 75 dBA noise exposure area.

Land Use Compatibility. FICON developed land use compatibility guidelines for noise in terms of DNL (USDOT 1980). DNL is the metric used by the Air Force in determining noise impacts of military airfield operations for land use planning. Air Force land use compatibility guidelines (relative to DNL values) are documented in the Air Installation Compatible Use Zone (AICUZ) *Program Manager’s Handbook* (USAF 1999). Four noise zones are used in AICUZ studies to identify noise impacts from aircraft operations. These noise zones range from DNL of 65 dBA to DNL of 80 dBA. For example, it is recommended that no residential uses, such as homes, multifamily dwellings, dormitories, hotels, and mobile home parks be located where the noise is expected to exceed a DNL of 65 dBA. If noise sensitive structures are located in areas within a DNL range of 65 to 75 dBA, the structures should be designed to achieve a

25 to 30 dBA interior noise reduction. For outdoor activities, the USEPA recommends a DNL of 55 dBA as the sound level below which there is no reason to suspect that the general population will be at risk from any noise impacts (USEPA 1974).

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APPENDIX C AIR QUALITY INFORMATION

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AIR QUALITY INFORMATION

Air Pollutants and Regulations

The Clean Air Act (CAA) directed the USEPA to develop, implement, and enforce strong environmental regulations that would ensure cleaner air for all Americans. To protect public health and welfare, the USEPA developed concentration-based standards called National Ambient Air Quality Standards (NAAQS). The promulgation of the CAA was driven by the failure of nearly 100 cities to meet the NAAQS for ozone and carbon monoxide and by the inherent limitations in previous regulations to effectively deal with these and other air quality problems. The USEPA established both primary and secondary NAAQS under the provisions of the CAA. Primary standards define levels of air quality necessary to protect public health with an adequate margin of safety. Secondary standards define levels of air quality necessary to protect public welfare (*i.e.*, soil, vegetation, property, and wildlife) from any known or anticipated adverse impacts.

The six criteria pollutants are ozone (O₃), particulate matter (PM₁₀), nitrogen dioxide (NO₂), carbon monoxide (CO), sulfur dioxide (SO₂), and lead (Pb). Even though ozone is a regulated criteria pollutant, it is not directly emitted from sources. Ozone forms as a result of volatile organic compound (VOC) and nitrogen oxides (NO_x) reacting with sunlight in the atmosphere.

Ozone is not emitted directly into the air but is formed through chemical reactions between natural and man-made emissions of VOC and NO_x in the presence of sunlight. Thus, VOC and NO_x are referred to as “precursors” of ozone. The level of ozone in the air depends on the outdoor levels of these organic gases, the radiant energy of the sun, and other weather conditions. The biggest concern with high ozone concentrations is the damage it causes to human health, vegetation and many common materials used everyday. High ozone concentrations can cause shortness of breath, coughing, wheezing, headaches, nausea, eye and throat irritations, and lung damage.

There are two categories of particulate matter: particles with diameters less than 10 microns and particles with diameters less than 2.5 microns in diameter. Currently, there are area designations only for PM₁₀. The sources of PM₁₀ emissions include industrial and agricultural operations, automobile exhaust, and construction. Since PM₁₀ is so small, it is not easily filtered and can penetrate to the deeper portions of the lungs. Chronic and acute respiratory illnesses may be caused from inhalation of PM₁₀.

Nitrogen dioxide is a reddish-brown to dark brown poisonous gas that produces an irritating odor. It is a byproduct of high combustion sources. Health effects include damage to lungs, bronchial and respiratory system irritation, headaches, nausea, coughing, choking and chest pains.

Carbon monoxide is a colorless, odorless and tasteless toxic gas found naturally in trace quantities in the atmosphere and emitted from any form of combustion. At low concentrations, the central nervous system is affected. At higher concentrations, irritability, headaches, rapid breathing, blurred vision, lack of coordination, nausea and dizziness can all occur. It is especially dangerous indoors when ventilation is inadequate; unconsciousness or death can occur.

Sulfur dioxide is a colorless gas with a strong suffocating odor. It is a gas resulting from the burning of sulfur-containing fuels. Exposure to SO₂ can irritate the respiratory system including lung and throat irritations and nasal bleeding. In the presence of moisture, SO₂ can form sulfuric acid that can cause damage to vegetation.

Lead is a bluish-white to silvery gray solid. Lead particles can originate from motor vehicle exhaust, industrial smelters and battery plants. Health effects include decreased motor function, reflexes and learning; as well as, damage to the central nervous system, kidneys and brain. At high levels of exposure, seizures, coma or death may occur.

The CAA does not directly enforce the NAAQS, but requires each state to promulgate regulatory requirements necessary to implement the NAAQS. The CAA also allows states to adopt air quality standards that are more stringent than the federal standards. The state ambient air standards, as promulgated in Florida Statutes Section 403, are listed in Table C-1. The state of Florida air quality program is administered by the FDEP.

Table C-1 National and State Ambient Air Quality Standards

Air Pollutant	Averaging Time	Primary NAAQS ^{a,b,c}	Secondary NAAQS ^{a,b,d}	Florida Standards ^{a,b}
Carbon Monoxide	8-hour 1-hour	9 ppm (10,000 µg/m ³) 35 ppm (40,000 µg/m ³)	No standard No standard	9 ppm 35 ppm
Lead	Quarterly	1.5 µg/m ³	1.5 µg/m ³	1.5 µg/m ³
Nitrogen Dioxide	Annual	0.053 ppm (100 µg/m ³)	0.053 ppm (100 µg/m ³)	0.053 ppm
Ozone	1-hour 8-hour	0.12 ppm (235 µg/m ³) 0.08 ppm (157 µg/m ³)	0.12 ppm (235 µg/m ³) 0.08 ppm (157 µg/m ³)	0.12 ppm
Particulate Matter (measured as PM ₁₀)	Annual 24-hour	50 µg/m ³ 150 µg/m ³	50 µg/m ³ 150 µg/m ³	50 µg/m ³ 150 µg/m ³
Particulate Matter (measured as PM _{2.5})	Annual 24-hour	15 µg/m ³ 65 µg/m ³	15 µg/m ³ 65 µg/m ³	15 µg/m ³ 65 µg/m ³
Sulfur Oxides (measured as SO _x)	Annual 24-hour 3-hour	0.03 ppm (80 µg/m ³) 0.14 ppm (365 µg/m ³) No standard	No standard No standard 0.50 ppm (1,300 µg/m ³)	0.02 ppm 0.1 ppm 0.5 ppm

^a National and Florida state standards, other than those based on an annual or quarterly arithmetic mean, are not to be exceeded more than once per year. The ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is less than or equal to one over three years.

^b The NAAQS and Florida state standards are based on standard temperature and pressure of 25 degrees Celsius and 760 millimeters of mercury, respectively. Units of measurements are parts per million (ppm) and micrograms per cubic meter (µg/m³).

^c National Primary Standards: The levels of air quality necessary to protect the public health with an adequate margin of safety. Each state must attain the primary standards no later than three years after the state implementation plan is approved by the USEPA.

^d National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse impacts of a pollutant. Each state must attain the secondary standards within a "reasonable time" after the state implementation plan is approved by the USEPA.

Air quality management at Air Force installations is established in AFI 32-7040, *Air Quality Compliance*. AFI 32-7040 requires installations to achieve and maintain compliance with all applicable federal, state, and local standards for air quality compliance. Air quality compliance involves prevention, control, abatement, documentation, and reporting of air pollution from stationary and mobile sources. Maintaining compliance with air quality regulations may require reduction or elimination of pollutant emissions from existing emission sources, and control of new pollution sources.

Regional Air Quality

The USEPA classifies the air quality within an AQCR according to whether or not the concentrations of criteria air pollutants in the atmosphere exceed primary or secondary NAAQS. On July 16, 1997, the USEPA updated the NAAQS for ozone and PM_{2.5}. Central to the updated standards, the USEPA has developed an implementation package that calls for a new round of review of particulate matter to be completed before areas are designated as nonattainment and before any pollution controls would be required. The new standards will not require local controls until 2005 for particulate matter, with compliance determinations delayed until 2008, and with possible extensions.

All areas within each AQCR are assigned a designation of either attainment, nonattainment, unclassifiable attainment, or not designated attainment for each criteria air pollutant. An attainment designation indicates that the air quality within an area is as good as or better than the NAAQS. Nonattainment indicates that air quality within a specific geographical area exceeds applicable NAAQS. Unclassifiable and not designated indicates that the air quality cannot be or has not been classified on the basis of available information as meeting or not meeting the NAAQS and is therefore treated as attainment. Before a nonattainment area is eligible for reclassification to attainment status, the state must demonstrate compliance with NAAQS in the nonattainment area for three consecutive years and demonstrate, through extensive dispersion modeling, that attainment status can be maintained in the future even with community growth.

Federal actions must comply with the USEPA Final General Conformity Rule published in 40 CFR 93, subpart B (for Federal agencies) and 40 CFR 51, subpart W (for state requirements). The Final Conformity Rule, which took effect on January 31, 1994, requires all Federal agencies to ensure that proposed agency activities conform with an approved or promulgated state implementation plan (SIP) or Federal implementation plan (FIP). Conformity means compliance with a SIP or FIP for the purpose of attaining or maintaining the NAAQS. Specifically, this means ensuring the Federal activity does not: 1) cause a new violation of the NAAQS; 2) contribute to an increase in the frequency or severity of violations of existing NAAQS; 3) delay the timely attainment of any NAAQS; or 4) delay interim or other milestones contained in the SIP for achieving attainment.

The Final General Conformity Rule applies only to Federal actions in designated nonattainment or maintenance areas, and the rule requires that total direct emissions (emissions of a criteria pollutant or its precursor caused by a federal action which occurs at the same time/place of the action) and indirect emissions (emissions of a criteria pollutant or its precursor caused by a federal action, but may occur later in time and/or

may be removed in distance from the action, but are still reasonably foreseeable) of nonattainment criteria pollutants, including ozone precursors, be considered in determining conformity. The rule does not apply to actions that are not considered regionally significant and where the total direct and indirect emissions of nonattainment criteria pollutants do not equal or exceed *de minimis* threshold levels for criteria pollutants established in 40 CFR 93.153(b). A Federal action would be considered regionally significant when the total emissions from the Proposed Action equal or exceed 10 percent of the nonattainment area's emissions inventory for any criteria air pollutant. If a Federal action meets *de minimis* requirements and is not considered a regionally significant action, then it does not have to undergo a full conformity determination. Ongoing activities currently being conducted are exempt from the rule so long as there is no increase in emissions above the *de minimis* levels as the result of the Federal action. Table C-2 lists the *de minimis* levels for criteria pollutants in nonattainment areas.

