Final Environmental Assessment

Construction and Operation of U.S. Special Operations Command South Headquarters Adjacent to Homestead Air Reserve Base, Homestead, Florida

Prepared for

U.S. Special Operations Command

Prepared by

U.S. Army Corps of Engineers, Mobile District

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Finding of No Significant Impact:

Homestead, Florida

Construction and Operation of U.S. Special Operations Command South (SOCSOUTH) Headquarters Adjacent to Homestead Air Reserve Base

The U.S. Special Operations Command South (SOCSOUTH), a sub-unified command of U.S. Southern Command, has prepared an Environmental Assessment (EA) that evaluates the potential environmental and socioeconomic impacts associated with construction and operation of a new headquarters building, parking, utility rights-of-way, and related construction on county-leased property or acquired in fee title adjacent to Homestead Air Reserve Base (HARB). In preparation of the EA, it was determined that no action alternatives other than the proposed action would satisfy the purpose and need of the proposed action without substantially greater costs and/or impacts to resources. Accordingly, only the proposed action and no action alternative were evaluated. The attached EA, which is incorporated by reference, was prepared pursuant to 32 Code of Federal Regulations Part 651 and U.S. Council on Environmental Quality regulations (Title 40, U.S. Code, Parts 1500-1508) for implementing the procedural requirements of the National Environmental Policy Act.

Description of the Proposed Action

The proposed action is for SOCSOUTH to enter into a 50-year lease agreement with Miami-Dade County to lease an approximately 84.2 -acre or acquire in fee title property adjacent to HARB, construct a new 125,000-square-foot (ft^2) headquarters facility, parking, utility rights-of-way, and related construction for SOCSOUTH on the 84.2-acre property, and operate SOCSOUTH from the new headquarters facility, parking, utility rights-of-way, and related construction for the duration of the lease or in fee title.

SOCSOUTH would lease or acquire in fee title an approximately 84.2 from Miami-Dade County and construct the SOCSOUTH headquarters facility on approximately 28 acres of the site and would allow for parking, utility rights-of-way, and related construction. The primary facility would consist of a Secure Compartmentalized Information Facility with sensitive storage areas (31,000 ft^2) and general purpose administrative areas (93,000 ft^2). Fire, intrusion detection, and alarm systems would be included. Supporting facilities would include connection to utilities (water, sewer, electrical, storm drainage, and information systems), emergency backup power with an uninterruptible power system, site development, paving including parking (17,500 square yards), sidewalks (12,000 ft^2), curb and gutter (7,000 linear feet), storm drainage, landscaping, and other site improvements, including secure communications reception areas. Antiterrorism measures would be incorporated into the design, to include appropriate stand-off distances, barriers, sliding fence gate, and closed circuit TV. Buildings would be designed and built to comply with Category 5 hurricane protection and to prevent progressive collapse. Demolition of existing structures, existing paved surfaces, and utilities would be included in the proposed action.

Two buildings on the 84.2-acre property would be retained by SOCSOUTH. Building 741 is an old hangar that is currently used for storage and Building 736 is a small office building that is not in current use. SOCSOUTH would continue to use Building 741 for storage. Building 736 would be renovated and used for additional administrative space. SOCSOUTH may renovate Building 741 in the future to meet specific mission needs. A small un-numbered structure on the property would be demolished.

To provide utility service, new utility rights-of-way would be placed in a corridor along the perimeter of the property along St. Lo Boulevard, Rabaul Road, and Bikini Boulevard. Utility lines would be buried in the new utility corridor.

Miami-Dade County has recently constructed a lift station along a force main within the approximately 84.2-acre property that would be leased by SOCSOUTH. The lift station would not be demolished or relocated. Miami-Dade County would retain access rights to the lift station and would continue to operate and maintain the lift station as part of the lease agreement.

The entire approximately 84.2-acre property would be fenced. SOCSOUTH would install approximately 6,429 feet of new fencing along the northern border and between the 25- and 37-acre parcels. SOCSOUTH would also utilize the existing fence (approximately 7,278 feet) present along the southern border. All fencing would be made of galvanized chain link and be 7 feet in height with 1-foot of additional outrigging of barbed wire or concertina wire. SOCSOUTH would remove existing fence poles prior to installing the new fence. A 10-foot cleared strip would be maintained by mowing between the fence and property line.

SOCSOUTH would demolish and dispose of the temporary buildings that currently serve as its headquarters or otherwise dispose of these temporary structures.

No Action Alternative

The no action alternative would not address the need for the proposed action, but was considered in the analysis to provide a baseline for comparison of impacts of the proposed action. Under the no action alternative, SOCSOUTH would not construct a headquarters facility. Implementation of the no action alternative would result in SOCSOUTH continuing to occupy inadequate temporary facilities on HARB.

Environmental Consequences

No significant negative environmental or socioeconomic consequences were identified in the EA as a result of the proposed action, including construction and day-to-day operation of the facilities. Site selection minimized and avoided impacts to the extent practicable. Table 1 summarizes project design features that will be implemented during project construction to further reduce environmental impacts.

TABLE 1
Project Design Features to be Implemented with the Proposed Action
Construction and Operation of SOCSOUTH Headquarters, Homestead, FL

Resource Area	Project Design Features
Air Quality	Use of sprinkling/irrigation, vegetative cover, and mulching as dust abatement measures during construction.
Noise	Workers will be required to wear hearing protection as appropriate.
Soils	Use of sediment barriers (silt fence or straw bales), temporary detention basins, grade stabilization with seed and mulch, and geotextile slope stabilization to minimize impacts to soils.
Surface Water	Use of sediment barriers (silt fence or straw bales), temporary detention basins, grade stabilization with seed and mulch, and geotextile slope stabilization to minimize erosion and transport of sediments to surface waters.
Stormwater	Use of silt fencing, guttering and other flow control measures, and detention and infiltration areas to prevent onsite and downstream impacts from stormwater.

The preferred alternative would result in negligible impacts to land use and geology. Minor impacts to soils and vegetation would result from the proposed action, but these impacts would occur to an area previously disturbed, be localized, and less than significant. Impacts to soils would be controlled through the use of appropriate best management practices and soil stabilization techniques.

Post-construction stormwater controls designed to minimize or eliminate the long-term effects of increased runoff from the increased impervious surface area resulting from the proposed construction would be designed into the project.

Minor displacement of wildlife, both temporary and permanent, would occur from the construction area and adjoining areas, but this impact would be temporary as animals would acclimate to the areas into which they relocate or return to areas adjacent to the construction sites.

The federally endangered Small's milkpea (*Galactia smallii*) and federal candidate species sand flax (*Linum arenicola*) occur on the approximately 84.2-acre property. Development of the headquarters facility would result in impacts to these species. The U.S. Fish and Wildlife Service (USFWS) issued a Biological Opinion (BO), which is incorporated into this Finding of No Significant Impact (FNSI) by reference, that specifies appropriate mitigation for unavoidable impacts to these two species that would reduce the impacts to less than significant. To mitigate for the unavoidable impacts to Small's milkpea and sand flax, the Army:

- Conserve and manage approximately 17.86 acres for Small's milkpea and sand flax. This area includes Management Areas 1 and 2, which cover 14.7 acres and include 8.5 acres of pine rockland habitat plus an additional 6.2 acres that may be restored to pine rockland habitat, and additional population areas (totaling 3.16 acres) outside of Management Areas 1 and 2. The approximately 17.86 acres would include 96,764 individuals of

Small's milkpea (approximately 96 percent of the estimated onsite population) and 70,909 individuals of sand flax (approximately 96 percent of the estimated onsite population) based on 2009 estimates. Management Areas 1 and 2 would be permanently fenced prior to construction. Other habitat areas outside the construction footprint would be protected with temporary fencing during construction. Signage would be placed at habitat areas to inform personnel during operation of the facility.

- Prepare and implement an Integrated Natural Resources Management Plan (INRMP) pursuant to Army Regulation 200-1 to manage for Small's milkpea and sand flax on 17.86 acres of suitable habitat within the 84.2-acre site. Implementation of the INRMP would be funded by the U.S. Army through annual appropriations beginning in Fiscal Year 2013.

The approximately 84.2-acre property is part of a parcel that was encumbered by the deed transfer of the former Homestead Air Force Base to Miami-Dade County. This parcel was identified in the 2004 Finding of Suitability to Transfer as containing Small's milkpea and the deed contained the stipulation that the transferee identify and preserve the species prior to construction on the parcel. This deed encumbrance would minimize the potential for future actions to incrementally adversely affect protected species on the property. An additional deed restriction based on 2004 Finding of Suitability to Transfer stipulates that a site survey for the eastern indigo snake (*Drymarchon corais couperi*) be conducted prior to any construction on the site. Because the most recent survey was done in 2009 and more than two years will have passed between that survey and the start of construction, SOCSOUTH would conduct a site survey for eastern indigo snake in advance of construction, which also would assess whether the state endangered gopher tortoise has moved onto the property. Should the eastern indigo snake be found onsite, consultation with the U.S. Fish and Wildlife Service would be conducted and appropriate mitigation, as determined by that consultation, would be implemented prior to construction.

No negative impacts to architectural or other cultural resources would occur. No structures listed, eligible for listing, or potentially eligible for listing on the National Register of Historic Places are located in the proposed project area. All construction would occur in previously developed areas that have no intact cultural resources. There are no known Native American tribal resources within the proposed project area.

Implementation of the preferred alternative would result in minor impacts to air quality, as well as generation of construction-related noise during construction activities. These impacts would be temporary and less than significant. A general conformity analysis for air quality was conducted. This analysis determined that general conformity review would not be applicable to the proposed action. The Record of Non-Applicability is included as an appendix to the EA.

No appreciable impacts on solid waste, hazardous materials, fuels, and the Installation Restoration Program would occur. There would be no impacts to other resource areas. No significant cumulative or indirect impacts would be expected to result from the proposed action.

A minor positive impact to the local economy would result from construction-related jobs and construction-related purchases of supplies and materials. The headquarters would have a 390-person capacity for the possibility of increasing permanent personnel in the future.

Additional residents in the area as a result of future expansion would also contribute to minor long-term economic benefits.

Public and Agency Review

A Notice of Availability of the Final EA and FNSI was published in the *Miami Herald* on April 21, 2011. The EA and FNSI were available to the public for comment for a period from April 22, 2011 through May 25, 2011. No comments were received during the public comment period. The Army received comments from the South Florida Water Management District and the South Florida Regional Planning Commission through the Florida State Clearinghouse review process. To the extent applicable, the implemented action will be consistent with the policies and goals of the South Florida Regional Planning Commission. Through the design-build process, a modification to South Florida Water Management District Permit No. 13-00148-S will be obtained prior to construction.

Conclusion

Based on the analysis presented in the EA, I find that implementation of the proposed action, including the mitigation measures specified in the USFWS BO, would have no significant impact on the human or natural environment. Therefore, a FNSI is issued for the proposed action and no Environmental Impact Statement is required.

US ARMY GARRISON MIAMI

Audy R Snodgrass — 17 Jun 11

Audy R Snodgrass
Garrison Manager

Date

Executive Summary

ES-1 Introduction

Special Operations Command South (SOCSOUTH), a sub-unified command of United States (U.S.) Southern Command relocated its headquarters for special operations in Central and South America from Roosevelt Roads Naval Base in Puerto Rico to a site on Homestead Air Reserve Base (HARB), Florida. The relocation was driven by the closure of Roosevelt Roads Naval Base. Homestead was chosen over other possible relocation sites because of its proximity to U.S. Southern Command headquarters in Miami, which is the unified command responsible for all U.S. military activities in Central and South America. Since the relocation was completed, SOCSOUTH has been housed in temporary structures on HARB. The temporary facilities were intended as a short-term measure to bridge the period while a permanent headquarters was made available. The original 3-year lease on the temporary buildings has expired. To continue use of these structures, the purchase of the residual value of the buildings would be necessary.

The SOCSOUTH area of focus encompasses approximately 15.6 million square miles, including the countries and adjacent waters of Latin America south of Mexico. The SOCSOUTH mission includes conducting counternarcotics operations, performing multinational training, and hosting symposiums for Latin American countries on combating terrorism. SOCSOUTH also participates in humanitarian relief throughout the region. SOCSOUTH is a joint headquarters comprising three operational units:

- C Company, 3rd Battalion, 7th Special Forces Group (Airborne)
- Naval Special Warfare Unit 4
- D Company, 160th Special Operations Aviation Regiment

Counternarcotics support is a major focus of the U.S. Southern Command. SOCSOUTH units are deployed on a continual basis throughout the source and transit zones to support interagency and host-nation interdiction efforts to disrupt the production, cultivation, and movement of illegal drugs. C Company, 3rd Battalion, 7th Special Forces Group hosts the annual Special Operations Forces Counter-terrorism Tactics and Techniques Symposium that brings security forces from throughout the region together in friendship to exchange ideas and foster dialogue on the common issue of combating terrorism. Additionally, SOCSOUTH deploys forces to improve force protection for U.S. units and enhance the safety of U.S. citizens and interests during periods of strife in the region.

ES-2 Purpose and Need

The proposed action is required to provide permanent facilities for SOCSOUTH, which has been operating from temporary buildings since being relocated to HARB. The temporary buildings exceeded their economic life expectancy in 2007 and now require above-average sustainment repairs to enable continued use. The lease with HARB expired in September

2009; however, SOCSOUTH will continue to occupy the temporary facilities until a new headquarters facility is constructed. The purpose of the proposed action is to provide permanent facilities to support safe and secure operations, parachute rigging and maintenance, deployment storage, and vehicle and equipment maintenance for SOCSOUTH. The need for the proposed action is to meet mission requirements and demands of the SOCSOUTH and its associated forces. The proposed action would provide SOCSOUTH headquarters a permanent facility capable of fully supporting the SOCSOUTH mission.

ES-3 Proposed Action and Alternatives

Proposed Action (Preferred Alternative)

The proposed action is for SOCSOUTH to enter into a 50-year agreement with Miami-Dade County to lease or acquire in fee title an approximately 84.2-acre property adjacent to HARB, construct a new 125,000-square-foot (ft^2) headquarters facility for SOCSOUTH on the approximately 84.2-acre property, and operate SOCSOUTH from the new headquarters facility.

SOCSOUTH would construct its headquarters facility on approximately 28 acres of the approximately 84.2-acre site. The primary facility would consist of a Secure Compartmentalized Information Facility with sensitive storage areas and general purpose administrative areas. Fire, intrusion detection, and alarm systems would be included. Supporting facilities would include connection to utilities (water, sewer, electrical, storm drainage, and information systems), emergency backup power with an uninterruptible power system, site development, paving (including parking, sidewalks, curb and gutter, and storm drainage), landscaping, and other site improvements, including secure communications reception areas.

Antiterrorism measures would be incorporated into the design, to include appropriate stand-off distances, barriers, sliding fence gate, and closed circuit TV. Buildings would be designed and built to comply with Category 5 hurricane protection and to prevent progressive collapse. Demolition of existing structures, existing paved surfaces, and utilities would be included in the proposed action.

Four buildings on the approximately 84.2-acre property would be retained by SOCSOUTH: Building 741, an old hangar that is currently used for storage; Building 736, a small office building that is not currently in use; Building 743, a pumphouse for the associated 500,000-gallon aboveground storage tank (AST) located adjacent to the building (both currently not in use); and Building 746, an open-sided shed that is also not currently in use. SOCSOUTH would continue to use Building 741 for storage.

Building 736 would be renovated and used for additional administrative space. SOCSOUTH may renovate Building 741 in the future to meet specific mission needs. SOCSOUTH would upgrade Building 743 and the AST to a foam fire retardant system for Building 741. Once the system is operation, the hangar would be capable of housing aircraft. The small un-numbered structure on the property would be demolished. Building 746 would be used for storage.

In addition to the headquarters facility, SOCSOUTH has identified a need for related construction during or after construction of the headquarters facility to meet mission needs and secure military assets. Because this related construction would constitute interrelated and interdependent actions relative to construction of the headquarters facility, the U.S. Army has identified sections within the approximately 84.2-acre site where related construction would be placed and analyzed the impacts of this construction. While specific construction details cannot be identified at this time, the maximum footprints of the related construction areas have been identified to define the limits of potential disturbance.

The entire approximately 84.2-acre property would be fenced. SOCSOUTH would install approximately 6,429 feet of new fencing along the northern border and along Rabaul Road. SOCSOUTH would also utilize the existing fence (approximately 7,278 feet) along the southern border. All fencing would be made of galvanized chain link and be 7 feet in height with 1-foot of additional outrigging of barbed wire or concertina wire. SOCSOUTH would remove existing fence poles prior to installing the new fence. A 10-foot cleared strip would be maintained by mowing between the fence and property line.

To provide utility service, new utility rights-of-way would be placed in a corridor along the perimeter of the property along St. Lo Boulevard, Rabaul Road, and Bikini Boulevard. Utility lines would be buried in the new utility corridor.

Miami-Dade County operates a subsurface sanitary sewer lift station on the property that the county will retain and the U.S. Army will provide the County access to this area for maintenance purposes.

No Action Alternative

Under the no action alternative, SOCSOUTH would not enter into a 50-year agreement with Miami-Dade County to lease or acquire in fee title the approximately 84.2-acre property and would not construct a new headquarters facility for SOCSOUTH there. Implementation of the no action alternative would result in SOCSOUTH continuing to occupy inadequate temporary facilities on HARB.

Alternatives Not Considered in Detail

Six other alternatives were initially were considered but not fully analyzed:

- Renovate temporary facilities
- Renovate temporary facilities and construct new facilities on HARB
- Construct new facilities on HARB
- Relocate to other facilities on HARB
- Relocate to other federal facilities in the Homestead area
- Construct new facilities on private land in the Homestead area

Renovating the temporary facilities would not provide adequate space for headquarters operations, and the limited available space and land at HARB would not allow relocation. In addition, no other Department of Defense or federal facilities exist in the Homestead area. The proposed action would provide the appropriate space for headquarters operations, so no additional alternatives were carried forward for detailed analysis.

ES-4 Environmental Consequences

Table ES-1 summarizes the consequences of the proposed action and the no action alternative, both of which are discussed below.

TABLE ES-1
Summary of Potential Environmental and Socioeconomic Consequences
Construction and Operation of SOCSOUTH Headquarters, Homestead, FL

	Environmental and Socioeconomic Consequences	
Resource	**No Action**	**Proposed Action**
Land Use	No Change from Baseline Conditions	No impact
Aesthetics and Visual Resources	No Change from Baseline Conditions	No impact
Air Quality	No Change from Baseline Conditions	Minor short-term impact from construction- and demolition-related fugitive dust that would be controlled through appropriate best management practices (BMPs). Minor construction-related emissions of greenhouse gases with long-term reduction from increased energy efficiency. Negligible impact from building and water heaters and reserve generators.
Noise	No Change from Baseline Conditions	Negligible impact: construction- and demolition-elated: appropriate worker safety measures would be implemented; no long-term effects from operation.
Geology and Soils		
Geology/Topography	No Change from Baseline Conditions	No impact
Soils	No Change from Baseline Conditions	Minor impact: appropriate BMPs would be implemented to minimize erosion and impact from stormwater runoff.
Prime Farmland	No Change from Baseline Conditions	No impact
Water Resources		
Surface Water	No Change from Baseline Conditions	Negligible impact: appropriate BMPs would be implemented to minimize indirect impacts from erosion and stormwater runoff.
Hydrogeology/Groundwater	No Change from Baseline Conditions	No impact
Floodplains	No Change from Baseline Conditions	No impact

TABLE ES-1
Summary of Potential Environmental and Socioeconomic Consequences
Construction and Operation of SOCSOUTH Headquarters, Homestead, FL

	Environmental and Socioeconomic Consequences	
Resource	**No Action**	**Proposed Action**
Stormwater	No Change from Baseline Conditions	Negligible impact: use of appropriate BMPs and stormwater controls would prevent impacts from construction activities. Stormwater controls would be designed to prevent post-construction runoff from exceeding pre-construction runoff.
Biological Resources		
Vegetation	No Change from Baseline Conditions	Negligible impact
Wildlife	No Change from Baseline Conditions	Negligible impact
Sensitive Species	No Change from Baseline Conditions	Minor short-term impacts with proposed mitigation. Moderate long-term beneficial impacts with proposed mitigation.
Wetlands	No Change from Baseline Conditions	No impact
Floodplains	No Change from Baseline Conditions	No impact
Cultural Resources		
Historic Resources	No Change from Baseline Conditions	No impact
Archeological Resources	No Change from Baseline Conditions	No impact
Native American Resources	No Change from Baseline Conditions	No impact
Socioeconomics		
Economic Development	No Change from Baseline Conditions	Minor benefit to local economy during construction. No impact from operation.
Demographics	No Change from Baseline Conditions	No impact
Housing	No Change from Baseline Conditions	No impact
Environmental Justice	No Change from Baseline Conditions	No impact
Protection of Children	No Change from Baseline Conditions	No impact
Transportation	No Change from Baseline Conditions	No impact

TABLE ES-1
Summary of Potential Environmental and Socioeconomic Consequences
Construction and Operation of SOCSOUTH Headquarters, Homestead, FL

	Environmental and Socioeconomic Consequences	
Resource	**No Action**	**Proposed Action**
Utilities		
Potable Water	No Change from Baseline Conditions	Negligible impact from construction demand. No impact from operation as existing demand would be relocated approximately 0.5-mile.
Wastewater	No Change from Baseline Conditions	Negligible impact from construction demand. No impact from operation as existing demand would be relocated approximately 0.5-mile.
Energy	No Change from Baseline Conditions	Negligible impact from construction demand. No impact from operation as existing demand would be relocated approximately 0.5-mile; potential long-term benefit from energy-efficient design and use of energy-efficient climate control.
Solid Waste	No Change from Baseline Conditions	Minor impact from construction: typical construction wastes that would be within the capacity of local and regional waste disposal facilities. No impact from operation because waste generation would not change.
Hazardous Materials, Wastes, Installation Restoration Program Sites, and Stored Fuels		
Hazardous/Toxic Materials	No Change from Baseline Conditions	No impact: Appropriate handling and disposal methods would be employed should any hazardous materials be encountered.
Indirect and Cumulative Impacts	No Change from Baseline Conditions	No impact

Consequences of the Preferred Alternative

Implementation of the preferred alternative would result in minor short-term adverse impacts to air quality from construction and negligible adverse impacts to air quality from operation of building heating and air conditioning systems. There could be a long-term benefit to air quality from reduced emissions of new, energy-efficient heating and air conditioning systems. There would be temporary construction-related noise and minor alteration of topography and soils during construction. Use of appropriate construction and post-construction BMPs would result in negligible impacts from stormwater runoff. There would be a minor increase in solid waste generation during construction but no long-term change in demand on public utilities and services. Minor short-term beneficial impacts to the local economy would result from the proposed construction. No adverse cumulative impacts would be expected.

The federally endangered Small's milkpea (*Galactia smallii*) and the federal candidate species sand flax (*Linum arenicola*) occur on the property that would be developed by SOCSOUTH. The proposed action would result in the unavoidable loss of approximately 4 percent of the populations of Small's milkpea and sand flax, and the loss of approximately 11 percent of the habitat for these species on the property. To mitigate for these unavoidable impacts, the

U.S. Army would implement conservation measures that include designating two Management Areas (Management Areas 1 and 2, which cover 14.7 acres [8.5 acres of pine rockland habitat that contains Small's milkpea and sand flax plus an additional 6.2 acres that may be restored to pine rockland habitat]), erecting permanent fencing around Management Areas 1 and 2 prior to construction, placing signage to deter unauthorized entry on the fence where it borders construction areas, placing temporary fencing and/or signage to protect habitat areas containing Small's milkpea and sand flax outside of Management Areas 1 and 2 that would not be disturbed by construction, and developing and implementing an Integrated Natural Resources Management Plan (INRMP) for the property that would direct conservation and management of the species during operation of the SOCSOUTH facility. With the proposed conservation measures, there would be minor short-term adverse impacts to the two species and their habitat and a long-term benefit to these species and their habitat.

There would be no impacts to other resources evaluated in this Environmental Assessment (EA). Environmental impacts would be the same whether the land is leased or acquired in fee title.

Consequences of the No Action Alternative

The no action alterative would have no impact on any of the resources evaluated in this EA.

ES-5 Conclusions

Applicable construction permits would be obtained, and appropriate health and safety procedures would be implemented during construction. While no mitigation, beyond that specified for the protected species, would be necessary, SOCSOUTH would implement appropriate BMPs to further reduce unavoidable minor impacts of the proposed project (Table ES-2). BMPs would be used to minimize soil erosion and stormwater runoff, control fugitive dust emissions, manage hazardous materials, and reduce the generation of wastes during construction and operations. Construction activities would occur during the daytime hours to minimize noise disturbance to nearby sensitive receptors.

TABLE ES-2
Summary of BMPs
Construction and Operation of SOCSOUTH Headquarters, Homestead, FL

BMP	Function	Applicability
Construction entrance/exit	Reduce mud/dirt on roadways and subsequent transport to receiving waters and air	Soils, water quality, air quality
Silt fence	Reduce flow of sediment offsite	Soils, water quality
Sediment basin	Remove sediment from stormwater runoff	Soils, water quality
Filter berm	Remove sediment from stormwater runoff	Soils, water quality
Mulch	Provide temporary stabilization of disturbed soil during construction	Soils, water quality, air quality
Permanent reseeding	Provide permanent vegetative cover after construction is complete	Soils, water quality, air quality
Sprinkling	Provide dust control on cleared areas	Air quality

The eastern indigo snake is not considered to occur on the approximately 84.2-Acre property. However, because the most recent survey was done in 2009, SOCSOUTH would conduct a site survey for gopher tortoise in advance of construction. Should the species be found onsite, consultation with the U.S. Fish and Wildlife Service would be conducted and appropriate mitigation, as determined by that consultation, would be implemented prior to construction.

To avoid accidental exposure to arsenic contamination in soils and groundwater onsite, SOCSOUTH also would implement the following:

- SOCSOUTH would not erect permanent residential structures, hospitals, public or private schools, or day care centers.
- SOCSOUTH would not consume, cause exposure to, or otherwise use the underlying groundwater for any purpose without coordinating such efforts and obtaining approval from the Florida Department of Environmental Protection, the U.S. Environmental Protection Agency, and the U.S. Air Force.

The proposed action would result in the unavoidable loss of approximately 4 percent of the populations of Small's milkpea and sand flax, and the loss of approximately 11 percent of the habitat for these species on the property. To mitigate for these unavoidable impacts, the U.S. Army would implement conservation measures that include:

- Designation of two Management Areas (Management Areas 1 and 2, which cover 14.7 acres [8.5 acres of pine rockland habitat that contains Small's milkpea and sand flax plus an additional 6.2 acres that may be restored to pine rockland habitat]).
- Erection of permanent fencing around Management Areas 1 and 2 prior to construction and potential placement of signage to deter unauthorized entry on the fence where it borders construction areas.
- Placement of temporary fencing and/or signage to protect habitat areas containing Small's milkpea and sand flax outside of Management Areas 1 and 2 that would not be disturbed by construction.
- Development and implementation an INRMP for the property that would direct conservation and management of the species during the operation of the SOCSOUTH facility.

With the proposed mitigation, there would be minor short-term adverse impacts to the two species and their habitat and a long-term benefit to these species and their habitat.

Based upon the environmental impact analysis, it has been concluded that, with the mitigation proposed, no significant environmental or socioeconomic impacts would result from the preferred alternative (proposed action). Therefore, it is not necessary to prepare an environmental impact statement to address the proposed action and a Finding of No Significant Impact should be issued.

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Appendices

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Figures

1.0 Purpose, Need, and Scope

1.1 Introduction

Special Operations Command South (SOCSOUTH) , a sub-unified command of United States (U.S.) Southern Command relocated its headquarters for special operations in Central and South America from Roosevelt Roads Naval Base in Puerto Rico to a site on Homestead Air Reserve Base (HARB), Florida (Figure 1-1). The relocation was driven by the closure of Roosevelt Roads Naval Base. Homestead was chosen over other possible relocation sites because of its proximity to U.S. Southern Command headquarters in Miami, which is the unified command responsible for all U.S. military activities in Central and South America. Since the relocation was completed, SOCSOUTH has been housed in temporary structures on HARB in Homestead, Florida. The temporary facilities were intended as a short-term measure to bridge the period while a permanent headquarters was made available. The original 3-year lease on the temporary buildings has expired. To continue use of these structures, the purchase of the residual value of the buildings would be necessary.

The SOCSOUTH area of focus encompasses approximately 15.6 million square miles, including the countries and adjacent waters of Latin America south of Mexico. The SOCSOUTH mission includes conducting counternarcotics operations, performing multinational training, and hosting symposiums for Latin American countries on combating terrorism. SOCSOUTH also participates in humanitarian relief throughout the region. SOCSOUTH is a joint headquarters comprising three operational units:

- C Company, 3rd Battalion, 7th Special Forces Group (Airborne)
- Naval Special Warfare Unit 4
- D Company, 160th Special Operations Aviation Regiment

Counternarcotics support is a major focus of the U.S. Southern Command. SOCSOUTH units are deployed on a continual basis throughout the source and transit zones to support interagency and host-nation interdiction efforts to disrupt the production, cultivation, and movement of illegal drugs. C Company, 3rd Battalion, 7th Special Forces Group hosts the annual Special Operations Forces Counter-terrorism Tactics and Techniques Symposium that brings security forces from throughout the region together in friendship to exchange ideas and foster dialogue on the common issue of combating terrorism. Additionally, SOCSOUTH deploys forces to improve force protection for U.S. units and enhance the safety of U.S. citizens and interests during periods of strife in the region.

1.2 Purpose and Need

The proposed action is required to provide permanent facilities for SOCSOUTH, which has been operating from temporary buildings since being relocated to HARB. The temporary buildings exceeded their economic life expectancy in 2007 and now require above-average

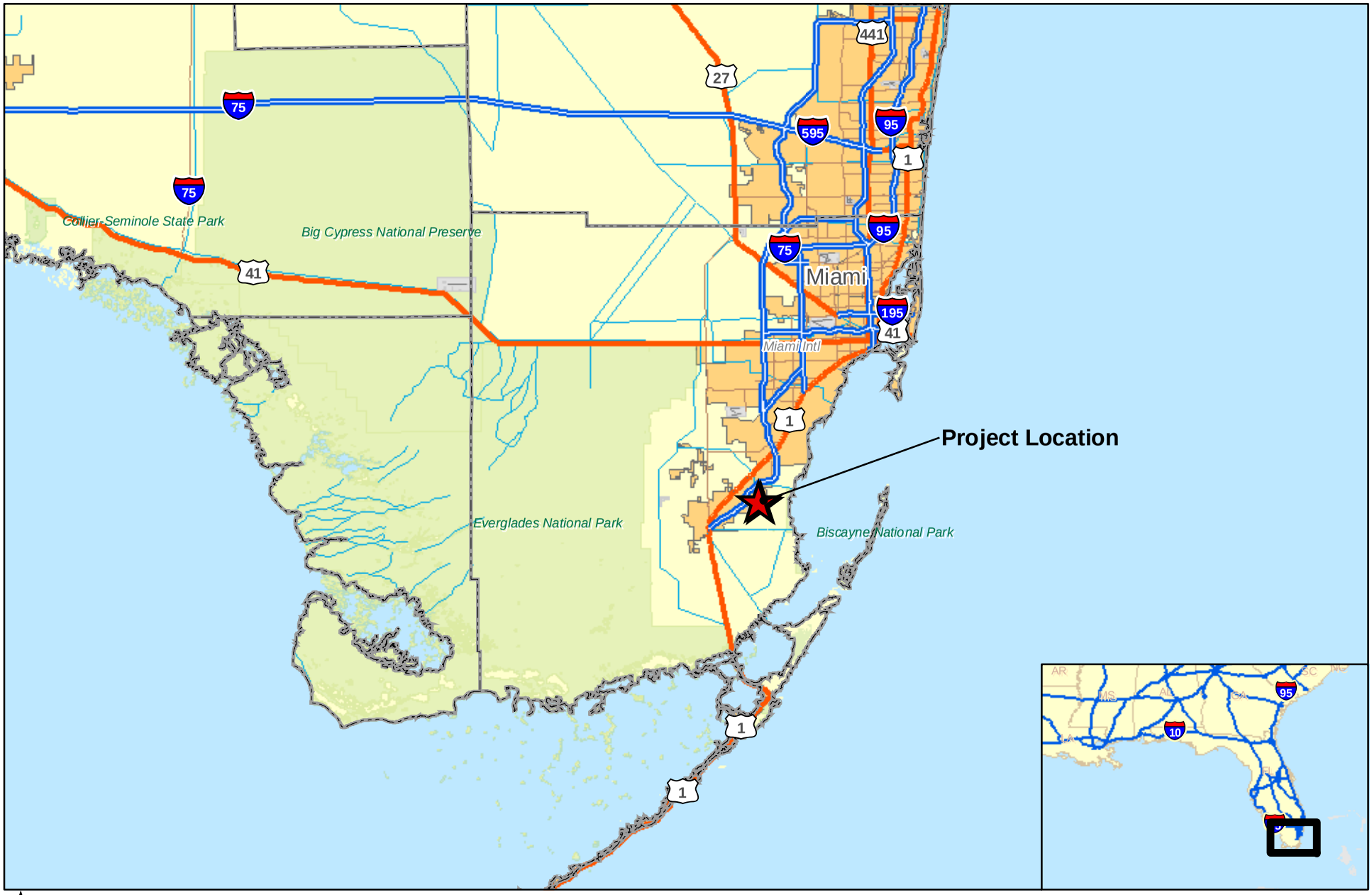

Figure 1-1
Proposed Project Location
SOCSOUTH Headquarters EA

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sustainment repairs to enable continued use. The lease with HARB expired in September 2009; however, SOCSOUTH continues to occupy the temporary facilities and will remain there until a new headquarters facility is constructed. The purpose of the proposed action is to provide permanent facilities to support safe and secure operations, parachute rigging and maintenance, deployment storage, and vehicle and equipment maintenance for SOCSOUTH. The need for the proposed action is to meet mission requirements and demands of the SOCSOUTH and its associated forces. The proposed action would provide SOCSOUTH headquarters a permanent facility capable of fully supporting the SOCSOUTH mission.

1.3 Scope

This Environmental Assessment (EA) has been developed in accordance with the National Environmental Policy Act (NEPA) and implementing regulations found at 40 Code of Federal Regulations (CFR) Part 1500 through Part 1508 (President's Council on Environmental Quality [CEQ], 2002), and 32 CFR 651 (Office of the Deputy Assistant Secretary of the Army, 2002). Its purpose is to inform decision-makers and the public of the likely environmental consequences of the proposed action and alternatives.

This EA identifies, documents, and evaluates the environmental and socioeconomic effects of construction and routine operation of the new headquarters facility for SOCSOUTH, including the potential for interaction with past, present, and reasonably foreseeable future actions that could produce cumulative impacts on resources. An interdisciplinary team of environmental scientists, biologists, planners, economists, engineers, archaeologists, historians, and military technicians has analyzed the proposed action and alternatives in light of existing conditions and has identified relevant beneficial and adverse effects associated with the action and alternatives.

This EA also considers the potential impacts of the no action alternative, as required by NEPA, to provide a benchmark for comparison of the potential impacts of the proposed action and the alternatives.

1.4 Public Involvement

The U.S. Army (Army) invites public participation in the proposed federal action through the NEPA process. Consideration of the views and information of all interested persons promotes open communication and enables better decision-making. All agencies, organizations, and members of the public having a potential interest in the proposed action, including minority, low-income, disadvantaged, and Native American groups, are urged to participate in the decision-making process. Initial agency scoping letters were submitted to the U.S. Fish and Wildlife Service (USFWS) and the Florida State Historic Preservation Office (SHPO), and a Coastal Zone Consistency Determination was submitted to the Florida Clearinghouse (Appendix A). Responses to the scoping letters, comments from the Florida Clearinghouse, and documentation of follow-on coordination also are provided in Appendix A. As a result of the presence of federal listed and candidate species within the proposed project area, formal consultation under Section 7 of the Endangered Species Act was completed with USFWS. Documentation of the formal consultation, including the

Army's biological assessment (BA) and the USFWS biological opinion (BO), is provided in Appendix B.

This document will be distributed to all interested state and federal regulatory agencies by the Florida State Clearinghouse, which normally is a 60-day process. Public participation opportunities with respect to this EA and decision-making on the proposed action are guided by 32 CFR Part 651. A Notice of Availability of the Final EA and Draft Finding of No Significant Impact (FNSI) was published in the *Miami Herald* on April 21, 2011 (Appendix C). The EA and Draft FNSI were available to the public for comment for a period from April 22, 2011 through May 25, 2011. No comments were received during the public comment period. The Army received comments from the South Florida Water Management District and the South Florida Regional Planning Commission through the Florida State Clearinghouse review (Appendix A). The Army considered these comments in making the decision of whether to implement the proposed action and determined that no changes to the analysis presented in the EA were warranted. As appropriate, agency comments were addressed through the Final FNSI.