Table C-2 *De Minimis* Levels for Criteria Pollutants in Nonattainment Areas

Pollutant	Designation	Tons/Year
Ozone*	Serious Nonattainment	50
	Severe Nonattainment	25
	Extreme Nonattainment	10
	Other nonattainment areas outside of ozone transport region	100
	Marginal and moderate nonattainment areas inside ozone transport region	50/100
Carbon Monoxide	All nonattainment areas	100
Sulfur Dioxide	All nonattainment areas	100
Lead	All nonattainment areas	25
Nitrogen Dioxide	All nonattainment areas	100
Particulate Matter	Moderate nonattainment	100
	Serious Nonattainment	70
* includes precursors: VOCs or NO _x		

Source: 40CFR 51.853

The quantities of air pollutants are generally measured in pounds per year or tons per year (tpy). All emission sources may be categorized as either mobile or stationary sources. Typical mobile emission sources from Air Force installations include aircraft, surface vehicles, aerospace ground equipment, and weapons testing, whereas stationary emission sources may include boilers, generators, fueling operations, industrial processes, and burning activities. Accurate air emissions inventories are needed for estimating the relationship between emissions sources and air quality.

**APPENDIX D
INTERAGENCY AND INTERGOVERNMENTAL COORDINATION
FOR ENVIRONMENTAL PLANNING**

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Interagency and Intergovernmental Coordination for Environmental Planning

Air Force Instruction (AFI) 32-7060, *Interagency and Intergovernmental Coordination for Environmental Planning*, provides the procedures to comply with applicable federal, state, and local directives for Interagency and Intergovernmental Coordination for Environmental Planning (IICEP). The AFI implements the following:

- Air Force Planning Document 32-70, *Environmental Quality*;
- Department of Defense (DoD) Directive 4165.61, *Intergovernmental coordination of DoD Federal Development Programs and Activities*;
- Executive Order 12372, *Intergovernmental Review of Federal Programs*;
- Title IV of the *Intergovernmental Coordination Act (ICA) of 1968*; and
- Section 204 of the *Demonstration Cities and Metropolitan Development Act of 1966*.

Section 401(b) of the ICA states that, “All viewpoints-national, regional, state, and local...will be fully considered...when planning Federal or federally assisted development programs and projects. To comply with the IICEP, Tyndall AFB distributed the Description of Proposed Action and Alternatives (DOPAA) for Military Family Housing Privatization on August 26, 2004. The transmittal letters and responses from the agencies are included in this appendix.

This draft environmental assessment (EA) has been distributed to the same list of agencies as the DOPAA requesting review and comments. Responses from these agencies are included in Appendix E of this EA.

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DEPARTMENT OF THE AIR FORCE
AIR EDUCATION AND TRAINING COMMAND

26 August 2004

Mr. Ken Gleason
325 CES/CEV
119 Alabama Avenue
Tyndall AFB, FL 32409

Mr. Mike Brim
United States Department of the Interior
Fish and Wildlife Service
1601 Balboa Avenue
Panama City FL 32405

Dear Mr. Brim

The United States Air Force is preparing an Environmental Assessment (EA) to evaluate the potential environmental consequences associated with the privatization of all the military family housing units on Tyndall Air Force Base, TX (TAFB). In accordance with Executive Order 12372, *Intergovernmental Review of Federal Program*, please identify specific issues or topics of environmental concern (to include potential permits or other requirements) that should be addressed in the EA. A short description of the purpose and need, as well as a description of the proposed activities associated with the Proposed Action and Alternatives is given below and figures are attached for your reference.

The purpose of the Proposed Action is to provide access to safe, quality, well-maintained housing in a community where Air Force members and their families would choose to live. The Air Force proposes to lease the underlying land and convey to a private developer all military family housing units on Tyndall AFB (Figures 1-1) with associated utilities, and other infrastructure improvements. Through a combination of demolition of some existing units, and construction of new units, the developer would provide and then manage 813 units for 50 years. Construction and demolition activities would be distributed among Redfish Point Extension, Wood Manor, Wood Manor East, Bay View, and Shoal Point military family housing areas. After demolition and development activities and a short-term lease not to exceed ten years, 47.5 acres of land in Bay View, Shoal Point, and Wood Manor East would be returned to Tyndall AFB for future base development. These areas are identified in Figure 2-1.

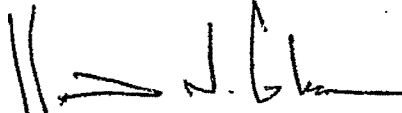
Alternative 1 is the same as the Proposed Action, except all units would be demolished and 813 units would be rebuilt within the existing neighborhoods.

Under the No Action Alternative, privatization of military family housing units on TAFB would not occur. Tyndall AFB would continue to manage its housing program, to include routine maintenance and repair, but no new construction, whole-house renovation, or additional demolition beyond reducing the housing inventory to 813 units would be accomplished.

In addition to identifying resources within your agency's purview that may be potentially impacted, we also request any point-of-contact information or relevant documentation that is available that would assist in preparing the EA. To facilitate cumulative impact analysis, we would also appreciate identification of major projects in the vicinity that may contribute to cumulative effects.

Please provide any comments or information by 15 September 2004. Your assistance in providing information is greatly appreciated. If you have any questions, please call me at 850-283-4393.

Sincerely

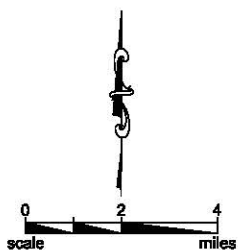
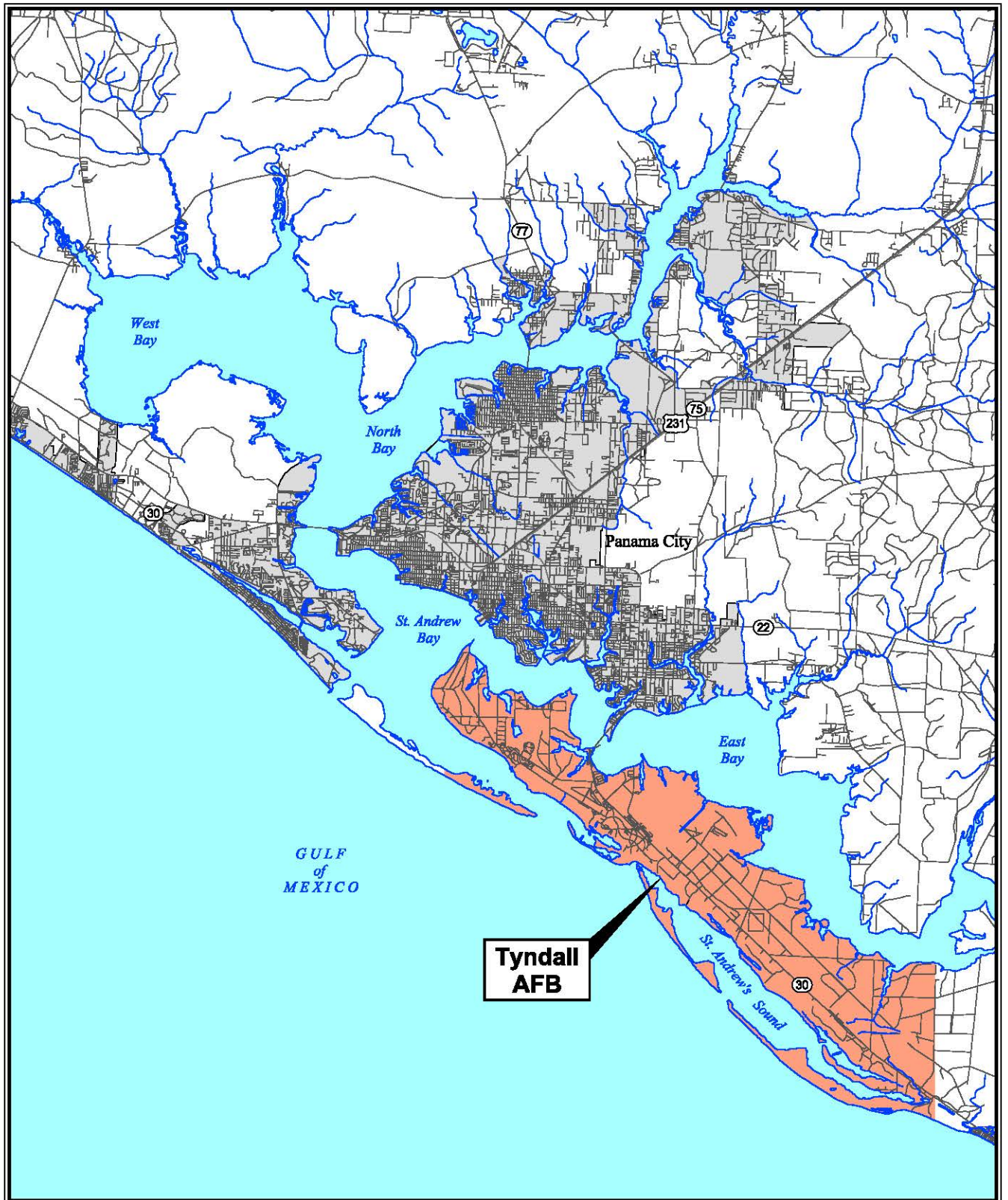
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Ken Gleason
Chief, Environmental Flight

Attachments:

Figure 1 – Location of TAFB

Figure 2 – Location of TAFB Housing Areas



FLORIDA

Figure 1-1

Location of Tyndall AFB

MFH Privatization Initiative - Tyndall AFB, Florida

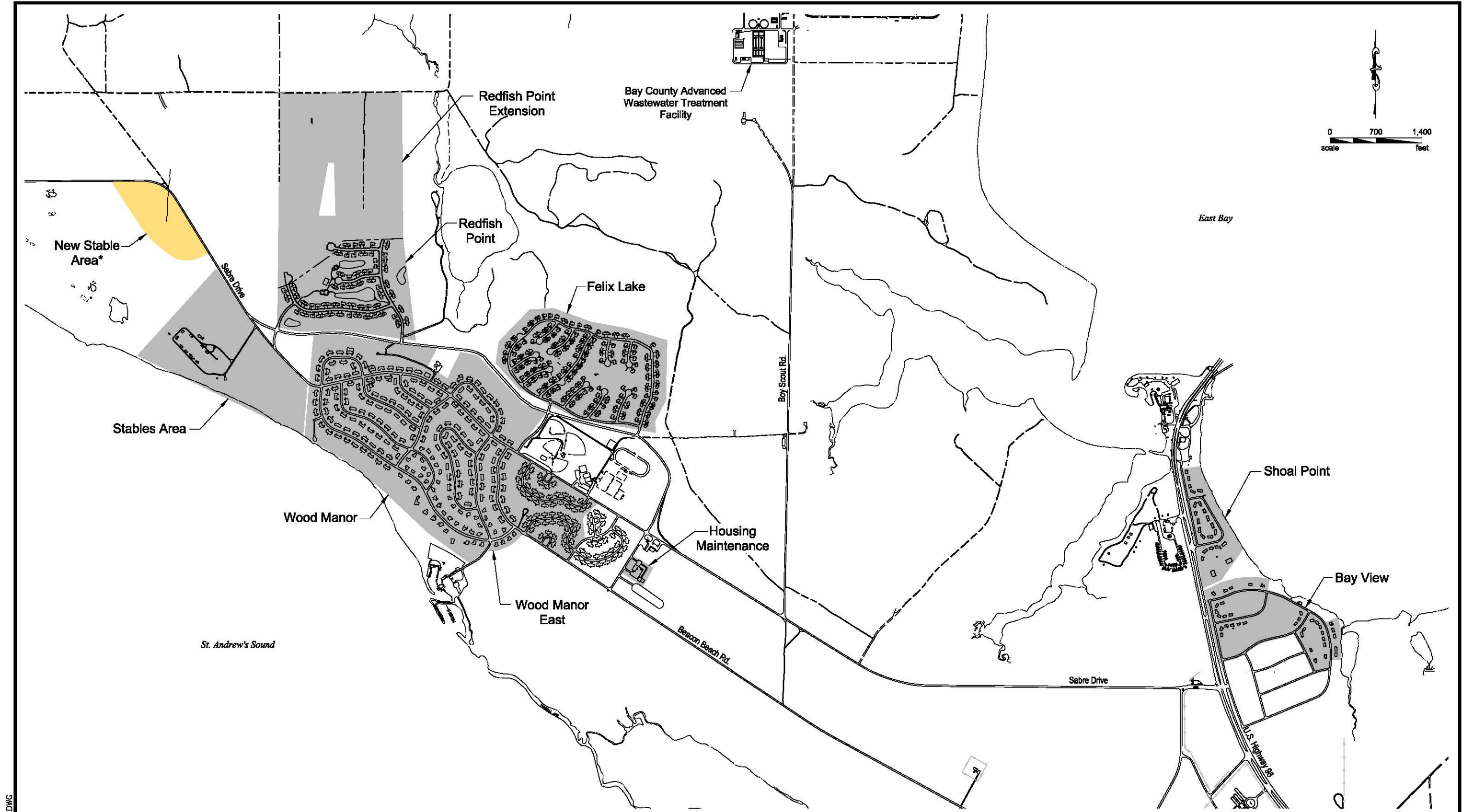


Figure 2-1

Military Family Housing Areas

MFH Privatization Initiative - Tyndall AFB, Florida

743580 TYN-DOPAA-SITES.DWG

* New Stable Area will not be conveyed during the privatization initiative.



DEPARTMENT OF THE AIR FORCE
AIR EDUCATION AND TRAINING COMMAND

26 August 2004

Mr. Ken Gleason
325 CES/CEV
119 Alabama Avenue
Tyndall AFB, FL 32409

Mr. William Straw
Regional Environmental Officer
Federal Emergency Management Agency, Region IV
Mitigation Division
3003 Chamblee-Tucker Road
Atlanta GA 30341

Dear Mr. Straw

The United States Air Force is preparing an Environmental Assessment (EA) to evaluate the potential environmental consequences associated with the privatization of all the military family housing units on Tyndall Air Force Base, TX (TAFB). In accordance with Executive Order 12372, *Intergovernmental Review of Federal Program*, please identify specific issues or topics of environmental concern (to include potential permits or other requirements) that should be addressed in the EA. A short description of the purpose and need, as well as a description of the proposed activities associated with the Proposed Action and Alternatives is given below and figures are attached for your reference.

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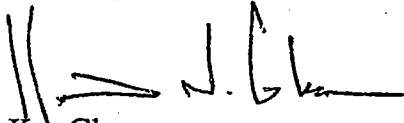
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Please provide any comments or information by 15 September 2004. Your assistance in providing information is greatly appreciated. If you have any questions, please call me at 850-283-4393.

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Ken Gleason
Chief, Environmental Flight

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Figure 2 – Location of TAFB Housing Areas



DEPARTMENT OF THE AIR FORCE
AIR EDUCATION AND TRAINING COMMAND

26 August 2004

Mr. Ken Gleason
325 CES/CEV
119 Alabama Avenue
Tyndall AFB, FL 32409

Ms. Janet Shelby, CESAM-PA
U.S. Army Corps of Engineers
Mobile District
109 Saint Joseph Street, Room 8000B
Mobile AL 36602

Dear Ms. Shelby

The United States Air Force is preparing an Environmental Assessment (EA) to evaluate the potential environmental consequences associated with the privatization of all the military family housing units on Tyndall Air Force Base, TX (TAFB). In accordance with Executive Order 12372, *Intergovernmental Review of Federal Program*, please identify specific issues or topics of environmental concern (to include potential permits or other requirements) that should be addressed in the EA. A short description of the purpose and need, as well as a description of the proposed activities associated with the Proposed Action and Alternatives is given below and figures are attached for your reference.

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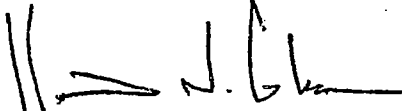
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DEPARTMENT OF THE AIR FORCE
AIR EDUCATION AND TRAINING COMMAND

26 August 2004

Mr. Ken Gleason
325 CES/CEV
119 Alabama Avenue
Tyndall AFB, FL 32409

Mr. Mike McDaniel
State of Florida State Clearing House
Bureau of Local Planning
Division of Community Planning
2555 Shumard Oak Boulevard
Tallahassee FL 32399-2100

Dear Mr. McDaniel

The United States Air Force is preparing an Environmental Assessment (EA) to evaluate the potential environmental consequences associated with the privatization of all the military family housing units on Tyndall Air Force Base, TX (TAFB). In accordance with Executive Order 12372, *Intergovernmental Review of Federal Program*, please identify specific issues or topics of environmental concern (to include potential permits or other requirements) that should be addressed in the EA. A short description of the purpose and need, as well as a description of the proposed activities associated with the Proposed Action and Alternatives is given below and figures are attached for your reference.

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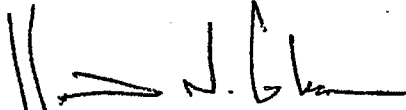
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Chief, Environmental Flight

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WEST FLORIDA REGIONAL PLANNING COUNCIL

WEST FLORIDA REGIONAL PLANNING COUNCIL

Post Office Box 9759 • 3435 North 12th Avenue • Pensacola, Florida 32513-9759
 Phone (850) 595-8910 • S/C 695-8910 • (800) 226-8914 • Fax (850) 595-8967

LeJ Czeck
 Executive Director

Cody Taylor
 Chairman

Sydney Joel Pate
 Vice-Chairman

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

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

DATE: OCTOBER 5, 2004

FROM: Terry Joseph, Intergovernmental Review Coordinator
 Extension 206
 joseph@wfrpc.dst.fl.us

SUBJECT: State Clearinghouse Review(s) Fax Transmittals:

SAI #	Project Description	RPC #
FL200409039700C	Air Force – Notice of intent to prepare an environmental assessment – Military family housing privatization demolition, construction, renovation, and leasing program at Tyndall Air Force Base.	B546-09-28-2004

	No Comments – Generally consistent with the WFSRPP
X	Comments Attached

If you have any questions, please call.

**WEST FLORIDA REGIONAL PLANNING COUNCIL**

Post Office Box 9759 • Pensacola, Florida 32513-9759 • 3435 North 12th Avenue (32503)
Phone (850) 595-8910 • S/C 695-8910 • (800) 226-8914 • Fax (850) 595-8967

Lel Czeck
Executive Director

Cody Taylor
Chairman

Sydney Joel Pate
Vice-Chairman

MEMORANDUM

DATE: September 30, 2004

TO: Terry Joseph/Director, Comprehensive Planning Division

FROM: Deborah F. Nickles, Senior Planner

SUBJECT: Review of Department of the Air Force - Notice of Intent to Prepare an Environmental Assessment-Military Family Housing Privatization Demolition, Construction, Renovation, and Leasing Program at Tyndall Air Force Base-Bay County
SAI#: FL 2004-09-03-9700C

Based upon a review of the above project description, it is recommended that an archeological/cultural/historical resources survey be completed prior to any demolition, construction, and renovation to the existing housing units. This survey would allow for documentation of any archeological, cultural or historical resources, and for those dwelling units 50 years or older listed or eligible for listing on the National Register of Historic Places, in accordance with the National Historic Preservation Act of 1966, as amended.