1.5 Relevant Statutes and Executive Orders

A decision on whether to proceed with the proposed action depends on numerous factors such as mission requirements, schedule, availability of funding, and environmental considerations. In addressing environmental considerations, the Army is guided by relevant statutes (and their implementing regulations) and Executive Orders (EOs) that establish standards and provide guidance on environmental and natural resources management and planning. These include:

Federal Regulations

- NEPA (42 United States Code [USC] 4321-4370)
- Endangered Species Act of 1973 (ESA) (16 USC 1531-1543)
- Fish and Wildlife Coordination Act (16 USC 661, et seq.)
- Migratory Bird Treaty Act ([MBTA] 16 USC 701, et seq.)
- Clean Water Act of 1977 (CWA) and the Water Quality Act of 1987 (WQA) (33 USC 1251 et seq., as amended)
- Farmland Protection Act of 1981 (7 USC 4201 et seq., as amended)
- Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) (as amended by the Superfund Amendments and Reauthorization Act of 1986 [SARA])
- Resource Conservation and Recovery Act of 1976 (RCRA) (42 USC 6901)
- Toxic Substances Control Act (15 USC 2601 et seq., as amended)
- National Historic Preservation Act (NHPA) of 1966 (16 USC 470 et seq., as amended)
- Archeological Resources Protection Act of 1979 (16 USC 470)

- Clean Air Act (CAA) (42 USC 7401 et seq., as amended)
- Noise Control Act of 1972 (42–USC 4901 - 4918)
- Coastal Zone Management Act (CZMA) (Section 307 and 15 CFR Part 930 sub-part C)

Regulations

- CEQ Regulations for Implementing NEPA (Title 40 CFR, Parts 1500-1508 (40 CFR 1500-1508)
- Environmental Analysis of Army Actions (32 CFR 651)
- Protection of Historic Properties (36 CFR Part 800)

Executive Orders

- EO 11514, Protection and Enhancement of Environmental Quality (amended by EO 11991)
- EO 11988, Floodplain Management
- EO 11990, Protection of Wetlands
- EO 12088, Federal Compliance with Pollution Control Standards
- EO 12372, Intergovernmental Review of Federal Programs
- EO 12580, Superfund Implementation
- EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
- EO 13045, Protection of Children from Environmental Health Risks and Safety Risk
- EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds
- EO 13327, Federal Real Property Asset Management (amended by EO 13423)
- EO 13423, Strengthening Federal Environmental, Energy, and Transportation Management
- EO 13175, Consultation and Coordination with Indian Tribal Governments

These authorities are addressed in various sections throughout this EA when relevant to particular environmental resources and conditions. The full text of the laws, regulations, and EOs is available on the Defense Environmental Network & Information Exchange (DENIX) web site at http://www.denix.osd.mil.

The means available to Army installation commanders to satisfy their facilities' space requirements are subject to policies set forth in various Army Regulations. Army Regulation 210-20 (*Installation Master Planning*) establishes Army policy to maximize use of existing facilities. The regulation directs that new construction will not be authorized to meet an installation mission that can be supported by existing underutilized and adequate facilities, provided that the use of such facilities does not degrade operational efficiency.

1.6 Organization of the Document

This EA is divided into the following 11 sections and 5 appendices:

- Section 1.0 provides background information on SOCSOUTH, identifies the purpose of and need for the proposed action, explains the regulatory agency review and public involvement process, and describes the analysis framework.
- Section 2.0 defines the proposed action.
- Section 3.0 provides a detailed description of the proposed action and the no action alternative, and provides the rationale for dismissing other alternatives from detailed consideration.
- Section 4.0 describes existing environmental conditions in the area where the proposed action would occur and identifies the potential impacts of implementing the proposed action.
- Section 5.0 summarizes the cumulative impacts of the proposed action.
- Section 6.0 provides the findings and conclusions of the EA and summarizes any mitigation actions that would be implemented with the proposed action.
- Section 7.0 provides the references.
- Section 8.0 provides the acronyms and abbreviations.
- Section 9.0 identifies the preparers of the EA.
- Section 10.0 identifies the agencies that will receive the EA for review.
- Section 11.0 identifies persons consulted during preparation of the EA.
- Appendix A provides a record of correspondence with state and federal agencies and Native American organizations.
- Appendix B contains the record of formal consultation with USFWS under Section 7 of the ESA.
- Appendix C contains the Notice of Availability for the public review of the Final EA and Draft FNSI.
- Appendix D contains the Coastal Zone Consistency Determination.
- Appendix E contains the record of non-applicability for a General Conformity review under the CAA.

2.0 Description of the Proposed Action

2.1 Introduction

This section describes the Army's preferred alternative for providing a permanent headquarters facility for SOCSOUTH. SOCSOUTH headquarters would relocate from inadequate temporary buildings on HARB into a permanent headquarters facility adjacent to HARB.

2.2 Implementation Proposed

The proposed action is for SOCSOUTH to enter into a 50-year agreement with Miami-Dade County to lease or acquire in fee title an approximately 84.2-acre property adjacent to HARB (Figure 2-1), construct a new headquarters facility for SOCSOUTH on the approximately 84.2-acre property, and operate SOCSOUTH from the new headquarters facility.

SOCSOUTH would construct its 125,000-square-foot (ft^2) headquarters facility on approximately 28 acres of the approximately 84.2-acre site. The primary facility would consist of a Secure Compartmentalized Information Facility (SCIF) with sensitive storage areas and general purpose administrative areas. Fire, intrusion detection, and alarm systems would be included. Supporting facilities would include connection to utilities (water, sewer, electrical, storm drainage, and information systems), emergency backup power with an uninterruptible power system, site development, paving (including parking, sidewalks, curb and gutter, and storm drainage), landscaping, and other site improvements, including secure communications reception areas.

Antiterrorism measures would be incorporated into the design, to include appropriate stand-off distances, barriers, sliding fence gate, and closed circuit TV. Buildings would be designed and built to comply with Category 5 hurricane protection and to prevent progressive collapse. Demolition of existing structures, existing paved surfaces, and utilities would be included in the proposed action. SOCSOUTH would also demolish or dispose of the temporary buildings that currently serve as its headquarters.

Four buildings on the approximately 84.2-acre property would be retained by SOCSOUTH: Building 741, an old hangar that is currently used for storage; Building 736; a small office building that is not currently in use; Building 743, a pumphouse for the associated 500,000-gallon AST located adjacent to the building (both currently not in use); and Building 746, an open-sided shed that is also not currently in use. SOCSOUTH would continue to use Building 741 for storage. Building 736 would be renovated and used for additional administrative space. SOCSOUTH may renovate Building 741 in the future to meet specific mission needs. SOCSOUTH would upgrade Building 743 and the AST to a foam fire retardant system for Building 741. Once the system is operation, the hangar would be capable of housing aircraft. The small un-numbered structure on the property would be demolished. Building 746 would be used for storage.

In addition to the headquarters facility, SOCSOUTH has identified a need for related construction during or after construction of the headquarters facility to meet mission needs and secure military assets. Because this related construction would constitute interrelated and interdependent actions relative to construction of the headquarters facility, the U.S. Army has identified sections within the approximately 84.2-acre site where related construction would be placed. While specific construction details cannot be identified at this time, the maximum footprints of the related construction areas have been identified to define the limits of potential disturbance (Figure 2-1).

The entire approximately 84.2-acre property would be fenced. SOCSOUTH would install approximately 6,429 feet of new fencing along the northern border and between the 25- and 37-acre parcels. SOCSOUTH would also utilize the existing fence (approximately 7,278 feet) along the southern border. All fencing would be made of galvanized chain link and be 7 feet in height with 1-foot of additional outrigging of barbed wire or concertina wire. SOCSOUTH would remove existing fence poles prior to installing the new fence. A 10-foot cleared strip would be maintained by mowing between the fence and property line.

To provide utility service, new utility rights-of-way would be placed in a corridor along the perimeter of the property along St. Lo Boulevard, Rabaul Road, and Bikini Boulevard (Figure 2-1). Utility lines would be buried in the new utility corridor, which would extend 10 feet from the road ditch.

Miami-Dade County operates a subsurface sanitary sewer lift station on the property that the county will retain and the U.S. Army will provide the County access to this area for maintenance purposes.

Figure 2-1
Proposed SOCSOUTH Headquarters Location, Rights-of-Way, and Related Construction Areas
SOCSOUTH Headquarters EA

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3.0 Alternatives

This section presents detailed information on the proposed action and alternatives. The preferred alternative (proposed action) is described in Section 3.1. Section 3.2 describes other alternatives that were considered early in the NEPA process but were determined to be infeasible. The no action alternative is presented in Section 3.3. For this EA, only the preferred action and the no action alternative were carried forward for detailed analysis.

3.1 Preferred Alternative

The proposed action described in Section 2.0 is the preferred alternative. SOCSOUTH would enter into a 50-year agreement with Miami-Dade County to lease or acquire in fee title an approximately 84.2-acre property, demolish a small un-numbered structure on the site, construct a new 125,000-ft^2 headquarters facility for SOCSOUTH on the property, and operate SOCSOUTH from the new headquarters facility. SOCSOUTH would also demolish or dispose of the temporary buildings that currently serve as its headquarters. If leased, the terms of the lease agreement would result in no yearly payments to Miami-Dade County. The cost of the lease would be covered through site improvements implemented by SOCSOUTH and the long-term maintenance of the property.

The property is adjacent to HARB and the HARB airfield. Proximity to the military airfield enhances the efficiency of the SOCSOUTH military mission through ease of access and reduced travel time for personnel, supplies, and equipment, which results in long-term cost savings to SOCSOUTH.

SOCSOUTH would construct a headquarters facility on approximately 28 acres of the approximately 84.2-acre site. The primary facility would consist of a SCIF with sensitive storage areas and general purpose administrative areas. Components of the proposed action are identified in Table 3-1. Fire, intrusion detection, and alarm systems would be included. Supporting facilities would include connection to utilities (water, sewer, electrical, storm drainage, and information systems), emergency backup power with an uninterruptible power system provided by a 150-kilowatt (kW) standby generator, site development, approximately 17,500 square yards (yd^2) of paving including parking, approximately 12,000 linear feet (lf) of sidewalks, approximately 7,000 lf of curb and gutter, and approximately 2,550 lf of storm drainage, landscaping, and other site improvements, including secure communications reception areas.

Antiterrorism measures would be incorporated into the design, to include appropriate stand-off distances, barriers, sliding fence gate, and closed circuit TV. Buildings would be designed and built to comply with Category 5 hurricane protection and to prevent progressive collapse. Features that would be incorporated to comply with hurricane standards would include heavier window and door glass, reinforced door frame construction, and additional wall, floor, and roof connections. The area around the headquarters facility (approximately 9,300 yd^2) would be covered with sod after construction.

TABLE 3-1
Components of the Proposed Action
Construction and Operation of SOCSOUTH Headquarters, Homestead, FL

Construction Component	Approximate Size
Headquarters Building	125,000 ft^2
Sidewalks	12,000 ft^2
Paving	17,500 yd^2
Security Fencing	10,800 lf
Exterior Lighting/Transmission	2,600 lf
Storm Drains	2,550 lf
Water, Sewer, and Gas Lines	2,000 lf
150-kW Standby Generator	1,500 ft^2
Renovate/Reuse Components	
Building 741	119,240 ft^2
Building 736	5,400 ft^2
Building 743	1,462 ft^2
AST connected to Building 743	500,000 gallons
Building 746	1,600 ft^2
Relocation Components	**Approximate Size**
Fire Hydrants	4 units
6-inch Sewer Force Main	1,000 lf
8-inch Water Line	700 lf
Demolition Component	**Approximate Size**
Un-numbered Structure	50 ft^2
Concrete Foundation	50,000 ft^2
Temporary Buildings	45,000 ft^2

In addition to the headquarters facility, SOCSOUTH has identified a need for related construction during or after construction of the headquarters facility to meet mission needs and secure military assets. Because this related construction would constitute interrelated and interdependent actions relative to construction of the headquarters facility, the U.S. Army has identified sections within the approximately 84.2-acre site where related construction would be placed. While specific construction details cannot be identified at this time, the maximum footprints of the related construction areas have been identified to define the limits of potential disturbance (Figure 2-1). Much of the area identified for related construction is previously disturbed and covered with old concrete from previous use on Homestead Air Force Base (HAFB) prior to its closing.

Demolition or disposal of existing structures, paved surfaces, and utilities would be included in the proposed action (Table 3-1). A small un-numbered structure would be demolished. As part of site preparation, SOCSOUTH would remove approximately 50,000 ft^2 of existing concrete foundation remaining from buildings destroyed by Hurricane Andrew. The concrete and asphalt material would be hauled to the South Dade Landfill located approximately 10 miles from the proposed project site.

SOCSOUTH would demolish or dispose of the temporary buildings (totaling 45,000 ft^2) serving as headquarters after the new headquarters facility is operational. SOCSOUTH would coordinate with the HARB recycling center to salvage reusable material from temporary buildings before hauling the trailers offsite. Any remaining unusable material from the temporary facilities would be transported to the South Dade Landfill. The administrative building that serves as the entrance to the temporary headquarters would be returned to HARB.

Four buildings on the approximately 84.2-acre property would be retained by SOCSOUTH: Building 741, an old hangar that is currently used for storage; Building 736, a small office building that is not currently in use; Building 743, a pumphouse for the associated 500,000-gallon AST located adjacent to the building (both currently not in use); and Building 746, an open-sided shed that is also not currently in use. Building 736 would be renovated and used for additional administrative space. SOCSOUTH would continue to use Building 741 for storage and may renovate it in the future to meet specific mission needs. SOCSOUTH would upgrade Building 743 and the AST to a foam fire retardant system for Building 741. Once the system is operation, the hangar would be capable of housing aircraft. Building 746 would be used for storage.

The entire approximately 84.2-acre property would be fenced. SOCSOUTH would install approximately 6,429 feet of new fencing along the northern border and along Rabaul Road. SOCSOUTH would also utilize the existing fence (approximately 7,278 feet) along the southern border. All fencing would be made of galvanized chain link and be 7 feet in height with 1-foot of additional outrigging of barbed wire or concertina wire. SOCSOUTH would remove existing fence poles prior to installing the new fence. A 10-foot cleared strip would be maintained by mowing between the fence and property line.

To provide utility service, new utility rights-of-way would be placed in a corridor along the perimeter of the property along St. Lo Boulevard, Rabaul Road, and Bikini Boulevard (Figure 2-1). Utility lines would be buried in the new utility corridor, which would extend 10 ft from the edge of the road ditch.

Approximately 700 lf of 8-inch water line, 4 fire hydrants, and approximately 1,000 lf of 6-inch sewer force main exist onsite and are owned by Miami-Dade County. These facilities would be relocated from proposed construction areas as part of the proposed action and would remain operable. Miami-Dade County operates a subsurface sanitary sewer lift station on the property that the county will retain and the U.S. Army will provide the County access to this area for maintenance purposes.

3.2 Alternatives Not Considered in Detail

3.2.1 Renovate Temporary Facilities

SOCSOUTH considered renovation of the temporary facilities that currently house the headquarters. Renovation of temporary facilities would be unable to provide the space required for the headquarters and would not provide a suitable economic life cycle. This alternative would not support the purpose and need for the project. Accordingly, renovation of the temporary facilities was not carried forward for detailed analysis.

3.2.2 Renovate Temporary Facilities and Construct New Facilities on HARB

SOCSOUTH considered renovation of the temporary facilities that currently house the headquarters combined with construction of new facilities on HARB. This alternative would retain the efficiency of proximity to the military airfield. However, this approach was determined to be inadequate to support life cycle economics due to the condition of the temporary facilities and also was determined not to be feasible because of space limitations on HARB. There is not sufficient available land on HARB to accommodate the new construction that would be necessary to meet SOCSOUTH space requirements. Renovation of temporary facilities combined with construction of new facilities on HARB was determined to be impracticable and this alternative was not carried forward for detailed analysis.

3.2.3 Construct New Facilities on HARB

SOCSOUTH considered construction of new headquarters facilities on HARB. This alternative would retain the efficiency of proximity to the military airfield. However, the space available on HARB is not sufficient to accommodate the new construction that would be necessary to meet space requirements. Construction of new headquarters facilities on HARB was determined to be impracticable and was not carried forward for detailed analysis.

3.2.4 Relocate to Other Facilities on HARB

SOCSOUTH considered relocating the headquarters to other facilities on HARB. This alternative would retain the efficiency of proximity to the military airfield. However, all permanent facilities on HARB are in use by the U.S. Air Force (USAF) Reserve. No other facilities are available for use by SOCSOUTH. Therefore, this alternative was not carried forward for detailed analysis.

3.2.5 Relocate to Other Federal Facilities in the Homestead Area

SOCSOUTH considered the use of other Department of Defense (DoD) or other federal agency facilities in the Homestead area as a headquarters site. This alternative would result in locating SOCSOUTH facilities farther away from a military airfield. The separation from a military airfield would reduce the mission efficiency of SOCSOUTH. In addition, there are no other DoD or other federal agency facilities available in the Homestead area to support the purpose and need for the proposed project. The use of other federal facilities was determined to be impracticable and this alternative was not carried forward for detailed analysis.

3.2.6 Construct New Facilities on Private Land in the Homestead Area

SOCSOUTH considered the construction of new facilities on private land in the Homestead area. No private properties were available that were of sufficient size to accommodate the headquarters building, a storage warehouse, and an ancillary office building and to allow for future expansion to meet potential needs related to changes in military mission. Commercial properties in southern Miami-Dade County are selling for between $125,000 and $180,000 per acre. The additional costs related to acquiring land, constructing a storage warehouse rather than modifying Building 741, and constructing ancillary office space rather than renovating Building 736 would make the cost of this alternative substantially greater than the cost of the proposed action. Additionally, no private land is available that is near a military airfield. Also, the separation from a military airfield would reduce the mission efficiency of SOCSOUTH. For these reasons, construction of new facilities on private land in the Homestead area was not considered feasible, and this alternative was not carried forward for detailed analysis.

3.3 No Action Alternative

Under the no action alternative, SOCSOUTH would not enter into a 50-year agreement with Miami-Dade County to lease or acquire in fee title the approximately 84.2-acre property and would not construct a new headquarters facility for SOCSOUTH there. Implementation of the no action alternative would result in SOCSOUTH continuing to occupy inadequate temporary facilities on HARB.

The no action alternative would not address the purpose and need for the proposed action. Inclusion of the no action alternative serves as a benchmark for evaluation of the potential effects of the proposed federal action. Therefore, the no action alternative is evaluated in detail in this EA.

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4.0 Affected Environment and Consequences

4.1 Introduction

This section describes the existing environmental and socioeconomic conditions potentially affected by the proposed action, as well as the potential environmental and socioeconomic impacts of implementing the proposed action or alternatives.

This section also provides information to serve as a baseline from which to identify and evaluate environmental and socioeconomic changes likely to result from implementation of the proposed action. Baseline conditions represent current conditions.

In compliance with NEPA, CEQ guidelines, and 32 CFR Part 651, et seq., the description of the affected environment focuses on those resources and conditions potentially subject to impacts. These include land use, aesthetics and visual resources, air quality, noise, geology and soils, water resources, biological resources, cultural resources, socioeconomics, transportation, utilities, and hazardous and toxic substances.

Following the description of the components of the affected environment, this section presents the analysis of the direct and indirect environmental and socioeconomic effects that would likely occur with the proposed action or no action alternative and identifies any adverse environmental effects that could not be avoided through project design. Potential cumulative impacts are discussed in Section 5.

4.1.1 Direct versus Indirect Effects

The terms "effect" and "impact" are synonymous as used in this EA. Effects may be beneficial or adverse and may apply to the full range of natural, aesthetic, historic, cultural, and economic resources within the proposed project area and also within the surrounding area. Definitions and examples of direct and indirect impacts as used in this document are as follows:

- ***Direct Impac*t.** A direct impact is one that would be caused directly by implementing an alternative and that would occur at the same time and place.
- ***Indirect Impac*t.** An indirect impact is one that would be caused by implementing an alternative that would occur later in time or farther removed in distance but would still be a reasonably foreseeable outcome of the action. Indirect impacts may include induced changes in the pattern of land use, population density, or growth rate, and indirect effects to air, water, and other natural resources and social systems.
- ***Relationship between Direct versus Indirect Impact*s.** For direct impacts to occur, a resource must be present. For example, if highly erodible soils were disturbed as a direct result of the use of heavy equipment during construction of a home, there could be a direct effect on soils resulting from erosion. This could indirectly affect water quality if stormwater runoff containing sediment from the construction site were to enter a stream.

4.1.2 Short-Term versus Long-Term Effects

Effects are also expressed in terms of duration. The duration of short-term impacts is considered to be 1 year or less from completion of construction. For example, the construction of a building would likely expose soil in the immediate area of construction. However, this effect would be considered short-term because it would be expected that vegetation would re-establish on the disturbed area within a year of the disturbance. Long-term impacts are described as lasting beyond 1 year. Long-term impacts can continue in perpetuity, in which case they would also be described as permanent.

4.1.3 Intensity of Effects

The magnitude of effects of an action must be considered regardless of whether the effects are adverse or beneficial. The following terms are used to describe the magnitude of impacts:

- No Impact: The action does not cause a detectable change.
- Negligible: The impact is at the lowest level of detection.
- Minor: The impact is slight but detectable.
- Moderate: The impact is readily apparent.
- Major: The impact is severely adverse or exceptionally beneficial.

4.1.4 Significance

In accordance with CEQ regulations and implementing guidance, impacts are also evaluated in terms of whether they are significant. Both short-term and long-term effects are relevant to the consideration of significance. "Significance," as defined in the CEQ regulations for implementing NEPA at 40 CFR 1508.27, requires consideration of context and intensity.

"Context" requires that significance be considered with regard to society, the affected region, affected interests, and the locality. The scale of consideration for context varies with the setting and magnitude of the action. A small, site-specific action is best evaluated relative to the location rather than to the entire world.

4.1.5 Mitigation

The alternatives considered in this EA could have environmental and socioeconomic impacts resulting from implementation that would require mitigation. Where potentially significant adverse impacts are identified, measures that would be implemented to mitigate for the magnitude of impacts are discussed. Potential mitigation actions could include:

- Rectifying an impact by repairing, rehabilitating, or restoring the affected environment.
- Reducing or eliminating an impact over time by preservation and maintenance operations during the life of the action.
- Compensating for an impact by replacing or providing substitute resources or environments.

Where no significant adverse impacts are identified, mitigation measures are not proposed. Absent mitigation, the Army would implement Best Management Practices (BMPs) and

project design features to avoid impacts or minimize unavoidable impacts that are less than significant.

4.2 Land Use

4.2.1 Affected Environment

4.2.1.1 Installation Land

Land use on HARB is primarily airfield pavement, airfield clearance areas, and industrial. Airfield pavement includes the runway, taxiways, aircraft parking aprons, alert areas, and arm/disarm areas. HARB has one active runway, 300 feet wide by 11,200 feet long, with a northeast-southwest orientation. Aircraft operations and maintenance (O&M) occupies industrial areas near airfield pavement areas. Aircraft O&M includes hangars and maintenance shops. Airfield clearance areas are open, building-free spaces designed to minimize impacts from potential aircraft strikes and noise levels. The remaining HARB land use includes administrative services, community resources, recreation facilities, housing, and medical facilities (HARB, 2006).

4.2.1.2 Proposed Project Area

The proposed project area is adjacent to the HARB airstrip. The area is mostly unused, abandoned land. Existing structures include an old B-52 hangar now used for storage, a vacant small office building, and a small building with an old air compressor. Miami-Dade County operates a subsurface sanitary sewer lift station on the property. In addition, there are multiple foundations of buildings destroyed by Hurricane Andrew and parking lots are located throughout the property. A dry water tower and the Homestead Job Corps Center are located north of the proposed project area. U.S. Coast Guard facilities are located southwest of the proposed project area, and a Miami-Dade County Search and Rescue staging facility is northeast of the proposed project area.

The approximately 84.2-acre property is part of a parcel that was encumbered by the deed transfer of the former HAFB to Miami-Dade County. This parcel was identified in the Finding of Suitability to Transfer (FOST) as containing Small's milkpea (*Galactia smallii*) and the deed contained the stipulation that the transferee must identify and preserve the species prior to construction on the parcel.

4.2.2 Environmental Consequences

4.2.2.1 Proposed Action

Direct Impacts

There would be no change in land use within the proposed project area. The proposed action would be compatible with the current zoning designation and the Miami-Dade County Department of Planning and Zoning supports the proposed action. No impacts to land use would result.

Indirect Impacts

The minor increase in traffic associated with SOCSOUTH operations at the station would not be incompatible with surrounding land uses. No indirect impacts to land use are anticipated.

4.2.2.2 No Action Alternative

Under the no action alternative, no development would occur. There would be no changes to land use.

4.3 Noise

4.3.1 Affected Environment

Noise, in the context of this analysis, refers to sounds generated by activities that could affect SOCSOUTH employees or wildlife on the approximately 84.2-acre property.

Human hearing is best approximated by using an A-weighted decibel scale (dBA). When sound pressure doubles, the dBA level increases by three (The Engineering Toolbox, 2007), although most people psychologically perceive a doubling of sound as an increase of 10 dBA (U.S. Environmental Protection Agency [USEPA], 1974). Sound pressure decreases with distance from the source. Typically, the sound measured from a point source decreases at a rate of 6 dBA per doubling of distance from the source, and sound from a continuous source decreases at a rate of 3 dBA with each doubling of distance. However, other factors including ground surface type, topography, atmospheric conditions, and shielding by vegetation and structures further affect the amount of decrease in sound over distance (Federal Highway Administration [FHWA], 2007).

Noise levels are often expressed as Ldn (day-night averaged sound level), which is the average dBA sound level over a 24-hour day and night period. The Ldn applies a 10-dBA penalty to nighttime sounds occurring between 10 pm and 7 am to account for the desirability of a quieter night than day. A noise level considered low is less than 45 dBA, a moderate noise level is 45 - 60 dBA, and a high noise level is above 60 dBA. In busy urban areas, noise levels are typically near 75 dBA, and can reach 85 dBA near airports and major freeways (California Lands Commission, 2005). Sound levels in rural residential areas typically average 40 dBA. In business and commercial areas, sound levels typically range from 50 dBA to 60 dBA (The Engineering Toolbox, 2007).

The 482d Fighter Wing at HARB operates 24 F-16C aircraft. The Florida Air National Guard and the Miami Aviation Branch of the Department of Homeland Security's U.S. Customs and Border Patrol also occupy HARB and have aircraft on-base and SOCSOUTH operates its aircraft from HARB.

The proposed project area is adjacent to the HARB airstrip where noise levels range from approximately 65 to 79 dBA. The proposed SOCSOUTH headquarters building would frequently be exposed to noise levels of 65 dBA and greater due to aircraft operations (Headquarters Air Force Reserve Command [HAFRC], 2007).

4.3.2 Environmental Consequences

4.3.2.1 Proposed Action

Direct Impacts

Minor short-term noise would result from construction of the headquarters building and associated grading and paving activities. The highest level of construction noise would occur during earth work, when most of the largest and noisiest construction equipment

would operate. The noise levels of construction equipment most likely to be used during implementation of the proposed action range from 90 to 96 dBA at 50 feet from the source (Occupational Safety and Health Administration [OSHA], 2003). Construction workers would use hearing protection and would follow OSHA standards and procedures. No noise-related impacts to workers would be expected.

No sensitive noise receptors such as residential areas or schools are near the proposed project area. The Homestead Job Corps Center, located directly north of the site, houses temporary residents throughout the year. However, because of the already elevated noise levels from airfield operations on HARB, additional construction noise may be a nuisance to persons outdoors in the area, but it would not interfere with activities. Therefore, any noise impacts during construction would be expected to be negligible.

No noise impacts would be expected during operation of the SOCSOUTH headquarters. The building would not require additional sound reduction measures, but would be designed with appropriate sound insulation to prevent disruption of activities. SOCSOUTH would continue to use HARB for aircraft operations consistent with its mission requirements and no change in aircraft noise contours would result.

Indirect Impacts

Under the proposed action alternative, there would be no indirect noise impacts.

4.3.2.2 No Action Alternative

Under the no action alternative, no development would occur. There would be no changes to current noise levels. Military, including SOCSOUTH, and Department of Homeland Security aircraft use of HARB would continue. No noise impacts would be expected.

4.4 Air Installation Compatible Land Use

4.4.1 Affected Environment

The Air Installation Compatible Use Zone (AICUZ) program was developed by the DoD to protect civilians from aircraft noise and potential accidents while continuing to promote the mission of the USAF. The program promotes compatible land use through participation in local, regional, state, and federal land use planning, control, and coordination processes. Local development and land use must be compatible with aircraft noise zones and potential accident zones outlined in AICUZ guidelines. The program is also designed to inform residents living near the base about USAF flying operations and the resulting noise levels and potential for accidents (HAFRC, 2007).

The noise zones used in the AICUZ are Day-Night Average A-weighted Sound Levels of 65 to 69 dBA, 70 to 74 dBA, 75 to 79 dBA, and greater than 80 dBA. There are also three accident potential zones (APZs) used: the clear zone (CZ), the APZ I, and the APZ II. The zones start at the end of the runway and extend out, with the CZ located closest to the runway and the APZ II located farthest away (HAFRC, 2007).

The AICUZ report analyses the noise zones and the APZs based on the zoning, current land use, and future land use of an area to determine if land uses are compatible and meet the USAF AICUZ guidelines.

The 482d Fighter Wing at HARB operates 24 F-16C aircraft. The Florida Air National Guard and the Miami Aviation Branch of the Department of Homeland Security's U.S. Customs and Border Patrol also occupy HARB and have aircraft on-base and SOCSOUTH operates its aircraft from HARB. The AICUZ for HARB was re-evaluated in 2007 after the addition of nine F-16C aircraft to the 482d Fighter Wing at HARB. The proposed SOCSOUTH headquarters building would be in the 65-69 dBA noise zone.

4.4.2 Environmental Consequences

4.4.2.1 Proposed Action

Direct Impacts

The headquarters building would include mostly military offices and administration services, which would be compatible with the noise levels in this zone and would not require additional noise reduction design. The proposed headquarters would be located laterally adjacent to the airstrip and not within an APZ. There would be no APZ restrictions on the SOCSOUTH headquarters.

Continued use of HARB for SOCSOUTH air operations would not result in changes to the HARB AICUZ program. No AICUZ impacts would be anticipated under the proposed action.

Indirect Impacts

Under the proposed action alternative, there would be no indirect impacts to AICUZ.

4.4.2.2 No Action Alternative

Under the no action alternative, no development would occur but SOCSOUTH would continue to use HARB for aircraft operations. There would be no impacts to AICUZ.

4.5 Geology

4.5.1 Affected Environment

The geology of south Florida is characterized by carbonate rocks (limestone and dolostone) overlain by a thin veneer of soil. During the last 65 million years (the Cenozoic Era), cycles of sediment deposition and erosion occurred in Florida in response to sea level changes. During this time, carbonate sediments, mostly made up of whole or broken shells, formed in south Florida. Up to 11,800 feet of carbonate rock underlies much of south Florida.

HARB is situated on a geological formation called the Miami Limestone, a marine-derived limestone of Pleistocene age. The Miami Limestone is porous, and outcrops generally display irregular karst topography. On the western and northern portions of the base, limited areas of exposed, smoothed limestone exist. Rock outcrops are not evident in the southern and eastern portions, where limestone is overlain with a calcium-rich mud called Perrine Marl (Hilsenbeck, 1993). The Miami Limestone is considered part of the Biscayne (Shallow) aquifer and is generally less than 40 feet thick.

Beneath the Miami Limestone, the Key Largo Limestone merges laterally with the Anastasia Formation. It consists of hard limestone and is derived from coral, algae, and shells, with a

thickness as great as 60 feet. The Key Largo Limestone is generally below the surface in the vicinity of HARB.

The Fort Thompson Formation, consisting of interbedded limestone, sand, and shells, is below The Key Largo Limestone. This Pleistocene age formation is approximately 40 to 70 feet thick, and is one of the most productive water-bearing units within the Biscayne aquifer.

The lowest relevant rock formation in the area is the Hawthorne Group, of Miocene age, which attains a thickness of more than 900 feet. This group consists of interbedded sand, silt, clay, dolostone, and limestone. The Tamiami Formation, of late Miocene to early Pliocene age, forms the top of this group. It consists of sand and clay and forms the base of the Biscayne aquifer. The upper part of the group acts as a confining unit for the Floridan (Deep) aquifer (U.S. Department of Agriculture [USDA], 1996).

With respect to geologic hazards, the potential for sinkhole formation in the HARB area is minimal, as determined by the Florida Geological Survey (USAF, 2000). There are very few sinkholes in the area and, when present, are generally shallow, wide, and slow to develop. Likewise, the potential for seismic activity in the HARB area is negligible.

4.5.2 Environmental Consequences

4.5.2.1 Proposed Action

Direct Impacts

There would be no change to geology and no impacts would result.

Indirect Impacts

Under the proposed action alternative, there would be no indirect impacts to geology.

4.5.2.2 No Action Alternative

Under the no action alternative, no development would occur. There would be no impacts to geology.

4.6 Soils

4.6.1 Affected Environment

Soils in the proposed project area are primarily Udorthents, limestone substratum-urban land complex and urban land (Natural Resources Conservation Service [NRCS], 2009a). This land complex is a somewhat poorly drained soil with moderate permeability and a 0 to 2 percent slope (NRCS, 2009b; USDA, 1996).

Other soils found onsite include Krome very gravelly loam, Biscayne marl, Cardsound silty clay loam-rock outcrop complex, and Udorthents, limestone stratum 0 to 5 percent slopes. Cardsound silty clay loam-rock outcrop complex has moderately slow permeability and is considered well drained. Both the Krome very gravelly loam and the Udorthents, limestone stratum are classified as moderately well-drained, and Biscayne marl is poorly drained. Krome very gravelly loam and Biscayne marl have moderate permeability. Udorthents, limestone stratum has rapid permeability. All the soils, excluding the Udorthents, limestone

stratum 0 to 5 percent, have slopes of 0 to 2 percent (NRCS, 2009a; NRCS, 2009c; NRCS, 2009d; NRCS, 2009e; NRCS, 2009f; USDA, 1996). No lands designated as prime farmland are found within the proposed project area (NRCS, 2009g).

4.6.2 Environmental Consequences

4.6.2.1 Proposed Action

Direct Impacts

Minor impacts to soils would result from construction and clearing activities for the new headquarters. Soil disturbance also could result in increased erosion potential from exposed soils. The potential for temporary impacts to water quality are discussed in Section 4.8. Potential impacts to soils would be avoided or minimized through use of appropriate BMPs and soil stabilization/revegetation techniques following demolition. BMPs that may be implemented include, but would not be limited to, installation of silt fencing and sediment traps, mulching of exposed soils, and prompt revegetation of disturbed areas.

Indirect Impacts

Implementation of the BMPs described for direct impacts would minimize the potential for indirect impacts to offsite soils from stormwater runoff. No indirect impacts to soils would be expected.

4.6.2.2 No Action Alternative

Under the no action alternative, no development would occur. There would be no impacts to soils.

4.7 Hydrology

4.7.1 Groundwater

4.7.1.1 Affected Environment

Groundwater in south Florida is contained in two distinct aquifer systems: the Biscayne aquifer and the Floridan aquifer. The Biscayne is relatively shallow and unconfined with a thickness ranging from approximately 80 to 120 feet. The average transmissibility is estimated to be 5 million gallons per day (mgd) per foot. Recharge to the Biscayne aquifer is from rainfall, irrigation runoff, surface water imported by canals, urban runoff, and groundwater inflow. Average recharge is approximately 38 inches per year (USAF, 2000). The Floridan aquifer is deep and confined. At HARB, the top of the aquifer is typically 950 to 1,000 feet below mean sea level. The Floridan aquifer has an approximate thickness of 2,800 feet. The typical well in this aquifer system yields 750 gallons per minute (USGS, 2004) (USAF, 2000).

4.7.1.2 Environmental Consequences

Proposed Action

Direct Impacts

No groundwater use would occur onsite under the proposed action. No impacts would result.

Indirect Impacts

Stormwater runoff during construction could interact with groundwater recharge zones. A stormwater permit from the South Florida Water Management District would be obtained prior to construction activities. During construction, appropriate BMPs would be implemented to reduce pollutants in stormwater discharges from construction sites (StormwaterAuthority.org, 2007a). BMPs that would be implemented may include, but would not be limited to:

- Site grading to minimize runoff.
- Construction entrances to minimize mud on roadways.
- Silt fences to decrease water flow rates and allow sediment to settle onsite.
- Sediment basins and filter berms to remove sediment.
- Mulching to stabilize disturbed soils.
- Permanent reseeding of disturbed soils.

Through the use of appropriate BMPs, no indirect impacts to groundwater would be expected as a result of construction or operation activities.

No Action Alternative

Under the no action alternative, no development would occur. There would be no impacts to groundwater.

4.7.2 Surface Water

4.7.2.1 Affected Environment

Surface waters in the proposed project area are limited to man-made ditches and drainage canals. Stormwater runoff is collected through a series of canals that drain into the Boundary Canal system. The Flightline Canal drains runoff from the HARB runway and the proposed project area and discharges into the Boundary Canal. The Boundary Canal encircles most of the former HAFB area, and the canal system drains approximately 85 percent of runoff from this area. The water from the Boundary Canal flows into a reservoir at the southeast corner of HARB, from which water is pumped into the Military Canal, which discharges into Biscayne Bay.

Seven reservoirs and ponds occur in the HARB area. Mystic Lake, located along the northern boundary of HARB, covers approximately 9.8 acres. Phantom Lake is on the west side of the HARB and covers approximately 14 acres. The north and south flightline lakes (7.7 and 8.0 acres, respectively) are remnant borrow pits south of the runway. The Boundary Canal system reservoir and other smaller reservoirs in the golf course area and outside the HARB boundary make up the remaining surface water features in the area.

4.7.2.2 Environmental Consequences

Proposed Action

Direct Impacts

A stormwater permit from the South Florida Water Management District would be obtained prior to construction activities. During construction, appropriate BMPs would be implemented to reduce pollutants in stormwater discharges from construction sites (StormwaterAuthority.org, 2007a). BMPs that would be implemented may include, but would not be limited to:

- Site grading to minimize runoff.
- Construction entrances to minimize mud on roadways.
- Silt fences to decrease water flow rates and allow sediment to settle onsite.
- Sediment basins and filter berms to remove sediment.
- Mulching to stabilize disturbed soils.
- Permanent reseeding of disturbed soils.