DEPARTMENT OF THE AIR FORCE
AIR EDUCATION AND TRAINING COMMAND

26 August 2004

Mr. Ken Gleason
325 CES/CEV
119 Alabama Avenue
Tyndall AFB, FL 32409

Mr. Anthony Mitchell
City of Panama City
Community Development Program
2629 W. 10th Street
Panama City FL 32401

Dear Mr. Mitchell

The United States Air Force is preparing an Environmental Assessment (EA) to evaluate the potential environmental consequences associated with the privatization of all the military family housing units on Tyndall Air Force Base, TX (TAFB). In accordance with Executive Order 12372, *Intergovernmental Review of Federal Program*, please identify specific issues or topics of environmental concern (to include potential permits or other requirements) that should be addressed in the EA. A short description of the purpose and need, as well as a description of the proposed activities associated with the Proposed Action and Alternatives is given below and figures are attached for your reference.

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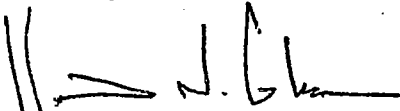
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Please provide any comments or information by 15 September 2004. Your assistance in providing information is greatly appreciated. If you have any questions, please call me at 850-283-4393.

Sincerely

A handwritten signature in black ink, appearing to read 'Ken Gleason', with a stylized flourish at the end.

Ken Gleason

Chief, Environmental Flight

Attachments:

Figure 1 – Location of TAFB

Figure 2 – Location of TAFB Housing Areas



DEPARTMENT OF THE AIR FORCE
AIR EDUCATION AND TRAINING COMMAND

26 August 2004

Mr. Ken Gleason
325 CES/CEV
119 Alabama Avenue
Tyndall AFB, FL 32409

Mr. Robert Majka, Jr.
Chief of Emergency
Emergency Management Office, Bay County
644 Mulberry Avenue
Panama City FL 32401

Dear Mr. Majka

The United States Air Force is preparing an Environmental Assessment (EA) to evaluate the potential environmental consequences associated with the privatization of all the military family housing units on Tyndall Air Force Base, TX (TAFB). In accordance with Executive Order 12372, *Intergovernmental Review of Federal Program*, please identify specific issues or topics of environmental concern (to include potential permits or other requirements) that should be addressed in the EA. A short description of the purpose and need, as well as a description of the proposed activities associated with the Proposed Action and Alternatives is given below and figures are attached for your reference.

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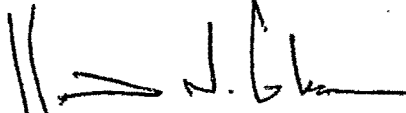
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Ken Gleason
Chief, Environmental Flight

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DEPARTMENT OF THE AIR FORCE
AIR EDUCATION AND TRAINING COMMAND

26 August 2004

Mr. Ken Gleason
325 CES/CEV
119 Alabama Avenue
Tyndall AFB, FL 32409

Ms. Vickie Morrison
State of Florida Department of Community Affairs
Florida Coastal Management Program
2555 Shumard Oak Boulevard
Tallahassee FL 32399-2100

Dear Ms. Morrison

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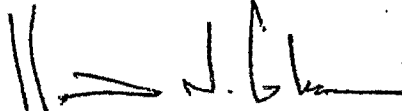
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Chief, Environmental Flight

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DEPARTMENT OF COMMUNITY AFFAIRS

*"Dedicated to making Florida a better place to call home"*JEB BUSH
GovernorTHADDEUS L. COHEN, AI
Secretary

September 13, 2004

Mr. Ken Gleason.
Chief, Environmental Flight
325 CES/CEV
119 Alabama Avenue
Tyndall Air Force Base, Florida 32409

Re: Environmental Assessment – Privatization of On Base Family Housing

Dear Mr. Gleason:

We have reviewed your letter of 26 August 2004 concerning the evaluation of the potential environmental consequences associated with the privatization of all military family housing units on Tyndall Air Force Base. As Florida's State Land Planning Agency, the Department of Community Affairs has responsibility for implementing Florida's growth management program. We do not have any comments at this time on the proposed provision and management of family housing on Tyndall Air Force Base.

Thank you for the opportunity to comment on this project. If you have any questions, please call Jeff Bielling, Principal Planner, at 850/922-1760.

Sincerely yours,



Alex Magee

Regional Program Administrator

2555 SHUMARD OAK BOULEVARD • TALLAHASSEE, FLORIDA 32399-2100

Phone: 850.488.8466/Suncom 278.8466 FAX: 850.921.0781/Suncom 291.0781

Internet address: <http://www.dca.state.fl.us>

CRITICAL STATE CONCERN FIELD OFFICE
2796 Overseas Highway, Suite 212
Marathon, FL 33050-2227
(305) 289-2402

COMMUNITY PLANNING
2555 Shumard Oak Boulevard
Tallahassee, FL 32399-2100
(850) 488-2356

EMERGENCY MANAGEMENT
2555 Shumard Oak Boulevard
Tallahassee, FL 32399-2100
(850) 413-9969

HOUSING & COMMUNITY DEVELOPMENT
2555 Shumard Oak Boulevard
Tallahassee, FL 32399-2100
(850) 488-7956



DEPARTMENT OF THE AIR FORCE
AIR EDUCATION AND TRAINING COMMAND

26 August 2004

Mr. Ken Gleason
325 CES/CEV
119 Alabama Avenue
Tyndall AFB, FL 32409

Ms. Lauren Milligan
State of Florida
State Agency Clearing House
The Department of Environmental Protection
3900 Commonwealth Blvd. MS 47
Tallahassee, FL 32399-3000

Dear Ms. Milligan

The United States Air Force is preparing an Environmental Assessment (EA) to evaluate the potential environmental consequences associated with the privatization of all the military family housing units on Tyndall Air Force Base, TX (TAFB). In accordance with Executive Order 12372, *Intergovernmental Review of Federal Program*, please identify specific issues or topics of environmental concern (to include potential permits or other requirements) that should be addressed in the EA. A short description of the purpose and need, as well as a description of the proposed activities associated with the Proposed Action and Alternatives is given below and figures are attached for your reference.

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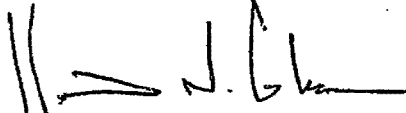
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Please provide any comments or information by 15 September 2004. Your assistance in providing information is greatly appreciated. If you have any questions, please call me at 850-283-4393.

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Chief, Environmental Flight

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DEPARTMENT OF THE AIR FORCE
AIR EDUCATION AND TRAINING COMMAND

26 August 2004

Mr. Ken Gleason
325 CES/CEV
119 Alabama Avenue
Tyndall AFB, FL 32409

Mr. Gary Schaffer
State of Florida
Department of Environmental Protection
District Branch Office – Northwest
2353 Jenks Avenue
Panama City FL 32405

Dear Mr. Schaffer

The United States Air Force is preparing an Environmental Assessment (EA) to evaluate the potential environmental consequences associated with the privatization of all the military family housing units on Tyndall Air Force Base, TX (TAFB). In accordance with Executive Order 12372, *Intergovernmental Review of Federal Program*, please identify specific issues or topics of environmental concern (to include potential permits or other requirements) that should be addressed in the EA. A short description of the purpose and need, as well as a description of the proposed activities associated with the Proposed Action and Alternatives is given below and figures are attached for your reference.

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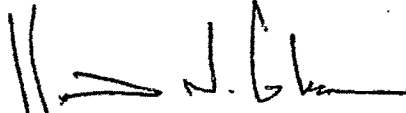
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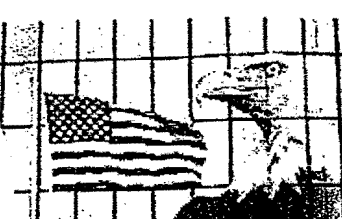
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Florida

Department of Environmental Protection

"More Protection, Less Process"



Categories

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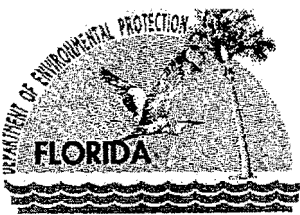
Project Information	
Project:	FL200409039700C
Comments Due:	October 01, 2004
Letter Due:	October 16, 2004
Description:	DEPARTMENT OF THE AIR FORCE - NOTICE OF INTENT TO PREPARE AN ENVIRONMENTAL ASSESSMENT - MILITARY FAMILY HOUSING PRIVATIZATION DEMOLITION, CONSTRUCTION, RENOVATION, AND LEASING PROGRAM AT TYNDALL AIR FORCE BASE - BAY COUNTY, FLORIDA.
Keywords:	USAF - MILITARY FAMILY HOUSING PRIVATIZATION PROGRAM, TYNDALL AFB - BAY CO.
CFDA #:	12.200
Agency Comments:	
COMMUNITY AFFAIRS - FLORIDA DEPARTMENT OF COMMUNITY AFFAIRS	
ENVIRONMENTAL PROTECTION - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION	
The DEP notes that a Wetland Resource Permit, pursuant to Rule 62-312, FAC may be required if construction activities are going to occur in wetlands. The applicant is advised to contact Mr. Larry O'Donnell at (850) 595-8300ext.1129 to discuss permitting requirements.	
STATE - FLORIDA DEPARTMENT OF STATE	
A review of the Florida Master Site File and our records indicated that there are a number of archaeological sites and historic buildings within the project area. Staff looks forward to receiving the proposed Environmental Assessment document and coordinating with the Department of the Air Force regarding historic resources that may be impacted by this project.	
NORTHWEST FLORIDA WMD - NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT	
No Final Comments Received	
WEST FLORIDA RPC - WEST FLORIDA REGIONAL PLANNING COUNCIL	
No Final Comments Received	
BAY - BAY COUNTY	
No Final Comments Received	

For more information please contact the Clearinghouse Office at:

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

Visit the [Clearinghouse Home Page](#) to query other projects.

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[Privacy Statement](#)



Department of Environmental Protection

Jeb Bush
Governor

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

Colleen M. Castille
Secretary

October 12, 2004

Mr. Ken Gleason
325 CES/CEV
119 Alabama Avenue
Tyndall AFB, FL 32409

RE: Department of the Air Force – Notice of Intent to Prepare an Environmental Assessment – Military Family Housing Privatization, Demolition, Construction, Renovation, and Leasing Program at Tyndall Air Force Base – Bay County, Florida.

SAI # FL200409039700C

Dear Mr. Gleason:

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 above-referenced notice of intent.

The Florida Department of Environmental Protection (DEP) notes that a Wetland Resource Permit(s), pursuant to Rule 62-312, *Florida Administrative Code*, may be required if construction activities occur within wetlands. The applicant is advised to contact Mr. Larry O'Donnell at (850) 595-8300 ext. 1129 to discuss permitting requirements.

The Florida Department of State (DOS), Division of Historical Resources notes that a review of the Florida Master Site File and their records indicated that there are a number of archaeological sites and historic buildings within the project area. The DOS acknowledges that the Environmental Assessment will contain an analysis of the project's effects on archaeological and historical resources. For additional information, please see the attached letter from the DOS.

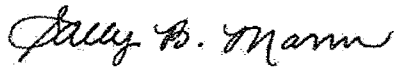
Based on the information contained in the subject notice and the enclosed comments provided by our reviewing agencies, the state has determined that the above-referenced federal project is consistent with the Florida Coastal Management Program.

"More Protection, Less Process"

Printed on recycled paper.

Thank you for the opportunity to review the project. Should you have any questions regarding this letter, please contact Ms. Lori Cox at (850) 245-2187.

Sincerely,

A handwritten signature in cursive script that reads "Sally B. Mann".

Sally B. Mann, Director
Office of Intergovernmental Programs

SBM/lec

Enclosures

cc: Scott Edwards, DOS
Terry Joseph, WFRPC



DEPARTMENT OF THE AIR FORCE
AIR EDUCATION AND TRAINING COMMAND

26 August 2004

Mr. Ken Gleason
325 CES/CEV
119 Alabama Avenue
Tyndall AFB, FL 32409

Ms. Laura Kammerer
Florida Department of State
Division of Historical Resources
500 S. Bronough Street
Tallahassee FL 32399-0250

Dear Ms. Kammerer

The United States Air Force is preparing an Environmental Assessment (EA) to evaluate the potential environmental consequences associated with the privatization of all the military family housing units on Tyndall Air Force Base, TX (TAFB). In accordance with Executive Order 12372, *Intergovernmental Review of Federal Program*, please identify specific issues or topics of environmental concern (to include potential permits or other requirements) that should be addressed in the EA. A short description of the purpose and need, as well as a description of the proposed activities associated with the Proposed Action and Alternatives is given below and figures are attached for your reference.

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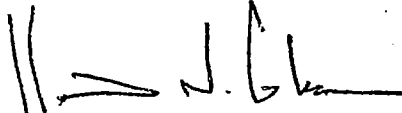
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Please provide any comments or information by 15 September 2004. Your assistance in providing information is greatly appreciated. If you have any questions, please call me at 850-283-4393.

Sincerely

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Ken Gleason
Chief, Environmental Flight

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Figure 1 – Location of TAFB

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FLORIDA DEPARTMENT OF STATE
Glenda E. Hood
Secretary of State
DIVISION OF HISTORICAL RESOURCES

RECEIVED

OCT 04 2004

OIP/OLGA

Ms. Lauren Milligan
Director, Florida State Clearinghouse
Florida Department of Environmental Protection
3900 Commonwealth Boulevard, Mail Station 47
Tallahassee, Florida 32399-3000

September 24, 2004

RE: DHR Project File Number: 2004-9033
Received by DHR September 14, 2004
SAI #: 2004039700C
Department of the Air Force – Notice of Intent To Prepare an Environmental Assessment
Military Family Housing Privatization Demolition, Construction & Leasing Program
Tyndall Air Force Base, Bay County

Dear Ms. Milligan:

Our office received and reviewed the above referenced project in accordance with Section 106 of the *National Historic Preservation Act of 1966* (Public Law 89-665), as amended in 1992, and 36 C.F.R., *Part 800: Protection of Historic Properties*, Chapter 267, *Florida Statutes*, Florida's Coastal Management Program, and implementing state regulations, for possible impact to historic properties listed, or eligible for listing, in the *National Register of Historic Places (NRHP)*, or otherwise of historical, architectural or archaeological value. The State Historic Preservation Officer (SHPO) is to advise and assist state and federal agencies when identifying historic properties, assessing effects upon them, and considering alternatives to avoid or minimize adverse effects.

A review of the Florida Master Site File and our records indicated that there are a number of archaeological sites and historic buildings within the project area. We note that the Department of the Air Force is preparing a Environmental Assessment document. In this document, environmental considerations will include effects on archaeological and historical resources. We look forward to receiving the document and coordinating with the Department of the Air Force regarding historic resources that may be impacted by this project.

If you have any questions concerning our comments, please contact Scott Edwards, Historic Preservationist, by electronic mail sedwards@dos.state.fl.us, or at 850-245-6333 or 800-847-7278.

Sincerely,

Lenna A. Kummerow, Deputy SHPO

for Frederick Gaske, Director, and
State Historic Preservation Officer

500 S. Bronough Street • Tallahassee, FL 32399-0250 • <http://www.flheritage.com>

☐ Director's Office
(850) 245-6300 • FAX: 245-6435

☐ Archaeological Research
(850) 245-6444 • FAX: 245-6436

☒ Historic Preservation
(850) 245-6333 • FAX: 245-6437

☐ Historical Museums
(850) 245-6400 • FAX: 245-6433

☐ Palm Beach Regional Office
(561) 279-1475 • FAX: 279-1476

☐ St. Augustine Regional Office
(904) 825-5045 • FAX: 825-5044

☐ Tampa Regional Office
(813) 272-3843 • FAX: 272-2340



DEPARTMENT OF THE AIR FORCE
AIR EDUCATION AND TRAINING COMMAND

26 August 2004

Mr. Ken Gleason
325 CES/CEV
119 Alabama Avenue
Tyndall AFB, FL 32409

Ms Carol Roberts
Bay County Chamber of Commerce
235 West 5th Street
Panama City FL 32401

Dear Ms Roberts

The United States Air Force is preparing an Environmental Assessment (EA) to evaluate the potential environmental consequences associated with the privatization of all the military family housing units on Tyndall Air Force Base, TX (TAFB). In accordance with Executive Order 12372, *Intergovernmental Review of Federal Program*, please identify specific issues or topics of environmental concern (to include potential permits or other requirements) that should be addressed in the EA. A short description of the purpose and need, as well as a description of the proposed activities associated with the Proposed Action and Alternatives is given below and figures are attached for your reference.

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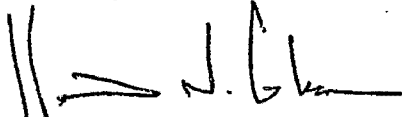
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Ken Gleason
Chief, Environmental Flight

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DEPARTMENT OF THE AIR FORCE
AIR EDUCATION AND TRAINING COMMAND

26 August 2004

Mr. Ken Gleason
325 CES/CEV
119 Alabama Avenue
Tyndall AFB, FL 32409

Mr. John E. Goin
Assistant County Manager for Community Service
Bay County Commissioners
Environmental Group
255 McKenzie Avenue
Panama City FL 32401

Dear Mr. Goin

The United States Air Force is preparing an Environmental Assessment (EA) to evaluate the potential environmental consequences associated with the privatization of all the military family housing units on Tyndall Air Force Base, TX (TAFB). In accordance with Executive Order 12372, *Intergovernmental Review of Federal Program*, please identify specific issues or topics of environmental concern (to include potential permits or other requirements) that should be addressed in the EA. A short description of the purpose and need, as well as a description of the proposed activities associated with the Proposed Action and Alternatives is given below and figures are attached for your reference.

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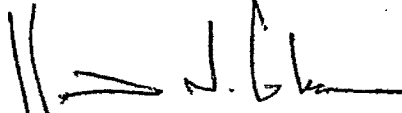
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In addition to identifying resources within your agency's purview that may be potentially impacted, we also request any point-of-contact information or relevant documentation that is available that would assist in preparing the EA. To facilitate cumulative impact analysis, we would also appreciate identification of major projects in the vicinity that may contribute to cumulative effects.

Please provide any comments or information by 15 September 2004. Your assistance in providing information is greatly appreciated. If you have any questions, please call me at 850-283-4393.

Sincerely

A handwritten signature in black ink, appearing to read 'Ken Gleason', with a stylized flourish at the end.

Ken Gleason
Chief, Environmental Flight

Attachments:

Figure 1 – Location of TAFB

Figure 2 – Location of TAFB Housing Areas



DEPARTMENT OF THE AIR FORCE
AIR EDUCATION AND TRAINING COMMAND

26 August 2004

Mr. Ken Gleason
325 CES/CEV
119 Alabama Avenue
Tyndall AFB, FL 32409

Mr. Robert Morgan
Panama City Utilities Department
2226 Michigan Avenue
Panama City FL 32405

Dear Mr. Morgan

The United States Air Force is preparing an Environmental Assessment (EA) to evaluate the potential environmental consequences associated with the privatization of all the military family housing units on Tyndall Air Force Base, TX (TAFB). In accordance with Executive Order 12372, *Intergovernmental Review of Federal Program*, please identify specific issues or topics of environmental concern (to include potential permits or other requirements) that should be addressed in the EA. A short description of the purpose and need, as well as a description of the proposed activities associated with the Proposed Action and Alternatives is given below and figures are attached for your reference.

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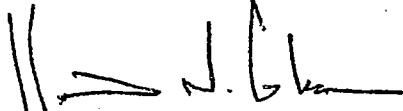
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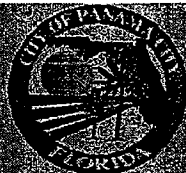
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Ken Gleason
Chief, Environmental Flight

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Figure 1 – Location of TAFB

Figure 2 – Location of TAFB Housing Areas



*Dedicated to Excellence
People Serving People*

September 10, 2004

Ken Gleason
325 CES/CEV
1119 Alabama Avenue
Tyndall AFB, FL 32409

Re: Privatization of all military family housing on Tyndall AFB

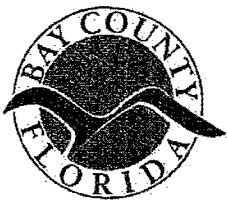
Dear Mr. Gleason:

This is to advise that the City of Panama City Utilities Department has no comments regarding the privatization of family military housing on Tyndall Air Force Base, Florida dated September 2004.