Post-construction stormwater controls would be implemented to prevent an increase in the volume of offsite stormwater runoff from any increase in impervious area. These stormwater controls may include, but would not be limited to, detention ponds, extended dry detention ponds, and infiltration basins (StormwaterAuthority.org, 2007b).

If necessary, the drainage canal system would be modified to bring it into compliance with current requirements for stormwater systems in Miami-Dade County. Any required permits would be obtained in advance of the modifications and the design would minimize disturbance. Appropriate BMPs, as discussed above, would be implemented during any drainage canal modification to minimize the potential for direct or indirect impacts.

Indirect Impacts

Implementation of those BMPs described for direct impacts would minimize the potential for indirect impacts from stormwater runoff and sedimentation. No indirect impacts to offsite surface waters would be expected.

No Action Alternative

Under the no action alternative, no development would occur. There would be no impacts to surface waters.

4.8 Water Quality

4.8.1 Affected Environment

The Biscayne aquifer is the primary drinking water source for Miami-Dade County. Miami-Dade Water and Sewer Department (WASD) supplies potable drinking water to the area through county supply lines. Localized shallow groundwater use has been restricted throughout the confines of the HAFB. Within the proposed project area, groundwater use is restricted near Building 741 because of elevated arsenic concentrations. The area has been designated as Installation Restoration Program (IRP) site Operable Unit 31 (OU-31), and the groundwater is monitored biennially. See Section 4.13 for a further discussion of OU-31.

4.8.2 Environmental Consequences

4.8.2.1 Proposed Action

Direct Impacts

During construction, appropriate BMPs would be implemented to reduce pollutants in stormwater discharges from construction sites (StormwaterAuthority.org, 2007a). BMPs that would be implemented may include, but would not be limited to:

- Site grading to minimize runoff.
- Construction entrances to minimize mud on roadways.
- Check dams and silt fences to decrease water flow and allow sediment to settle onsite.

- Sediment basins and filter berms to remove sediment.
- Mulching to stabilize disturbed soils.
- Permanent reseeding of disturbed soils.

Post-construction stormwater controls, as discussed above, would be implemented to prevent impacts to water quality offsite.

Indirect Impacts

Implementation of the BMPs described for direct impacts would minimize the potential for impacts from stormwater runoff and sedimentation. No indirect impacts to water quality would be expected.

4.8.2.2 No Action Alternative

Under the no action alternative, no development would occur. There would be no impacts to water quality.

4.9 Biological Resources

4.9.1 Affected Environment

4.9.1.1 Wildlife

The HAFB Ecological Inventory identified 19 amphibian species, 58 reptile species, 23 mammal species, and 136 bird species that either occurred on HAFB or were determined to have the potential to occur on HAFB (HAFB, 1993).

Birds are frequently observed in the HAFB area, and common species include the northern mockingbird (*Mimus polyglottos*), common grackle (*Quiscalus quiscula*), mourning dove (*Zenaida macroura*), northern cardinal (*Cardinalis cardinalis*), red-shouldered hawk (*Butea lineatus*), and red-winged blackbird (*Agelaius phoeniceus*). Wading birds are found in the freshwater canals and wetlands on-base and common species include the great blue heron (*Ardea herodias*), great egret (*Casmerodius albus*), cattle egret (*Bubulcus ibis*), white ibis (*Eudocimus albus*), and double-crested cormorant (*Phalacrocorax auritus*).

The MBTA protects 836 bird species, 58 of which are legally hunted as game birds. A migratory bird, as protected by the MBTA, is any species or family of birds that live, reproduce, or migrate within or across international borders at some point during their life cycle. Protected migratory birds travel along the east coast of Florida and may use the proposed project area during the year.

The canals and lakes also provide habitat for a variety of fish, reptiles, and amphibians. Common fish species include largemouth bass (*Micropterus salmoides*), warmouth (*Lepomis gulosus*), bluegill (*L. macrochirus*), striped mullet (*Mugil cephalus*), Florida gar (*Lepisosteus platyrhincus)*, and common snook (*Centropomis undecimalis*). The Florida slider (*Trachemys scripta*), Florida soft shell turtle (*Apalone ferox*), snapping turtle (*Chelydra serpentina*), American alligator (*Alligator mississippiensis*), American crocodile (*Crocodylus acutus*), and the exotic spectacled caiman (*Caiman crocodiles*) are common reptiles in the area. The Nile monitor lizard (*Varanus niloticus*), green iguana (*Iguana iguana*), and brown basilisk (*Basiliscus vittatus*) are exotic reptile species that also occur. Other reptiles and amphibians include rough grass snake (*Opheodrys aestivus*), corn snake (*Elaphe guttata*), checkered garter

snake (*Thamnophis marcianus*), Florida chorus frog (*Pseudacris nigrita verrucosa*), tree frogs (*Hyla* sp.), and two-toed amphiuma (*Amphiuma means*). The raccoon (*Procyon lotor*) and marsh rabbit (*Sylvilagus palustris*) are common mammals occurring in the area (HAFB, 1993; USAF, 2004).

4.9.1.2 Vegetation

Vegetation in the proposed project area consists of a mix of native and exotic species. The area was once part of the developed and landscaped HAFB, but has become overgrown since Hurricane Andrew removed most of the aboveground structures. No vegetation maintenance has occurred since Miami-Dade County gained ownership of the property. Brazilian pepper (*Schinus terebinthifolius*), silk reed (*Neyraudia reynaudiana*), and napier grass (*Pennisetum purpureum*) are invasive exotic species and are pervasive throughout the proposed project area. Australian pine (*Casuarina equisetifolia*), also an invasive exotic species, was commonly observed during the site visit, usually spreading from where it apparently was used in landscaping on HAFB. Remnant Bermuda grass (*Cynodon dactylon*) and landscape shrubbery are common around old foundations and parking lots. The native poisonwood tree (*Metopium browneii*) was noted colonizing the proposed project area along road edges and parking lots.

Prior to development, the area was predominantly native pine rockland habitat. This sensitive vegetation community, where tropical species are more common than temperate species, occurs only in southern Miami-Dade County, the Florida Keys, and parts of the Bahamas that are restricted to outcroppings of three limestone formations: Miami Limestone, Key Largo Limestone, and Tamiami Limestone (Florida Natural Areas Inventory, 2010; Austin, 1997; Taylor, 1998). Remnant vegetation of native pine rockland communities likely still occur within and around the proposed project area. Pine rockland species previously observed on the property include Bahama brake (*Pteris bahamensis*), locustberry (*Byrsonima lucida*), pineland jacquemontia (*Jacquemontia curtissii*), quail berry (*Crossopetalum ilicifolium*), small Porter's sandmat (*Chamaesyce porteriana*), white-top sedge (*Dichromena floridensis*), West Indian lilac (*Tetrazygia bicolor*), and five-petaled leaf-flower (*Phyllanthus pentaphylus* var. *floridanus*) (PBS&J, 1996).

4.9.1.3 Sensitive Species

The ESA establishes the federal program for the conservation of threatened and endangered plants and animals and their habitats. The lead federal agencies for implementing the ESA are the USFWS and the National Oceanic and Atmospheric Administration (NOAA) Fisheries Service. The USFWS maintains a worldwide list of endangered species. The ESA requires federal agencies, in consultation with USFWS and/or NOAA Fisheries Service, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of listed species (USEPA, 2011a).

Under the ESA, species may be listed as endangered or threatened. Endangered means a species is in danger of extinction throughout all or a significant portion of its range. Threatened means a species is likely to become endangered within the foreseeable future. For the purposes of the ESA, species are defined to include subspecies, varieties, and, for vertebrates, distinct population segments. USFWS also classifies those species for which there is sufficient information to warrant proposing the species for listing as endangered or

threatened but which USFWS is precluded from listing due to other higher priority listing actions as candidate species. USFWS works with States, Tribes, private landowners, private partners, and other federal agencies to carry out conservation actions for candidate species to prevent further decline and to possibly eliminate the need for listing (USFWS, 2009).

Section 7 of the ESA requires federal agencies to use their legal authority to promote the conservation purposes of the ESA and to consult with the USFWS and NOAA Fisheries Service, as appropriate, to ensure that actions they authorize, fund, or carry out will not jeopardize the continued existence of listed species. As a result of consultation, the federal agency proposing the action receives a BO or concurrence letter from USFWS addressing the proposed action (USFWS, 2009).

The ESA also requires the designation of critical habitat for listed species. Critical habitat contains the physical or biological features that are essential to the conservation of the species. federal agencies are required to avoid destruction or adverse modification of designated critical habitat (USFWS, 2009).

Article IV, Section 9 of the Florida State Constitution establishes the authority of the Florida Fish and Wildlife Conservation Commission to "exercise the regulatory and executive powers of the state with respect to wild animal life and fresh water aquatic life, and shall also exercise regulatory and executive powers of the state with respect to marine life..." Chapter 68A-27 of the Florida Administrative Code (FAC) provides the rules regulating state-protected animals in Florida. FAC 5B-40 establishes the categories for regulated plants and includes the Regulated Plant Index.

Sensitive species include those with federal endangered or threatened status; species proposed for listing as federal endangered or threatened; and state endangered, threatened, and species of special concern. An endangered species is in danger of extinction throughout all or a significant portion of its range. A threatened species is likely to become endangered in the future throughout all or a significant portion of its range because of habitat loss, anthropogenic effects, or other causes.

No federally protected animal species are known to occur within the proposed project area and occurrence is unlikely due to the extent of encroachment by invasive exotic plant species and the high level of disturbance. The federally protected American crocodile and American alligator are known to occur in the drainage canals of HARB and were observed historically on HAFB. Historical sightings of the federally protected indigo snake (*Drymarchon corais*) were recorded within the HAFB area, including the proposed project area. However, recent occurrences of the indigo snake have only been documented as occurring on HARB. Site surveys in January of 2009 did not identify any suitable burrows for this species and USFWS did not identify the eastern indigo snake as a concern for the property in response to the intital scoping letter (Appendix A).

Four state-protected species have been identified as potentially occurring in the general project area (Table 4-1). The Florida burrowing owl (*Athene cunicularia floridana*) is known to occur around the HARB runway near the control tower. The proposed project area is adjacent to the runway and the Florida burrowing owl could occur, at least occasionally, in the proposed project area. There is no suitable habitat for the Florida pine snake (*Pituophis melanoleucus mugitus*) within the proposed project area.

TABLE 4-1
State Protected Animal Species with Potential to Occur in the Proposed Project Area
Construction and Operation of SOCSOUTH Headquarters, Homestead, FL

Common Name	Scientific Name	Status 1	Preferred Habitat
Southeastern American kestrel	*Falco sparverius paulus*	ST	Pine flatwoods.
Florida burrowing owl	*Athene cunicularia floridana*	SSC	Grasslands and other open areas.
Florida pine snake	*Pituophis melanoleucus mugitus*	SSC	Habitats with open canopies and dry sandy soils, sand hills, pastures, sand pine scrub and scrubby flatwoods.
Rim rock crowned snake	*Tantilla ooltica*	ST	Pine flatwoods and tropical hammocks.

ST = State Threatened, SSC = State Species of Special Concern
Source: USAF, 2004

Site surveys in June 2009 confirmed that the federally endangered Small's milkpea and the federal candidate species sand flax (*Linum arenicola*) occur within the proposed project area. No other federally protected plant species were identified within or adjacent to the proposed project area (Bradley, 2009a; 2009b). An additional 15 state protected plant species were documented within the proposed project area (Table 4-2) (Bradley, 2009a; 2009b).

TABLE 4-2
State Protected Plants Identified within the Proposed Project Area
Construction and Operation of SOCSOUTH Headquarters, Homestead, FL

Scientific Name	Common Name	State Status
Angadenia berteroi	Pineland golden trumpet	Threatened
Byrsonima lucida	Locustberry	Threatened
Chaptalia albicans	White sunbonnets	Threatened
Coccothrinax argentata	Florida silver palm	Threatened
Crossopetalum ilicifolium	Quailberry	Threatened
Cynanchum blodgettii	Blodgett's swallowwort	Threatened
Ernodea cokeri	Coker's beach creeper	Endangered
Galactia smallii	Small's milkpea	Endangered
Ipomoea microdactyla	Man-in-the-ground	Endangered
Jacquemontia curtisii	Pineland clustervine	Threatened
Lantana depressa	Rockland shrubverbena	Endangered
Linum arenicola	Sand flax	Endangered
Phyla stoechadifolia	Southern fogfruit	Endangered
Poinsettia pinetorum	Pineland spurge	Endangered
Psidium longipes	Long stalked stopper	Threatened
Pteris bahamensis	Bahama ladder brake	Threatened
Sachsia polycephala	Bahama sachsia	Threatened
Scutellaria havanensis	Havana scullcap	Endangered
Smilax havanensis	Everglades greenbrier	Threatened
Spermacoce terminalis	Everglades false buttonweed	Threatened
Thelypteris augescens	Abrupt-tip maiden fern	Threatened
Tragia saxicola	Rockland noseburn	Threatened
Zamia integrifolia	Coontie	Commercially Exploited

Source: Bradley, 2009a; 2009b

The approximately 84.2-acre property contains no designated critical habitat.

4.9.1.4 Wetlands

Wetlands are inundated areas, or areas where water is present either at or near the surface for distinguishable periods throughout the year. Wetlands at HARB occur in and along canals and ditches that drain stormwater runoff from the airfield. Wetland areas within the proposed project area are limited to drainage canals.

4.9.1.5 Floodplains

The proposed project area is not located within a Federal Emergency Management Agency (FEMA) designated floodplain (FEMA, 1994).

4.9.2 Environmental Consequences

4.9.2.1 Proposed Action

Direct Impacts

The U.S. Army completed a BA to determine the impacts to Small's milkpea and sand flax that would result under the proposed action (Appendix B). Based upon the population numbers identified in the 2009 survey, the U.S. Army has determined that unavoidable impacts would be:

- The loss of 0.78-acre of suitable habitat, along with 878 individuals of Small's milkpea and 836 individuals of sand flax, from construction of the proposed headquarters facility and associated parking.
- The loss of 0.025-acre of suitable habitat, along with 155 individuals of Small's milkpea and 179 individuals of sand flax, from construction of new utility corridor.
- The loss of approximately 0.68-acre of suitable habitat, along with 2,905 individuals of Small's milkpea and 1,835 individuals of sand flax, from related construction beyond the headquarters facility and its associated parking.

Total loss of habitat would be approximately 1.405 acres (approximately 12 percent of the available habitat for Small's milkpea and sand flax). The loss of Small's milkpea and sand flax would be approximately 4 percent of the 2009 population estimate. To mitigate for the unavoidable impacts to Small's milkpea and sand flax, the Army would:

- Conserve and manage approximately 17.86 acres for Small's milkpea and sand flax. This area includes Management Areas 1 and 2, which cover 14.7 acres and include 8.5 acres of pine rockland habitat plus an additional 6.2 acres that may be restored to pine rockland habitat, and additional population areas (totaling 3.16 acres) outside of Management Areas 1 and 2. The approximately 17.86 acres would include 96,764 individuals of Small's milkpea (approximately 96 percent of the estimated onsite population) and 70,909 individuals of sand flax (approximately 96 percent of the estimated onsite population) based on 2009 estimates (Bradley, 2009a).
- Management Areas 1 and 2 would be permanently fenced prior to construction. Other habitat areas outside the construction footprint would be protected with temporary fencing during construction. Signage would be placed at habitat areas to inform personnel during operation of the facility.

- Prepare and implement an Integrated Natural Resources Management Plan (INRMP) pursuant to Army Regulation 200-1 to manage for Small's milkpea and sand flax on 17.86 acres of suitable habitat within the approximately 84.2-acre site. Implementation of the INRMP would be funded by the U.S. Army through annual appropriations beginning in Fiscal Year 2013.

With implementation of these measures, the Army would protect and manage approximately 85 percent of the onsite pine rockland habitat and approximately 96 percent of the onsite population (based on numbers from 2009 survey) for each species.

An additional approximately 6.2 acres may be restored to pine rockland habitat. The approximately 84.2-acre property is part of a parcel that was encumbered by the deed transfer of the former HAFB to Miami-Dade County. Because this parcel was identified in the FOST as containing Small's milkpea, the deed contained the stipulation that the transferee must identify and preserve the species prior to construction on the parcel. This deed encumbrance would minimize the potential for future actions to incrementally adversely affect protected species, within both the approximately 84.2-acre site and the remainder of the parcel identified in the FOST.

The U.S. Army submitted the BA to the USFWS and completed Section 7 consultation with USFWS regarding impacts to Small's milkpea and sand flax. USFWS issued a BO agreeing with the Army's findings with the condition that all proposed mitigation be implemented (Appendix B). Based on this analysis, the U.S. Army determined that the proposed action may affect and is likely to adversely affect the populations of Small's milkpea and sand flax that occur on the approximately 84.2-acre site. However, the U.S. Army anticipates that, with management for the species and their habitat through an INRMP, construction and operation of the headquarters facility, new utility rights-of-way, and related construction would not threaten the continued existence of Small's milkpea and sand flax and that implementation of onsite management would be beneficial to both species.

The eastern indigo snake is not considered to occur on the approximately 84.2-Acre property. However, because of the passage of time since the previous survey, SOCSOUTH would conduct a site survey for gopher tortoise in advance of construction. Should the species be found onsite, consultation with USFWS would be conducted and appropriate mitigation, as determined by that consultation, would be implemented prior to construction.

The state-listed plant species documented from the site are species that typically associate with pine rockland habitat. The conservation management that would be implemented for Small's milkpea and sand flax would also benefit these species.

The proposed project area contains low quality habitat for wildlife species. The activity on-site under the proposed action could result in displacement of existing species or incidental mortalities. However, because of low quality habitat, large aggregations of animals would not be expected. Any losses would not seriously affect regional animal population levels. Impacts would be negligible.

No wetlands were identified within the proposed project area during the site visit. Canals border the proposed construction site, and canal modifications are discussed in Section 4.7. There would be no impacts to wetlands from the proposed action.No aquatic habitat is present at the proposed site, so no impacts to aquatic wildlife or wading birds would result.

Existing vegetation within the proposed project area is dominated by exotic species, with pockets of pine rockland habitat interspersed that vary in habitat quality from extremely degraded to high quality. Any impacts to vegetation would be limited to the clearing and construction of the immediate site for the proposed SOCSOUTH headquarters building and the maintenance of a 10-foot cleared strip between the security fence and property line, once the headquarters is complete. The 10-foot cleared strip would serve as new corridor for utility rights-of-way along the roads on the northern border and through the center of the property. The proposed action would remove invasive exotic plant species from the area, resulting in a short-term positive impact. However, long-term impacts would be negligible.

The Florida burrowing owl is known to occur within the vicinity of the proposed project area. However, the current habitat quality onsite is poor and no suitable burrows were observed during the site visit. This species is unlikely to nest within the proposed project area. Any impacts would be negligible and limited to relocation of foraging animals to other nearby habitat.

The remaining pine rockland habitat within the proposed project area is too small and disjunct from other suitable habitat to support populations of Southeastern American kestrel (*Falco sparverius paulus*) or rock rim crowned snake (*Tantilla ooltica*). No impacts to these species would be likely to occur.

As part of the mitigation for unavoidable impacts to Small's milkpea and sand flax, the Army would control exotic invasive vegetation and undertake efforts to restore pine rockland habitat on a portion of the property. These actions would be a minor benefit to migratory birds through habitat improvement.

The American alligator and crocodile may occur in the canals bordering the proposed construction site. However, any use by these species would likely be incidental due to the level of development in the area. Construction activities would likely cause minor short-term disturbances to the species, but no mortality would be expected. Impacts would be negligible.

The proposed project area is not within a designated floodplain. There would be no impacts to floodplains from the proposed action.

Indirect Impacts

Because project impacts would be confined to the project property, no adverse indirect impacts to biological resources would be expected under the proposed action.

4.9.2.2 No Action Alternative

Under the no action alternative, no development would occur. There would be no impacts to biological resources.

4.10 Coastal Zone Management

4.10.1 Affected Environment

The proposed project area is within the designated coastal zone in south Florida. However, the proposed project area is inland from the coastline and separated from the coastline by HARB and other portions of HAFB.

4.10.2 Environmental Consequences

4.10.2.1 Proposed Action

Direct Impacts

SOCSOUTH has evaluated the proposed action and found it to be consistent with coastal zone management in Florida. SOCSOUTH submitted a Coastal Zone Act Consistency Determination to the Florida Department of Environmental Protection (FDEP) Coastal Management Program through the Florida State Clearinghouse (Appendix D –DATE TO BE ADDED PRIOR TO SUBMISSION). No impacts to coastal zone management would result.

Indirect Impacts

Under the proposed action, there would be no indirect impacts to coastal zone management.

4.10.2.2 No Action Alternative

Under the no action alternative, no development would occur. There would be no impacts to a coastal zone.

4.11 Safety and Occupational Health

4.11.1 Affected Environment

The proposed action would be implemented in compliance with all applicable federal laws, codes, and regulations and with all applicable laws, ordinances, codes, and regulations of the state of Florida and Miami-Dade County with regard to construction, health, safety, food service, water supply, sanitation, licenses and permits to do business, and all other matters.

4.11.2 Environmental Consequences

4.11.2.1 Proposed Action

Direct Impacts

Construction of the parking area and SOCSOUTH headquarters building has the potential for minor, short-term impacts to health and safety during construction. This includes the temporary presence of construction vehicles onsite. Appropriate safety plans and OSHA regulations would be followed to limit the risk of accidents. No impacts to human health and safety are anticipated from the construction work or during operation.

Indirect Impacts

There would be no indirect impacts to safety and occupational health.

4.11.2.2 No Action Alternative

Under the no action alternative, no development would occur. There would be no impacts to safety and occupational health.

4.12 Air Quality

4.12.1 Affected Environment

4.12.1.1 National Ambient Air Quality Standards (NAAQS)

The CAA requires the USEPA to set NAAQS for pollutants considered harmful to public health and the environment. NAAQS include two types of air quality standards. Primary standards protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings (USEPA, 2011b). USEPA has established NAAQS for six principal pollutants, which are called "criteria pollutants" (Table 4-3).

TABLE 4-3
Criteria Pollutants within NAAQS
Construction and Operation of SOCSOUTH Headquarters, Homestead, FL

Pollutant	Primary Standards	Averaging Times	Secondary Standards	
Carbon Monoxide	9 ppm (10 mg/m^3)	8-hour[a]	None	
	35 ppm (40 mg/m^3)	1-hour[a]	None	
Lead	0.15 µg/m^3	Rolling 3-Month Average	Same as Primary	
	1.5 µg/m^3	Quarterly Average	Same as Primary	
Nitrogen Dioxide	0.053 ppm (100 µg/m^3) 0.100 ppm[c]	Annual (Arithmetic Mean) 1-hour	Same as Primary None	
Particulate Matter (PM)				
PM_{10}	150 µg/m^3	24-hour[a]	Same as Primary	
$PM_{2.5}$	15.0 µg/m^3	Annual[b] (Arithmetic Mean)	Same as Primary	
	35 µg/m^3	24-hour[c]	Same as Primary	
Ozone	0.075 ppm (2008 std)	8-hour[d]	Same as Primary	
	0.08 ppm (1997 std)	8-hour[e]	Same as Primary	
	0.12 ppm	1-hour[f]	Same as Primary	
Sulfur Dioxide	0.03 ppm	Annual (Arithmetic Mean)	0.5 ppm	3-hour
	0.14 ppm	24-hour[a]	0.5 ppm	3-hour
	75 parts per billion (ppb)	1-hour[a]	None	

Notes:
[a] Not to be exceeded more than once per year.
[b] 3-year average of the weighted annual mean PM2.5 concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m.
[c] 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m.
[d] 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm.
[e] 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.
[f] (a) USEPA revoked the 1-hour ozone standard in all areas, although some areas have continuing obligations under that standard ("anti-backsliding"). (b) Standard attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is ≤ 1.
µg/m^3 = microgram per cubic meter
mg/m^3 = milligram per cubic meter
ppm = part per million
Source: http://www.epa.gov/air/criteria.html (USEPA, 2011b)

Areas that meet the air quality standard for the criteria pollutants are designated as being "in attainment." Areas that do not meet the air quality standard for one of the criteria pollutants may be subject to the formal rule-making process and designated as being "in nonattainment" for that standard.

Nonattainment areas for some pollutants, such as ozone, are further classified as regulated under Subpart 1 or Subpart 2, based on the magnitude of the problem. Subpart 1 ("basic" nonattainment) is applied to those areas where the problem is less severe and contains general requirements for nonattainment areas. Subpart 2 is applied to areas with severe problems and establishes a classification scheme for ozone nonattainment areas with more specific requirements. An area would be classified under Subpart 2 as marginal, moderate, serious, or severe based on the most recent 3 years of data. All other 8-hour ozone nonattainment areas are covered under Subpart 1 (USEPA, 2011c).

4.12.1.2 General Conformity Rule

General Conformity under the CAA, Section 176 has been evaluated for the proposed action according to the requirements of 40 CFR 93, Subpart B. The requirements of this rule are not applicable to this action because total direct and indirect volatile organic compounds (VOCs) and nitrogen oxides (NOx) are below the conformity threshold values of 100 tons per year of either VOC or NOx established at 40 CFR 93.153 (b) and this action is not considered regionally significant under 40 CFR 93.153(i).

4.12.1.3 Miami-Dade County Attainment Status

Federal regulations at 40 CFR 81 delineate certain air quality control regions, based on population and topographic criteria closely approximating each air basin. The potential influence of emissions on regional air quality would typically be confined to the air basin in which the emissions occur. The approximately 84.2-acre property is in the Southeast Florida Intrastate Air Quality Control Region (SF-IAQCR), which includes Broward, Miami-Dade, Indian River, Martin, Monroe, Okeechobee, Palm Beach, and St. Lucie Counties. The SF-IAQCR is designated an ozone maintenance area. An ozone maintenance plan was developed for the SF-IAQCR to regulate emissions of ozone precursors, NO_x and VOCs, from stationary sources but not mobile sources (USAF, 2004).

No stationary sources occur on the approximately 84.2-acre property where the SOCSOUTH headquarters would be placed. The proposed project site is adjacent to the HARB airstrip, and aircraft operations account for 60 percent of all mobile air emissions in the area (USAF, 2004).

Everglades National Park is a designated Class 1 Wilderness Area within 100 miles of the approximately 84.2-acre property (USEPA, 2011d).

4.12.1.4 Greenhouse Gases

Greenhouse gases (GHGs) are compounds that may contribute to accelerated climate change by altering the thermodynamic properties of the earth's atmosphere. GHGs include the following pollutants (USEPA, 2010):

- Carbon dioxide (CO_2) - a naturally occurring gas produced by fires, geothermal activity, and aerobic respiration. In addition, CO_2 is a by-product of fossil fuel and biomass combustion and other industrial processes. It is the principal anthropogenic GHG that affects the radiative balance of the earth.

- Methane (CH_4) - a naturally occurring gas with a climate change potential (for climatic warming) approximately 20 times that of CO_2. CH_4 is produced through anaerobic decomposition in landfills, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion.
- Nitrous oxide (N_2O) - a naturally occurring gas with a climate change potential approximately 300 times that of CO_2 with regard to climatic warming. N_2O is produced through use of commercial and organic fertilizers in crop production, fossil fuel combustion, nitric acid production, and biomass burning.
- Hydrofluorocarbons (HFCs) - man-made compounds containing only hydrogen, fluorine, chlorine, and carbon. HFCs were introduced as a replacement for chlorofluorocarbons (ozone-depleting substances). The climate change potential of HFCs ranges from approximately 100 to 10,000 times that of CO_2.
- Perfluorocarbons (PFCs) - man-made compounds containing only fluorine and carbon. Similar to HFCs, PFCs were introduced as a replacement for chlorofluorocarbons, are used in manufacturing processes, and are emitted as by-products of industrial processes. PFCs have a climate change potential approximately 5,000 to 10,000 times that of CO_2.
- Sulfur hexafluoride (SF6) - a colorless gas that is a very powerful GHG, with a climate change potential more than 20,000 times that of CO_2. SF6 is used primarily in electrical transmission and distribution systems, as well as dielectrics in electronics.

In April 2009, the USEPA found that CO_2, CH_4, N_2O, HFCs, PFCs, and SF6 may contribute to air pollution and may endanger public health and welfare. The Supreme Court decision in *Massachusetts et al. v. Environmental Protection Agency et al.* (Supreme Court Case 05-1120) upheld the authority of USEPA to list GHGs as pollutants and to regulate emissions of GHGs under the CAA. The USEPA Mandatory Reporting Rule for GHGs became effective on December 29, 2009. Suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of carbon dioxide equivalent (CO_2e) emissions must submit annual reports to the USEPA.

4.12.2 Environmental Consequences

4.12.2.1 Proposed Action

Direct Impacts

A signed Record on Non-Applicability (RONA) is attached as Appendix E and certifies that emissions increases are well below the conformity threshold values. Therefore, a General Conformity review is deemed unnecessary at this time. The proposed action would cause minor, short-term adverse impacts to air quality due to emissions from construction activities (Appendix E). All construction emissions would likely be local and limited to the duration of the construction activities. Because of the proximity to the HARB, no increase in commute distances and associated vehicle emissions would be expected.

A minor short-term impact to air quality would be expected during construction. Air quality impacts could occur from dust carried offsite and combustive emissions from construction equipment. The primary risks from blowing dust particles relate to human health and human nuisance values. Fugitive dust can contribute to respiratory health problems and

create an inhospitable working environment. Deposition on surfaces can be a nuisance to those living or working downwind.

BMPs that would be implemented to reduce or eliminate fugitive dust emissions could include the following:

- *Sprinkling/Irrigation*. Sprinkling the ground surface with water until it is moist is an effective dust control method for haul roads and other traffic routes (Smolen et al., 1988). This practice can be applied at almost any site. When suppression methods involving water are used, care would be exercised to minimize over-watering that could cause the transport of mud onto adjoining roadways, ultimately increasing the dust problem.
- *Vegetative Cover*. In areas not expected to accommodate vehicle traffic, vegetative stabilization of disturbed soil is often desirable. Vegetation provides coverage to surface soils and decreases wind velocity at the ground surface, thus reducing the potential for dust to become airborne.
- *Mulch*. Mulching can be a quick and effective means of dust control for recently disturbed areas.

No substantial changes in air quality from the baseline conditions would be likely with implementation of the preferred alternative. Fugitive dust would increase in the immediate area during construction, but impacts would be temporary and minor. Dust abatement measures discussed above would limit the direct and secondary creation of dust.

SOCSOUTH completed an air quality analysis and determined that a General Conformity analysis would not be required prior to implementation of the proposed action and issued a Record of Non-Applicability for the project (Appendix E). Total emissions from the proposed action for each source applicable to the conformity determination projected for 2011 through 2012 would be below *de minimis* levels (Table 4-4). The emissions would not change if construction were delayed by a year.

TABLE 4-4
Summary of 2011 – 2012 Total Emissions from Proposed SOCSOUTH Action at Homestead, FL
Construction and Operation of SOCSOUTH Headquarters, Homestead, FL

Source Category	CO	NO_X	SO_2	VOC	PM_{10}
	Emissions (tpy)				
	2011				
Area Sources					
Other Phase I Const. – Grading Operations	0.00	**0.00**	0.00	**0.01**	0.00
Other Phase II Const. – Acres Paved	0.00	**0.00**	0.00	**0.00**	0.00
Other Phase II Const. – Mobile Equipment	6.53	**15.58**	1.93	**1.42**	1.26
Other Phase II Const. – Non-Res. Arch. Ctgs.	0.00	**0.00**	0.00	**0.19**	0.00
Other Phase II Const. – Res. Arch. Ctgs.	0.00	**0.00**	0.00	**0.00**	0.00
Other Phase II Const. – Stationary Equip.	44.30	**1.15**	0.06	**1.66**	0.03
Other Phase II Const. – Workers Trips	2.28	**0.11**	0.00	**0.10**	0.00
Other Phase I Const. – Grading Equipment	0.02	**0.09**	0.01	**0.01**	0.01
Total	53.13	**16.93**	2.00	**3.39**	1.30

TABLE 4-4
Summary of 2011 – 2012 Total Emissions from Proposed SOCSOUTH Action at Homestead, FL
Construction and Operation of SOCSOUTH Headquarters, Homestead, FL

Source Category	CO	NO_X	SO_2	VOC	PM_{10}
		Emissions (tpy)			
		2012			
Area Sources					
Other Phase II Const. – Workers Trips	3.51	**8.37**	1.04	**0.77**	0.68
Other Phase II Const. – Acres Paved	0.00	**0.00**	0.00	**0.10**	0.00
Other Phase II Const. – Mobile Equipment	0.00	**0.00**	0.00	**0.00**	0.00
Other Phase II Const. – Non-Res. Arch. Ctgs.	23.81	**0.62**	0.03	**0.89**	0.02
Other Phase II Const. – Res. Arch. Ctgs.	1.23	**0.06**	0.00	**0.06**	0.01
Other Phase II Const. – Stationary Equip.	0.00	**0.00**	0.00	**0.00**	0.00
Total	28.55	**9.05**	1.07	**1.82**	0.71
Mobile Sources					
Mobile – Base Employee Commute Vehicle Miles Traveled (VMT)	13.99	**0.54**	0.01	**0.96**	0.03
Mobile – On-Road Government-Owned Vehicles (GOV) VMT	1.63	**0.06**	0.00	**0.11**	0.00
Off-Road Base Support Vehicles	0.28	**0.11**	0.01	**0.03**	0.01
Total	15.90	**0.71**	0.02	**1.10**	0.04
Point Sources					
Miscellaneous Point Sources	0.00	**0.00**	0.00	**0.00**	0.00
Other Const. – Facility Heating	0.22	**0.28**	0.00	**0.01**	0.02
Residential Space Heating	0.00	**0.00**	0.00	**0.00**	0.00
Total	0.31	**0.37**	0.00	**0.02**	0.03
Grand Total	44.76	**10.13**	1.09	**2.94**	0.78
		2013			
Mobile Sources					
Mobile – Base Employee Commute VMT	13.41	**0.49**	0.01	**0.88**	0.03
Mobile – On-Road GOV VMT	1.56	**0.06**	0.00	**0.10**	0.00
Off-Road Base Support Vehicles	0.55	**0.23**	0.02	**0.05**	0.02
Total	15.52	**0.78**	0.03	**1.03**	0.05
Point Sources					
Miscellaneous Point Sources	0.00	**0.00**	0.00	**0.00**	0.00
Other Const. – Facility Heating	0.45	**0.55**	0.00	**0.03**	0.04
Residential Space Heating	0.00	**0.00**	0.00	**0.00**	0.00
Total	0.45	**0.55**	0.00	**0.03**	0.04
Grand Total	15.97	**1.33**	0.03	**1.06**	0.09

Sources: Appendix E (ACAM Emissions Summary Report)

There would be GHG emissions associated with construction activities that could come from four sources:

- Land clearing and onsite equipment use
- Worker accommodation

- Transport of materials
- Traffic delays

The construction workforce would be drawn from the local construction labor pool, resulting in no additional emissions related to worker accommodation for the area. Because all work would be confined within the project area and away from major thoroughfares, no traffic delays, with associated vehicle idling, would be expected as a result of the construction of the facility. GHG emissions from land clearing, equipment use, and transport of materials would be comparable to those from virtually any small construction job and would not result in generation of more than 25,000 metric tons CO_2e.

SOCSOUTH already is stationed in the area, so there would be no appreciable change in GHG emissions from current conditions associated with the proposed action. Because the new headquarters would be more energy-efficient than the collection of trailers used by SOCSOUTH at present, there would likely be a net reduction in GHG emissions as a result of the proposed action.

Indirect Impacts

Construction and operation of the SOCSOUTH headquarters would not contribute to deterioration of air quality in the SF-IAQCR, nor would the proposed action contribute to impaired visibility or otherwise contribute to deterioration of air quality at Everglades National Park. No indirect impacts would be expected to occur under the proposed action.

4.12.2.2 No Action Alternative

Under the no action alternative, no development would occur. There would be no impacts to air quality.

4.13 Hazardous Materials

4.13.1 Affected Environment

The approximately 84.2-acre property was assessed for hazardous materials and potential contamination and an Environmental Condition of Property (ECP) report was prepared (CH2M HILL, 2011). The ECP report was subsequently revalidated (U.S. Army Corps of Engineers, 2011). This section describes the baseline conditions with regard to hazardous materials based upon the findings of these reports. The ECP assessed 15 environmental factors, of which 9 are considered categorization factors and 6 are considered disclosure factors. The categorization factors are regulated under CERCLA and include:

- Hazardous material/petroleum product management
- Hazardous waste/petroleum waste management
- Radioactive materials and mixed waste
- ASTs/underground storage tanks (USTs) and pipelines
- Oil/water separator (OWS)
- Wastewater treatment and disposal
- Pesticides
- Solid waste
- IRP Sites and Areas of Concern

The disclosure factors are not regulated under CERCLA and, if properly managed, do not affect the property categorization. However, the presence of one or more disclosure factors may result in an environmental concern if a potential release to the environment were to occur. The six disclosure factors include:

- Asbestos-containing materials (ACMs)
- Lead-based paint (LBP)
- Polychlorinated biphenyls (PCBs)
- Radon
- Medical/biohazardous waste
- Munitions of explosive concern

The approximately 84.2-acre property was formerly part of HAFB. Most of the facilities on HAFB were destroyed by Hurricane Andrew in 1992. In 1994, a portion of the former HAFB was realigned to Homestead Air Reserve Station (HARS) under the Defense Base Closure and Realignment Commission. HARS became HARB in 2003. The remaining acres of the former HAFB were divided into parcels and transferred to other entities. The approximately 84.2-acre property is part of Parcel 11 of the former HAFB, which was transferred to Miami-Dade County. Since acquiring the property, the County has utilized Building 741 for storage of hurricane relief supplies and the rest of the property has remained unoccupied land (CH2M HILL, 2011).