Respectfully,


Ron Morgan
Utilities Director

RM:kl



PUBLIC WORKS DEPARTMENT
Engineering Division
225 McKenzie Avenue
Panama City, Florida 32401
(850) 784-4060

BOARD OF COUNTY
COMMISSIONERS

September 10, 2004

www.co.bay.fl.us

POST OFFICE BOX 1818
PANAMA CITY, FLORIDA 32402

COMMISSIONERS:

JOHN G. NEWBERRY, JR.
DISTRICT I

GEORGE B. GAINER
DISTRICT II

CORNEL BROCK
DISTRICT III

JERRY L. GIRVIN
DISTRICT IV

MICHAEL J. ROPA
DISTRICT V

PAMELA D. BRANGACCIO
COUNTY MANAGER

Mr. Ken Gleason
325 CES/CEV
119 Alabama Avenue
Tyndall AFB, Florida 32409

RE: Environment Assessments for Privatization of Military Housing (your letter dated 8/26/04)

Dear Mr. Gleason:

We have reviewed your letter concerning a project for privatization of military housing at Tyndall AFB and we have no comments.

Please, note that Mr. John Goin is no longer employed by Bay County. All further correspondence concerning environment assessments should be addressed to me.

Sincerely,

A handwritten signature in black ink, appearing to read "Ken Schnell".

Ken Schnell, P.E.
Public Works Director

KS/bh

Cc: Tom Crandall, Utilities Director w/attachment
George E. Walrond, P.E., Engineering Superintendent w/attachment
Larry Hawks, Environmental Coordinator w/attachment



DEPARTMENT OF THE AIR FORCE
AIR EDUCATION AND TRAINING COMMAND

26 August 2004

Mr. Ken Gleason
325 CES/CEV
119 Alabama Avenue
Tyndall AFB, FL 32409

Chief David Slusser
Panama City Police Department
1209 East 15th Street
Panama City FL 32405

Dear Chief Slusser

The United States Air Force is preparing an Environmental Assessment (EA) to evaluate the potential environmental consequences associated with the privatization of all the military family housing units on Tyndall Air Force Base, TX (TAFB). In accordance with Executive Order 12372, *Intergovernmental Review of Federal Program*, please identify specific issues or topics of environmental concern (to include potential permits or other requirements) that should be addressed in the EA. A short description of the purpose and need, as well as a description of the proposed activities associated with the Proposed Action and Alternatives is given below and figures are attached for your reference.

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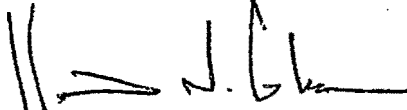
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Please provide any comments or information by 15 September 2004. Your assistance in providing information is greatly appreciated. If you have any questions, please call me at 850-283-4393.

Sincerely

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Ken Gleason
Chief, Environmental Flight

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Figure 1 – Location of TAFB

Figure 2 – Location of TAFB Housing Areas



DEPARTMENT OF THE AIR FORCE
AIR EDUCATION AND TRAINING COMMAND

26 August 2004

Mr. Ken Gleason
325 CES/CEV
119 Alabama Avenue
Tyndall AFB, FL 32409

Mr. Steve Malone
Panama City Land Use Code Enforcement
9 Harrison Avenue
Panama City FL 23401

Dear Mr. Malone

The United States Air Force is preparing an Environmental Assessment (EA) to evaluate the potential environmental consequences associated with the privatization of all the military family housing units on Tyndall Air Force Base, TX (TAFB). In accordance with Executive Order 12372, *Intergovernmental Review of Federal Program*, please identify specific issues or topics of environmental concern (to include potential permits or other requirements) that should be addressed in the EA. A short description of the purpose and need, as well as a description of the proposed activities associated with the Proposed Action and Alternatives is given below and figures are attached for your reference.

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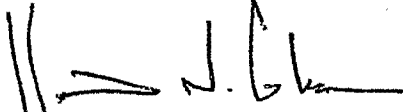
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Ken Gleason
Chief, Environmental Flight

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DEPARTMENT OF THE AIR FORCE
AIR EDUCATION AND TRAINING COMMAND

26 August 2004

Mr. Ken Gleason
325 CES/CEV
119 Alabama Avenue
Tyndall AFB, FL 32409

Mr. Felton and Ms. BeBe Cofer
Friends of Watson Bayou
605 West 8th Street
Panama City FL 32401

Dear Mr. and Ms. Cofer

The United States Air Force is preparing an Environmental Assessment (EA) to evaluate the potential environmental consequences associated with the privatization of all the military family housing units on Tyndall Air Force Base, TX (TAFB). In accordance with Executive Order 12372, *Intergovernmental Review of Federal Program*, please identify specific issues or topics of environmental concern (to include potential permits or other requirements) that should be addressed in the EA. A short description of the purpose and need, as well as a description of the proposed activities associated with the Proposed Action and Alternatives is given below and figures are attached for your reference.

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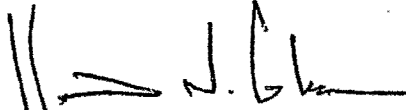
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Chief, Environmental Flight

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APPENDIX E PUBLIC INVOLVEMENT

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Public Involvement

The *Air Force Environmental Impact Analysis Process* (32 CFR 989), 15 Jul 99, and amended 28 Mar 01, states that the environmental assessment and Finding of No Significant Impact should be made available to agencies under the IICEP (see Appendix D) and the public for comment. A notice announcing the 30-day public comment period and the availability of the draft EA was published in the *Panama City News Herald* on May 1, 2005. Responses from the public are included in this appendix.

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Jeb Bush
Governor

Department of Environmental Protection

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

Colleen M. Castille
Secretary

OFFICE OF INTERGOVERNMENTAL PROGRAMS

FAX TRANSMITTAL FORM

TO: Mr. Wes J. Westphal DATE: June 28, 2005

OFFICE: USAF, Tyndall AFB LOCATION: Tyndall AFB, FL

FAX #: (850) 283-4560 NUMBER OF PAGES: 5
(including cover sheet)

RE: Department of the Air Force -- Draft Environmental Assessment and FONSI -- Military
Family Housing Privatization at Tyndall Air Force Base -- Bay County, Florida.
SAI # FL200505100841C

State clearance letter

FROM: Lauren P. Milligan LOCATION: Douglas Bldg. Mail Station 47

FAX #: (850) 245-2189 PHONE #: (850) 245-2170

"More Protection, Less Process"

Printed on recycled paper.

(512) 719-6099

Comment 1

2005 13:26 FROM: 207/2000 11:00 8002402183

850 283-4560

TO: 9815127196099P363674P.3
DEF INTERGOV PROGRAM



Jeb Bush
Governor

Department of Environmental Protection

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

Colleen M. Castilla
Secretary

Comment 2

June 22, 2005

Mr. Kenneth Gleason, Chief
Environmental Flight
325 CES/CEV
119 Alabama Avenue
Tyndall AFB, FL 32403-5014

RE: Department of the Air Force – Draft Environmental Assessment and FONSI – Military Family Housing Privatization at Tyndall Air Force Base – Day County, Florida.
SAI # FL200505100841C

Dear Mr. Gleason:

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 above-referenced project.

The Florida Department of Environmental Protection (DEP) advises that both the Proposed Action and the Maximum Development Alternative will require stormwater treatment pursuant to Chapter 62-25, *Florida Administrative Code (F.A.C.)*. The applicant is advised to contact Mr. Cliff Street, P.E., in the DEP Northwest District Office in Pensacola at (850) 595-8300 ext. 1135, for assistance with stormwater permitting requirements. The DEP also advises that the No Action Alternative, the Proposed Action, and the Maximum Development Alternative Activities will require a National Pollutant Discharge Elimination System (NPDES) permit pursuant to Chapter 62-621, *F.A.C.*, as each project could result in disturbance of one or more acre(s) of land during construction. For NPDES permitting requirements, the applicant is advised to contact the NPDES Stormwater Section in Tallahassee at (850) 245-7522.

Based on the information provided, the DEP notes that impacts to jurisdictional wetlands are not likely to occur under the proposed alternatives. The applicant has mentioned that wetlands delineation will occur during the project design phase of the proposed action alternative. If the scope of the project should change and wetland impacts are anticipated, a Wetland Resource Permit may be required from the DEP. The applicant is advised to contact Mr. Larry O'Donnell in the DEP Northwest District Office in Pensacola at (850) 595-8300 ext. 1129, for assistance with wetlands permitting requirements.

"More Protection, Less Process"

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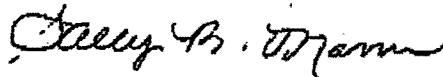
Mr. Kenneth Gleason
June 22, 2005
Page 2 of 2

The Florida Department of State (DOS) has determined that it does not have sufficient information to evaluate the effect that the project may have on historic properties. Buildings within the proposed housing areas should be re-assessed for their eligibility in the *National Register of Historic Places* and that information included in the draft environmental assessment. In addition, a systematic archaeological survey should be performed in those areas not previously surveyed. Please see the enclosed comments from DOS for additional information.

Based on the information contained in the draft environmental assessment and FONSI and the comments provided by our reviewing agencies, the state has determined that, at this stage, the proposed activity is consistent with the Florida Coastal Management Program (FCMP). The applicant must, however, address the concerns identified by the 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 project. Should you have any questions regarding this letter, please contact Ms. Lori Cox at (850) 245-2187.

Sincerely,



Sally B. Mann, Director
Office of Intergovernmental Programs

SBM/lec
Enclosures

cc: Barbara Ruth, DEP, Northwest District
Scott Edwards, DOS

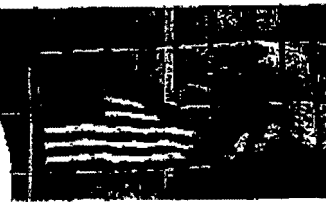


Florida

Department of Environmental Protection

"More Protection, Less Process"

[DEP Home](#) | [OEP Home](#) | [Contact DEP](#) | [Search](#) | [DEP Site Map](#)



Project Information	
Project:	FL200505100841C
Comments Due:	08/09/2005
Letter Due:	06/24/2005
Description:	DEPARTMENT OF THE AIR FORCE - DRAFT ENVIRONMENTAL ASSESSMENT AND FONSI - MILITARY FAMILY HOUSING PRIVATIZATION AT TYNDALL AIR FORCE BASE - BAY COUNTY, FLORIDA.
Keywords:	USAF - MILITARY FAMILY HOUSING PRIVATIZATION AT TYNDALL AFB - BAY CO.
CFDA #:	12.200
Agency Comments:	
WEST FLORIDA RPC - WEST FLORIDA REGIONAL PLANNING COUNCIL	
No Comment	
BAY - BAY COUNTY	
No Comment	
COMMUNITY AFFAIRS - FLORIDA DEPARTMENT OF COMMUNITY AFFAIRS	
STATE - FLORIDA DEPARTMENT OF STATE	
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ENVIRONMENTAL PROTECTION - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION	
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NORTHWEST FLORIDA WMD - NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT	
No comment.	

For more information please contact the Clearinghouse Office at:

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



FLORIDA DEPARTMENT OF STATE
Glenda E. Hood
Secretary of State
DIVISION OF HISTORICAL RESOURCES

RECEIVED
JUN 06 2005
OIP / OLGA

Ms. Lauren Milligan
Director, Florida State Clearinghouse
Florida Department of Environmental Protection
3900 Commonwealth Boulevard, Mail Station 47
Tallahassee, Florida 32399-3000

June 3, 2005

RE: DHR Project File Number: 2005-4512 / Received by DHR May 12, 2005
SAI #: 200505100841C
Department of the Air Force -- Draft Environmental Assessment and FONSI
Military Family Housing Privatization, Tyndall Air Force Base, Bay County

Dear Ms. Milligan:

Our office received and reviewed the above referenced project in accordance with Section 106 of the *National Historic Preservation Act of 1966* (Public Law 89-665), as amended in 1992, and *36 C.F.R., Part 800: Protection of Historic Properties*, Chapter 267, *Florida Statutes*, Florida's Coastal Management Program, and implementing state regulations, for possible impact to historic properties listed, or eligible for listing, in the *National Register of Historic Places*, or otherwise of historical, architectural or archaeological value. The State Historic Preservation Officer (SHPO) is to advise and assist state and federal agencies when identifying historic properties, assessing effects upon them, and considering alternatives to avoid or minimize adverse effects.

We determined that we have not been provided sufficient information to evaluate the effect the project may have on historic properties. The information referenced in Section 3.10.1 is incomplete. In addition to the 604 pre-1956 housing structures evaluated, the survey assessed 120 WWII era building and 32 Cold War buildings. Nineteen of the 152 buildings were evaluated as potentially eligible. The Draft Environmental Assessment should reflect this information and since the evaluations are nearly ten years old, buildings within the proposed housing areas should be re-assessed for their *National Register* eligibility. In addition, the proposed housing areas, which have not had a systematic archaeological survey, should have one performed.

If you have any questions concerning our comments, please contact Scott Edwards, Historic Preservationist, by electronic mail sedwards@dor.state.fl.us, or at 850-245-6333 or 800-847-7278.

Sincerely,

Laura A. Kammene, Deputy SHPO
for Frederick P. Gaske, Director, and
State Historic Preservation Officer

XC: Jasmin Raffington, PCMP-DEP

500 S. Bronough Street • Tallahassee, FL 32399-0250 • <http://www.flheritage.com>

☐ Director's Office
(850) 245-6300 • FAX: 245-6436

☐ Archaeological Research
(850) 245-6444 • FAX: 245-6436

☒ Historic Preservation
(850) 245-6333 • FAX: 245-6437

☐ Historical Museums
(850) 245-6400 • FAX: 245-6433

☐ Southeast Regional Office
(904) 467-4990 • FAX: 467-4991

☐ Northeast Regional Office
(904) 825-3045 • FAX: 825-3044

☐ Central Florida Regional Office
(813) 272-3843 • FAX: 272-2340



IN REPLY REFER TO:

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Field Office

1601 Balboa Avenue

Panama City, FL 32405-3721

Tel: (850) 769-0552

Fax: (850) 763-2177

June 3, 2005

Mr. Kenneth Gleason
Chief, Environmental Flight
325 CES/CEV
119 Alabama Avenue
Tyndall AFB, Florida 32405

Re: FWS No. 4-P-05-224
Military Housing Privatization
Tyndall Air Force Base
Bay County, Florida

Dear Mr. Gleason:

We are writing in response to your request for comments on the draft Environmental Assessment (DEA) per the project referenced above. This response is provided in accordance with Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543) (Act), and the Fish and Wildlife Coordination Act (16 U.S.C. 661 *et seq.*).

Under the proposed action, the Air Force would convey 848 military housing units, and the associated infrastructure, to a privatization contractor. The privatization contractor would plan, design, develop, demolish, construct, own, operate, maintain, and manage for 50 years an 813-unit housing development on Tyndall AFB. Proposed activities include, but would not be limited to, the demolition of 560 housing units and construction of 525 replacement units. Three hundred and ninety of the replacement units would be constructed within the existing footprint of the units that would be demolished. The remaining 135 replacement units would be constructed on a 102.5-acre site that is currently an undeveloped wooded area known as the Redfish Point Extension. An existing 288 housing units that have been more recently constructed on areas of the base not impacted by aircraft noise and human health and safety issues will be retained. All improvements and construction of units will take place on 431 acres.

The DEA also identifies a maximum development alternative. This alternative was evaluated by the Air Force to allow for unforeseen growth and higher demand for military housing from Air Force personnel. Under this alternative, the contractor would demolish all of the 848 existing housing units and construct 1,238 replacement units. Activities would occur on the same 431 acres as the proposed action. However, a greater number of units would be constructed. Because of the construction of more units, the total amount of impervious cover would increase.

Comment 10

Both alternatives will result in an increase in impervious surface area. This project is part of a pattern of growing urbanization in the St. Andrews Bay/East Bay watersheds. Urbanization can lead to altered hydrology, increased impervious surface, and loss of forest cover, all of which have been correlated with decreased biodiversity in nearby aquatic systems - even when stormwater treatment systems are in place (1, 2). Increasing impermeable surface area in the watershed (which would occur as a direct result of this project, indirectly from associated growth, and cumulatively from past, present, and future watershed development) could alter local hydrology and increase the contaminant inputs to this important estuary.

Comment 11

It is well documented that stormwater possesses numerous organic and inorganic contaminants that degrade water quality and partition into the sediment compartment. For this reason, during the Community Development Planning (CDP) process (or other planning phases), we recommend addressing stormwater management with the goal of further reducing the impacts from this project, while setting a standard for future development in the watershed. We encourage the implementation of the highest standards possible for stormwater management, incorporating as much absorbent space as possible and exceeding the minimum stormwater design requirements that are currently in place for northwest Florida.

For either alternative, the DEA states that wetlands delineations will be accomplished during the project design phase to accurately identify and map jurisdictional wetlands. No project activities or new military family housing units will be constructed in wetlands. We also note that CDPs will identify buffer zones around wetlands. We encourage providing as wide buffers as possible. Enclosed is a buffer fact sheet.

The DEA notes that the Redfish Point Extension would occur on "vacant undeveloped and densely vegetated land." We suggest that a more detailed description of the vegetative community(ies) be included. We also note that Florida Natural Areas Inventory (FNAI) has identified an area on Tyndall AFB *"that is of such exceptional quality we recommend all efforts be made to preserve this parcel from development (3)."* The area described in the FNAI report is in the general vicinity of the Redfish Point Extension. Please verify the location of the area as discussed in the FNAI report in relation to the Redfish Point Extension. Direct, secondary, and indirect impacts to this area should be avoided.

The DEA documents that no bald eagle nests are known to occur within 1,500 feet of any proposed activities. However, other project reviews coupled with annual aerial nesting surveys, as well as anecdotal reports and observations, lead us to believe that the bald eagle population in Bay County, and on Tyndall AFB in particular, is expanding. Therefore, in order to avoid delays in project implementation, we recommend that within one year prior to any construction/demolition activities that a survey (preferably during the bald eagle nesting season - October 1-May 15) for bald eagle nests be conducted within the 1,500 foot buffer zone of those activities.

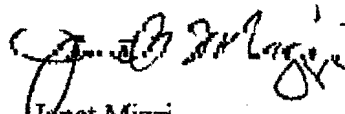
Page 4-27, lines 27-30 of the DEA states *"Past surveys for T&E species near the Redfish Point Extension identified two federal candidate plant species (Gulf coast lupine, large-leaved joint weed) and one federal candidate reptile species (Gopher tortoise)."* We wish to point out that currently none of these species are candidate species, but because of their rarity, are on our list of "management concern." Management concern species receive no federal protection. Regardless

of the status of rare species, we encourage their conservation during project planning. Conservation now may help to avoid the need to list them in the future. If activities have potential impacts to the gopher tortoise, the Florida Fish and Wildlife Conservation Commission should be contacted at (850) 265-3677, as this is a State-listed species.

We recommend that restoration of longleaf pine vegetative communities be considered within the demolition areas that will be conveyed back to the Air Force.

Environmental Assessment for this project. If you have any questions or for further project coordination, please contact Mr. Stan Simpkins at ext. 234.

Sincerely yours,



Janet Mizzi
Deputy Field Supervisor

Enclosure:
Buffer Fact Sheet

Literature Cited

1. Booth, D.B., and C.R. Jackson. 1997 Urbanization of Aquatic Systems: Degradation Thresholds, Stormwater Detection, and the Limits of Mitigation. Journal of the American Water Resources Association, Vol. 33, No. 5, pp.1077-1090.
2. Booth, D.B., D. Hartley, and R. Jackson. 2002. Forest cover, Impervious-Surface Area, and the Mitigation of Stormwater Impacts. Journal of the American Water Resources Association, Vol. 38, No. 3, pp. 835-845.
3. Printiss, D.J., and Hipes, D.L. 2000 Flatwoods salamander survey and habitat evaluation of Eglin Air Force Base, Hurlburt Field, and Tyndall Air Force Base. Final Report to U.S. Department of Defense, U.S. Air Force. Florida Natural Areas Inventory, Tallahassee, Florida.