The Base Realignment and Closure Clean-up Team (BCT) was established to resolve technical and policy issues, conduct program reviews, and reach a consensus on procedural, organizational, and operational issues. In 2002 the BCT agreed to restrict groundwater use on Parcel 11, which includes the approximately 84.2-acre property. The groundwater restrictions require that any construction, dewatering, and/or drainage proposals for the site be reviewed and approved by the Miami-Dade County Department of Environmental Resource Management, USEPA, and FDEP, in addition to the usual construction permitting agencies. The approximately 84.2-acre property is unoccupied land adjacent to the HARB airstrip.

Five structures remain on the property: a hangar (Building 741); an abandoned office building (Building 736); an abandoned building with an air compressor tank previously associated with Building 4136, a 500,000-gallon AST containing deluge water; a pump station associated with the AST (Building 743); and a former oxygen/nitrogen tank storage facility (Building 746). A sixth structure was on the property at the time of the initial reconnaissance, but Miami-Dade County replaced an aboveground sanitary sewer lift station with belowground infrastructure. This area is enclosed by fencing. The remainder of the property consists of natural land, old parking lots, and former building foundations (CH2M HILL, 2011).

4.13.1.1 Categorization Factors

All ASTs on the approximately 84.2-acre property were closed and removed in the early 1990s except for the 500,000-gallon AST adjacent to Building 743. All USTs on the approximately 84.2-acre property have been closed and removed. No medical/biohazardous wastes or munitions of explosive concern were identified on the property (CH2M HILL, 2011).

Historically, hazardous materials such as aviation fuels, oils, lubricants, hydraulic fluids, paints, solvents, aircraft cleaning compounds, corrosives, and compressed gases were widely used and stored on HARB. Several buildings that were on the approximately 84.2-acre property were used to store petroleum and hazardous materials. Hazardous materials at HAFB were managed in accordance with USAF guidance, which included inventory control and supply inspection, recycling, process changes, and solvent substitution to less hazardous materials. After Hurricane Andrew, the remaining stockpiles of hazardous materials were transported to RCRA-permitted hazardous waste storage facilities. Currently, no hazardous materials are stored on the approximately 84.2-acre property.

No radioactive materials or OWSs were identified on the approximately 84.2-acre property and no historical use of radioactive materials or OWSs on the approximately 84.2-acre property was documented. No pesticides were stored on the property. No active or abandoned groundwater monitoring wells were identified on the property (CH2M HILL, 2011).

Three IRP sites, designated as OU-6, OU-14, and OU-31, were identified on the approximately 84.2-acre property. Site OU-6, the former Aircraft Washrack Area, is located on Bikini Boulevard southwest from the Rabaul Road intersection. The area was active from 1970 to 1980. The USAF excavated soil (3,450 cubic yards), disposed of water collected during excavation, and continued groundwater monitoring remedies onsite for elevated VOC concentrations. The site was monitored until classified No Further Action in 1999 (CH2M HILL, 2011).

Site OU-14, a former drum storage facility, was associated with Building 720 located on Timor Road directly adjacent to the main airstrip. The building is the former aircraft painting facility, and several 55-gallon drums containing paint and solvent-related wastes were stored in the facility. Building 720 and associated structures were destroyed by Hurricane Andrew, and the site was dismantled in 1993. Testing in 1993 and 1995 indicated elevated concentrations of benzo(a)pyrene, benzo(b)fluoranthene, and arsenic in the soil, but contaminants were not detected in the groundwater. The site was closed in the late 1990s and classified as No Further Action. However, benzo(a)pyrene, benzo(b)fluoranthene, and arsenic remain in the soil at concentrations above levels protective of human health and the environment as part of the agreed remediation of OU-14 (CH2M HILL, 2011).

Site OU-31, or Building 755, is located on the southern end of St. Nazaire Boulevard near the main airstrip. The 60-foot by 75-foot building once contained a garage, x-ray room and dark room, offices, furnace room, and mechanical room. The contaminants of concern onsite were arsenic and polycyclic aromatic hydrocarbons. During the spring and summer of 2001, the USAF completed soil removal and groundwater pumping at OU-31, but groundwater sampling onsite indicated arsenic levels were still above the FDEP standards. In 2002, the USAF restricted groundwater use and agreed to complete biennial groundwater sampling in the area. Three groundwater monitoring wells were established, but none are on the approximately 84.2-acre property (CH2M HILL, 2011).

4.13.1.2 Disclosure Factors

ACMs are known to be present in Building 741, the hangar on the approximately 84.2-acre property. The other structures onsite were built after the use of ACMs was discontinued (CH2M HILL, 2011).

Of the five structures remaining onsite, Building 741, Building 743, and Building 746 contain LBP. Building 736 and the small building with an abandoned air compressor associated with Building 4136 were built after the use of LBP was discontinued (CH2M HILL, 2011).

Electrical transformers, electrical equipment, light ballasts, and machinery with hydraulic systems are potential sources of PCB-containing oil. Historically, Building 537, an operations facility located on the approximately 84.2-acre property, contained three PCB-containing transformers, which were removed in 1990 with no evidence of PCB leaks or spills. A downed pole-mounted electrical transformer was observed adjacent to the north corner of Building 741. The transformer had no label or date, was open, empty of fluid, and appeared rusty and old. No evidence of staining or stressed vegetation was observed around the downed transformer. On October 12, 2009, soil samples were collected and analyzed for PCBs, with results indicating detections of PCBs that were below the Florida soil cleanup levels for commercial/residential property. The downed transformer has been removed from the property by Florida Power and Light (FP&L). Three other pole-mounted electrical transformers were observed on the property and another transformer was found in Building 741. Records indicate that all PCB-containing electrical equipment was removed from HARB prior to Hurricane Andrew. Therefore, no PCB spills or other incidents are likely to have occurred on the property (CH2M HILL, 2011).

4.13.2 Environmental Consequences

4.13.2.1 Proposed Action

Direct Impacts

No changes to Building 741 would occur during construction of the SOCSOUTH headquarters. SOCSOUTH would upgrade Building 743 and the AST to a foam fire retardant system for Building 741, and Building 746 would be used for storage. SOCSOUTH would use appropriate procedures for handling and disposal of LBP and ACM, including appropriate personal protective equipment to prevent worker exposure, when remodeling and upgrading the buildings. No impacts would be likely from removal and disposal of LBP and ACM.

No ground-disturbing activities are proposed for the area where groundwater contamination is known to occur along the northeast border of the site adjacent to Building 741. Should stormwater ditch modifications be implemented, any appropriate permits would be obtained before any ground disturbance into groundwater would occur. Appropriate procedures and personal protective equipment would be implemented to prevent worker exposure. No impacts would be likely from exposure to contaminated groundwater.

To avoid accidental exposure to arsenic contamination in soils and groundwater onsite, SOCSOUTH also would implement the following:

- SOCSOUTH would not erect permanent residential structures, hospitals, public or private schools, or day care centers.
- SOCSOUTH would not consume, cause exposure to, or otherwise use the underlying groundwater for any purpose without coordinating such efforts and obtaining approval from the FDEP, USEPA, and USAF.

- Indirect Impacts

Under the proposed action, there would be no indirect impacts to hazardous and materials.

4.13.2.2 No Action Alternative

Under the no action alternative, no development would occur. There would be no impacts to hazardous materials.

4.14 Cultural Resources

4.14.1 Affected Environment

A reconnaissance investigation for significant archeological sites was conducted by HAFB and the National Park Service in 1986. Based on the survey results, what is known of the grounds condition at HAFB (and the surrounding area), and the construction history of the base, the 1986 report concluded there is virtually no possibility of discovering a significant archeological site in the area. The Florida SHPO concurred with the report's conclusion in 1993 (Appendix A) (USAF, 1994).

Two destructive hurricanes occurring in 1945 and 1992 eliminated most historical structures in the area. However, two historical structures remain at HARB. Building 121 is the only remaining structure on-base dating over 50 years, and Building 931, constructed in 1974, was deemed historically significant during the Cold War era. Both of these structures are considered ineligible for the National Register of Historic Places (NRHP) (USAF, 2000).

The five structures remaining in the proposed project area were either destroyed by Hurricane Andrew in 1992 and rebuilt or were constructed less than 50 years ago. These structures would not be eligible for the NRHP. Therefore, no historical buildings or archeological sites have been identified in the proposed project area.

4.14.2 Environmental Consequences

4.14.2.1 Proposed Action

Direct Impacts

No negative impacts to architectural or other cultural resources would be expected at the proposed action site. No buildings listed, eligible for listing, or potentially eligible for listing on the NRHP are located in the proposed project area.

No additional impacts to cultural resources would be anticipated under the proposed action. All construction would take place in previously developed areas that have no intact cultural resources. SOCSOUTH submitted a letter to the Florida SHPO requesting concurrence with the finding that the proposed action would not impact cultural resources on April 2, 2009. On June 10, 2009, the SHPO concurred that the proposed action would not affect cultural resources. Additionally, SOCSOUTH submitted letters to seven Native American Tribes asking if they had any concerns regarding the proposed action. No responses have been received. Correspondence with the SHPO and Native American Tribes is provided in Appendix A.

Indirect Impacts

Under the proposed action, there would be no indirect impacts to cultural resources.

4.14.2.2 No Action Alternative

Under the no action alternative, no development would occur. There would be no impacts to cultural resources.

4.15 Socioeconomic Resources

4.15.1 Affected Environment

4.15.1.1 Population

According to the U.S. Census Bureau (U.S. Census), the estimated 2000 population for the Homestead Base census-designated place (CDP) was 446, and the 1990 population was 5,153 (U.S. Census, 2000a).Thus, the population on the base decreased by approximately 91 percent from 1990 to 2000. The City of Homestead's estimated 2009 population was 59,812, and the 2000 population was approximately 31,909 (U.S. Census, 2009a). From 2000 to 2009, the City of Homestead population increased by 87 percent. The 2009 population for Miami-Dade County was approximately 2,500,625, and the 2000 population was 2,253,362, which represents an 11 percent increase for the county (U.S. Census, 2009b).

4.15.1.2 Housing

In a 2006-2008 survey, Miami-Dade County had 968,744 total housing units, of which 829,238 were occupied (U.S. Census, 2006-2008a). The City of Homestead had 19,087 total housing units, and 15,843 were occupied (U.S. Census, 2006-2008b). In the City of Homestead, the majority of homes were renter-occupied (8,791), and in Miami-Dade County most of the homes were owner-occupied (U.S. Census, 2006-2008a, b).

4.15.1.3 Economy

The civilian labor force in Miami-Dade County from 2006-2008 was 1,179,502 persons, 1,109,780 of whom were employed (U.S. Census, 2006-2008c). The unemployment rate for Miami-Dade County in 2000 was 8.7% and decreased to 5.9% in 2006-2008 (U.S. Census, 2000b). The median household income increased from $35,966 in 1999 to $44,364 in 2008 (U.S. Census, 2000b; U.S. Census, 2006-2008c). Persons below the poverty level represented 16.1% of the population in 2008 (U.S. Census, 2006-2008c). The major employers are the University of Miami, Publix Supermarkets, and Baptist Health South Florida (eFlorida, 2009).

The civilian labor force in the City of Homestead from 2006-2008 was 22,772 persons, 21,000 of whom were employed (U.S. Census, 2006-2008d). The unemployment rate for the City of Homestead in 2000 was 10.3% and decreased to 5.2% in 2006-2008 (U.S. Census, 2000c). The median household income increased from $26,775 in 1999 to $32,752 in 2008 (U.S. Census, 2000c; U.S. Census, 2006-2008d). Persons below the poverty level represented 33.3% of the population in 2008 (U.S. Census, 2006-2008d).

4.15.2 Environmental Consequences

4.15.2.1 Proposed Action

Direct Impacts

No population impacts would result under the proposed action. Some SOCSOUTH trainees would temporarily relocate to the area, but not in numbers large enough to impact the local population.

Construction workers would be employed locally, so no short-term housing impacts would be anticipated. Minor long-term intermittent benefits would occur as a result of SOCSOUTH trainees using local temporary housing.

There would be short-term minor benefits to the local economy from construction-related jobs as a result of constructing the SOCSOUTH headquarters. Minor permanent benefits to the economy would result from the new personnel spending some of their income locally.

Indirect Impacts

The SOCSOUTH headquarters building would be constructed with a 390-person capacity. Initially, only 250 people would relocate to the new facility, but SOCSOUTH may eventually increase permanent personnel to support future missions. Additional permanent residents in the area would result in minor benefits to the local economy.

4.15.2.2 No Action Alternative

Under the no action alternative, no development would occur. There would be no impacts to socioeconomic resources.

4.16 Environmental Justice

4.16.1 Affected Environment

Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. "Fair treatment" means that no group, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the adverse environmental consequences resulting from industrial, municipal, or commercial operations or the execution of federal, state, local, and tribal programs and policies.

In February 1994, President Clinton issued EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (59 Federal Register 7629). This order directs federal agencies to incorporate environmental justice as part of their missions. Federal agencies are specifically directed to identify and, as appropriate, to address disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. CEQ has issued guidance to federal agencies to assist them with their NEPA procedures so that environmental justice concerns are effectively identified and addressed (CEQ, 1997a).

The U.S. 2000 Census was used to determine the low-income and minority population characteristics of the area. U.S. Census data on minority and low-income populations are reported every 10 years with each decennial census. Census data are reported for a variety of geographic areas depending on availability of data. For purposes of environmental justice calculations, the largest geographic area is the Census Tract (CT), which can range in size from several to many miles depending on the density of the local population. Each CT consists of several Block Groups (BGs). Each BG in turn consists of multiple Blocks, which sometimes coincide with geographies as small as a city block or several acres of land area.

For purposes of this analysis, a detailed Census analysis of low-income and minority populations was not conducted. The proposed project site is on unoccupied land isolated from other properties by HARB and Miami-Dade County's proposed Fleet Maintenance Facility located between SW St. Lo Boulevard and Bikini Boulevard. The Homestead Job Corps Center, located directly north of the proposed project area, temporarily houses low-income or unemployed individuals throughout the year. However, no permanent minority or low-income populations live on or adjacent to the proposed project site.

4.16.2 Environmental Consequences

4.16.2.1 Proposed Action

Direct Impacts

No permanent minority or low-income populations exist in or around the proposed project area. The proposed action would have no potential for disproportionate impacts to minority or low-income populations.

Indirect Impacts

Under the proposed action, no indirect environmental justice impacts would occur.

4.16.2.2 No Action Alternative

Under the no action alternative, no development would occur. There would be no impacts to environmental justice.

4.17 Protection of Children

4.17.1 Affected Environment

Guidelines for the protection of children are specified in EO 13045, Protection of Children from Environmental Health Risks and Safety Risk (FR: 23 April 1997, Volume 62, Number 78). This EO requires that federal agencies make it a high priority to identify and assess environmental health and safety risks that may disproportionately affect children, and ensure that policies, programs, and standards address disproportionate risks to children that result from environmental health or safety risks.

The Homestead Job Corps Center, located directly north of the proposed project area, temporarily houses unemployed individuals and families. However, there are no permanent concentrations of children within the proposed project area. The proposed action would be implemented on unoccupied industrial land, and no children or families permanently live on or adjacent to the site.

4.17.2 Environmental Consequences

4.17.2.1 Proposed Action

Direct Impacts

No residential areas or schools are located near the proposed project area, and children would not have access to the SOCSOUTH headquarters. No environmental health or safety risks to children would be created by the proposed action.

Indirect impacts

Under the proposed action, no indirect impacts to the protection of children would occur.

4.17.2.2 No Action Alternative

Under the no action alternative, no development would occur. There would be no environmental health or safety risks to children.

4.18 Transportation

4.18.1 Affected Environment

The proposed SOCSOUTH headquarters site is on unoccupied land. Bikini Boulevard is the main road transecting the approximately 84.2-acre property, and SW St. Lo Boulevard borders the property to the north. Bougainville Boulevard provides direct access from HARB to the approximately 84.2-acre property and dead-ends at Building 741, the hangar. Bougainville Boulevard becomes 288th Street SW, which intersects the Florida Turnpike. The proposed project area is approximately 2 miles east of the Florida Turnpike.

4.18.2 Environmental Consequences

4.18.2.1 Proposed Action

Direct Impacts

There would be minor short-term increases in traffic along 288th Street SW as a result of construction workers coming to and leaving the proposed project area. Long-term traffic volume would remain relatively unchanged since generally the same number of SOCSOUTH personnel would commute to the area once following completion of construction.

Indirect Impacts

SOCSOUTH may eventually increase the number of permanent personnel to support future missions. Additional permanent residents in the area would result in minor traffic increases for the area.

4.18.2.2 No Action Alternative

Under the no action alternative, no development would occur. There would be no impacts to transportation.

4.19 Utilities

4.19.1 Affected Environment

The Biscayne aquifer is the primary drinking water source for Miami-Dade County. The Miami-Dade WASD supplies potable drinking water to the area through county supply lines. The South District Wastewater Treatment Plant, operated by WASD, treats wastewater from the proposed project area. FP&L provides electricity to the proposed project area, but natural gas is currently not provided.

4.19.2 Environmental Consequences

4.19.2.1 Proposed Action

Direct Impacts

Construction would result in temporary increases in the demands for energy, water, and wastewater services. Following construction, these demands would return to baseline levels.

When operational, SOCSOUTH would not increase utility demand with the new headquarters in the short-term. Utility use would be relocated from the temporary facilities currently used by SOCSOUTH to the new headquarters. No negative impacts would result and there could be a slight reduction in demand for utilities due to newer and more efficient heating and air conditioning systems in the new headquarters. If the number of personnel assigned to SOCSOUTH were to increase to 390, there would be a minor increase in demand for utilities in the long-term.

Because the SOCSOUTH headquarters would be relocated less than 0.5-mile, there would be no change in utility demand from operation of the facility. The building would be designed to be energy-efficient, as directed by EO 13423, and the heating and air conditioning would be modern, energy-efficient units; therefore, long-term energy demand could decrease.

A stormwater permit from the South Florida Water Management District would be obtained prior to construction activities. Stormwater discharge would not increase because appropriate post-construction stormwater controls would be included in the design and there would be no negative impact on the stormwater system. If necessary, the drainage canal system would be modified to bring it into compliance with current requirements for stormwater systems in Miami-Dade County. Any required permits would be obtained in advance of the construction and the design would minimize disturbance. Appropriate BMPs, as discussed above, would be implemented during any drainage canal modification to minimize the potential for direct or indirect impacts. Any modification would result in a positive impact on the local stormwater system.

Miami-Dade County operates a subsurface sanitary sewer lift station on the property that the county will retain. The U.S. Army will provide the County access to this area for maintenance purposes and there will be no impact on Miami-Dade County sanitary sewer service.

Indirect Impacts

SOCSOUTH may eventually increase the number of permanent personnel to support future missions. Additional permanent residents in the area would result in a minor increase in the demand for local utilities.

4.19.2.2 No Action Alternative

Under the no action alternative, no development would occur. There would be no impacts to utility infrastructure or service.

5.0 Cumulative Impacts

5.1 Introduction

The most severe environmental degradation may not result from the direct effects of any particular action, but from the combination of effects of multiple, independent actions over time. As defined in 40 CFR 1508.7 (CEQ Regulations), a cumulative effect is the

> *impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions.*

Some authorities contend that most environmental effects can be seen as cumulative because almost all systems have already been modified. Principles of cumulative effects analysis are described in the CEQ guide *Considering Cumulative Effects under the National Environmental Policy Act*. CEQ guidance on cumulative impacts analysis states:

> *For cumulative effects analysis to help the decision-maker and inform interested parties, it must be limited through scoping to effects that can be evaluated meaningfully. The boundaries for evaluating cumulative effects should be expanded to the point at which the resource is no longer affected significantly or the effects are no longer of interest to affected parties.* (CEQ, 1997b)

This section addresses the potential for cumulative impacts resulting from interaction of the proposed action with other past, present, and reasonably foreseeable actions occurring at HARB and in the surrounding community.

5.2 Land Use

The presence of the SOCSOUTH headquarters may increase the likelihood of further development of the planned industrial park on the remainder of the HAFB land acquired by Miami-Dade County.

Miami-Dade County has proposed a General Services Administration (GSA) Fleet Maintenance Facility project for Buildings 624 and 618, located directly north of the proposed project area. Building 624, currently a warehouse, would be the heavy maintenance facility for County trucks, including solid waste trucks and tractor trailers. It would also be used as a tire storage facility. Building 618 would be a vehicle preparation or "get-ready" facility for new County vehicles and police cars. Construction for the GSA Fleet Maintenance Facility project is scheduled for completion between 2012 and 2013.

The USAF has also proposed a family camping area (FAMCAMP) approximately 0.5-mile north of the proposed project area. Because this land was previously developed and is now highly disturbed or modified from natural conditions, any cumulative impacts to the natural environment would likely be negligible.

The City of Homestead has also proposed the closure and redevelopment of Homestead landfill. The landfill would be converted to a community park, which would include soccer fields, a dog park, a meditation area, basketball courts, tennis courts, racquetball courts, and playground area. The landfill is located over 5 miles southwest of the proposed project area and would have no foreseeable impacts on the proposed action.

The approximately 84.2-acre property is part of a parcel that was encumbered by the deed transfer of the former HAFB to Miami-Dade County. This parcel was identified in the FOST as containing Small's milkpea and the deed contained the stipulation that the transferee must identify and preserve the species prior to construction on the parcel. This deed encumbrance would minimize the potential for future land use changes to incrementally adversely affect protected species, within both the approximately 84.2-acre site and the remainder of the parcel identified in the FOST.

5.3 Noise

Elevated noise levels during construction of the SOCSOUTH headquarters would be short-term. There is no potential for cumulative impacts to noise from interaction with other past, present, and reasonably foreseeable projects.

5.4 Air Installation Compatible Land Use

The proposed action would not affect the AICUZ of the area. There is no potential for cumulative impacts to AICUZ from interaction with other past, present, and reasonably foreseeable projects.

5.5 Geology

The proposed action would not affect geology. Therefore, no cumulative impacts to geology would be anticipated from interaction effects of the proposed action with other past, present, and reasonably foreseeable projects.

5.6 Soils

Minor soil disturbance may result from construction of a new SOCSOUTH headquarters building and paving of parking areas that would occur under the proposed action. However, no cumulative impacts to soils are anticipated.

5.7 Hydrology

Groundwater use is restricted within the proposed project area. Therefore, no cumulative impacts to groundwater use would be anticipated from interaction effects of the proposed action with other past, present, and reasonably foreseeable projects.

The proposed action would not encroach upon any surface waters. Drainage canals are the only surface waters within the proposed project area, and appropriate BMPs would be used, so site runoff would not reach surface waters. No cumulative impacts to surface waters from

interaction of the headquarters construction and operation with other past, present, and reasonably foreseeable projects would likely occur.

5.8 Water Quality

Appropriate BMPs would be implemented to prevent sedimentation and stormwater runoff. No cumulative impacts to water quality from interaction of the headquarters construction and operation with other past, present, and reasonably foreseeable projects would likely occur.

5.9 Biological Resources

No cumulative impacts to wildlife would result from interaction of the proposed action with other past, present, and reasonably foreseeable projects.

Minor impacts to vegetation would result from construction of the headquarters facility and maintaining the mowed buffer around the fence line. However, no cumulative impacts to vegetation would result from interaction of the proposed action with other past, present, and reasonably foreseeable projects.

The proposed action area is not within floodplains, and the action would not affect floodplains. There is no potential for cumulative impacts to floodplains from interaction with other past, present, and reasonably foreseeable projects.

The proposed action would likely result in a cumulative benefit to Small's milkpea and sand flax within the region. Management for these species on the SOCSOUTH property would conserve the largest extant populations of these species, which would benefit the long-term viability of the species.

The approximately 84.2-acre property is part of a parcel that was encumbered by the deed transfer of the former HAFB to Miami-Dade County. This parcel was identified in the FOST as containing Small's milkpea and the deed contained the stipulation that the transferee must identify and preserve the species prior to construction on the parcel. This deed encumbrance would minimize the potential for future land use changes to incrementally adversely affect protected species, within both the approximately 84.2-acre site and the remainder of the parcel identified in the FOST.

5.10 Coastal Zone Management

The proposed action area would not impact coastal resources. There is no potential for cumulative impacts to coastal zone management from interaction with other past, present, and reasonably foreseeable projects.

5.11 Safety and Occupational Health

The proposed action would result in short-term construction hazards to construction workers. No cumulative impacts to safety and occupational health would result from

interaction of the proposed action with other past, present, and reasonably foreseeable projects.

5.12 Air Quality

Construction activities would produce localized, elevated air pollutant concentrations for a short duration, but appropriate BMPs would be implemented to alleviate impacts. No cumulative impacts to air quality would result from interaction of the proposed action with other past, present, and reasonably foreseeable projects.

It is anticipated that the new headquarters will be more energy-efficient than the existing temporary facilities being used by SOCSOUTH. This would likely result in a long-term reduction in GHG emissions and a positive cumulative impact with regard to GHGs.

5.13 Hazardous Materials

The proposed action would not affect hazardous materials. Therefore, no cumulative impacts to hazardous materials would result from interaction of the proposed action with other past, present, and reasonably foreseeable projects.

5.14 Cultural Resources

The proposed action would not affect cultural resources. Therefore, no cumulative impacts to cultural resources would result from interaction of the proposed action with other past, present, and reasonably foreseeable projects.

5.15 Socioeconomic Resources

The proposed action would have minor short-term benefits to the local economy from construction-related jobs as a result of constructing a new SOCSOUTH headquarters building. Minor permanent benefits to the economy would result from the new headquarters and the proposed Air Force FAMCAMP, located directly north of the proposed project area. No additional cumulative impacts would likely result from interaction of the proposed action with other past, present, and reasonably foreseeable projects.

5.16 Environmental Justice

The proposed action would not affect environmental justice. Therefore, no cumulative impacts to environmental justice would result from interaction of the proposed action with other past, present, and reasonably foreseeable projects.

5.17 Protection of Children

The proposed action would not affect the protection of children. Therefore, no cumulative impacts to the protection of children would result from interaction of the proposed action with other past, present, and reasonably foreseeable projects.

5.18 Transportation

The proposed action would result in separate points of entry for SOCSOUTH personnel, who currently enter HARB through the same entry point as all HARB personnel and tenants. The HARB entry gate is being upgraded, and that project would interact with the proposed action. The proposed action would remove SOCSOUTH personnel from the daily traffic through the HARB gate, thus improving traffic flow in the region at times when personnel enter or leave HARB and SOCSOUTH at the beginnings and ends of shifts. This would result in a minor beneficial cumulative impact on traffic.

Two new entry control gates have been proposed for the north and east sides of HARB. The gates would further improve the flow of traffic when personnel enter or leave HARB and SOCSOUTH during heavy traffic times.

5.19 Utilities

The proposed action, in addition to the proposed Miami-Dade County GSA Fleet Maintenance Facility project and the Air Force FAMCAMP, both located directly north of the proposed project area, would likely increase the demand on local utilities. The increased demand would have a potential minor cumulative impact on utilities.

Currently, natural gas is not provided to the proposed project area, but Florida City Gas could extend the nearest line (located approximately 2 miles from the proposed project site) if the local demand increases.

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6.0 Findings and Conclusions

6.1 Findings

Table 6-1 summarizes the consequences of the preferred alternative and the no action alternative. The following sections provide a summary of the anticipated impacts of each alternative.

TABLE 6-1
Summary of Potential Environmental and Socioeconomic Consequences
Construction and Operation of SOCSOUTH Headquarters, Homestead, FL

	Environmental and Socioeconomic Consequences	
Resource	**No Action**	**Preferred Alternative**
Land Use	No Change from Baseline Conditions	No impact
Aesthetics and Visual Resources	No Change from Baseline Conditions	No impact
Air Quality	No Change from Baseline Conditions	Minor short-term impact from construction- and demolition-related fugitive dust that would be controlled through appropriate BMPs. Minor construction-related emissions of GHGs with long-term reduction from increased energy efficiency. Negligible impact from building and water heaters and reserve generators.
Noise	No Change from Baseline Conditions	Negligible impact: construction- and demolition-related: appropriate worker safety measures would be implemented; no long-term effects from operation.
Geology and Soils		
Geology/Topography	No Change from Baseline Conditions	No impact
Soils	No Change from Baseline Conditions	Minor impact: appropriate BMPs would be implemented to minimize erosion and impact from stormwater runoff.
Prime Farmland	No Change from Baseline Conditions	No impact
Water Resources		
Surface Water	No Change from Baseline Conditions	Negligible impact: appropriate BMPs would be implemented to minimize indirect impacts from erosion and stormwater runoff.
Hydrogeology/Groundwater	No Change from Baseline Conditions	No impact

TABLE 6-1
Summary of Potential Environmental and Socioeconomic Consequences
Construction and Operation of SOCSOUTH Headquarters, Homestead, FL

	Environmental and Socioeconomic Consequences	
Resource	**No Action**	**Preferred Alternative**
Floodplains	No Change from Baseline Conditions	No impact
Stormwater	No Change from Baseline Conditions	Negligible impact: use of appropriate BMPs and stormwater controls would prevent impacts from construction activities. Stormwater controls would be designed to prevent post-construction runoff from exceeding pre-construction runoff.
Biological Resources		
Vegetation	No Change from Baseline Conditions	Negligible impact
Wildlife	No Change from Baseline Conditions	Negligible impact
Sensitive Species	No Change from Baseline Conditions	Minor short-term impacts with proposed mitigation. Moderate long-term beneficial impacts with proposed mitigation.
Wetlands	No Change from Baseline Conditions	No impact
Floodplains	No Change from Baseline Conditions	No impact
Cultural Resources		
Historic Resources	No Change from Baseline Conditions	No impact
Archeological Resources	No Change from Baseline Conditions	No impact
Native American Resources	No Change from Baseline Conditions	No impact
Socioeconomics		
Economic Development	No Change from Baseline Conditions	Minor benefit to local economy during construction. No impact from operation.
Demographics	No Change from Baseline Conditions	No impact
Housing	No Change from Baseline Conditions	No impact
Environmental Justice	No Change from Baseline Conditions	No impact
Protection of Children	No Change from Baseline Conditions	No impact
Transportation	No Change from Baseline Conditions	No impact

TABLE 6-1
Summary of Potential Environmental and Socioeconomic Consequences
Construction and Operation of SOCSOUTH Headquarters, Homestead, FL

	Environmental and Socioeconomic Consequences	
Resource	**No Action**	**Preferred Alternative**
Utilities		
Potable Water	No Change from Baseline Conditions	Negligible impact from construction demand. No impact from operation, as existing demand would be relocated approximately 0.5-mile.
Wastewater	No Change from Baseline Conditions	Negligible impact from construction demand. No impact from operation, as existing demand would be relocated approximately 0.5-mile.
Energy	No Change from Baseline Conditions	Negligible impact from construction demand. No impact from operation, as existing demand would be relocated approximately 0.5-mile; potential long-term benefit from energy-efficient design and use of energy-efficient climate control.
Solid Waste	No Change from Baseline Conditions	Minor impact from construction: typical construction wastes that would be within the capacity of local and regional waste disposal facilities. No impact from operation because waste generation would not change.
Hazardous Materials, Wastes, IRP Sites, and Stored Fuels		
Hazardous/Toxic Materials	No Change from Baseline Conditions	No impact: no change in current use from construction or operation.
Indirect and Cumulative Impacts	No Change from Baseline Conditions	No impact

6.1.1 Consequences of the Preferred Alternative

Applicable construction permits would be obtained, and health and safety procedures during construction would be implemented. While no mitigation, beyond that specified for protected species, would be implemented, SOCSOUTH would implement appropriate BMPs to further reduce unavoidable minor impacts of the proposed project (Table 6-2). BMPs would be used to minimize soil erosion, control fugitive dust emissions, manage hazardous materials, and reduce the generation of wastes during construction and operations. Construction activities would occur during the daytime hours to minimize disturbance.

Implementation of the preferred alternative would result in minor short-term adverse impacts to air quality from construction and negligible adverse impacts to air quality from operation of building heating and air conditioning systems. There could be a long-term benefit to air quality from reduced emissions of new, energy-efficient heating and air conditioning systems. There would be temporary construction-related noise and minor alteration of topography and soils during construction. Use of appropriate construction and post-construction BMPs would result in negligible impacts from stormwater runoff. There would be a minor increase in solid waste generation during construction but no long-term

TABLE 6-2
Summary of BMPs
Construction and Operation of SOCSOUTH Headquarters, Homestead, FL

BMP	Function	Applicability
Construction entrance/exit	Reduce mud/dirt on roadways and subsequent transport to receiving waters and air	Soils, water quality, air quality
Silt fence	Reduce flow of sediment offsite	Soils, water quality
Sediment basin	Remove sediment from stormwater runoff	Soils, water quality
Filter berm	Remove sediment from stormwater runoff	Soils, water quality
Mulch	Provide temporary stabilization of disturbed soil during construction	Soils, water quality, air quality
Permanent reseeding	Provide permanent vegetative cover after construction is complete	Soils, water quality, air quality
Sprinkling	Provide dust control on cleared areas	Air quality

change in demand on public utilities and services. Minor short-term beneficial impacts to the local economy would result from the proposed construction.

To avoid accidental exposure to arsenic contamination in soils and groundwater onsite, SOCSOUTH also would implement the following:

- SOCSOUTH would not erect permanent residential structures, hospitals, public or private schools, or day care centers.
- SOCSOUTH would not consume, cause exposure to, or otherwise use the underlying groundwater for any purpose without coordinating such efforts and obtaining approval from the FDEP, USEPA, and USAF.

The eastern indigo snake is not considered to occur on the approximately 84.2-Acre property. However, because of the passage of time since the previous survey, SOCSOUTH would conduct a site survey for gopher tortoise in advance of construction. Should the species be found onsite, consultation with USFWS would be conducted and appropriate mitigation, as determined by that consultation, would be implemented prior to construction.

The proposed action would result in the unavoidable loss of approximately 4 percent of the populations of Small's milkpea and sand flax, and the loss of approximately 11 percent of the habitat for these species on the property. To mitigate for these unavoidable impacts, the U.S. Army would implement conservation measures that include:

- Designation of two Management Areas (Management Areas 1 and 2, which cover 14.7 acres [8.5 acres of pine rockland habitat that contains Small's milkpea and sand flax plus an additional 6.2 acres that may be restored to pine rockland habitat]).
- Erection of permanent fencing around Management Areas 1 and 2 prior to construction and potential placement of signage to deter unauthorized entry on the fence where it borders construction areas.

- Placement of temporary fencing and/or signage to protect habitat areas containing Small's milkpea and sand flax outside of Management Areas 1 and 2 that would not be disturbed by construction.
- Development and implementation of an INRMP for the property that would direct conservation and management of the species during the operation of the SOCSOUTH facility.

With the proposed mitigation, there would be minor short-term adverse impacts to the two species and their habitat and a long-term benefit to these species and their habitat.

There would be no significant impacts to other resources evaluated in this EA.

6.1.2 Consequences of the No Action Alternative

The no action alternative would have no impact on any of the resources evaluated in this EA.

6.2 Conclusions

Based upon the findings presented above, it has been concluded that, with implementation of the mitigation proposed for protected species, no significant environmental or socioeconomic impacts would result from the preferred alternative (proposed action). Therefore, it is not necessary to prepare an EIS to address the proposed action and a FNSI should be issued.

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7.0 References

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8.0 Acronyms and Abbreviations

ACM	Asbestos-containing material
AICUZ	Air Installation Compatible Use Zone
APZ	Accident Potential Zone
AST	aboveground storage tank
BA	Biological Assessment
BCT	Base Realignment and Closure Clean-up Team
BG	Block Group
BMP	Best Management Practice
BO	Biological Opinion
CAA	Clean Air Act
CDP	Census-designated place
CE	Conservation Easement
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO	Carbon monoxide
CO_2	Carbon dioxide
CT	Census Tract
CWA	Clean Water Act of 1977
CZ	Clear Zone
CZMA	Coastal Zone Management Act
dBA	A-weighted decibel scale
DENIX	Defense Environmental Network & Information Exchange
DoD	Department of Defense
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order

ESA	Endangered Species Act
FAC	Florida Administrative Code
FAMCAMP	Family Camping
FDEP	Florida Department of Environmental Protection
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FNSI	Finding of No Significant Impact
FOST	Finding of Suitability to Transfer
FP&L	Florida Power and Light Company
ft^2	square feet
GSA	General Services Administration
HAFB	Homestead Air Force Base
HAFRC	Headquarters Air Force Reserve Command
HARB	Homestead Air Reserve Base
HARS	Homestead Air Reserve Station
INRMP	Integrated Natural Resources Management Plan
IRP	Installation Restoration Program
kW	kilowatt
LBP	lead-based paint
Ldn	Day-night average sound level
lf	linear feet
CH_4	Methane
MBTA	Migratory Bird Treaty Act
mgd	million gallons per day
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOAA	National Oceanic and Atmospheric Administration
NOx	Nitrogen Oxides
NRHP	National Register of Historic Places

O&M	Operations and Maintenance
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
OWS	Oil/water separator
PCB	Polychlorinated biphenyl
PM	Particulate Matter
RCRA	Resource Conservation and Recovery Act
RONA	Record of Non-Applicability
SARA	Superfund Amendments and Reauthorization Act
SCIF	Secure Compartmentalized Information Facility
SF-IAQCR	Southeast Florida Intrastate Air Quality Control Region
SHPO	State Historic Preservation Office
SOCSOUTH	Special Operations Command South
U.S.	United States
U.S. Census	U.S. Census Bureau
USAF	U.S. Air Force
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
UST	underground storage tank
VOC	Volatile Organic Compounds
WASD	Water and Sewer Department
WQA	Water Quality Act of 1987
yd^2	square yards

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9.0 List of Preparers

Rich Reaves/Environmental Scientist/18 years of experience/PhD.

Russell Short/Senior Project Manager/28 years of experience/Master of Science

Sara Kent/ Staff Scientist/3 years of experience/Bachelor of Science

David Dunagan/Technical Editor/29 years of experience/Master of Arts

Laura Suber/GIS Specialist/7 years of experience/Bachelor of Science

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10.0 Distribution List

Florida State Clearing House

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11.0 Persons Consulted

Mr. Winston Hobgood
U.S.Fish and Wildlife Service

Ms. Victoria Foster
U.S.Fish and Wildlife Service

Mr. Kieth Bradley
Institute for Biological Conservation

Mr. Mike Andrejko
Homestead Air Reserve Base

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APPENDIX A

Government Correspondence

FLORIDA DEPARTMENT OF STATE
Kurt S. Browning
Secretary of State
DIVISION OF HISTORICAL RESOURCES

Major Kyle Mckeever Merolla
Department of Defense
Special Operations Command South
29350 Coral Sea Boulevard
Homestead ARB, Florida 33039-1299

June 10, 2009

RE: DHR Project File Number: 2009-2830
Environmental Assessment - Proposed United States Special Operations Command South (SOCSOUTH) Headquarters at Homestead Air Reserve Base
Homestead ARB, Dade County

Dear Major Merolla:

This office reviewed the referenced project for possible impact to historic properties listed, or eligible for listing, in the *National Register of Historic Places.* The review was conducted in accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended, *36 CFR Part 800: Protection of Historic Properties* and the *National Environmental Policy Act of 1969,* as amended.

Based on the information provided and a review of our records, it is the opinion of this office that the buildings do not appear to meet the criteria for listing in the *National Register.* In addition, a review of the Florida Master Site File indicates that no significant archaeological or historical resources are recorded within the project area. Therefore, the proposed undertaking will have no effect on historic properties.

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,

Frederick P. 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: 245-6436
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☑ Historic Preservation (850) 245-6333 • FAX: 245-6437

1989804

FLORIDA DEPARTMENT OF STATE
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Secretary of State
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PFN: 932634

In Reply Refer To:
Susan Hammersten
Compliance Review
Section, DHR
(904) 487-2333

September 16, 1993

Gary P. Baumgartel, Lt Col
HQ AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

RE: Disposal and Reuse in Support of Realignment
Homestead Air Force Base
Homestead, Dade County, Florida

Dear Col. Baumgartel:

In accordance with the procedures contained in 36 C.F.R., Part 800 ("Protection of Historic Properties"), we have reviewed the referenced project(s) for possible impact to historic properties listed, or eligible for listing, in the National Register of Historic Places. The authority for this procedure is the National Historic Preservation Act of 1966 (Public Law 89-665), as amended.

A review of our files indicates that there are no recorded archaeological sites or historic structures located at Homestead Air Force Base. Furthermore, it is the opinion of this office that it is unlikely that any significant archaeological sites or historic structures will be found in the area affected by the referenced project. Therefore, it is the opinion of this office that the proposed project will have no effect on any historic properties listed, or eligible for listing in the National Register of Historic Places.

If you have any questions concerning our comments, please do not hesitate to contact us. Your interest in protecting Florida's historic properties is appreciated.

Sincerely,

Laura A. Kammerer

for George W. Percy, Director
Division of Historical Resources
and
State Historic Preservation Officer

GWP/Hsh

DEPARTMENT OF DEFENSE
SPECIAL OPERATIONS COMMAND SOUTH
29350 Coral Sea Boulevard
Homestead ARB, Florida, 33039-1299

REPLY TO
ATTENTION OF

April 2, 2009

Frederick Gaske
Director, Division of Historic Resources
ICO: Laura Krammerer
Bureau Chief, National Register, National Historic Landmarks
Bureau of Historic Preservation
Florida Division of Historical Resources
500 South Bronough Street
Tallahassee, Florida 32399-0250

Reference: Environmental Assessment – U.S. Special Operations Command South (SOCSOUTH), Proposed SOCSOUTH Headquarters, Homestead Air Reserve Base, Miami-Dade County, Florida

Dear Mr. Gaske:

SOCSOUTH is preparing an Environmental Assessment (EA) to address potential environmental and socioeconomic impacts under the National Environmental Policy Act for the construction and operation of the proposed new SOCSOUTH Headquarters at the Homestead Air Reserve Base (HARB) in Homestead, Florida. In addition, SOCSOUTH, as a Federal agency must consider the affects of the proposed project on historic properties (cultural resources deemed eligible for or listed on the National Register of Historic Places) as per the requirements of Section 106 of the National Historic Preservation Act of 1966 as amended (NHPA). This letter provides the results of SOCSOUTH's determination of effect on historic properties by the project to your office as per the requirements outlined in the implementing guidelines of NHPA as detailed in 36CFR800.

SOCSOUTH is the unified military command responsible for all U.S. military activities in Central and South America, which was located on Roosevelt Roads Naval Base in Puerto Rico. When Roosevelt Roads Naval Base closed SOCSOUTH was forced to relocate its headquarters to HARB. Since the date of relocation SOCSOUTH has been housed in temporary structures located at HARB. The temporary facilities were intended as a short-term measure in order to bridge the period while a permanent headquarters was made available.

In order to provide a permanent facility SOCSOUTH would enter into a 50-year agreement with Miami-Dade County to lease a 90-acre property adjacent to the HARB airfield. As a result of that lease SOCSOUTH would construct a new 125,000 square foot multi-story facility on the leased land, indicated by the red shaded area on Figure

2-1. At present, the 90-acre property contains four structures and remnant foundations and paving from previous structures, which were demolished by Hurricane Andrew in 1992.

The property associated with the proposed action is north of Bikini Boulevard and east of the Turner Street (Figure 1). The new SOCSOUTH Headquarters would be constructed on an approximately 28-acre parcel within the 90-acre site. Two existing buildings on the remaining part of the 90-acre property would be retained. Specifically, Building 741, which was previously used as a storage hangar originally constructed in 1956, would be retained in the same capacity with some minor renovations. Building 736, which was a small office building constructed in 1991, would be renovated and used as administrative office space. The property is surrounded by industrial/commercial development. HARB borders the property to the east, south, and west, the Coast Guard occupies the area southwest of the property, and a Miami-Dade fire station is directly northeast of the property. Representative photographs of Buildings 736 and 741 and the surrounding area are enclosed.

A reconnaissance investigation for significant archeological sites was conducted by Homestead Air Force Base and the National Park Service in 1986. The survey consisted of windshield and pedestrian inspection and archival research to determine the need for any additional cultural resources investigations. The 1986 report concluded there is virtually no possibility of discovering a significant archeological site in the area. The Florida State Historic Preservation Office concurred with the report's conclusion in 1993. Two destructive hurricanes occurring in 1945 and 1992 have destroyed most historical structures in the area. Two historical structures remain at HARB. Building 121 is the only remaining structure on-base dating over 50 years, and Building 931, constructed in 1974, was deemed historically significant during the Cold War era. However, both of these structures were considered ineligible for the National Registry of Historic Places based on the 1986 site visit and discussions with the base historian. In 1993, SHPO confirmed the ineligibility (Reference ATTACHMENT 1) Based on the background search, current property conditions and limited proposed actions, SOCSOUTH recommends no further inventory work and has made a determination of "no historic properties affected" by the proposed action based on:

- Site was first completely developed between 1952 and 1968 according to historical aerials and no previously undisturbed areas would be impacted.
- Remodeling would be limited to the interior of Building 736 located on the property
- A new structure would be constructed on the property and would include the removal of previously existing foundations and paved areas.
- The existing structure lacks the requisite age, features, and associations to make it eligible to be an historic property
- Surrounding area is contemporary industrial/commercial development

SOCSOUTH requests your concurrence with our determination of "no historic properties affected" by the proposed action as per 36CFR800.4 (d) (1) and request a response within 30-calender days. If you have any comments or need further information please contact Major Kyle Merolla at (305) 224-6347. As always, your assistance is greatly appreciated.

Sincerely,

Kyle Mckeever Merolla, P.E.
MAJ, U.S. Army
Command Engineer

Enclosure(s)

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960

April 29, 2009

Major Kyle M. Merolla, P.E.
Department of Defense
29350 Coral Sea Boulevard
Homestead ARB, Florida 33039-1299

Federal Activity No.: 41420-2009-FA-0330
Service Log No.: 41420-2009-I-0228
Date Received: March 13, 2009
Applicant: United States Coast Guard
County: Monroe

Dear Major Merolla:

The Fish and Wildlife Service (Service) has reviewed the Department of Defense's (DOD) letter dated March 11, 2009. These comments are provided under the provisions of section 7 of the Endangered Species Act of 1973, as amended (ESA) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*), the Migratory Bird Treaty Act (40 Stat. 755; 16 U.S.C. 701 *et seq.*), and the provisions of the Fish and Wildlife Coordination Act of 1958, as amended (48 Stat. 401; 16 U.S.C. 661 *et seq.*).

PROJECT DESCRIPTION

The DOD proposes to construct a headquarters facility for the Special Operations Command South (SOCSOUTH) on 28 acres of a 90-acre parcel. The project site is located at the Homestead Air Reserve Base, Miami-Dade County, Florida.

DETERMINATION

The DOD has made observations regarding Small's milkpea (*Galactia smallii*), an endangered plant, at the proposed site and requests the Service's concurrence. The Service is unable to evaluate the proposed project without additional information and clarification. The DOD should make a determination in the form of "no effect", "may affect, but not likely to adversely affect", or "may affect, likely to adversely affect" Small's milkpea for evaluation by the Service.

Small's milkpea is endemic to the pine rocklands of Miami-Dade County. Less than 2 percent of the original pine rockland habitat remains. Most of that habitat occurs in small, isolated stands that are difficult to protect or manage. Continued habitat loss and fragmentation, fire suppression, and invasion by exotic plant species threaten its existence. Small's milkpea flourishes after burning, even if burning is restricted to a small area near the plants themselves, yet occurs every 5 to 7 years.

A survey of the site on January 21 and 22, 2009, did not document this species within the project footprint. However, lack of visible plants within the footprint at one point in time does not preclude a viable seed bank within the soil.

The Service requests the following additional information:

- A decimal latitude and longitude site location so that we can locate the project site;
- Decimal latitudes and longitudes of known Small's milkpea locations on the property;
- A map showing the footprint of proposed new facilities on the property, and the known locations of Small's milkpea, in relation to the property boundaries;
- A copy of the Integrated Resource Management Plan (INRAMP) for this site, if available; and
- DOD's proposal to manage and conserve the Small's milkpea at the site.

A comprehensive conservation plan should include a protection strategy for the remaining plants, an exotic species removal and management strategy, a prescribed burn strategy for existing plant locations, and a monitoring and reporting strategy.

Thank you for your cooperation and effort in protecting Florida's natural resources. If you have any questions regarding this letter, please contact Winston Hobgood at 772-562-3909, extension 306.

Sincerely yours,

Allan D. Webb for

Paul Souza
Field Supervisor
South Florida Ecological Services Office

cc:
Miami-Dade DERM, Miami, Florida

United States Department of the Interior
FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960-3559
OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE $300

Major Kyle M. Merolla, P.E.
Department of Defense
29350 Coral Sea Boulevard
Homestead ARB, FL 33039-1299

33039+1299

DEPARTMENT OF DEFENSE
SPECIAL OPERATIONS COMMAND SOUTH
29350 Coral Sea Boulevard
Homestead ARB, Florida, 33039-1299

REPLY TO
ATTENTION OF

March 11, 2009

Command Engineer

U.S. Fish and Wildlife Service
South Florida Ecological Services Office
ATTN: Mr. Paul Souza
1339 20th Street
Vero Beach, Florida 32960

Dear Mr. Souza,

The United States (U.S.) Special Operations Command South (SOCSOUTH) was forced to relocate its headquarters for special operations in Central and South America from the Roosevelt Roads Naval Base in Puerto Rico to a site located at the Homestead Air Reserve Base (HARB), Homestead, Florida. As a result of the sudden closure of Roosevelt Roads Naval Base, the Homestead location was chosen over others sites because of its close proximity to U.S. Southern Command (SOUTHCOM) Headquarters in Miami. SOUTHCOM is the unified military command responsible for all U.S. military activities in Central and South America. Since the date of the relocation, SOCSOUTH has been housed in temporary structures located at HARB. The temporary facilities were intended as a short-term measure in order to bridge the period while a permanent headquarters was made available.

In order to provide a permanent facility, SOCSOUTH would enter into a 50-year agreement with Miami-Dade County to lease a 90-acre property adjacent to the HARB airfield (see attached map). As a result of that lease SOCSOUTH, would construct a new permanent structure on the leased land. SOCSOUTH would then operate its headquarters facility on the property for the duration of the lease. At present, the 90-acre property contains four structures and remnant foundations and paving from previous structures which were demolished by Hurricane Andrew.

The SOCSOUTH headquarters would be constructed on an approximately 28-acre parcel within the 90-acre site. Two existing buildings on the remaining part of the 90-acre property would be retained. Specifically, building 741 which was previously used as a storage hangar would be retained in the same capacity with some minor renovations. Building 736 which was a small office building would be renovated and used as administrative office space.

The new headquarters building would be a125,000 square foot multi-story facility, and would be built in the approximate location of the red shaded area on the attached aerial photograph. The supporting facilities would include connection to utilities (water, sewer, electrical, storm drainage, and information systems), as well as, emergency backup power with an uninterruptible power system, site development, paving to include parking, sidewalks, curb

and gutter. Additionally, storm drainage, landscaping, and other site improvements will be included with the appropriate stand-off distances, barriers, sliding, fences gates, and closed circuit TV security apparatus.

Furthermore, demolition of an existing unnumbered structure, along with obsolete existing paved surfaces, and existing utilities would be included. Additionally, Building 545 which is a Miami-Dade County sanitary sewer lift station will be retained by the county and the county will continue to have access to this area for maintenance purposes.

Currently there are three historic records with respect to Small's milkpea (*Galactia smallii*) from within the 90-acre property. The last observation was made in 1997, when Miami-Dade County investigated the use of the site as a municipal airport. Another earlier observation was documented during the 1996 Finding of Suitability to Transfer study developed by the U.S. Air Force. This study occurred as the result of the Department of Defense Base Closure and Realignment Act in which parts of Homestead Air Force Base were transferred to the County of Miami-Dade.

One of the historic observations falls within the approximately 28-acre parcel where the headquarters facility would be constructed. The other two historic observations are in locations near the proposed perimeter fence but are within the stand-off distances implemented for antiterrorism protection and therefore would not be disturbed by the proposed construction.

On January 21-22, 2009, a CH2MHILL botanist (Dr. Richard Reaves) conducted a site walkover of the 90-acre site. The results of the walkover indicated that the property has been unmaintained since the time of transfer to Miami-Dade County. He also noted that Brazilian pepper (*Schinus terebinthifolius*) and silkreed (*Neyraudia reynaudiana*) have substantially encroached on the area and that Australian pine (*Casuarina equisetifolia*) has begun to spread across the property from earlier ornamental plantings. It was noted that there was no evidence of recent fire on the property and subsequent review of documents confirmed that fire has been excluded from the property since prior to the landfall of Hurricane Andrew. Also, noted were small areas of shallow Miami limestone.

Small areas of shallow Miami limestone, which supports the pine rockland habitat necessary for Small's milkpea were noted in the area. However, species typically associated with pine rockland habitat were not observed, except for a single bluehearts (*Buchnera americana*) that was seen near Building 545 at a location that would be outside the proposed construction area. While January is not an optimum period for observing vegetation, pine rockland habitat in the Everglades National Park had extensive displays of species typical of this habitat at the same

time. Small's milkpea was not observed during the site walkover conducted on January 21-22, 2009.

SOCSOUTH has determined that the historical occurrence of Small's milkpea within the area proposed for construction of the headquarters facility does not remain viable. This determination is based on following information:

a. The degraded condition of the habitat as past development, and encroachment of exotic invasive species.

b. Long-term fire suppression in this area.

c. The lack of typical pine rockland species at a time when these species were readily observable in nearby pine rockland habitats.

d. The lack of observable specimens of Small's milkpea during the site walkover.

Therefore, based upon the above, we respectfully request that you provide written concurrence with our site observation and determination. If you have any questions about this letter or wish to discuss any concerns your agency has about this project, please contact Major Kyle Merolla at (305) 224-6347.

Thank you for your anticipated cooperation.

Sincerely,

Kyle Mckeever Merolla, P.E.
Major, US Army
Command Engineer

cc:
Mr. Brian Peck
Dr. Rich Reaves

DEPARTMENT OF DEFENSE
SPECIAL OPERATIONS COMMAND SOUTH
29350 CORAL SEA BOULEVARD
HOMESTEAD ARB, FLORIDA, 33039-1299

The Honorable Tarpie Yargee, Chief
c/o Augustine Asbury
Cultural Preservation Specialist
Alabama-Quassarte Tribal Town
P.O. Box 187
Wetumka, OK 74883

Subject: Environmental Assessment for the U.S. Army Special Operations Command South Headquarters Facility

Dear Chief Yargee:

The United States (U.S.) Special Operations Command South (SOCSOUTH) recently relocated its headquarters for special operations in Central and South America from Roosevelt Roads Naval Base in Puerto Rico to a temporary facility on Homestead Air Reserve Base (HARB), Florida. The temporary facilities were intended as a short-term measure to bridge the period while a permanent headquarters was made available. The original 3-year lease on the temporary buildings has expired. SOCSOUTH intends to lease a 90-acre property from Miami-Dade County to build a new headquarters facility. The 90-acre property is located adjacent to HARB on land previous occupied by Homestead Air Force Base. Following Hurricane Andrew in 1992, parts of Homestead Air Force Base were closed and transferred to Miami-Dade County under the Department of Defense Base Realignment and Closure Act. Currently, the 90-acre property is unoccupied land. Four structures including Building 741, Building 736, a small un-numbered structure, and a small Miami-Dade County lift station remain on the property. In addition, there are multiple foundations of buildings destroyed by Hurricane Andrew and parking lots are located throughout the property.

The Area of Potential Effect (APE) includes the proposed 125,000 square foot SOCSOUTH headquarters facility to be constructed on 28-acres of the 90-acre property. The facility would consist of a Secure Compartmentalized Information Facility and general purpose administrative areas. Two existing buildings remaining on the property would be retained. Building 741, which was previously used as an aircraft hanger and for storage, would be retained for storage with minor renovations. Building 736, which was a small office building, would be renovated and used as administrative office space. Project development would involve demolition of existing foundations and a small shed, grading, paving, security systems, utilities and other improvements. Please see the enclosed study area map depicted on the Homestead, Goulds, Arsenicker Keys, and Perrine 7.5 Minute U.S. Geological Survey quadrangle map (Figure 1).

SOCSOUTH, as lead Federal agency for the proposed action, understands its unique relationship with federaly recognized Native American Tribes and takes its consultation responsibilities seriously. This letter is a formal request for consultation and input with the Alabama-Quassarte Tribal Town, which may have concerns with the project area. A reconnaissance investigation for archeological resources was conducted by Homestead

Air Force Base and the National Park Service in 1986 and concluded that due to previous disturbances, there were no cultural resources within the APE. The Florida State Historic Preservation Office concurred with the report's conclusion in 1993.

Although the results of the cultural resource investigation indicate that no archaeological resources are present in the project APE, we encourage you to respond with any concerns you may have relating to cultural sites or materials of significance to the Alabama-Quassarte Tribal Town. We greatly appreciate your assistance in this matter and request a response within 30-calender days. If you have any questions, comments, or concerns about this project please feel free to contact Major Kyle Merolla at (305) 224-6347.

Respectfully,

Kyle Mckeever Merolla, P.E.
MAJ, U.S. Army
Command Engineer

Enclosure(s)

DEPARTMENT OF DEFENSE
SPECIAL OPERATIONS COMMAND SOUTH
29350 CORAL SEA BOULEVARD
HOMESTEAD ARB, FLORIDA, 33039-1299

The Honorable Jennie Lillard, Town Chief
Kialegee Tribal Town of the Creek Nation
P.O. Box 332
Wetumka, OK 74883

Subject: Environmental Assessment for the U.S. Army Special Operations Command South Headquarters Facility

Dear Chief Lillard:

The United States (U.S.) Special Operations Command South (SOCSOUTH) recently relocated its headquarters for special operations in Central and South America from Roosevelt Roads Naval Base in Puerto Rico to a temporary facility on Homestead Air Reserve Base (HARB), Florida. The temporary facilities were intended as a short-term measure to bridge the period while a permanent headquarters was made available. The original 3-year lease on the temporary buildings has expired. SOCSOUTH intends to lease a 90-acre property from Miami-Dade County to build a new headquarters facility. The 90-acre property is located adjacent to HARB on land previous occupied by Homestead Air Force Base. Following Hurricane Andrew in 1992, parts of Homestead Air Force Base were closed and transferred to Miami-Dade County under the Department of Defense Base Realignment and Closure Act. Currently, the 90-acre property is unoccupied land. Four structures including Building 741, Building 736, a small un-numbered structure, and a small Miami-Dade County lift station remain on the property. In addition, there are multiple foundations of buildings destroyed by Hurricane Andrew and parking lots are located throughout the property.

The Area of Potential Effect (APE) includes the proposed 125,000 square foot SOCSOUTH headquarters facility to be constructed on 28-acres of the 90-acre property. The facility would consist of a Secure Compartmentalized Information Facility and general purpose administrative areas. Two existing buildings remaining on the property would be retained. Building 741, which was previously used as an aircraft hanger and for storage, would be retained for storage with minor renovations. Building 736, which was a small office building, would be renovated and used as administrative office space. Project development would involve demolition of existing foundations and a small shed, grading, paving, security systems, utilities and other improvements. Please see the enclosed study area map depicted on the Homestead, Goulds, Arsenicker Keys, and Perrine 7.5 Minute U.S. Geological Survey quadrangle map (Figure 1).

SOCSOUTH, as lead Federal agency for the proposed action, understands its unique relationship with federaly recognized Native American Tribes and takes its consultation responsibilities seriously. This letter is a formal request for consultation and input with the Kialegee Tribal Town of the Creek Nation, which may have concerns with the project area. A reconnaissance investigation for archeological resources was conducted by Homestead Air Force Base and the National Park Service in 1986 and concluded

that due to previous disturbances, there were no cultural resources within the APE. The Florida State Historic Preservation Office concurred with the report's conclusion in 1993.

Although the results of the cultural resource investigation indicate that no archaeological resources are present in the project APE, we encourage you to respond with any concerns you may have relating to cultural sites or materials of significance to the Kialegee Tribal Town of the Creek Nation. We greatly appreciate your assistance in this matter and request a response within 30-calender days. If you have any questions, comments, or concerns about this project please feel free to contact Major Kyle Merolla at (305) 224-6347.

Respectfully,

Kyle Mckeever Merolla, P.E.
MAJ, U.S. Army
Command Engineer

Enclosure(s)

DEPARTMENT OF DEFENSE
SPECIAL OPERATIONS COMMAND SOUTH
29350 CORAL SEA BOULEVARD
HOMESTEAD ARB, FLORIDA, 33039-1299

The Honorable Billy Cypress, Chairperson
c/o Mr. Steve Terry
Cultural Representative, Miccosukee Tribe
Miccosukee Tribe of Indians of Florida
P.O. Box 440021
Tamiami Station
Miami, FL 33144

Subject: Environmental Assessment for the U.S. Army Special Operations Command South Headquarters Facility

Dear Chairperson Cypress:

The United States (U.S.) Special Operations Command South (SOCSOUTH) recently relocated its headquarters for special operations in Central and South America from Roosevelt Roads Naval Base in Puerto Rico to a temporary facility on Homestead Air Reserve Base (HARB), Florida. The temporary facilities were intended as a short-term measure to bridge the period while a permanent headquarters was made available. The original 3-year lease on the temporary buildings has expired. SOCSOUTH intends to lease a 90-acre property from Miami-Dade County to build a new headquarters facility. The 90-acre property is located adjacent to HARB on land previous occupied by Homestead Air Force Base. Following Hurricane Andrew in 1992, parts of Homestead Air Force Base were closed and transferred to Miami-Dade County under the Department of Defense Base Realignment and Closure Act. Currently, the 90-acre property is unoccupied land. Four structures including Building 741, Building 736, a small un-numbered structure, and a small Miami-Dade County lift station remain on the property. In addition, there are multiple foundations of buildings destroyed by Hurricane Andrew and parking lots are located throughout the property.

The Area of Potential Effect (APE) includes the proposed 125,000 square foot SOCSOUTH headquarters facility to be constructed on 28-acres of the 90-acre property. The facility would consist of a Secure Compartmentalized Information Facility and general purpose administrative areas. Two existing buildings remaining on the property would be retained. Building 741, which was previously used as an aircraft hanger and for storage, would be retained for storage with minor renovations. Building 736, which was a small office building, would be renovated and used as administrative office space. Project development would involve demolition of existing foundations and a small shed, grading, paving, security systems, utilities and other improvements. Please see the enclosed study area map depicted on the Homestead, Goulds, Arsenicker Keys, and Perrine 7.5 Minute U.S. Geological Survey quadrangle map (Figure 1).

SOCSOUTH, as lead Federal agency for the proposed action, understands its unique relationship with federaly recognized Native American Tribes and takes its consultation responsibilities seriously. This letter is a formal request for consultation and input with the Miccosukee Tribe of Indians of Florida, which may have concerns with the project

area. A reconnaissance investigation for archeological resources was conducted by Homestead Air Force Base and the National Park Service in 1986 and concluded that due to previous disturbances, there were no cultural resources within the APE. The Florida State Historic Preservation Office concurred with the report's conclusion in 1993.

Although the results of the cultural resource investigation indicate that no archaeological resources are present in the project APE, we encourage you to respond with any concerns you may have relating to cultural sites or materials of significance to the Miccosukee Tribe. We greatly appreciate your assistance in this matter and request a response within 30-calender days. If you have any questions, comments, or concerns about this project please feel free to contact Major Kyle Merolla at (305) 224-6347.

Respectfully,

Kyle Mckeever Merolla, P.E.
MAJ, U.S. Army
Command Engineer

Enclosure(s)

DEPARTMENT OF DEFENSE
SPECIAL OPERATIONS COMMAND SOUTH
29350 CORAL SEA BOULEVARD
HOMESTEAD ARB, FLORIDA, 33039-1299

The Honorable A.D. Ellis, Principal Chief
c/o Ms. Joyce A. Bear
Cultural Preservation Officer
Muscogee (Creek) Nation
P.O. Box 580
Okmulgee, OK 74447

Subject: Environmental Assessment for the U.S. Army Special Operations Command South Headquarters Facility

Dear Chief Ellis:

The United States (U.S.) Special Operations Command South (SOCSOUTH) recently relocated its headquarters for special operations in Central and South America from Roosevelt Roads Naval Base in Puerto Rico to a temporary facility on Homestead Air Reserve Base (HARB), Florida. The temporary facilities were intended as a short-term measure to bridge the period while a permanent headquarters was made available. The original 3-year lease on the temporary buildings has expired. SOCSOUTH intends to lease a 90-acre property from Miami-Dade County to build a new headquarters facility. The 90-acre property is located adjacent to HARB on land previous occupied by Homestead Air Force Base. Following Hurricane Andrew in 1992, parts of Homestead Air Force Base were closed and transferred to Miami-Dade County under the Department of Defense Base Realignment and Closure Act. Currently, the 90-acre property is unoccupied land. Four structures including Building 741, Building 736, a small un-numbered structure, and a small Miami-Dade County lift station remain on the property. In addition, there are multiple foundations of buildings destroyed by Hurricane Andrew and parking lots are located throughout the property.

The Area of Potential Effect (APE) includes the proposed 125,000 square foot SOCSOUTH headquarters facility to be constructed on 28-acres of the 90-acre property. The facility would consist of a Secure Compartmentalized Information Facility and general purpose administrative areas. Two existing buildings remaining on the property would be retained. Building 741, which was previously used as an aircraft hanger and for storage, would be retained for storage with minor renovations. Building 736, which was a small office building, would be renovated and used as administrative office space. Project development would involve demolition of existing foundations and a small shed, grading, paving, security systems, utilities and other improvements. Please see the enclosed study area map depicted on the Homestead, Goulds, Arsenicker Keys, and Perrine 7.5 Minute U.S. Geological Survey quadrangle map (Figure 1).

SOCSOUTH, as lead Federal agency for the proposed action, understands its unique relationship with federaly recognized Native American Tribes and takes its consultation responsibilities seriously. This letter is a formal request for consultation and input with the Muscogee (Creek) Nation, which may have concerns with the project area. A

reconnaissance investigation for archeological resources was conducted by Homestead Air Force Base and the National Park Service in 1986 and concluded that due to previous disturbances, there were no cultural resources within the APE. The Florida State Historic Preservation Office concurred with the report's conclusion in 1993.

Although the results of the cultural resource investigation indicate that no archaeological resources are present in the project APE, we encourage you to respond with any concerns you may have relating to cultural sites or materials of significance to the Muscogee Nation. We greatly appreciate your assistance in this matter and request a response within 30-calender days. If you have any questions, comments, or concerns about this project please feel free to contact Major Kyle Merolla at (305) 224-6347.

Respectfully,

Kyle Mckeever Merolla, P.E.
MAJ, U.S. Army
Command Engineer

Enclosure(s)

DEPARTMENT OF DEFENSE
SPECIAL OPERATIONS COMMAND SOUTH
29350 CORAL SEA BOULEVARD
HOMESTEAD ARB, FLORIDA, 33039-1299

The Honorable Buford Rolin, Chairperson
c/o Mr. Robert Thrower
Tribal Historic Preservation Officer
Poarch Band of Creek Indians
HCR 69 A,. Box 85B
Atmore, AL 36503

Subject: Environmental Assessment for the U.S. Army Special Operations Command South Headquarters Facility

Dear Chairperson Rolin:

The United States (U.S.) Special Operations Command South (SOCSOUTH) recently relocated its headquarters for special operations in Central and South America from Roosevelt Roads Naval Base in Puerto Rico to a temporary facility on Homestead Air Reserve Base (HARB), Florida. The temporary facilities were intended as a short-term measure to bridge the period while a permanent headquarters was made available. The original 3-year lease on the temporary buildings has expired. SOCSOUTH intends to lease a 90-acre property from Miami-Dade County to build a new headquarters facility. The 90-acre property is located adjacent to HARB on land previous occupied by Homestead Air Force Base. Following Hurricane Andrew in 1992, parts of Homestead Air Force Base were closed and transferred to Miami-Dade County under the Department of Defense Base Realignment and Closure Act. Currently, the 90-acre property is unoccupied land. Four structures including Building 741, Building 736, a small un-numbered structure, and a small Miami-Dade County lift station remain on the property. In addition, there are multiple foundations of buildings destroyed by Hurricane Andrew and parking lots are located throughout the property.

The Area of Potential Effect (APE) includes the proposed 125,000 square foot SOCSOUTH headquarters facility to be constructed on 28-acres of the 90-acre property. The facility would consist of a Secure Compartmentalized Information Facility and general purpose administrative areas. Two existing buildings remaining on the property would be retained. Building 741, which was previously used as an aircraft hanger and for storage, would be retained for storage with minor renovations. Building 736, which was a small office building, would be renovated and used as administrative office space. Project development would involve demolition of existing foundations and a small shed, grading, paving, security systems, utilities and other improvements. Please see the enclosed study area map depicted on the Homestead, Goulds, Arsenicker Keys, and Perrine 7.5 Minute U.S. Geological Survey quadrangle map (Figure 1).

SOCSOUTH, as lead Federal agency for the proposed action, understands its unique relationship with federaly recognized Native American Tribes and takes its consultation responsibilities seriously. This letter is a formal request for consultation and input with the Poarch Band of Creek Indians, which may have concerns with the project area. A

reconnaissance investigation for archeological resources was conducted by Homestead Air Force Base and the National Park Service in 1986 and concluded that due to previous disturbances, there were no cultural resources within the APE. The Florida State Historic Preservation Office concurred with the report's conclusion in 1993.

Although the results of the cultural resource investigation indicate that no archaeological resources are present in the project APE, we encourage you to respond with any concerns you may have relating to cultural sites or materials of significance to the Poarch Band. We greatly appreciate your assistance in this matter and request a response within 30-calender days. If you have any questions, comments, or concerns about this project please feel free to contact Major Kyle Merolla at (305) 224-6347.

Respectfully,

Kyle Mckeever Merolla, P.E.
MAJ, U.S. Army
Command Engineer

Enclosure(s)

DEPARTMENT OF DEFENSE
SPECIAL OPERATIONS COMMAND SOUTH
29350 CORAL SEA BOULEVARD
HOMESTEAD ARB, FLORIDA, 33039-1299

The Honorable Enoch Kelly Haney, Principal Chief
c/o Ms Natalie Deere
Tribal Historic Preservation Officer
Seminole Nation of Oklahoma
P.O. Box 1498
Wewoka, OK 74884

Subject: Environmental Assessment for the U.S. Army Special Operations Command South Headquarters Facility

Dear Chief Haney:

The United States (U.S.) Special Operations Command South (SOCSOUTH) recently relocated its headquarters for special operations in Central and South America from Roosevelt Roads Naval Base in Puerto Rico to a temporary facility on Homestead Air Reserve Base (HARB), Florida. The temporary facilities were intended as a short-term measure to bridge the period while a permanent headquarters was made available. The original 3-year lease on the temporary buildings has expired. SOCSOUTH intends to lease a 90-acre property from Miami-Dade County to build a new headquarters facility. The 90-acre property is located adjacent to HARB on land previous occupied by Homestead Air Force Base. Following Hurricane Andrew in 1992, parts of Homestead Air Force Base were closed and transferred to Miami-Dade County under the Department of Defense Base Realignment and Closure Act. Currently, the 90-acre property is unoccupied land. Four structures including Building 741, Building 736, a small un-numbered structure, and a small Miami-Dade County lift station remain on the property. In addition, there are multiple foundations of buildings destroyed by Hurricane Andrew and parking lots are located throughout the property.

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SOCSOUTH, as lead Federal agency for the proposed action, understands its unique relationship with federaly recognized Native American Tribes and takes its consultation responsibilities seriously. This letter is a formal request for consultation and input with the Seminole Nation of Oklahoma, which may have concerns with the project area. A reconnaissance investigation for archeological resources was conducted by Homestead

Air Force Base and the National Park Service in 1986 and concluded that due to previous disturbances, there were no cultural resources within the APE. The Florida State Historic Preservation Office concurred with the report's conclusion in 1993.

Although the results of the cultural resource investigation indicate that no archaeological resources are present in the project APE, we encourage you to respond with any concerns you may have relating to cultural sites or materials of significance to the Seminole Nation of Oklahoma. We greatly appreciate your assistance in this matter and request a response within 30-calender days. If you have any questions, comments, or concerns about this project please feel free to contact Major Kyle Merolla at (305) 224-6347.

Respectfully,

Kyle Mckeever Merolla, P.E.
MAJ, U.S. Army
Command Engineer

Enclosure(s)

DEPARTMENT OF DEFENSE
SPECIAL OPERATIONS COMMAND SOUTH
29350 CORAL SEA BOULEVARD
HOMESTEAD ARB, FLORIDA, 33039-1299

The Honorable Mitchell Cypress, Chairperson
c/o Mr. William Steele
Tribal Historic Preservation Officer
Seminole Tribe of Florida
Ah Tah Thi Ki Museum
HC-61, Box 21-A
Clewiston, FL 33440

Subject: Environmental Assessment for the U.S. Army Special Operations Command South Headquarters Facility

Dear Chairperson Cypress:

The United States (U.S.) Special Operations Command South (SOCSOUTH) recently relocated its headquarters for special operations in Central and South America from Roosevelt Roads Naval Base in Puerto Rico to a temporary facility on Homestead Air Reserve Base (HARB), Florida. The temporary facilities were intended as a short-term measure to bridge the period while a permanent headquarters was made available. The original 3-year lease on the temporary buildings has expired. SOCSOUTH intends to lease a 90-acre property from Miami-Dade County to build a new headquarters facility. The 90-acre property is located adjacent to HARB on land previous occupied by Homestead Air Force Base. Following Hurricane Andrew in 1992, parts of Homestead Air Force Base were closed and transferred to Miami-Dade County under the Department of Defense Base Realignment and Closure Act. Currently, the 90-acre property is unoccupied land. Four structures including Building 741, Building 736, a small un-numbered structure, and a small Miami-Dade County lift station remain on the property. In addition, there are multiple foundations of buildings destroyed by Hurricane Andrew and parking lots are located throughout the property.

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SOCSOUTH, as lead Federal agency for the proposed action, understands its unique relationship with federaly recognized Native American Tribes and takes its consultation responsibilities seriously. This letter is a formal request for consultation and input with the Seminole Tribe of Florida, which may have concerns with the project area. A

reconnaissance investigation for archeological resources was conducted by Homestead Air Force Base and the National Park Service in 1986 and concluded that due to previous disturbances, there were no cultural resources within the APE. The Florida State Historic Preservation Office concurred with the report's conclusion in 1993.

Although the results of the cultural resource investigation indicate that no archaeological resources are present in the project APE, we encourage you to respond with any concerns you may have relating to cultural sites or materials of significance to the Seminole Tribe. We greatly appreciate your assistance in this matter and request a response within 30-calender days. If you have any questions, comments, or concerns about this project please feel free to contact Major Kyle Merolla at (305) 224-6347.