S.Simpkins:skh:06-02-05-213; 850-769-0552; jcm:stan34p05224.word.doc)

Buffers: An Efficient Tool for Watershed Protection

What Are Buffers?

A **buffer** is a strip of naturally vegetated land along a lake, stream, or wetland that provides numerous benefits. Preserving a buffer zone protects water resources from neighboring land uses. Nutrient inputs are of great concern because of their abundant sources (fertilizer, septic tank drain fields, leaking sewage lines, animal waste). Excess nutrients in lakes and estuaries cause toxic algal blooms and depleted oxygen. Natural chemical and biological processes within buffers alter or uptake nutrients and pollutants *before* they enter a water body, thus providing a cost-effective treatment system. Buffers preserve native habitat for wildlife and enhance aquatic habitat. The range of benefits provided by buffers includes:

- Water quality protection 
- Erosion control
- Storage of floodwaters and flood damage reduction
- Aquatic habitat enhancement 
- Habitat for terrestrial riparian wildlife 
- Maintenance of base flow in streams
- Improved aesthetic appearance of stream corridors
- Recreational and educational opportunities

Riparian refers to the land adjoining a body of water, usually a river or stream.

Buffer Width: Bigger is Better

Choosing a buffer width depends on your planning goals. As buffer width increases, the buffer provides greater benefits. As seen in the table below, a 30-foot buffer provides minimal service. At 50 feet, the buffer meets minimum water quality protection recommendations and gives some aquatic habitat benefits. For effective water quality and aquatic habitat protection, a buffer width of 100 feet is needed. Buffers to enhance riparian wildlife should be 300 feet or greater. Special buffer zones may be required to protect vulnerable species.  Width should be increased where slope, impervious surface, and soil type reduce buffer effectiveness. The consequences of an inadequate buffer may be an increased need for stormwater ponds, increased flooding, decreased abundance of sportfish, and/or loss of certain species such as some salamanders or crayfish.

Benefit Provided:	Buffer Width:					
	30 ft	50 ft	100 ft	300 ft	1,000 ft	1,500 ft
Sediment Removal - Minimum						
Maintain Stream Temperature						
Nitrogen Removal - Minimum						
Contaminant Removal						
Large Woody Debris for Stream Habitat						
Effective Sediment Removal						
Short-Term Phosphorus Control						
Effective Nitrogen Removal						
Maintain Diverse Stream Invertebrates						
Bird Corridors						
Reptile and Amphibian Habitat						
Habitat for Interior Forest Species						
Flatwoods Salamander Habitat - Protected Species						

Sources

Burke, V.J. and J.W. Gibbons, 1995, Terrestrial Buffer Zones and Wetland Conservation: A Case Study of Freshwater Turtles in a Carolina Bay, *Conservation Biology* 9 (6), pp. 1365-1369.

Desbonnet, A., V. Lee, P. Pogue, D. Reis, J. Boyd, J. Willis, and M. Imperial, 1995, Development of Coastal Vegetated Buffer Programs, *Coastal Management* 23, pp. 91-109.

Mitsch, W.J. and J.G. Gosselink, 1993, *Wetlands*, Van Nostrand Reinhold, New York, New York.

Semlitsch, R.D., 1998, Biological Delineation of Terrestrial Buffer Zones for Pond-Breeding Salamanders, *Conservation Biology* 12 (5), pp. 1113-1119.

U.S. Fish and Wildlife Service, April 1, 1999, Endangered and Threatened Wildlife and Plants: Final Rule to List the Flatwoods Salamander as a Threatened Species, *Federal Register* 62(241): 15691-15704.

Wenger, S., 1999, *A Review of the Scientific Literature on Riparian Buffer Width, Extent and Vegetation*, Office of Public Service and Outreach, Institute of Ecology, University of Georgia, Athens, Georgia.

Wenger, S. and L. Fowler, 2000, *Protecting Stream and River Corridors: Creating Effective Local Riparian Buffer Ordinances*, Carl Vinson Institute of Government, University of Georgia, Athens, Georgia.

For Further Information Contact:

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Responses to Public Comments
Draft Environmental Assessment
Military Family Housing Privatization at Tyndall AFB, Florida

Florida Department of Environmental Protection, dated June 22, 2005

Response to Comment #1: The issues of storm water treatment and permitting requirements are addressed in Section 4.5 of the EA. All proposed demolition and construction activities would comply with the Base's Municipal Separate Storm Sewer System permit to reduce discharge of pollutants to the maximum extent possible. Land disturbing activities of 1 acre or more would require a NPDES construction permit with a storm water pollution prevention plan that complies with FDEP Document No. 62-621.300(4)(a). Additionally, the requirements of FAC 62-65 would be followed. Under the No Action Alternative, personnel from 325/CEV would comply with these requirements. Under the Proposed Action and Maximum Development Alternative, the privatization contractor would coordinate these requirements with 325 CES/CEV personnel. The best management practices described in Subchapter 3.5.4 would be used under any of the alternatives.

Response to Comment #2: Noted.

Response to Comment #3: As noted in Subchapter 3.10.1 in the EA, there are no historic buildings located on the parcels to be used for MFH privatization. Mr. Wesley Westpal with 325 CES/CEVN at Tyndall AFB contacted Mr. Scott Edwards, the State Historic Preservation Officer, who stated that none of the MFH units that would be affected by this project meets the requirements for listing in the NRHP based on their Programmatic Memorandum of Agreement with Tyndall AFB. The following paragraph was added to the end of Section 3.10.1:

“One hundred and twenty WWII era buildings and 32 Cold War buildings were also assessed during the 1996 survey. Of the 152 buildings, 19 were evaluated as being potentially eligible for the NRHP. However, the 152 WWII era and Cold War buildings are not part of the privatization project.

Additionally, concerning the issue of performing a systematic archaeological survey, a new paragraph has been added to Section 4.10.2, *Archaeological Resources*, as follows: “In those areas previously disturbed, no systematic archaeological survey would be accomplished since resources that may have once existed are gone; however, in those undeveloped areas proposed for construction, a systematic archaeological survey would be conducted and coordinated with the SHPO prior to construction.”

Response to Comment #4: Noted. The text in Subchapter 1.6 of the EA has been revised to include this information. The following sentences have been added to the end of the paragraph: “The state has determined that the proposed activity is consistent with the

FCMP; however, the state's final concurrence of the project's consistency with the FCMP will be determined during the environmental permitting stage. See Appendix E for Response to Comments from Florida Department of Environmental Protection concerning consistency with the FCMP."

Florida Department of State Division of Historical Resources, dated June 3, 2005

Response to Comment #5: See Response to Comment #3.

United States Department of the Interior Fish and Wildlife Service, dated June 3, 2005

Response to Comment #6: Noted.

Response to Comment #7: Noted. Subchapter 2.4, first paragraph on page 2-8 of the EA, has been revised to include the following statement at the end of the paragraph: "Suggested buffer widths by the United States Department of the Interior, Fish and Wildlife Service, is contained in their comments to the Draft EA in Appendix E."

Response to Comment #8: See Response to Comment #7.

Response to Comment #9: Subchapter 4.6.2, page 4-27, second paragraph, *Vegetation and Wildlife*, has been revised as follows: "The Proposed Action construction activities associated with the Redfish Point Extension would occur on currently vacant, undeveloped, and densely vegetated mesic and xeric uplands of sandhill and scrub. Vegetative clearing would be required for housing, and roadway and utility easements. This area would be more likely to contain a relatively larger number and greater diversity of wildlife compared to the more urban habitats of the existing housing areas. Construction activities associated with the Redfish Point Extension would not directly affect the undeveloped property located immediately west of the proposed MFH area and identified in the Florida Natural Areas Inventory as a sand pine scrub of exceptional quality. The area west of the proposed MFH area is a Sand Pine Plantation, which is part of the Base's forestry program, and has been harvested in the past and will continue to be harvested in the future. The most recent topographic maps (1994) reveal that a small portion near the center of the area between the two properties is flat, but the majority of Redfish Point Extension slopes away from the adjacent undeveloped land towards the Redfish Point Neighborhood and Felix Lake. Therefore, secondary and indirect impacts from storm water runoff to this area would not be expected."

Response to Comment #10: Subchapter 4.6.2, page 4-28, third paragraph, *Threatened and Endangered Species* has been revised as follows: "The eastern most boundary of the proposed Redfish Point Extension is approximately 0.4 mile (2,100 feet) west of the bald eagle's nest and outside the 1,500-foot bald eagle buffer zone commented by the USFWS. However, it is unlikely that human interactions with the bald eagle would create an adverse effect since the distance to the nest would be greater than the existing distance from the nest to the Felix Lake neighborhood, a relationship that has not produced an adverse effect. Annual surveys for bald eagle nests conducted by Tyndall AFB Natural

Resources personnel would continue. A 1,500-foot buffer zone would be established surrounding any nests discovered prior to construction. Any activity that could potentially cause threat or encroachment of T&E Species would require formal Section 7 consultation with the USFWS.

Response to Comment #11: Subchapter 4.6.2, first paragraph, *Threatened and Endangered Species* has been revised as follows: “The Proposed Action construction activities associated with the Redfish Point Extension would occur on vacant, undeveloped, and densely vegetated land. Past surveys for T&E species near the Redfish Point Extension identified two plant species (Gulf Coast lupine, large-leaved joint weed) of management concern by USFWS. One reptile species (Gopher tortoise) is listed as a Species of Concern by the Florida Fish and Wildlife Conservation Commission (Tyndall AFB 1999). The potential impact on these species would be minimized by following the Tyndall Integrated Natural Resources Management Plan (INRMP).”

Response to Comment #12: Subchapter 4.6.2, page 4-27, *Vegetation and Wildlife*. The following paragraph has been added after the third paragraph in this subchapter: “As previously discussed in Subchapter 2.4, the Bay View and Shoal Point neighborhoods, as well as the Wood Manor East units, would be conveyed under a short-term lease prior to demolition. Once the short-term lease expires, the land would be returned to Tyndall AFB for future use and development. The Florida Fish and Wildlife Service recommends that restoration of longleaf pine vegetation communities be considered within the demolition areas that would be conveyed back to the Air Force.”