Respectfully,

Kyle Mckeever Merolla, P.E.
MAJ, U.S. Army
Command Engineer

Enclosure(s)

DEPARTMENT OF DEFENSE
SPECIAL OPERATIONS COMMAND SOUTH
29350 CORAL SEA BOULEVARD
HOMESTEAD ARB, FLORIDA, 33039-1299

The Honorable Vernon Yarholar, Mekko
c/o Charles Coleman
Cultural Preservation Officer
Thlopthlocco Tribal Town
P.O. Box 188
Okemah, OK 74859

Subject: Environmental Assessment for the U.S. Army Special Operations Command South Headquarters Facility

Dear Mekko Yarholar:

The United States (U.S.) Special Operations Command South (SOCSOUTH) recently relocated its headquarters for special operations in Central and South America from Roosevelt Roads Naval Base in Puerto Rico to a temporary facility on Homestead Air Reserve Base (HARB), Florida. The temporary facilities were intended as a short-term measure to bridge the period while a permanent headquarters was made available. The original 3-year lease on the temporary buildings has expired. SOCSOUTH intends to lease a 90-acre property from Miami-Dade County to build a new headquarters facility. The 90-acre property is located adjacent to HARB on land previous occupied by Homestead Air Force Base. Following Hurricane Andrew in 1992, parts of Homestead Air Force Base were closed and transferred to Miami-Dade County under the Department of Defense Base Realignment and Closure Act. Currently, the 90-acre property is unoccupied land. Four structures including Building 741, Building 736, a small un-numbered structure, and a small Miami-Dade County lift station remain on the property. In addition, there are multiple foundations of buildings destroyed by Hurricane Andrew and parking lots are located throughout the property.

The Area of Potential Effect (APE) includes the proposed 125,000 square foot SOCSOUTH headquarters facility to be constructed on 28-acres of the 90-acre property. The facility would consist of a Secure Compartmentalized Information Facility and general purpose administrative areas. Two existing buildings remaining on the property would be retained. Building 741, which was previously used as an aircraft hanger and for storage, would be retained for storage with minor renovations. Building 736, which was a small office building, would be renovated and used as administrative office space. Project development would involve demolition of existing foundations and a small shed, grading, paving, security systems, utilities and other improvements. Please see the enclosed study area map depicted on the Homestead, Goulds, Arsenicker Keys, and Perrine 7.5 Minute U.S. Geological Survey quadrangle map (Figure 1).

SOCSOUTH, as lead Federal agency for the proposed action, understands its unique relationship with federaly recognized Native American Tribes and takes its consultation responsibilities seriously. This letter is a formal request for consultation and input with the Thlopthlocco Tribal Town, which may have concerns with the project area. A reconnaissance investigation for archeological resources was conducted by Homestead

Air Force Base and the National Park Service in 1986 and concluded that due to previous disturbances, there were no cultural resources within the APE. The Florida State Historic Preservation Office concurred with the report's conclusion in 1993.

Although the results of the cultural resource investigation indicate that no archaeological resources are present in the project APE, we encourage you to respond with any concerns you may have relating to cultural sites or materials of significance to the Thlopthlocco Tribal Town. We greatly appreciate your assistance in this matter and request a response within 30-calender days. If you have any questions, comments, or concerns about this project please feel free to contact Major Kyle Merolla at (305) 224-6347.

Respectfully,

Kyle Mckeever Merolla, P.E.
MAJ, U.S. Army
Command Engineer

Enclosure(s)

SAI # FL201104225741C

USACE Mobile District – Draft Final Environmental Assessment, Construction and Operation of U.S. Special Operations Command South Headquarters Adjacent to Homestead Air Reserve Base – Homestead, Miami-Dade County, Florida.

The referenced project was received by the Florida State Clearinghouse on 4/21/11, and has been forwarded to the appropriate reviewing agencies. The clearance letter and agency comments will be forwarded to you no later than 6/5/11, unless you are otherwise notified. Please refer to the State Application Identifier (SAI) number in all written correspondence with the Clearinghouse regarding this project. If you have any questions, please contact Clearinghouse staff at (850) 245-2161.

Florida Department of Environmental Protection
Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Rick Scott
Governor

Jennifer Carroll
Lt. Governor

Herschel T. Vinyard Jr.
Secretary

June 3, 2011

Dr. Rich Reaves
CH2M Hill
Northpark 400
1000 Abernathy Road, Suite 1600
Atlanta, GA 30328

RE: Department of the Army, Mobile District Corps of Engineers – Draft Final Environmental Assessment, Construction and Operation of U.S. Special Operations Command South Headquarters Adjacent to Homestead Air Reserve Base – Homestead, Miami-Dade County, Florida.
SAI # FL201104225741C

Dear Dr. Reaves:

The Florida State Clearinghouse has coordinated a review of the Draft Environmental Assessment (EA) under the following authorities: Presidential Executive Order 12372; Section 403.061(42), *Florida Statutes*; the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended; and the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321-4347, as amended.

The South Florida Water Management District (SFWMD) staff has reviewed the proposed project and advises that this project will require a modification to Permit No. 13-00148-S.

The South Florida Regional Planning Council (SFRPC) supports projects that aim to improve economic diversification and job creation, enhance regional cooperation, multi-jurisdictional coordination, public involvement and multi-issue regional planning to ensure long-term sustainability of the area's natural, developed and human resources. If approved, the project should be consistent with the requirements of the NEPA and Endangered Species Act. The project should also be closely coordinated with the City of Homestead's and Miami-Dade County's Planning Departments and be consistent with the goals and policies of the SFRPC's *Strategic Regional Policy Plan for South Florida*. Please refer to the enclosed SFRPC letter for further information.

Based on the information contained Draft EA and enclosed agency comments, the state has determined that, at this stage, the proposed activities are consistent with the Florida Coastal Management Program (FCMP). To ensure the project's continued consistency

with the FCMP, the concerns identified by our reviewing agencies must be addressed prior to project implementation. The state's continued concurrence will be based on the activity's compliance with FCMP authorities, including federal and state monitoring of the activity to ensure its continued conformance, and 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 process under Section 373.428, *Florida Statutes*.

Thank you for the opportunity to review the proposed project. Should you have any questions regarding this letter, please contact Mr. Chris Stahl at (850) 245-2169.

Yours sincerely,

Sally B. Mann

Sally B. Mann, Director
Office of Intergovernmental Programs

SBM/cjs
Enclosures

cc: Jim Golden, SFWMD
Eric Swanson, SFRPC

Florida
Department of Environmental Protection
"More Protection, Less Process"

Categories

Project Information	
Project:	FL201104225741C
Comments Due:	05/23/2011
Letter Due:	06/05/2011
Description:	DEPARTMENT OF THE ARMY, MOBILE DISTRICT CORPS OF ENGINEERS - DRAFT FINAL ENVIRONMENTAL ASSESSMENT, CONSTRUCTION AND OPERATION OF U.S. SPECIAL OPERATIONS COMMAND SOUTH HEADQUARTERS ADJACENT TO HOMESTEAD AIR RESERVE BASE - HOMESTEAD, MIAMI-DADE COUNTY, FLORIDA.
Keywords:	ACOE - U.S. SPECIAL OPERATIONS COMMAND SOUTH HQ, HOMESTEAD ARB - MIAMI-DADE CO.
CFDA #:	99.997

Agency Comments:
SOUTH FL RPC - SOUTH FLORIDA REGIONAL PLANNING COUNCIL
The SFRPC supports projects that aim to improve economic diversification and job creation, enhance regional cooperation, multi-jurisdictional coordination, public involvement and multi-issue regional planning to ensure long-term sustainability of the area's natural, developed and human resources. If approved, the project should be consistent with the requirements of the NEPA and ESA. The project should also be closely coordinated with the City of Homestead's and Miami-Dade County's Planning Departments and be consistent with the goals and policies of the SFRPC's Strategic Regional Policy Plan.
COMMUNITY AFFAIRS - FLORIDA DEPARTMENT OF COMMUNITY AFFAIRS
FISH and WILDLIFE COMMISSION - FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION
NO COMMENT BY JENNIFER GOFF ON 4/28/11.
STATE - FLORIDA DEPARTMENT OF STATE
No Comment/Consistent
ENVIRONMENTAL PROTECTION - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
No Comments
SOUTH FLORIDA WMD - SOUTH FLORIDA WATER MANAGEMENT DISTRICT
This project will require a modification to Permit No. 13-00148-S.

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

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

Visit the Clearinghouse Home Page to query other projects.

South Florida Regional Planning Council

May 19, 2011

Ms. Lauren P. Milligan
Florida State Clearinghouse
Florida Dept. of Environmental Protection
3900 Commonwealth Blvd., Mail Station 47
Tallahassee, Florida 32399-3000

RE: SFRPC#11-0412, United States Southern Command/Special Operations Command South, Clearinghouse review of the DRAFT Environmental Assessment for the construction and operations of U.S. Special Operations Command South adjacent to Homestead Air Reserve Base.

Dear Ms. Milligan:

We have reviewed the above-referenced Scoping Notice, which details the description of the proposed action, action alternatives assessed, environmental consequences, and conclusion and support of the relocation of the U.S. Special Operations Command South (SOCSOUTH) onto the Homestead Air Reserve Base. The South Florida Regional Planning Council supports projects that aim to improve economic diversification and job creation, enhance regional cooperation, multi-jurisdictional coordination, public involvement and multi-issue regional planning to ensure long-term sustainability of our natural, developed and human resources. If approved, this Environmental Assessment should consider the following comments:

- The project should be consistent with the goals and policies of the National Environmental Policy Act (NEPA), the Endangered Species Act and its corresponding regulations. It is important for the applicant to coordinate involvement with all governments of jurisdiction, environmental groups, as well as concerned public citizens.
- The project should be closely coordinated with the City of Homestead's and Miami-Dade County's Planning Departments, and all other applicable agencies of jurisdiction.
- The Goals and Policies of the *Strategic Regional Policy Plan for South Florida (SRPP)*, in particular those indicated below, should be observed when making decisions regarding this project:

GOAL 3 **Promote the health, safety, and welfare of South Florida's residents.**

Policy 3.7 Reduce exposure to environmental contaminants and hazards in the Region's ground, air, and water.

GOAL 4 **Enhance the economic and environmental sustainability of the Region by ensuring the adequacy of its public facilities and services.**

GOAL 9 **Develop clean, sustainable and energy-efficient power generation and transportation systems.**

Policy 9.1 Develop and implement sustainable energy conservation strategies.

3440 Hollywood Boulevard, Suite 140, Hollywood, Florida 33021
Broward (954) 985-4416, State (800) 985-4416
FAX (954) 985-4417, email: sfadmin@sfrpc.com, website: www.sfrpc.com

Policy 9.2 Encourage the development of renewable, clean fuels and energy-efficient enterprises to serve our communities and national markets.

GOALS 14 Preserve, protect, and restore Natural Resources of Regional Significance.

Policy 14.1 Address environmental issues, including the health of our air, water, habitats, and other natural resources, that affect quality of life and sustainability of our Region.

Policy 14.3 Protect native habitat by first avoiding impacts to wetlands before minimizing or mitigating those impacts. Development proposals should demonstrate how wetland impacts are being avoided and what alternative plans have been considered to achieve that objective.

Policy 14.7 Restore, preserve, and protect the habitats of rare and state and federally listed species. For those rare and threatened species that have been scientifically listed species. For those rare and threatened species that have been scientifically demonstrated by past or site specific studies to be relocated successfully, without resulting in hard to the relocated or receiving populations, and where *in-situ* preservation is neither possible nor desirable from an ecological perspective, identify suitable receptor sites, guaranteed to be preserved and managed in perpetuity for the protection of the relocated species that will be utilized for the relocation of such rare or listed plants and animals made necessary by unavoidable project impacts. Consistent use of the site by endangered species, or documented endangered species habitat on-site shall be preserved on-site.

Goal 17 Maintain a competitive, diversified, and sustainable regional economy.

Policy 17.4 Continue to seek and take advantage of global opportunities that increases diversification of the Region's economy.

Policy 17.7 Continue to diversify the economic base to utilize the range of skills in the Region's labor force.

GOAL 21 Assume a leadership role to enhance regional cooperation, multi-jurisdictional coordination, and multi-issue regional planning to ensure the balancing of competing needs and long-term sustainability of our natural, developed and human resources.

Policy 21.5 Strengthen the linkage between land use and transportation/air quality planning.

Policy 21.15 Ensure that the need for a healthy and sustainable regional economy is balanced against other regional needs, including environmental and community concerns.

Thank you for the opportunity to comment. If you require further information, please contact me at 954-985-4416.

Sincerely,

Eric Swanson
Regional Planner

ES/kal

COUNTY: MIAMI-DADE

Dalle

DATE: 4/21/2011
COMMENTS DUE DATE: 5/23/2011
CLEARANCE DUE DATE: 6/5/2011
SAI#: FL201104225741C

MESSAGE: 2011-01724

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

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

X **Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.**

_ **Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.**

_ **Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.**

_ **Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.**

Project Description:

DEPARTMENT OF THE ARMY, MOBILE DISTRICT CORPS OF ENGINEERS - DRAFT FINAL ENVIRONMENTAL ASSESSMENT, CONSTRUCTION AND OPERATION OF U.S. SPECIAL OPERATIONS COMMAND SOUTH HEADQUARTERS ADJACENT TO HOMESTEAD AIR RESERVE BASE - HOMESTEAD, MIAMI-DADE COUNTY, FLORIDA.

To: Florida State Clearinghouse

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

EO. 12372/NEPA Federal Consistency

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

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

From:

Division/Bureau: Historical Resources

Laura A. Kammerer
Deputy SHPO

Reviewer: Michael Hart

Date: 5/16/11 5.17.2011

RECEIVED
MAY 19 2011
DEP Office of Intergov't Programs

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2011 APR 25 P 2:10

APPENDIX B

Section 7 Endangered Species Act Consultation

BIOLOGICAL ASSESSMENT

Construction and Operation of U.S. Special Operations Command South Headquarters Adjacent to Homestead Air Reserve Base, Homestead, Florida

Prepared For
United States Army Garrison – Miami

and

Special Operations Command - South

Prepared By
CH2M HILL
Richard Reaves, Ph.D.,
Endangered Species Biologist
March 2011

1

2

3 PRINTED ON RECYCLED PAPER

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A – Assessment of Rare Plant Species and Pine Rockland Habitat at Proposed U.S. Special Operations Command South Headquarters Adjacent to the U.S. Air Reserve Base, Homestead, Florida

B – Addendum: Assessment of Rare Plant Species and Pine Rockland Habitat at Proposed U.S. Special Operations Command South Headquarters Adjacent to the U.S. Air Reserve Base, Homestead, Florida

C — Preliminary Management Plan for Small's Milkpea and Sand flax on U.S. Special Operations Command South Headquarters Adjacent to the U.S. Air Reserve Base, Homestead, Florida

LIST OF ACRONYMS, ABBREVIATIONS, AND SYMBOLS

AT/FP	Anti-Terrorism/Force Protection
BA	Biological Assessment
CE	Conservation Easement
cm	Centimeters
ESA	Endangered Species Act
ft^2	Square foot
HARB	Homestead Air Reserve Base
INRMP	Integrated Natural Resources Management Plan
SOCSOUTH	Special Operations Command SOUTH
U.S.	United States
USFWS	U.S. Fish and Wildlife Service

1. SUMMARY OF DETERMINATIONS

The United States (U.S.) Army would either enter into a 50-year lease agreement with Miami-Dade County or acquire in fee title an 84.2-acre property adjacent to Homestead Air Reserve Base (HARB) in order to construct and operate a new headquarters facility, new utility rights-of-way, and for related construction that would occur concurrent with or subsequent to headquarters construction for Special Operations Command SOUTH (SOCSOUTH) that would result in minor impacts to the Federal endangered Small's milkpea (*Galactia smallii*), Federal candidate sand flax (*Linum arenicola*), and their habitat under the Endangered Species Act of 1973, as amended (ESA). However, the proposed action would preserve most of the habitat present on the 84.2-acre site and manage the preserved areas for the benefit of the species (Table 1).

Table 1
Projected Impacts to and Preservation of Small's Milkpea, Sand Flax, and Their Habitat

Mission Component	Habitat [1] Lost (ac)	Small's Milkpea Lost [2]	Sand flax Lost [2]	Habitat [1] Preserved (ac)	Small's Milkpea Preserved [2]	Sand flax Preserved [2]
Construct Headquarters	0.78	878	836	None	None	None
New Utility Rights-of-Way	0.02	155	179	None	None	None
Renovate and Operate Building 736	None	None	None	None	None	None
Use Building 741	None	None	None	None	None	None
Upgrade and Operate Foam Fire System	None	None	None	None	None	None
Related Construction [3]	0.68	2,905	1,835	None	None	None
Management Areas [4]	None	None	None	11.66	96,764	70,909
Totals	1.48	3,938	2,850	11.66	96,764	70,909
Percentage of Total	11.3%	3.9%	3.9%	88.7%	96.1%	96.1%

[1] Habitat refers to land where either Small's milkpea or sand flax were identified growing in 2009 (Bradley, 2009a).
[2] Numbers based on population estimates from 2009 (Bradley, 2009a).
[3]This includes all or parts of 10 habitat areas containing Small's milkpea and sand flax. These areas would be managed until they are developed.
[3]This area includes Management Areas 1 and 2, which cover 14.7 acres (8.5 acres of pine rockland habitat that contains Small's milkpea and sand flax plus an additional 6.2 acres that may be restored to pine rockland habitat) and additional Small's milkpea and sand flax population areas (all or parts of eight habitat areas totaling 3.16 acres) outside of Management Areas 1 and 2.

Implementation of the proposed action would:

- Eliminate approximately 0.78-acre (approximately 5.9 percent) of the available onsite habitat for Small's milkpea and sand flax through construction and operation of the headquarters facility and associated parking.
- Eliminate 878 individuals of Small's milkpea (approximately 0.9 percent of the estimated onsite population) through development of the headquarters facility and associated parking.
- Eliminate 836 individuals of sand flax (approximately 1.1 percent of the estimated onsite population) through development of the headquarters facility and associated parking.
- Eliminate approximately 0.02-acre (approximately 0.2 percent) of the available onsite habitat for Small's milkpea and sand flax through construction of utility lines along St. Lo Boulevard and Rabaul Road.
- Eliminate 155 individuals of Small's milkpea (approximately 0.15 percent of the estimated onsite population) through construction of utility lines along St. Lo Boulevard and Rabaul Road.
- Eliminate 179 individuals of sand flax (approximately 0.24 percent of the estimated onsite population) through construction of utility lines along St. Lo Boulevard and Rabaul Road.
- Conserve and manage approximately 17.86 acres for Small's milkpea and sand flax. This area includes Management Areas 1 and 2, which cover 14.7 acres (8.5 acres of pine rockland habitat that contains Small's milkpea and sand flax plus an additional 6.2 acres that may be restored to pine rockland habitat) and additional Small's milkpea and sand flax population areas (all or parts of eight habitat areas totaling 3.16 acres) outside of Management Areas 1 and 2. The approximately 17.86 acres would include 96,764 individuals of Small's milkpea (approximately 96 percent of the estimated onsite population) and 70,909 individuals of sand flax (approximately 96 percent of the estimated onsite population) based on 2009 estimates (Bradley, 2009a).
- Prepare and implement an Integrated Natural Resources Management Plan (INRMP) pursuant to Army Regulation 200-1 to manage for Small's milkpea and sand flax on 17.86 acres of suitable habitat within the 84.2-acre site. Implementation of the INRMP would be funded by the U.S. Army through annual appropriations beginning in FY-13.

The U.S. Army also has specified certain areas within the 84.2-acre site where related construction would be done to meet mission requirements concurrent with or subsequent to construction of the headquarters. These areas of related construction are interrelated and interdependent with the construction of the headquarters facility and would potentially:

- Eliminate approximately 0.68-acre (approximately 5.2 percent) of the available onsite habitat for Small's milkpea and sand flax through related construction.
- Eliminate 2,905 individuals of Small's milkpea (approximately 2.9 percent of the estimated onsite population), based on 2009 estimates (Bradley, 2009a), through related construction.

- Eliminate 1,835 individuals of sand flax (approximately 2.5 percent of the estimated onsite population), based on 2009 estimates (Bradley, 2009a), through related construction.

The habitat within the related construction areas that contains Small's milkpea and sandflax (totaling 0.68 acre) would be managed to support the two species through mowing to suppress exotic species and restriction of physical encroachment by personnel.

Conservation measures the U.S. Army would implement include designation of two Management Areas (Management Areas 1 and 2, which cover 14.7 acres [8.5 acres of pine rockland habitat that contains Small's milkpea and sand flax plus an additional 6.2 acres that may be restored to pine rockland habitat]), erecting permanent fencing around Management Areas 1 and 2 prior to construction, potential placement of signage to deter unauthorized entry on the fence where it borders construction areas, placing temporary fencing and/or signage to protect habitat areas containing Small's milkpea and sand flax outside of Management Areas 1 and 2 that would not be disturbed by construction, and develop and implement an INRMP for the property that would direct conservation and management of the species during the operation of the SOCSOUTH facility.

Once the U.S. Army has control of the property, an INRMP would be prepared and implemented to address Small's milkpea, sand flax, and pine rockland habitat on the property. The U.S. Army would protect and manage approximately 85 percent of the onsite pine rockland habitat and approximately 96 percent of the onsite population of each species: approximately 96,764 individuals of Small's milkpea and approximately 70,909 individuals of sand flax. No negative cumulative impacts to the species would be expected.

Based on this analysis, the U.S. Army has determined that allowing the proposed site development, long-term operation of the facility, new utility rights-of-way, and related construction in specified areas may affect, and is likely to adversely affect Small's milkpea and sand flax that occur on the 84.2-acre site. However, the U.S. Army anticipates that, with management for the species and their habitat through development and implementation of an INRMP, construction and operation of the headquarters facility, new utility rights-of-way, and related construction would not significantly impact Small's milkpea and sand flax and that implementation of onsite management would be beneficial to both species.

If funding is secured for the project, the Army will satisfy all requirements of this Section 7 consultation and minimize the impact of the proposed action species through development and implementation of an INRMP to address invasive exotic species control and annual maintenance and monitoring efforts on the property.

2. BACKGROUND AND HISTORY

The purpose of this U.S. Army Biological Assessment (BA) is to address the effects of the construction and operation of a new headquarters facility, new utility rights-of-way, and related construction for SOCSOUTH on an 84.2-acre site at Homestead, Florida, on the Federal listed endangered Small's milkpea and the Federal candidate sand flax, under the protection of the ESA. The U.S. Army would either enter into a 50-year lease agreement with Miami-Dade

County or acquire in fee title an 84.2-acre property adjacent to HARB in order to construct and operate a new headquarters facility and associated buildings and infrastructure.

The 84.2-acre site the Army is considering for the SOCSOUTH headquarters and related construction is part of a parcel that was encumbered by the deed transfer of the former Homestead Air Force Base to Miami-Dade County. This parcel was identified in the Finding of Suitability to Transfer as containing Small's milkpea and the deed contained the stipulation that the transferee identify and preserve the species prior to construction on the parcel.

This BA, prepared by the U.S. Army, addresses the proposed action in compliance with Section 7(c) of the ESA. Section 7 of the ESA assures that, through consultation with the National Marine Fisheries Service and/or the United States Fish and Wildlife Service (USFWS), Federal actions do not jeopardize the continued existence of any threatened, endangered, or proposed species, or result in the destruction or adverse modification of critical habitat designated for such species.

Early coordination and pre-consultation between the U.S. Army and USFWS were conducted during a site visit and a series of meetings and telecommunications, including:

- Coordination letter to USFWS dated 11 March 2009 and response letter from USFWS dated April 29, 2009.
- Multiple email and telephone communications from April through July 2009.
- Site visit and meeting with USFWS on 21 May 2009.
- Meeting with USFWS on 16 July 2009.
- Provided Final Report prepared by the Institute for Regional Conservation: *Assessment of Rare Plant Species and Pine Rockland Habitat at Proposed U.S. Army Special Operations Command South Headquarters Adjacent to the U.S. Air Reserve Base, Homestead, Florida*. Submitted 22 July 2009.
- Teleconference with USFWS 24 February 2011.

These meetings and conversations are documented in the Administrative Record of the Environmental Assessment prepared for this action.

3. DESCRIPTION OF THE PROPOSED ACTION

The U.S. Army has identified an 84.2-acre site adjacent to the military airfield at HARB that is suitable for construction of a new SOCSOUTH Headquarters facility (Figure 1). Under the proposed action, the U.S. Army would either enter into a 50-year lease agreement with Miami-Dade County or acquire in fee title 84.2 acres and construct a 125,000-square-foot (ft^2) headquarters facility on the southwestern portion of the 84.2-acre site.

Because of Anti-Terrorism and Force Protection (AT/FP) requirements, no permanently occupied structures may be placed within 180 feet of the exterior perimeter fence or within 90 feet of interior fences separating SOCSOUTH from HARB. The AT/FP areas also must be maintained free of woody vegetation, such as trees and shrubs that could conceal intruders.

The headquarters facility would consist of a Secure Compartmentalized Information Facility with sensitive storage areas and general purpose administrative areas located in the southwestern portion of the 84.2-acre site (Figure 2). Fire, intrusion detection, and alarm systems would be included. Supporting facilities would include connection to utilities (water, sewer, electrical, storm drainage, and information systems), emergency backup power with an uninterruptible power system, site development, paving including parking, access drives, sidewalks, curb and gutter, storm drainage, landscaping, and other site improvements, including secure communications reception areas. Antiterrorism measures would be incorporated into the design, to include appropriate stand-off distances, barriers, sliding fence gate, and closed circuit TV. Buildings would be designed and built to comply with Category 5 hurricane protection and to prevent progressive collapse. The headquarters would have approximately 40,000 ft^2 of paved parking and access, which would include existing paved areas and new pavement (Figure 2).

To provide utility service, new utility rights-of-way would be placed along the perimeter of the 84.2-acre site along St. Lo Boulevard, Rabaul Road, and Bikini Boulevard (Figure 2). Utility lines would be buried in the new rights-of-way.

An existing hangar (Building 741), its associated foam fire retardant system (Building 743 and 500,000-gallon aboveground storage tank), and a small existing office building (Building 736) would be leased by the U.S. Army for use by SOCSOUTH (Figure 2). Building 741 would be used for storage initially. When the fire retardant system is upgraded, the building would be capable of housing aircraft and could then be used as a hangar. Building 736 would be renovated and used as administrative space. Existing structures that are beyond repair or rehabilitation would be demolished, and existing pavement would be removed from some areas.

The Federal endangered species, Small's milkpea, and the Federal candidate species, sand flax, are known to occur on the 84.2-acre site. Areas where these plants occur have been mapped (Figure 3) and approximately 17.86 acres of the 84.2-acre site would be managed to benefit these species. The approximately 17.86 acres would include two management areas (designated Management Areas 1 and 2) encompassing approximately 14.7 acres and an additional 3.16 acres of scattered habitat areas where Small's milkpea and sand flax are known to occur. Management Areas 1 and 2 include approximately 8.5 acres of habitat currently occupied by Small's milkpea and sand flax and an additional approximately 6.2 acres surrounding Small's milkpea and sand flax populations that may be restored to pine rockland habitat (Appendix A [Bradley, 2009a]; Appendix B [Bradley 2009b]). Outside these two designated management areas, an additional approximately 3.16 acres of land containing Small's milkpea and sand flax also would be protected and managed. However, it is not practical to restore land surrounding these 3.16 acres to pine rockland habitat because they are scattered through the interior of the property and not part of a contiguous area including AT/FP setbacks as is the case for management Areas 1 and 2.

The areas that would be managed for Small's milkpea and sand flax also contain much of the highest quality pine rockland habitat on the 84.2-acre site (Bradley, 2009a; 2009b). Pine rockland habitat supports the two protected species and has been mostly destroyed in south Florida as a result of development. An INRMP, pursuant to Army Regulation 200-1 would be developed and implemented, which would specify the management measures to benefit the two species and the habitat. A Preliminary Management Plan is attached as Appendix C.

SOCSOUTH has identified a need for related construction concurrent with or subsequent to construction of the headquarters facility to meet mission needs and secure military assets.

Because this related construction would constitute interrelated and interdependent actions relative to construction of the headquarters facility, the U.S. Army has identified sections within the larger 84.2-acre site where related construction would be placed. While specific construction details cannot be identified at this time, the maximum footprints of the related construction areas have been identified to define the limits of potential disturbance to the two protected species (Figure 4). The impacts to Small's milkpea and sand flax that would result from this related construction are included in this BA.

4. LOCATION AND SETTING DESCRIPTION

4.1 Location

The 84.2-acre site proposed for lease from Miami-Dade County is located in Dade County approximately 4 miles northeast of Homestead, Florida. HARB borders the site to the east, south, and west, The HARB air strip is adjacent to the site along the eastern border. The area north of the 84.2-acre site also is owned by Miami-Dade County and being developed as an industrial park.

4.2 Setting Description

The 84.2-acre site is unoccupied land consisting mostly of old building foundations and unused parking lots. Six structures remain on the 84.2-acre site, including an old office building (Building 736), a large hangar (Building 741), a 500,000-gallon aboveground storage tank and associated pump house (Building 743), an open-sided shed (Building 746), and a small un-numbered shed containing an air compressor (Figure 2).

Development of the site is constrained by AT/FP requirements that prevent construction of buildings near the perimeter of the 84.2-acre site. In addition, noise from airfield operations at HARB place further restrictions on buildings near the eastern side of the 84.2-acre site.

Several exotic species were observed on the 84.2-acre site, including Brazilian pepper (*Schinus terebinthifolius*), silk reed (*Neyraudia reynaudiana*), napier grass (*Pennisetum purpureum*), and Australian pine (*Casuarina equisetifolia*), and were predominantly concentrated around disturbed areas and roadways.

Prior to development, much of the area consisted of native pine rockland habitat. This sensitive vegetation community occurs only in southern Miami-Dade County, the Florida Keys, and parts of the Bahamas that are restricted to outcropping of three limestone formations: Miami Limestone, Key Largo Limestone, and Tamiami Limestone (Austin, 1997; Taylor, 1998). Remnant vegetation of native pine rockland communities likely still occurs within and around the 84.2-acre site. Pine rockland species previously observed on the 84.2-acre site include Bahama brake (*Pteris bahamensis*), locustberry (*Byrsonima lucida*), pineland jacquemontia (*Jacquemontia curtissii*), quail berry (*Crossopetalum ilicifolium*), small Porter's sandmat (*Chamaesyce porteriana*), white-top sedge (*Dichromena floridensis*), West Indian lilac (*Tetrazygia bicolor*), and five-petaled leaf-flower (*Phyllanthus pentaphylus* var. *floridanus*) (PBS&J, 1996). These species and other pine rockland species were observed again in 2009 (Bradley, 2009a).

5. SPECIES DESCRIPTIONS

5.1 Small's Milkpea

Small's milkpea is a small, trifoliolate, perennial legume with small, purple flowers and a prostrate habit. The stems are grayish, due to a covering of short hairs, and grow up to 79 inches. Stem internodes are well-developed and have long, straight, soft hairs. Leaflets are broadly ovate to elliptic and 0.4 - 0.9 inch long. The underside of the leaflet has long, soft, wavy hairs lying almost flat against the surface. The upper surface of the leaflet is either hairless or has sparse, stiff hairs, lying flat. Flowers are about 0.5 inch long and pinkish-purple or lavender.

Small's milkpea is endemic to the pine rocklands of Miami-Dade County. Pine rockland habitat has been destroyed throughout much of its historic range in south Florida and replaced by residential housing, commercial construction, or agriculture. Less than 2 percent of the original pine rockland habitat remains and most occurs in small, isolated stands. Prior to this discovery, only seven additional populations of Small's milkpea were known, none of which are as large as that on the project site. Habitat loss and fragmentation, fire suppression, and invasion by exotic plant species threaten the existence of Small's milkpea. The species typically is reduced or eliminated in areas where invasive exotic species, such as Brazilian pepper and silk reed, are prevalent. Most threats to Small's milkpea are ongoing and are considered imminent.

5.2 Sand Flax

Sand flax is a glabrous, perennial herb with wiry stems reaching up to 28 inches tall. Leaves are few, alternate, and early deciduous. Flowers are in terminal cymes, 5-parted, less than 2.5 inches wide, with ephemeral yellow petals and separate styles.

Sand flax is found in pine rockland and marl prairie habitats which require periodic wildfires to maintain an open, shrub-free subcanopy and reduce litter levels. Available data indicate there are 11 extant occurrences of sand flax, with 11 others extirpated or destroyed. Only small and isolated occurrences remain in a restricted range of southern Florida and the Florida Keys. Habitat loss and degradation due to development is a major threat to this species. Most remaining occurrences are on private land or non-conservation public land. Nearly all remaining populations are threatened by fire suppression, difficulty in applying prescribed fire, road maintenance activities, exotic species, and/or illegal dumping. Most threats to the species are ongoing and are considered imminent.

5.3 Distribution of Small's Milkpea and Sand Flax in the Project Area

Small's milkpea and sand flax are generally concentrated in the west-central portion of the project area, but they occur scattered throughout much of the 84.2-acre site (Figure 3 and Table 2). At the west end of the project area, the surface elevation is generally lower than optimal and densities of these species are reduced. The eastern portion of the project area is more highly disturbed and the level of disturbance may contribute to lower abundance and densities for the species.

6. EFFECTS OF PROPOSED ACTION IMPLEMENTATION

The activities described under the proposed action have the potential to affect Small's milkpea, a Federal listed species, and sand flax, a candidate species for Federal listing. Effects analysis in this BA focuses on the elements associated with each activity and the potential impacts to the species. The following discussion of potential impacts is divided by individual activities. Reports describing the site investigations are provided as Appendices C and D.

6.1 Construct New Headquarters Facility

Construction of the headquarters facility and its associated parking areas would result in loss of habitat and species from Areas M, O, Q, and S as well as portions of Areas A, P, R, and T (Figure 4 and Table 2). Total habitat lost to development of the headquarters and its associated parking areas would be approximately 0.78-acre, or 5.9 percent of the available habitat on the 84.2-acre site. Most habitat areas that would be lost are very small and of low quality, but some contain high quality habitat. The numbers of plants of these species vary among years, and an exact number of plants that would be lost cannot be determined. However, based on 2009 population counts (Bradley, 2009) and assuming the species loss would be proportional to area lost, there would be a loss of approximately 878 individuals of Small's milkpea (0.87 percent of the estimated total) and approximately 836 individuals of sand flax (1.13 percent of the estimated total) as a result of the proposed development.

The U.S. Army was able to minimize the impacts to high quality habitat from construction of the headquarters facility, and this resulted in the projected relative impacts to the species being less than one-fifth of that projected for habitat. Additional conservation measures the U.S. Army would implement in this area during construction include designation of two Management Areas (Management Areas 1 and 2, which are discussed in Section 6.7), erecting permanent fencing around Management Areas 1 and 2 prior to construction, potential placement of signage to deter unauthorized entry on the fence where it borders construction areas, and placing temporary fencing and/or signage to protect habitat areas containing Small's milkpea and sand flax outside of Management Areas 1 and 2 that would not be disturbed by construction.

6.2 New Utility Rights-of-Way

To provide utility services to meet current and projected needs, the U.S. Army would place 10-foot wide utility corridors along three roadways bordering the 84.2-acre site. These corridors would extend into the 84.2-acre site from the edge of the roadside ditches along St. Lo Boulevard, Rabaul Road, and Bikini Boulevard (Figure 4).

New utility rights-of-way along St. Lo Boulevard and Rabaul Road would encroach into Areas B and D (Figure 4 and Table 2). Because the rights-of-way would contain buried utilities, the Miami limestone would be compromised and it is unlikely that these areas would provide comparable habitat after utility installation. New utility rights-of-way would result in loss of 0.01 acre of Area B and0.015 acre of Area D. Based on 2009 population counts (Bradley, 2009) and assuming the species loss would be proportional to area lost, there would be a loss of approximately 99 individuals of Small's milkpea (0.1 percent of the estimated total) and approximately 34 individuals of sand flax (0.1 percent of the estimated total) as a result of utility construction.

Table 2
Population Sizes, Habitat Size and Quality, and Future Status of Small's Milkpea, Sand Flax, and Their Habitat

Area	Population of Species [a]	Habitat Size and Quality	Status Following Project Implementation [b]
A	*Galactia smallii*: 33,735 *Linum arenicola*: 37,287	6.05 acres of high quality habitat, largest contiguous tract of suitable habitat	96% preserved and managed for the species and pine rockland habitat as directed in the INRMP. Anticipated loss of approximately 0.24 ac of habitat, 1,391 Small's milkpea, and 1,491 sand flax from proposed and related construction.
B	*Galactia smallii*: 10,870 *Linum arenicola*: 3,705	1.10 acres with habitat quality ranging from good to poor	99% preserved and managed for the species and pine rockland habitat as directed in the INRMP. Anticipated loss of approximately 0.01 ac of habitat, 99 Small's milkpea, and 34 sand flax from proposed and related construction.
C	*Galactia smallii*: Trace *Linum arenicola*: 4,494	0.69 acre of high quality habitat	Area will be preserved and managed to maintain species and habitat, as directed in INRMP.
D	*Galactia smallii*: 1,116 *Linum arenicola*: 2,903	0.33 acre with habitat quality ranging from medium to good	80% preserved and managed for the species and pine rockland habitat as directed in the INRMP. Anticipated loss approximately of 0.07 ac of habitat, 223 Small's milkpea, and 581 sand flax from utility rights-of-way and related construction.
E	*Galactia smallii*: 14,471 *Linum arenicola*: 2,199	0.81 acre of medium quality habitat	2% of area within proposed related construction may be impacted. Anticipated loss of approximately 0.02 ac of habitat, 289 Small's milkpea, and 44 sand flax from related construction. Remainder of area will be preserved and managed to maintain species and habitat, as directed in INRMP
F	*Galactia smallii*: 12,379 *Linum arenicola*: Trace	0.54 acre with habitat quality ranging from medium to good	Area will be preserved and managed to maintain species and habitat, as directed in INRMP.
G	*Galactia smallii*: 5,174 *Linum arenicola*: 15,928	1.23 acres of high quality habitat	Preserved and managed for the species and pine rockland habitat as directed in the INRMP.
H	*Galactia smallii*: 8,395 *Linum arenicola*: 2,799	0.26 acre of medium quality habitat	80% of area within proposed related construction may be impacted. Anticipated loss of approximately 0.21 ac of habitat, 6,716 Small's milkpea, and 2,239 sand flax from related construction.
I	*Galactia smallii*: Trace *Linum arenicola*: 3,935	0.21 acre of medium quality habitat	Area will be preserved and managed to maintain species and habitat, as directed in INRMP.
J	*Galactia smallii*: 13,614 *Linum arenicola*: Trace	0.61 acre of medium quality habitat	Area will be preserved and managed to maintain species and habitat, as directed in INRMP.
K	*Galactia smallii*: 205 *Linum arenicola*: 359	0.04 acre of high quality habitat	Area will be preserved and managed to maintain species and habitat, as directed in INRMP.

Table 2
Population Sizes, Habitat Size and Quality, and Future Status of Small's Milkpea, Sand Flax, and Their Habitat

Area	Population of Species [a]	Habitat Size and Quality	Status Following Project Implementation [b]
M	*Galactia smallii*: 5 *Linum arenicola*: 0	0.01 acre of low quality habitat	All plants and habitat would be impacted through development of headquarters facility and associated parking.
O	*Galactia smallii*: 5 *Linum arenicola*: 0	0.004 acre of low quality habitat	All plants and habitat would be impacted through development of headquarters facility and associated parking.
P	*Galactia smallii*: 75 *Linum arenicola*: 0	0.25 acre of low quality habitat	25% preserved under Management Area 1 and managed for the species and pine rockland habitat. Anticipated loss of approximately 0.19 ac of habitat and 56 Small's milkpea from development of headquarters facility and associated parking.
Q	*Galactia smallii*: 5 *Linum arenicola*: 0	0.02 acre of low quality habitat	All plants and habitat would be impacted through development of headquarters facility and associated parking.
R	*Galactia smallii*: 50 *Linum arenicola*: 100	0.35 acre high quality habitat in patches	10% preserved under Management Area 1 and managed for the species and pine rockland habitat. Anticipated loss of approximately 0.32 ac of habitat and 45 Small's milkpea from proposed development of headquarters facility and associated parking.
S	*Galactia smallii*: 50 *Linum arenicola*: 0	0.05 acre of low quality habitat	All plants and habitat would be impacted through development of headquarters facility and associated parking.
T	*Galactia smallii*: 25 *Linum arenicola*: 0	0.02 acre of medium quality habitat	30% preserved under management Area 1 and managed for the species and pine rockland habitat. Anticipated loss of approximately 0.01 ac of habitat, 17 Small's milkpea, and 90 sand flax from proposed development of headquarters facility and associated parking.
V	*Galactia smallii*: 0 *Linum arenicola*: 20	0.13 acre of high quality habitat	All plants and habitat may be impacted from related construction.
W	*Galactia smallii*: 0 *Linum arenicola*: 10	0.004 acre of low quality habitat	All plants and habitat may be impacted from related construction.
X	*Galactia smallii*: 413 *Linum arenicola*: 0	0.07 acre of medium quality habitat	Area will be preserved and managed to maintain species and habitat, as directed in INRMP.
Y	*Galactia smallii*: 20 *Linum arenicola*: 20	0.12 acre of medium quality habitat	Plants and habitat may be impacted from related construction.
Z	*Galactia smallii*: 25 *Linum arenicola*: 0	0.02 acre of low quality habitat	Plants and habitat may be impacted from related construction.

Table 2
Population Sizes, Habitat Size and Quality, and Future Status of Small's Milkpea, Sand Flax, and Their Habitat

Area	Population of Species [a]	Habitat Size and Quality	Status Following Project Implementation [b]
AA	*Galactia smallii*: 5 *Linum arenicola*: 0	0.004 acre of low quality habitat	Plants and habitat may be impacted from related construction.
BB	*Galactia smallii*: 25 *Linum arenicola*: 0	0.09 acre of low quality habitat	Plants and habitat may be impacted from related construction.
CC	*Galactia smallii*: 20 *Linum arenicola*: 0	0.07 acre of low quality habitat	Plants and habitat may be impacted from related construction.
DD	*Galactia smallii*: 20 *Linum arenicola*: 0	0.06 acre of medium quality habitat	Plants and habitat would be impacted through development of headquarters facility and associated parking.

[a] Survey conducted in June 2009
[b] Population impact estimates based on assumption of even distribution within a partially impacted area.
Source: Bradley, 2009a.

New utility rights-of-way along Bikini Boulevard (Figure 4) would not encroach on any areas where Small's milkpea and sand flax have been documented to occur. No impacts to either species or to pine rockland habitat would result from construction of utility corridor along this roadway.

6.3 Renovate and Operate Building 736 as Administrative Space

Renovation and use of Building 736 would not impact Small's milkpea, sand flax, or pine rockland habitat. No ground disturbance that would encroach into areas containing Small's milkpea sand flax populations would occur in utility corridors to include telecommunication lines that would be extended along the roadway north of the building and across a maintained lawn that does not support either species. No impacts to the species or their potentially suitable habitat would be anticipated.

6.4 Use Hangar (Building 741) for Storage and as a Parking Area for Aircraft

Use of Building 741 would not impact Small's milkpea, sand flax, or pine rockland habitat. The building and its associated apron are already in place. There are two populations of protected plants adjacent to the apron (Areas H and BB, Figure 4 and Table 2). While Areas H and BB may be developed (discussed in Section 6.6), prior to any development in these areas the U.S. Army would manage the areas to support the species and maintain the genetic variability these areas offer. Areas H and BB would be signed to prevent access and incidental disturbance as a result of use of the building and apron or from any subsequent renovation of Building 741 until such time as these areas are impacted by construction.

6.5 Upgrade and Operate Foam Fire Retardant System for Hangar

No impacts to Small's milkpea, sand flax, or pine rockland habitat would result from upgrading the foam fire retardant system and using that system in conjunction with use of Building 741 as a hangar. No new ground disturbance would result from the upgrade process. This area was investigated and found to have no individuals of Small's milkpea or sand flax (Bradley, 2009b), and no impacts to the species or their potentially suitable habitat would be anticipated.

6.6 Related Construction

SOCSOUTH has identified needs to secure military assets through related construction concurrent with or subsequent to construction of the headquarters facility. Specific plans have not been developed for this related construction on the 84.2-acre site, but the U.S. Army has identified areas within the site where this development would be placed (Figure 2). Construction would occur on of all of these areas and would result in loss of Areas V, W, Y, Z, AA, BB, and CC as well as loss of portions of Areas D, E, and H (Figure 4 and Table 2). Total habitat that may be lost would be approximately 0.68-acre, or 5.2 percent of the available habitat on the 84.2-acre site. Of these potential impacts from related construction, only Area V (0.13- acre) contains high quality habitat. The habitat within the related construction areas that contains Small's milkpea and sandflax (totaling 0.68 acre) would be managed to support the two species until such time as construction disturbance begins. Management actions would likely include mowing to suppress exotic species and restriction of physical encroachment by personnel.

Based on 2009 population counts (Bradley, 2009) and assuming the species loss would be proportional to area lost, there would be a loss of approximately 2,905 individuals of Small's

milkpea (2.9 percent of the estimated total) and 1,835 individuals of sand flax (2.5 percent of the estimated total) from related construction. The Army was able to minimize the impacts to high quality habitat from related construction, and this resulted in the projected relative impacts to the species being approximately half of that projected for habitat.

Conservation measures the U.S. Army would implement in these areas during construction include designation of two Management Areas (Management Areas 1 and 2, which are discussed in Section 6.7), erecting permanent fencing around Management Areas 1 and 2 prior to construction, potential placement of signage to deter unauthorized entry on the fence where it borders construction areas, and placing temporary fencing and/or signage to protect habitat areas containing Small's milkpea and sand flax outside of Management Areas 1 and 2 that would not be disturbed by construction.

6.7 Management Areas 1 and 2

Two management areas (designated Management Areas 1 and 2) would be established within the property to include areas surrounding substantial populations of Small's milkpea and sand flax that may be restored to pine rockland habitat. Management Area 1 encompasses a 12.6-acre area south of St. Lo Boulevard and west of Rabaul Road. Management Area 2 encompasses a 2.1-acre area east of the intersection of Rabaul Road and Bikini Boulevard (Figure 3 and Figure 4). Management Area 1 would protect most of Areas A, B, and D and parts of Areas P, R, and T. Management Area 2 would protect all of Area G. Management Areas 1 and 2 would include 8.5 acres of primarily high quality pine rockland habitat, approximately 65 percent of the pine-rockland habitat on the 84.2-acre site (Table 2; Bradley, 2009a). Management Areas 1 and 2 will be protected by permanent fencing prior to construction activities as part of the military construction project. Following construction, both management areas would be protected from disturbance by the perimeter fencing of the SOCSOUTH facility. Within the SOCSOUTH facility, the fencing would be augmented by signage to prevent unauthorized entry into these sensitive areas.

Based on 2009 population estimates (Bradley 2009a), the management areas would protect 49,254 individuals of Small's milkpea (approximately 49 percent of the total) and 57,725 individuals of sand flax (approximately 78 percent of the total).

Conservation measures the U.S. Army would implement in these areas during construction include erecting permanent fencing around Management Areas 1 and 2 prior to construction as part of the military construction project. Additional signage to deter unauthorized entry also may be placed on the fence where it borders construction areas.

If the property is leased, the U.S. Army understands that enactment of a Conservation Easement (CE) by Miami-Dade County on Management Areas 1 and 2 would be desirable to USFWS. If a CE could be enacted, the property would be protected pursuant to the terms of the conservation easement. The U.S. Army would support such discussions if a suitable easement holder can be identified. Should the U.S. Army acquire the property in fee title, the INRMP would provide for permanent conservation of the two species on the property.

6.8 Long-term Operation and Management

Long-term operation of the SOCSOUTH Headquarters would not further impact Small's milkpea, sand flax, or pine rockland habitat. However, future mission changes or assignment of

new units or tenants to the facility could result in a need for additional structures or infrastructure on the 84.2-acre site. Once the U.S. Army has control of the 84.2-acre site, the U.S. Army would arrange to prepare an INRMP per the Sikes Act (16 United States Code 670 et seq.), which requires that all military installations with significant natural resources prepare an INRMP. The INRMP would be developed in accordance with Army Regulation 200-1 (Environmental Protection and Enhancement) and Department of Defense Instruction 4715.3, and would be developed in coordination with USFWS, and cooperating State Agencies. The INRMP would address the U.S. Army's management responsibilities for the property. The INRMP would incorporate adaptive management and would be evaluated and revised based on data collected during monitoring.

As a proactive measure, the U.S. Army has developed a preliminary management plan (Appendix D) that would guide initial management efforts until the INRMP is developed and serve as a basis of the INRMP. Measures with no potential for impacts to non-target species would be implemented across the 84.2-acre site. Where a management measure would have potential for non-target species impacts that could extend to Small's milkpea and sand flax, the measure would first be tested within a known habitat area that is planned for related construction. After documentation of the efficacy of the management measure and demonstration of no or minimal non-target impacts, the measure would be applied more broadly. Because populations of Small's milkpea and sand flax have remained robust on the 84.2-acre site with no management being implemented for approximately 15 years, the U.S. Army has determined that a deliberate approach to active management would be in the best interest of the species on this property.

The U.S. Army would protect and manage approximately 85 percent of the onsite pine rockland habitat and approximately 96 percent of the onsite population of each species: approximately 96,764 individuals of Small's milkpea and approximately 70,911 individuals of sand flax. The Army was able to minimize the impacts to high quality habitat from construction of the headquarters facility, new utility rights-of-way, related construction, and this resulted in the projected relative impacts to the species being less than one-half of that projected for habitat.

6.9 Cumulative Impact Summary

While there would be unavoidable direct impacts to Small's milkpea and sand flax as a result of the U.S. Army action and related construction, no negative cumulative impacts to these species would be expected. The U.S. Army has considered the existing populations of Small's milkpea and sand flax in developing the design of the SOCSOUTH headquarters and parking and in planning areas for related construction. Direct impacts to the species have been minimized and areas that would be developed were selected to avoid the highest quality habitat on the property.

The highest quality habitat areas on the property will be preserved through two permanent fenced management areas. Other areas containing known populations of these plants outside Management Areas 1 and 2 will be protected by temporary fencing and/or signage during construction activities and then will be designated as sensitive areas by permanent signs. Control of invasive exotic species and improvement of existing habitat within the Management Areas 1 and 2 will provide long-term benefits to the species. No impacts to Small's milkpea and sand flax, beyond those discussed above, would result from future U.S. Army actions without additional prior consultation with USFWS.

7. CONCLUSION

Under the proposed action, The U.S. Army would:

- Construct a new headquarters facility, new utility rights-of-way, and related construction.
- Renovate and operate Building 736 as administrative space.
- Use existing hangar (Building 741) for storage and as a parking area for aircraft.
- Upgrade and operate foam fire retardant system for hangar.
- Develop and implement an INRMP on the 84.2-acre site.
- Operate the facility for the duration of a 50-year lease agreement or acquire the land in fee title.

Implementation of the proposed action would result in minor impacts to Small's milkpea, sand flax, and their habitat, but the proposed action also would preserve most of the habitat present on the 84.2-acre site and manage the preserved areas for the benefit of the species (Table 3).

Table 3
Projected Impacts to and Preservation of Small's Milkpea, Sand Flax, and Their Habitat

Mission Component	Habitat [1] Lost (ac)	Small's Milkpea Lost [2]	Sand flax Lost [2]	Habitat [1] Preserved (ac)	Small's Milkpea Preserved [2]	Sand flax Preserved [2]
Construct Headquarters	0.78	878	836	None	None	None
New Utility Rights-of-Way	0.02	155	179	None	None	None
Renovate and Operate Building 736	None	None	None	None	None	None
Use Building 741	None	None	None	None	None	None
Upgrade and Operate Foam Fire System	None	None	None	None	None	None
Related Construction [3]	0.68	2,905	1,835	None	None	None
Management Areas [4]	None	None	None	11.66	96,764	70,909
Totals	1.48	3,938	2,850	11.66	96,764	70,909
Percentage of Total	11.3%	3.9%	3.9%	88.7%	96.1%	96.1%

[1] Habitat refers to land where either Small's milkpea or sand flax were identified growing in 2009 (Bradley, 2009a).
[2] Numbers based on population estimates from 2009 (Bradley, 2009a).
[3]This includes all or parts of 10 habitat areas containing Small's milkpea and sand flax. These areas would be managed until they are developed.
[3]This area includes Management Areas 1 and 2, which cover 14.7 acres (8.5 acres of pine rockland habitat that contains Small's milkpea and sand flax plus an additional 6.2 acres that may be restored to pine rockland habitat) and additional Small's milkpea and sand flax population areas (all or parts of eight habitat areas totaling 3.16 acres) outside of Management Areas 1 and 2.

Implementation of the proposed action would:

- Eliminate approximately 0.78- acre (approximately 5.9 percent) of the available onsite habitat for Small's milkpea and sand flax through construction and operation of the headquarters facility and associated parking.
- Eliminate 878 individuals of Small's milkpea (approximately 0.9 percent of the estimated onsite population) through development of the headquarters facility and associated parking.
- Eliminate 836 individuals of sand flax (approximately 1.1 percent of the estimated onsite population) through development of the headquarters facility and associated parking.
- Eliminate approximately 0.02- acre (approximately 0.2 percent) of the available onsite habitat for Small's milkpea and sand flax through construction of utility lines along St. Lo Boulevard and Rabaul Road.
- Eliminate 155 individuals of Small's milkpea (approximately 0.15 percent of the estimated onsite population) through construction of utility lines along St. Lo Boulevard and Rabaul Road.
- Eliminate 179 individuals of sand flax (approximately 0.24 percent of the estimated onsite population) through construction of utility lines along St. Lo Boulevard and Rabaul Road.
- Potentially eliminate approximately 0.68- acre (approximately 5.2 percent) of the available onsite habitat for Small's milkpea and sand flax through related construction.
- Potentially eliminate 2,905 individuals of Small's milkpea (approximately 2.9 percent of the estimated onsite population) through related construction.
- Potentially eliminate 1,835 individuals of sand flax (approximately 2.5 percent of the estimated onsite population) through related construction.
- Conserve and manage approximately 17.86 acres for Small's milkpea and sand flax. This area includes Management Areas 1 and 2, which cover 14.7 acres (8.5 acres of pine rockland habitat that contains Small's milkpea and sand flax plus an additional 6.2 acres that may be restored to pine rockland habitat) and additional Small's milkpea and sand flax population areas (all or parts of eight habitat areas totaling 3.16 acres) outside of Management Areas 1 and 2. The approximately 17.86 acres would include 96,764 individuals of Small's milkpea (approximately 96 percent of the estimated onsite population) and 70,909 individuals of sand flax (approximately 96 percent of the estimated onsite population) based on 2009 estimates (Bradley, 2009a).
- Prepare and implement an Integrated Natural Resources Management Plan (INRMP) pursuant to Army Regulation 200-1 to manage for Small's milkpea and sand flax on 17.86 acres of suitable habitat within the 84.2-acre site. Implementation of the INRMP would be funded by the U.S. Army through annual appropriations beginning in FY-13.

Conservation measures the U.S. Army would implement include designation of two Management Areas (Management Areas 1 and 2, which cover 14.7 acres [8.5 acres of pine rockland habitat that contains Small's milkpea and sand flax plus an additional 6.2 acres that may be restored to pine rockland habitat]), erecting permanent fencing around Management Areas 1 and 2 prior to construction, potential placement of signage to deter unauthorized entry on the fence where it borders construction areas, placing temporary fencing and/or signage to protect habitat areas containing Small's milkpea and sand flax outside of Management Areas 1 and 2 that would not be disturbed by construction, and develop and implement an INRMP for the property that would direct conservation and management of the species during the operation of the SOCSOUTH facility.

Once the U.S. Army has control of the property, an INRMP will be developed and implemented to address Small's milkpea, sand flax, and pine rockland habitat on the property. The U.S. Army would protect and manage approximately 85 percent of the onsite pine rockland habitat and approximately 96 percent of the onsite population of each species: approximately 96,764 individuals of Small's milkpea and approximately 70,909 individuals of sand flax. No negative cumulative impacts to the species would be expected.

Based on this analysis, the U.S. Army has determined that allowing the proposed site development, long-term operation of the facility, new utility rights-of-way, and related construction in specified areas without the proposed mitigation may affect, and is likely to adversely affect the populations of Small's milkpea and sand flax that occur on the 84.2-acre site. However, the U.S. Army anticipates that, with management for the species and their habitat through development and implementation of an INRMP, construction and operation of the headquarters facility, new utility rights-of-way, and related construction would not significantly impact Small's milkpea and sand flax and that implementation of onsite management would be beneficial to both species.

If funding is secured for the project, the Army will satisfy all requirements of this Section 7 consultation and minimize the impact of the proposed action species through development and implementation of an INRMP to address invasive exotic species control and annual maintenance and monitoring efforts on the property

8. REVIEW OF LITERATURE AND OTHER INFORMATION

All pertinent literature was reviewed. The following summary indicates the primary references utilized during preparation of this BA.

Bradley, K.A. 2009a. Assessment of Rare Plant Species and Pine Rockland Habitat at Proposed U.S. Army Special Operations Command South Headquarters Adjacent to the U.S. Air Reserve Base, Homestead, Florida. Contract No. W91278-09-P-0278.

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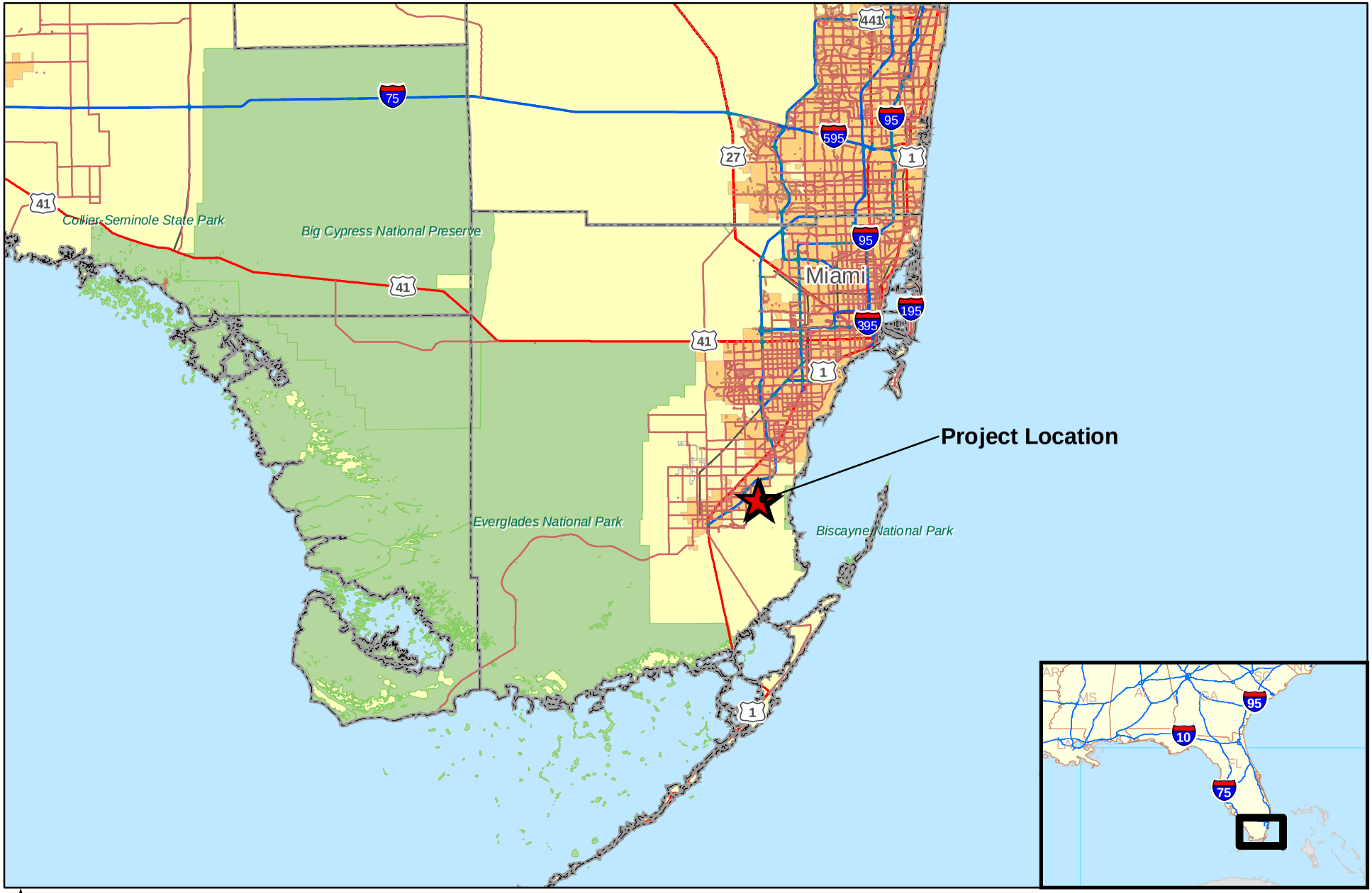

Figure 1
Site Location
SOCSOUTH BA

\\GALILEO\PROJ\HOMESTEADAIRRESERVE_383839\MAPFILES\BA\FIGURE1.MXD LSUBER1 11/30/2009 11:35:31

CH2MHILL

Related Construction
HQ Access
HQ Building
Outer Boundary

Data Source:
Roads, Counties, Urban Areas: ESRI
Imagery: ArcGIS Online 2007

N

0 250 500 Feet

Figure 2
Proposed SOCSOUTH Headquarters Location and Related Construction Areas
SOCSOUTH

CH2MHILL

Rare Plant Colony
Management Areas
Outer Boundary

Data Source:
Roads, Counties, Urban Areas: ESRI
Imagery: ArcGIS Online 2007

N

0 250 500 Feet

Figure 3
Location of Rare Plant Populations and Management Areas
SOCSOUTH BA

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CH2MHILL

Related Construction
HQ Building
HQ Access
Rare Plant Colony
Management Areas
Outer Boundary

Data Source:
Roads, Counties, Urban Areas: ESRI
Imagery: ArcGIS Online 2007

N

0 250 500 Feet

Figure 4
Proposed Impacts and Management Areas
SOCSOUTH BA

CH2MHILL

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APPENDIX A – ASSESSMENT OF RARE PLANT SPECIES AND PINE ROCKLAND HABITAT AT PROPOSED U.S. ARMY SPECIAL OPERATIONS COMMAND SOUTH HEADQUARTERS ADJACENT TO THE U.S. AIR RESERVE BASE, HOMESTEAD, FLORIDA

Assessment of Rare Plant Species and Pine Rockland Habitat at Proposed U.S. Army Special Operations Command South Headquarters Adjacent to the U.S. Air Reserve Base, Homestead, Florida

Contract No. W91278-09-P-0278

Keith A. Bradley
July 22, 2009

Submitted by:
The Institute for Regional Conservation
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Background

A preliminary survey of the proposed SOCSOUTH HQ facility on 90 acres of county-owned lands adjacent to the U.S. Air Force Reserve Base, Homestead, Florida revealed the presence of two rare plant species. These were *Galactia smallii* (Small's milkpea) which is listed as Endangered under the Endangered Species Act (ESA), and *Linum arenicola* (Sand flax), which is a candidate for listing under the ESA. These species were found in many parts of the 90-acre tract, at varying densities. The two species were growing in relictual pine rockland habitats that had formerly been cleared, but later regenerated. The degree of habitat quality was found to vary from high to low.

It was determined that a survey should be conducted to determine the distribution of both *Galactia smallii* and *Linum arenicola,* and the densities of each species. In addition, where rare plants did occur, an assessment of habitat quality and management recommendations was also desired.

Methods

To perform a baseline, systematic assessment of the 90-acre tract, a grid consisting of 25 x 25 meters was overlain on the project boundary. Using a Global Positioning System (GPS) accurate to 1 meter (m), the entire project site was surveyed following this grid system. The center of each grid was walked, at a minimum. If potential habitat for any rare species considered as Endangered, Threatened, or a Candidate by the U.S. Fish and Wildlife Service was encountered, the cell was walked more thoroughly to determine presence or absence. A preliminary visual assessment of density of each rare species in the cell was given: low, medium, high, or very high density. These roughly equate to observing the following densities while standing in a representative station within each 25x25 m cell: Low = 1-2 plants, moderate = 3-5 plants, high = 6-10 plants, very high = >10 plants. In addition, pine rockland habitat quality was also recorded (low, medium, high). If habitat quality varied within a cell this was recorded. The grassy strip between the fence line and the runway was not walked, but no rare plants and no suitable habitat were visible through the fence.

Following the initial surveys, plot sampling was done to determine densities of rare plant species. In places where either species was determined to be of medium or higher densities, randomly placed 1 x 1 m plots were placed within populations of rare plants, and individuals of each species were counted. In areas of lower density, individuals of each species were counted.

Polygons of rare plant habitat were created from data generated during the initial grid survey. After polygons were created, a second site assessment was done to verify that polygon boundaries accurately delineated the habitats present in each rare plant location. The vegetation within each polygon was assessed. This was a qualitative assessment based on my experience in pine rockland ecosystems throughout southern Florida. Factors that were considered in assessing habitat quality were dominance of pine rockland plant species versus exotic or native weedy plant species and diversity of pine rockland plant species. Abundance of

the two rare plant species was not considered as an indicator of habitat quality since the intent was to assess overall quality of pine rockland habitat, not just that of one or two plant species.

Results

No other species considered as Endangered, Threatened, or Candidates by the US Fish and Wildlife Service were found other than *Galactia smallii* and *Linum arenicola*. Twenty three species listed by the State of Florida Department of Agriculture and Consumer Services as Endangered, Threatened, or Commercially Exploited were found on the property (Table 3). While most of these species are State-listed, they are typical components of pine rocklands throughout southern Florida. An exception is *Ernodea cokeri*, which is extremely rare in the state, and is listed as Critically Imperiled by the Florida Natural Areas Inventory and The Institute for Regional Conservation. A small population of this species was found in Area G.

Galactia smallii and *Linum arenicola* were found in 30 different locations covering 13.2 acres (Map 1, Table 1). These were distributed widely on the 90-acre tract, occupying all areas but the northeastern portion. It is estimated that approximately 100,000 *Galactia smallii* and 74,000 *Linum arenicola* occur on the site. Densities ranged as high 4.5 plants m^2 for *Linum arenicola* and 8.0 plants m^2 for *Galactia smallii.*

Of the 30 areas with rare plants, Areas A, B, C, and G contain the highest quality habitat. These 4 areas cover 9.1 acres and together contain approximately 50,000 *Galactia smallii* and *61,500 Linum arenicola*. These areas not only contain rare plant species, but are dominated by native pine rockland species. They have ground covers dominated by native grasses, and a diverse array of other native plant species.

Overall pine rockland and habitat quality on the project site does not always correlate with density of rare plant species. Many areas where *Galactia smallii* is dense are dominated by the exotic lawn grass *Zoysia tenuifolia*. *Galactia* has adapted to this artificial habitat, whereas few other native plant species manage to occur there. Examples include those mapped as Areas J and F.

Below is a description of each of the 27 areas where rare plants were found. Map 1 delineates these areas. These are also summarizes in Table 1.

A. *Area: 6.05 acres* *Galactia smallii*: 33,735 *Linum arenicola*: 37,287
   Good quality habitat, among the best on the base and with the largest contiguous area. It contains the largest population sizes of both *Galactia smallii* and *Linum arenicola*. Area A is dominated by native grasses and herbs, including *Schizachyrium gracile, S. sanguineum,* and *Andropogon ternarius.* A diverse array of additional pine rockland plant species is also present including *Lantana involucrata, Coccothrinax argentata, Crossopetalum ilicifolium,* and *Ipomoea microdactyla.* A few *Pinus elliottii* var. *densa* are also present.

Patches of *Zoysia tenuifolia* are scattered across this area, limiting the diversity of native species (except G*alactia smallii*). There are also occasional plants of *Schinus terebinthifolius, Casuarina equisetifolia, Lantana camara,* and *Neyraudia reynaudiana.*

B. *Area: 1.10 acres* *Galactia smallii*: 10,870 *Linum arenicola*: 3,705
Habitat varies in quality in Area B, from good quality with a diverse assemblage of native species in the westernmost portions, to *Zoysia* dominated, low diversity (but with high density of *Galactia smallii*) in the east. Higher quality areas are dominated by *Schizachyrium gracile, S. sanguineum,* and *Andropogon ternarius*. Several *Pinus elliottii* var*. densa* exist here.

There are large colonies of exotic plant species around the perimeters, and some clusters within the interior of this Area. These include *Schinus terebinthifolius, Leucaena leucocephala,* and the native but weedy *Chromolaena odorata.* There are also a number of cultivated *Ixora coccinea.*

C. *Area: 0.69 acres* *Galactia smallii*: Trace *Linum arenicola*: 4,494
High quality habitat with dense colonies of *Linum arenicola. Galactia smallii* is rare here and was not detected in sample plots. Most areas are dominated by a diverse assemblage of native species. Dominant grasses include *Schizachyrium gracile* and *S. sanguineum.* There are more native shrubs and palms here than in most other areas, including *Coccothrinax argentata, Byrsonima lucida*, and *Psidium longipes.*

Exotic plant species occur at low densities. There are patches of *Zoysia tenuifolia* which suppress native species. There are also patches of *Schinus terebinthifolius, Neyraudia reynaudiana,* and *Lantana camara*, particularly around the perimeter.

D. *Area: 0.33* acres *Galactia smallii*: 1,116 *Linum arenicola*: 2,903
Variable in quality, portions along Rabaul Road are of the best quality, with patches of good habitat along the railroad easement. Typical native species include *Schizachyrium gracile, S. sanguineum, Phyllanthus pentaphyllus* var*. floridana, Andropogon longiberbis, Rhynchospora floridensis, Aristida purpurascens,* and *Chiococca parvifolia.*

Exotic plant species are frequent, including *Neyraudia reynaudiana, Schinus terebinthifolius, Casuarina equisetifolia,* and *Lantana camara*. *Zoysia tenuifolia* is present, but currently very sparse. There is also a perimeter of *Schinus terebinthifolius* around the best.

E. *Area: 0.81 acres* *Galactia smallii*: 14,471 *Linum arenicola*: 2,199
This is medium quality habitat due to dense infestations of the exotic grass Zoysia tenuifolia. *Galactia smallii* is common in this exotic grass, but *Linum arenicola* is mainly restricted to areas where the grass does not occur along the embankments of the ditch which runs across the area. Few other native pine rockland plant species occur here in

any abundance, except along the ditch banks. Native species include *Rhynchospora floridensis, Schizachyrium sanguineum,* and *S. gracile.*

F. *Area: 0.54 acres* *Galactia smallii*: 12,379 *Linum arenicola*: Trace
Medium to good quality habitat with dense colonies of *Galactia smallii*. *Linum arenicola* is present, but only a few plants were detected in sample plots. More *Linum* does occur along the ditch banks within the area, but random sample plots did not fall in this area. Much of the area is dominated by the exotic *Zoysia tenuifolia*, but native grasses such as *Schizachyrium sanguineum, S. gracile,* and *Andropogon ternarius* dominate small patches.

G. *Area: 1.23* acres *Galactia smallii*: 5,174 *Linum arenicola*: 15,928
High quality habitat with dense colonies of *Galactia smallii* and *Linum arenicola*. Most areas are dominated by a diverse assemblage of native species. Dominant grasses include *Schizachyrium gracile, S. sanguineum and Paspalum caespitosum.* The extremely rare, State-listed Endangered *Ernodea cokeri* was also found here.

Exotic plant species occur at low densities. There are patches of *Zoysia tenuifolia* which suppress native species. There are also patches of *Schinus terebinthifolius, Neyraudia reynaudiana,* and *Lantana camara*, particularly around the perimeter.

H. *Area: 0.26 acres* *Galactia smallii*: 8,395 *Linum arenicola*: 2,799
Medium quality habitat with patches of the exotic *Zoysia tenuifolia*, and also colonies of native grasses such as *Schizachyrium sanguineum* and *S. gracile.*

I. *Area: 0.21 acres* *Galactia smallii*: Trace *Linum arenicola*: 3,935
Medium quality habitat, but with a high density of *Linum arenicola. Galactia smallii* is present, but at such low densities that it was not detected in sample plots. Native species include the grasses *Schizachyrium sanguineum, S. gracile, and Aristida purpurascens.* Exotic plants include sparse *Zoysia tenuifolia*, and also plants of *Neyraudia reynaudiana* and *Schinus terebinthifolius*.

J. *Area: 0.61 acres* *Galactia smallii*: 13,614 *Linum arenicola*: Trace
Medium quality habitat. This Area is dominated by the exotic *Zoysia tenuifolia. Some native grass species occur here, including Andropogon ternarius* and *Schizachyrium sanguineum. Linum arenicola* occurs here, but densities were too low to be detected in sample plots.

K. *Area: 0.04 acres* *Galactia smallii*: 205 *Linum arenicola*: 359
This is a small area, but with good quality habitat and high densities of both *Galactia smallii* and *Linum arenicola.* It is dominated by native grasses including *Schizachyrium gracile* and *S. sanguineum,* and includes a diverse assemblage of additional native plant species. There are dense colonies of the exotic grass *Zoysia tenuifolia.*

M. *Area: 0.01 acres* *Galactia smallii*: 5 *Linum arenicola*: 0
Poor quality habitat dominated by the exotic *Zoysia tenuifolia*. Only a few *Galactia smallii* are present.

O. *Area: 0.004* acres *Galactia smallii*: 5 *Linum arenicola*: 0
Poor quality habitat dominated by the exotic *Zoysia tenuifolia*. Only a few *Galactia smallii* are present.

P. *Area: 0.25 acres* *Galactia smallii*: 75 *Linum arenicola*: 0
Galactia smallii is scattered at low densities throughout this patch, and most habitat quality is poor. There are small pockets of better habitat dominated *Schizachyrium gracile* and other native species, but otherwise exotic and weedy species are common, including *Zoysia tenuifolia, Chromolaena odorata, Lantana camara,* and *Stenotaphrum secundatum.*

Q. *Area: 0.02* acres *Galactia smallii*: 5 *Linum arenicola*: 0
A small area of poor habitat dominated by the exotic *Zoysia tenuifolia*, with a few plants of *Galactia smallii.*

R. *Area: 0.35 acres* *Galactia smallii*: 50 *Linum arenicola*: 100
Patches of good habitat along edges of railroad easement, dominated by *Schizachyrium gracile and Schizachyrium sanguineum.* Exotic plant species are common, including *Neyraudia reynaudiana, Schinus terebinthifolius, Zoysia tenuifolia,* and *Leucaena leucocephala.*

S. *Area: 0.05 acres* *Galactia smallii*: 50 *Linum arenicola*: 0
Poor quality habitat. Some native species occur here, such as *Schizachyrium gracile,* but exotics and weeds are dominant, particularly *Zoysia tenuifolia*¸ but also *Stenotaphrum secundatum, Chromolaena odorata, Eupatorium capillifolium, Poinsettia heterophylla,* and *Lantana camara.*

T. *Area: 0.02 acres* *Galactia smallii*: 25 *Linum arenicola*: 0
Small area with medium quality habitat dominated by native species including *Schizachyrium sanguineum* and *Schizachyrium gracile.* Exotic and weedy species include *Lantana camara* and *Chromolaena odorata.*

V. *Area: 0.13 acres* *Galactia smallii*: 0 *Linum arenicola*: 20
Good quality habitat, but a very small area, and low densities of *Linum arenicola.* This is dominated by native grasses including *Schizachyrium gracile* and *S. sanguineum.*

W. *Area: 0.004 acres* *Galactia smallii*: 0 *Linum arenicola*: 10
Poor quality habitat dominated by the exotic *Zoysia tenuifolia*. Only a few *Linum arenicola* are present.

X. *Area: 0.07 acres* *Galactia smallii*: 413 *Linum arenicola*: 0
A small area of medium quality habitat. It is dominated by the exotic *Zoysia tenuifolia*, with some native grasses including *Schizachyrium sanguineum* and *S. gracile.*

Y. *Area: 0.12 acres* *Galactia smallii*: 20 *Linum arenicola*: 20
This is medium quality habitat with some native grasses including *Schizachyrium sanguineum* and *Paspalum caespitosum.* Otherwise native plant diversity is low. Small populations of *Galactia smallii* and *Linum arenicola* were found here.

Z. *Area: 0.02 acres* *Galactia smallii*: 25 *Linum arenicola*: 0
Poor quality habitat dominated by the exotic *Zoysia tenuifolia*. Only a few *Galactia smallii* are present.

AA. *Area: 0.004* acres *Galactia smallii*: 5 *Linum arenicola*: 0
Poor quality habitat dominated by the exotic *Zoysia tenuifolia*. Only a few *Galactia smallii* are present.

BB. *Area: 0.09* acres *Galactia smallii*: 25 *Linum arenicola*: 0
Poor quality habitat with sparse *Galactia smallii.* This area is dominated by the exotic *Zoysia tenuifolia*, with only a few native species.

CC. *Area: 0.07* acres *Galactia smallii*: 20 *Linum arenicola*: 0
Poor quality habitat dominated by the exotic *Zoysia tenuifolia*. Only a few *Galactia smallii* are present.

DD. *Area: 0.06* acres *Galactia smallii*: 20 *Linum arenicola*: 0
A small, narrow band of medium quality habitat along the edge of a parking lot with native species, there are small patches of *Galactia smallii*. Native species include S*chizachyrium gracile, Paspalum caespitosum, Eustachys petraea, Aristida purpurascens,* and *Andropogon longiberbis.*

There are a few patches of *Zoysia tenuifolia,* but they are low density. There are also plants of *Schinus terebinthifolius, Leucaena leucocephala, Neyraudia reynaudiana,* and *Leucaena leucocephala.*

Pine Rockland Management Recommendations

All pine rockland areas that were delineated have been disturbed. They were all cleared mechanically and all understory palms and shrubs, and almost all trees, were removed. Following clearing native grasses and herbaceous species were able to recolonize and persist, although native shrub species and *Pinus elliottii* var. *densa* have not recruited very successfully in most places (only a few *Pinus* were seen on the site). Of great help in maintaining this recovered pine rockland habitat was infrequent mowing before 1992 which acted as a surrogate for periodic fires, a necessary disturbance in pine rocklands. Mowing helped to

maintain a low density of hardwoods, particularly exotic hardwoods, and weedy native species such as *Chromolaena odorata,* but was infrequent enough to allow grasses and herbaceous species to flower and set fruit.

Management of the better quality habitats on the project site, as determined by the USFWS and US Army Corps of Engineers, should consist of eliminating exotic and weedy plant species, transitioning the current mowing regime to a prescribed fire program, and augmenting the palm/shrub and tree layers. These are discussed below.

Exotic Plant Control. Even where habitat quality is highest, there are usually colonies of exotic plant species. The most common species on the site are *Schinus terebinthifolius, Zoysia tenuifolia*, and *Neyraudia reynaudiana*, although others such as *Lantana camara* and *Leucaena leucocephala* are also frequent. Control of most of these species is very straightforward using herbicides. However, *Zoysia tenuifolia* is more problematic to control because native species, including very commonly on the site *Galactia smallii*, grow entangled in the *Zoysia* ground cover. Using herbicides as a control is problematic because in most locations 100 percent of the area would have to be sprayed with herbicide, which would kill not only *Zoysia* but all native species. Several strategies should be employed to eliminate this species. Where no other native species occur (in patches of *Zoysia* surrounded by better habitat) an herbicide such as Roundup should be used. Prescribed fire can be used for some control, with Roundup being applied several weeks after a burn while native plant densities are low and cover of *Zoysia* is still low. A very effective method, although time consuming, is to cut stems of all native plant species by hand at ground level. The following day after calluses have formed on cut stems, the entire area can safely be sprayed with Roundup to kill the *Zoysia.* Native species will then resprout.

Mowing and Prescribed Burning. While periodic mowing prior to Hurricane Andrew was effective in maintaining the pine rockland habitat, it is not an effective long-term solution. It should be replaced with prescribed fire, which will provide better habitat for an even wider array of native plant species than are already present. In the absence of fire the pine rockland areas should still be mowed at intervals of 1-2 years in the winter, although experimentation should be done to ensure that species are flowering and setting seed during this interval. Prescribed fires are preferred, and should be conducted at 3-7 year intervals. For long-term management of smoke levels during burns, shorter intervals are preferred to prevent fuel accumulation between fires.

Plantings. Additional palms, shrubs, and trees are needed to re-create the structural diversity of a natural pine rockland fragment. The use of prescribed burns rather than mowing will probably allow for more recruitment of native hardwoods, so direct planting of shrubs and palms is not recommended at this time. Pine tubelings should be planted in all areas to achieve a canopy of no more than 25 percent cover. Plantings should be done after prescribed fires to allow maximum growth between burns. Plantings should also be staggered to create a multi-aged stand, with sparse densities of trees planted following each burn until the desired density is reached over 10-15 years.

Additional Exotic Control/Colonization/Restoration Areas. In addition to exotic plant control within rare plant colonies described above, addition exotic control could serve to expand habitat of rare plant species and pine rockland on the site. Many of the perimeters of rare plant populations contain colonies of exotic plants that have eliminated native plant assemblages. These areas should be cleared mechanically to eliminate all plants as well as loose organic soils, while minimizing disturbance to the bedrock. Follow up management of newly recruiting exotic plant species and conducting prescribed burns would serve to allow succession to pine rockland. This is especially true around Areas A, B, C, and G where there are already diverse, thriving assemblages of pine rockland plant species and rare plant species that would colonize into restoration areas.

Table 1: Summary of rare plant population sizes by Area

Area	Acres	*G. smallii*	*L. arenicola*
A	6.05	33,735	37,287
AA	0.004	5	-
B	1.10	10,870	3,705
BB	0.09	25	-
C	0.69	Trace	4,494
CC	0.07	20	-
D	0.33	1,116	2,903
DD	0.06	20	-
E	0.81	14,471	2,199
F	0.54	12,379	Trace
G	1.23	5,174	15,928
H	0.26	8,395	2,799
I	0.21	Trace	3,935
J	0.61	13,614	Trace
K	0.04	205	359
M	0.01	5	-
O	0.004	5	-
P	0.25	75	-
Q	0.02	5	-
R	0.35	50	100
S	0.05	50	-
T	0.02	25	-
V	0.13	-	20
W	0.004	-	10
X	0.07	413	-
Y	0.12	20	20
Z	0.02	25	-

Table 2: Scientific and Common Names used in text

Scientific Name	Common Name
Andropogon longiberbis	Hairy bluestem
Andropogon ternarius	Splitbeard bluestem
Aristida purpurascens	Arrowfeather threeawn
Byrsonima lucida	Locust berry
Casuarina equisetifolia	Australian-pine
Chiococca parvifolia	Pineland snowberry
Chromolaena odorata	Jack-in-the-bush
Coccothrinax argentata	Silver palm
Crossopetalum ilicifolium	Quail berry
Ernodea cokeri	Coker's beach creeper
Eupatorium capillifolium	Dogfennel
Eustachys petraea	Pinewoods fingergrass
Galactia smallii	Small's milkpea
Ipomoea microdactyla	Man-in-the-ground
Ixora coccinea	Scarlet jungleflame, Ixora
Lantana camara	Shrubverbena
Lantana involucrata	Buttonsage
Leucaena leucocephala	White leadtree
Linum arenicola	Sand flax
Neyraudia reynaudiana	Burma reed
Paspalum caespitosum	Blue crowngrass
Phyllanthus pentaphyllus var. *floridana*	Fivepetal leafflower
Pinus elliottii var. *densa*	Slash pine
Poinsettia heterophylla	Fiddler's spurge
Psidium longipes	Long stalked stopper
Rhynchospora floridensis	Florida whitetop
Schinus terebinthifolius	Brazilian-pepper
Schizachyrium gracile	Wire bluestem
Schizachyrium sanguineum	Crimson bluestem
Stenotaphrum secundatum	St. Augustine grass
Zoysia tenuifolia	Manila templegrass

Table 3: State-listed Endangered, Threatened, and Commercially Exploited Plant Species found on the project site

Scientific Name	Common Name	State List
Angadenia berteroi	Pineland golden trumpet	Threatened
Byrsonima lucida	Locustberry	Threatened
Chaptalia albicans	White sunbonnets	Threatened
Coccothrinax argentata	Florida silver palm	Threatened
Crossopetalum ilicifolium	Quailberry	Threatened
Cynanchum blodgettii	Blodgett's swallowwort	Threatened
Ernodea cokeri	Coker's beach creeper	Endangered
Galactia smallii	Small's milkpea	Endangered
Ipomoea microdactyla	Man-in-the-ground	Endangered
Jacquemontia curtisii	Pineland clustervine	Threatened
Lantana depressa	Rockland shrubverbena	Endangered
Linum arenicola	Sand flax	Endangered
Phyla stoechadifolia	Southern fogfruit	Endangered
Poinsettia pinetorum	Pineland spurge	Endangered
Psidium longipes	Long stalked stopper	Threatened
Pteris bahamensis	Bahama ladder brake	Threatened
Sachsia polycephala	Bahama sachsia	Threatened
Scutellaria havanensis	Havana scullcap	Endangered
Smilax havanensis	Everglades greenbrier	Threatened
Spermacoce terminalis	Everglades false buttonweed	Threatened
Thelypteris augescens	Abrupt-tip maiden fern	Threatened
Tragia saxicola	Rockland noseburn	Threatened
Zamia integrifolia	Coontie	Commercially Exploited

Figure 1: *Linum arenicola* (photo by Keith A. Bradley)

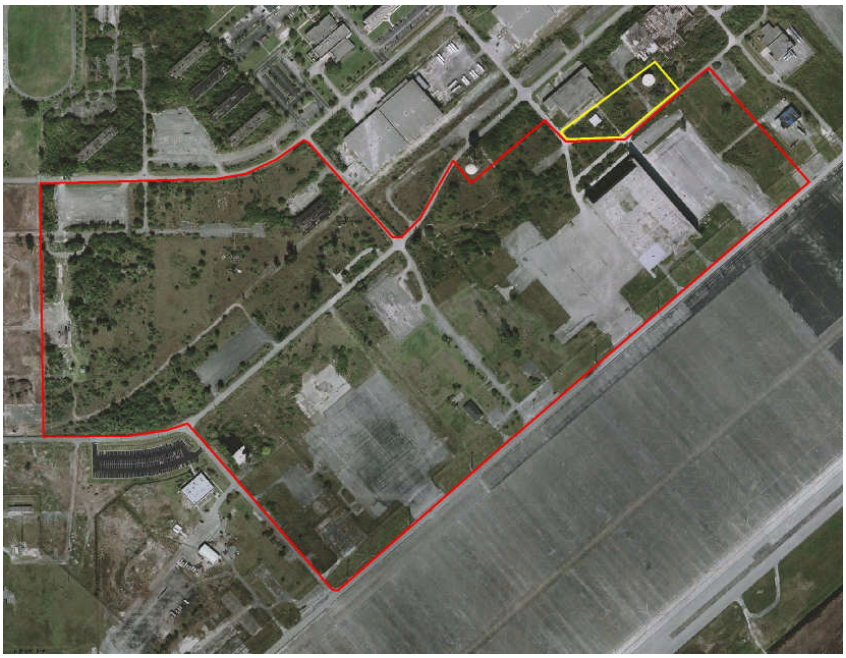
Figure 2: *Galactia smallii* (photo by Richard Reaves)

APPENDIX B – ADDENDUM: ASSESSMENT OF RARE PLANT SPECIES AND PINE ROCKLAND HABITAT AT PROPOSED U.S. ARMY SPECIAL OPERATIONS COMMAND SOUTH HEADQUARTERS ADJACENT TO THE U.S. AIR RESERVE BASE, HOMESTEAD, FLORIDA

Addendum:
Assessment of Rare Plant Species and Pine Rockland Habitat at Proposed U.S. Army Special Operations Command South Headquarters Adjacent to the U.S. Air Reserve Base, Homestead, Florida

Purchase Order: 936618

Keith A. Bradley
November 5, 2009



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Atlanta, GA 30328

Background

A July 2009 survey of the proposed SOCSOUTH HQ facility on 90 acres of county-owned lands adjacent to the U.S. Air Force Reserve Base, Homestead, Florida revealed the presence of two rare plant species. These were *Galactia smallii* (Small's milkpea) which is listed as Endangered under the Endangered Species Act (ESA), and *Linum arenicola* (Sand flax), which is a candidate for listing under the ESA. These species were found in many parts of the 90-acre tract, at varying densities. It was estimated that approximately 100,000 *G. smallii* and 74,000 *L. arenicola* existed on the property.

In November 2009 an additional 1.7 acres (Map 1) was surveyed to the northwest of the original 90 acre tract to determine if endangered species populations existed in that area. Methods used were identical to those used in the original survey. Property boundaries were provided by CH2MHILL.

Results

No species considered as Endangered, Threatened, or Candidates by the US Fish and Wildlife Service were found. No plant species considered as Endangered, Threatened, or Species of Special Concern by the State of Florida were found.

Habitat quality on the property was found to be very low. Almost all of the property was dominated by exotic and weedy native plant species. Dominant exotic species included *Neyraudia reynaudiana, Pennisetum purpureum, Schinus terebinthifolius, Spermacoce verticillata, Bothriochloa pertusa,* and a few individuals of *Casuarina equisetifolia*. Weedy native species included *Andropogon glomeratus* var. *pumilus*, *Chromolaena odorata*, and *Poinsettia heterophylla* (see Table 1 for common names of plants). These exotic and weedy native species are all indicators of heavily disturbed soils and poor habitat for target rare plant species.

Only one small area provided potential habitat for rare plants. This was located at N25.49698; W80.38646, in the center of the property adjacent to a ditch. The area was about 500 square feet in area, and was dominated by grasses typical of pine rockland habitat including *Schizachyrium gracile, Muhlenbergia capillaris,* and *Eragrostis elliottii.* Diversity of other native pine rockland species was low here, and no rare species were observed.

Map 1: November 2009 Survey Area

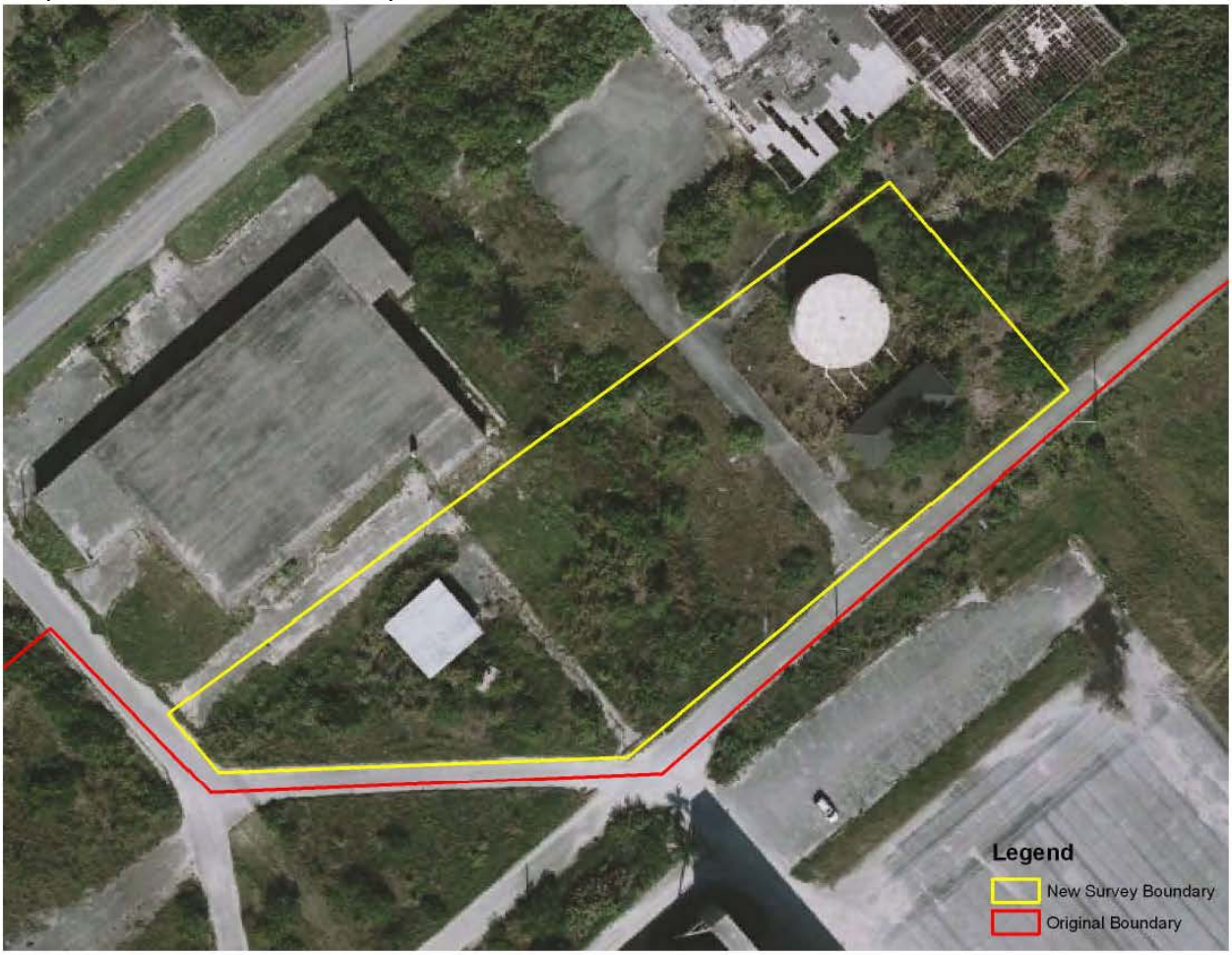

Table 1: Scientific and Common Names used in text

Scientific Name	Common Name
Andropogon glomeratus var. pumilus	Bushy Bluestem
Bothriochola pertusa	Pitted Beardgrass
Casuarina equisetifolia	Australian-pine
Chromolaena odorata	Jack-in-the-bush
Eragrostis elliottii	Field Lovegrass
Galactia smallii	Small's milkpea
Linum arenicola	Sand flax
Muhlenbergia capillaris	Hairawn Muhly
Neyraudia reynaudiana	Burma reed
Pennisetum purpureum	Elephant grass
Poinsettia heterophylla	Fiddler's spurge
Schinus terebinthifolius	Brazilian-pepper
Schizachyrium gracile	Wire bluestem
Spermacoce verticillata	Shrubby False Buttonweed

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APPENDIX C — PRELIMINARY MANAGEMENT PLAN FOR SMALL'S MILKPEA AND SAND FLAX ON U.S. SPECIAL OPERATIONS COMMAND SOUTH HEADQUARTERS ADJACENT TO THE U.S. AIR RESERVE BASE, HOMESTEAD, FLORIDA

PRELIMINARY MANAGEMENT PLAN

for

Small's Milkpea (*Galactia smallii*) and Sand Flax (*Linum arenicola*)
on
U.S. Army Special Operations Command South Headquarters,
Homestead, Florida

Prepared For
United States Army Garrison – Miami
and
Special Operations Command – South

Prepared By
CH2M HILL
July 2010

PRINTED ON RECYCLED PAPER

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LIST OF ACRONYMS, ABBREVIATIONS, AND SYMBOLS

Army	United States Army
INRMP	Integrated Natural Resources Management Plan
IPP	Invasive Pest Plant
m	Meter
SOCSOUTH	Special Operations Command SOUTH
U.S.	United States

1. INTRODUCTION

The U.S. Army (Army) Special Operations Command SOUTH (SOCSOUTH) Headquarters facility is proposed on a property containing a Federal endangered plant, Small's milkpea (*Galactia smallii*) and a Federal candidate plant species, sand flax (*Linum arenicola*). Development of the headquarters facility will result in the unavoidable loss of approximately four percent of the population of each species on the property. One of the requirements resulting from formal section 7 consultation under the Endangered Species Act was that the Army develop a management plan for implementation to conserve Small's milkpea and sand flax, and their habitat, on the property where the new SOCSOUTH Headquarters would be located.

This Preliminary Management Plan identifies measures that may be implemented to manage the habitat for Small's milkpea and sand flax on approximately 17.66 acres within the property. This area includes Management Areas 1 and 2, which cover 14.7 acres and include 8.5 acres of pine rockland habitat plus an additional 6.2 acres that may be restored to pine rockland habitat, and additional population areas (totaling 3.16 acres) outside of Management Areas 1 and 2. The additional 3.16 acres are identified by the population polygons identified during site survey (Bradley, 2009a). No surrounding land is included with the additional 3.16 acres because restoration of surrounding land would not be practical. This preliminary management Plan will be used as a basis for development of an Integrated Natural Resources Management Plan (INRMP) that will guide long-term management for these species.

2. SITE DESCRIPTION

The Army will lease an 84.2-acre property from Miami-Dade County for construction of the new SOCSOUTH Headquarters facility. The property is in Dade County, approximately 4 miles northeast of Homestead, Florida. Homestead Air Reserve Base borders the site to the east, south, and west, with the air strip adjacent to the site along the eastern border. The area north of the property also is owned by Miami-Dade County and being developed as an industrial park.

The site is unoccupied and consists mostly of old building foundations and unused parking lots. Six structures and a Dade County sanitary sewer lift station remain on the property, including an old office building (Building 736), a large hangar (Building 741), a 500,000-gallon aboveground storage tank and associated pump house (Building 743), an open-sided shed (Building 746), and a small un-numbered shed containing an air compressor (Figure 2). The headquarters building and its associated parking would be constructed near the southwestern boundary of the property. Additional areas on the property would be used or developed in the future (Figure 1). The remainder of the property is not planned for development and includes Management Area 1, Management Area 2, and an additional 3.16 acres of Small's milkpea/sand flax habitat.

Prior to development, the area was predominantly native pine rockland habitat. This sensitive vegetation community occurs only in southern Miami-Dade County, the Florida Keys, and parts of the Bahamas that are restricted to outcrops of three limestone formations: Miami Limestone, Key Largo Limestone, and Tamiami Limestone (Austin, 1997; Taylor, 1998). Remnant native pine rockland communities likely still occur within and around the 84.2-acre property. Pine rockland species previously observed on the property include Bahama brake (*Pteris bahamensis*), locustberry (*Byrsonima lucida*), pineland jacquemontia (*Jacquemontia curtissii*), quail berry (*Crossopetalum ilicifolium*), small Porter's sandmat (*Chamaesyce porteriana*), white-top sedge (*Dichromena floridensis*), West Indian lilac (*Tetrazygia bicolor*), and five-petaled leaf-

flower (*Phyllanthus pentaphylus* var. *floridanus*) (PBS&J, 1996). These species and other pine rockland species were observed on portions of the property in 2009 (Bradley, 2009a). Several exotic species occur on the property, including Brazilian pepper (*Schinus terebinthifolius*), silk reed (*Neyraudia reynaudiana*), napier grass (*Pennisetum purpureum*), and Australian pine (*Casuarina equisetifolia*) (Bradley, 2009a).

3. SPECIES DESCRIPTIONS

3.1 Small's Milkpea

Small's milkpea is a small, trifoliolate, perennial legume with small, purple flowers and a prostrate habit. The stems are grayish, due to a covering of short hairs, and grow up to 79 inches. Stem internodes are well-developed and have long, straight, soft hairs. Leaflets are broadly ovate to elliptic and 0.4 - 0.9 inch long. The underside of the leaflet has long, soft, wavy hairs lying almost flat against the surface. The upper surface of the leaflet is either hairless or has sparse, stiff hairs, lying flat. Flowers are about 0.5 inch long and pinkish-purple or lavender.

Small's milkpea is endemic to the pine rocklands of Miami-Dade County. Pine rockland habitat has been destroyed throughout much of its historic range in south Florida and replaced by residential housing, commercial construction, or agriculture. Less than 2 percent of the original pine rockland habitat remains and most occurs in small, isolated stands. Prior to this discovery, only seven additional populations of Small's milkpea were known, none of which are as large as that on the project site. Habitat loss and fragmentation, fire suppression, and invasion by exotic plant species threaten the existence of Small's milkpea. The species typically is reduced or eliminated in areas where invasive exotic species, such as Brazilian pepper and silk reed, are prevalent. Most threats to Small's milkpea are ongoing and are considered imminent.

3.2 Sand Flax

Sand flax is a glabrous, perennial herb with wiry stems reaching up to 28 inches tall. Leaves are few, alternate, and early deciduous. Flowers are in terminal cymes, 5-parted, less than 2.5 inches wide, with ephemeral yellow petals and separate styles.

Sand flax occurs in pine rockland and marl prairie habitats which require periodic wildfires to maintain an open, shrub-free subcanopy and reduce litter levels. Available data indicate there are 11 extant occurrences of sand flax, with 11 others extirpated or destroyed. Only small and isolated occurrences remain in a restricted range of southern Florida and the Florida Keys. Habitat loss and degradation due to development is a major threat to this species. Most remaining occurrences are on private land or non-conservation public land. Nearly all remaining populations are threatened by fire suppression, difficulty in applying prescribed fire, road maintenance activities, exotic species, and/or illegal dumping. Most threats to the species are ongoing and are considered imminent.

3.3 Distribution of Small's Milkpea and Sand Flax in the Project Area

Sand flax and Small's milkpea are generally concentrated in the west-central portion of the project area, but they occur scattered throughout much of the property (Figure 3). At the west end of the project area, the surface elevation is generally lower than optimal and densities of these species are reduced. The eastern portion of the project area is more highly disturbed and the level of disturbance may contribute to lower abundance and densities for the species.

This plan addresses management of Management Area 1 and Management Area 2 (Table 1, Figure 3), habitat areas on the property that are outside these designated management areas that also would be preserved, and habitat areas that would not be impacted by the headquarters facility, but that would eventually be lost to related construction (Table 2, Figure 3). No management would be proposed for habitat areas that would be lost as a direct result of the construction of the headquarters facility parking and structures. Some identified habitat areas would be partially encroached upon by the headquarters facility or related construction. The INRMP will address all natural resources on the property.

Table 1
Population Sizes of Small's Milkpea and Sand Flax and Habitat Size and Quality Within Areas to be Managed for the Species

Area	Population of Species	Habitat Size and Quality
A	*Galactia smallii*: 33,735 *Linum arenicola*: 37,287	6.05 acres of high quality habitat, largest contiguous tract of suitable habitat within Management Area 1
B	*Galactia smallii*: 10,870 *Linum arenicola*: 3,705	1.10 acres with habitat quality ranging from good to poor within Management Area 1
C	*Galactia smallii*: Trace *Linum arenicola*: 4,494	0.69 acre of high quality habitat outside of Management Area 1 and Management Area 2
D	*Galactia smallii*: 1,116 *Linum arenicola*: 2,903	0.33 acre with habitat quality ranging from medium to good within Management Area 1
E	*Galactia smallii*: 14,471 *Linum arenicola*: 2,199	0.81 acre of medium quality habitat Management Area 1 and Management Area 2
F	*Galactia smallii*: 12,379 *Linum arenicola*: Trace	0.54 acre with habitat quality ranging from medium to good Management Area 1 and Management Area 2
G	*Galactia smallii*: 5,174 *Linum arenicola*: 15,928	1.23 acres of high quality habitat within Management Area 2
I	*Galactia smallii*: Trace *Linum arenicola*: 3,935	0.21 acre of medium quality habitat Management Area 1 and Management Area 2
J	*Galactia smallii*: 13,614 *Linum arenicola*: Trace	0.61 acre of medium quality habitat Management Area 1 and Management Area 2
K	*Galactia smallii*: 205 *Linum arenicola*: 359	0.04 acre of high quality habitat Management Area 1 and Management Area 2
P	*Galactia smallii*: 75 *Linum arenicola*: 0	0.25 acre of low quality habitat within Management Area 1
T	*Galactia smallii*: 25 *Linum arenicola*: 0	0.02 acre of medium quality habitat within Management Area 1
X	*Galactia smallii*: 413 *Linum arenicola*: 0	0.07 acre of medium quality habitat Management Area 1 and Management Area 2

Source: Bradley, 2009a.

Table 2
Population Sizes of Small's Milkpea and Sand Flax and Habitat Size and Quality In Areas to be Managed Under This Plan Until lost to Related construction

Area	Population of Species	Habitat Size and Quality
H	*Galactia smallii*: 8,395 *Linum arenicola*: 2,799	0.26 acre of medium quality habitat
R	*Galactia smallii*: 50 *Linum arenicola*: 100	0.35 acre high quality habitat in patches
V	*Galactia smallii*: 0 *Linum arenicola*: 20	0.13 acre of high quality habitat
W	*Galactia smallii*: 0 *Linum arenicola*: 10	0.004 acre of low quality habitat
Y	*Galactia smallii*: 20 *Linum arenicola*: 20	0.12 acre of medium quality habitat
Z	*Galactia smallii*: 25 *Linum arenicola*: 0	0.02 acre of low quality habitat
AA	*Galactia smallii*: 5 *Linum arenicola*: 0	0.004 acre of low quality habitat
BB	*Galactia smallii*: 25 *Linum arenicola*: 0	0.09 acre of low quality habitat
CC	*Galactia smallii*: 20 *Linum arenicola*: 0	0.07 acre of low quality habitat

Note: A portion of Population T would be protected within managed areas, but most of this population would be eliminated by development.

Source: Bradley, 2009a.

4. MANAGEMENT ACTIONS

This section identifies the management actions that would be implemented under this plan. Management will follow an adaptive approach and it is expected that the plan will be revised and updated through time. All management would likely begin as annual efforts within each area, but as these habitat conditions improve and exotic species are more under control, active management in smaller areas could transition to every other year or every third year, depending on site-specific needs.

4.1 Invasive Pest Plant Control

Several invasive pest plants (IPPs) occur on the property, including Brazilian pepper (*Schinus terebinthifolius*), silk reed (*Neyraudia reynaudiana*), napier grass (*Pennisetum purpureum*), and Australian pine (*Casuarina equisetifolia*) (Bradley, 2009a). Control measures that would be implemented differ depending on the plant species being targeted, with obvious differences in the approach to controlling woody IPPs compared to herbaceous IPPs. Control of Woody IPPs poses little risk to nontarget species, including Small's milkpea and sand flax, and these control efforts can be implemented without special measures as long as the root mass is left in place and

no ground disturbance occurs. However, because the herbaceous IPPs are intermixed with Small's milkpea and sand flax, control efforts must be designed to minimize the risk to nontarget species.

4.1.1 Chemical Woody IPP Control

Control of woody IPPs on the property would be implemented on all areas not developed for the headquarters facility and associated parking. Because the headquarters facility and associated parking would be cleared and graded and then maintained in a landscaped condition, woody IPPs and the associated persistent seedbank would be eliminated from these areas. Control of woody IPPs on the remainder of the property would include a phased approach of elimination and removal of existing woody IPPs followed by continued treatments to control new growth from the persistent seedbank.

Initial elimination of woody IPPS would be accomplished through injection with an herbicide using a tree lance or hypodermic axe (hack and squirt) or through cut and stump paint with concentrated herbicide. The tree lance and hypodermic axe place the herbicide directly in the target plants with no risk of non-target contact while cutting and stump painting minimizes the risk to non-target species. It is expected that triclopyr (due to its specific effectiveness on many woody plants) or glyphosate (due to its general effectiveness) would be used for the control efforts because each compound is readily available, but other appropriate herbicides would be considered. Once the woody vegetation dies, the standing material would be cut and removed from the site with stumps left in place.

The initial treatment is expected to eliminate the mature woody IPPs and remove the seed source for these species. However, it is likely that woody herbaceous species would continue to grow on the site as a result of germination from the persistent seedbank. Seedlings would be treated the same as herbaceous IPPs, described below. Should any woody seedlings manage to develop into saplings, they would be treated in the same manner as the original woody IPP treatment. Eradication from the site will likely take several years, but the ability of these species to rapidly spread would be curtailed by the initial treatment.

4.1.2 Chemical Herbaceous IPP Control

Herbaceous IPPs would be controlled in a stepwise manner. One treatment method would be used where herbaceous IPPs occur without co-occurrence of either Small's milkpea or sand flax. A different approach would be used where the protected species and IPPs co-occur to minimize the risk to the protected species.

Where IPPs and protected species do not co-occur, IPP areas will be treated with broadcast foliar applications of herbicide. The chemical selected for application will have demonstrated effectiveness against the target species. Treatments would be repeated through time, as needed. Treatments would be applied under conditions when there is little to no potential for wind drift to transport broadcast foliar chemicals to non-treatment areas (little or no wind, no immediate forecast for rain).

Where herbaceous IPPs co-occur with protected species, chemical treatment may not be viable. A monocot-selective herbicide may be used on grass species that respond to this type of treatment. For *Zoysia* grass, which does not respond well to monocot-specific herbicides, chemical treatment may have to be combined with other treatments to achieve control. Broad-

leaved IPPs would be controlled through directed foliar applications rather than broadcast spraying of herbicides to minimize the potential for non-target exposure and wind drift. The treatments would be repeated as necessary to achieve control.

For *Zoysia* grass, chemical treatment could be combined with prescribed fire to achieve control. *Zoysia* typically resprouts faster than Small's Milkpea and sand flax after a fire. A broad-spectrum herbicide, preferably glyphosate as it has been shown to be most effective on this species, may be applied immediately following a prescribed burn if the *Zoysia* does resprout ahead of the protected species. Multiple treatments likely would be required because *Zoysia* is extremely difficult to eradicate.

Because of the potential risk to Small's milkpea and sand flax, this treatment should be tested in an areas targeted for related construction prior to applying to managed areas. If the test indicates positive control of *Zoysia* and minimal impact to Small's milkpea and sand flax, the treatment could then be applied to managed areas. Prior to use of chemical treatment in managed areas with protected plants, seeds of Small's Milkpea and sand flax would be collected, if available, from the treatment area to be available for seeding following treatment of the area. This would maintain the genetic diversity present in the treatment area in the event of unintentional nontarget impacts.

Outside of Management Areas 1 and 2, IPP treatment will focus on woody IPP species and herbaceous IPP species with wind-dispersed propagules that would have greatest potential for re-invading the management areas. Other IPP species will be treated, as appropriate, but such treatments will be prioritized based on relative threat.

4.2 Mowing

An area around the perimeter fence would be mowed to a distance of 10 feet from the fence to maintain a patrolable perimeter for installation security. Mowing typically would be done during the period from mid-January to mid-February. Where exotic species occur in this mowed area, approximately one month after mowing, a 5 percent glyphosate solution could be broadcast applied to the areas with exotic species.

Where Small's milkpea and sand flax occur within the fenced perimeter, winter mowing, as described above, would avoid primary seed set by these species. Additional managed areas may be mowed to retard growth of woody IPPs. As with the perimeter fence area, mowing would be done in winter.

4.3 Prescribed Fire

Fire is considered a necessary environmental component of pine-rockland habitat. Fire helps retard growth of woody species and maintains openings for the herbaceous plants associated with this habitat type. The Army could implement prescribed burns over areas where a pine rockland system could be maintained. Prescribed fires would only be implemented under appropriate conditions (wind speed, fuel moisture level, humidity) for containing the fire within the desired area.

Because the populations of Small's milkpea and sand flax are robust where no fire has occurred for approximately 15 years, and because the property is in proximity to substantial human activity, it is likely that a long burn interval (4 to 7 years) within the recommended range for this species would be selected. The four-year window for implementing burns would allow

management to accommodate years in which fuel load, weather conditions, or mission requirements may preclude a burn. Monitoring data would be analyzed to determine whether the interval should change in any given area.

Prescribed fire would be initiated in Management Areas 1 and 2 following woody IPP removal, when the fuel load would be more suitable. Prescribed fire treatments would be done in winter.

Prescribed fire may be used in other areas, but a specific burn rotation would not be established for these areas. The decision on whether to burn outside of Management Areas 1 and 2 would be based on overall conservation objectives and whether the burn could be safely implemented considering surrounding uses.

4.4 Native Pine and Grass Propagation

Within Management Areas 1 and 2, scattered plantings of native pine will be made in an effort to restore pine to the habitat. In a year following woody IPP removal, 250 South Florida slash pine (*Pinus elliottii* var. *densa*) seedlings would be planted with the goal of establishing an open pine community and restoring the canopy vegetation of the pine rockland community. The pines would be planted in areas where exotic woody vegetation was removed and other areas within the Management Areas 1 and 2 where Small's milkpea and sand flax do not occur to avoid accidental impacts to these herbaceous species. Spacing of pine seedlings would be approximately 35 per acre in the planted areas.

It is expected that seedlings would be purchased from the Florida Division of Forestry Andrews Nursery, or a similar native plant supplier, to assure that local genotypes are obtained. If a supplier other than the Florida Division of Forestry Andrews Nursery is selected, the supplying nursery must certify that all seedlings are *Pinus elliottii* var. *densa*.

The planted areas would not be burned for at least 4 years following planting of pine seedlings to allow the pines to become well-established prior to burning. An assessment of pine health and vigor would be made prior to implementing a burn to minimize the potential for accidental loss to fire. When the initial planted pines are well-established, a second planting would be done to create the start of an uneven-aged stand. The second planting would be scheduled 10 – 13 years following the initial pine planting, and would be done in a year following prescribed fire treatment. As with the initial planting, the areas where seedlings are placed would not be burned for a minimum of 4 years. After the second planting, no additional planting would be expected and natural recruitment would then continue development of an uneven-aged canopy with a cover of approximately 25 percent.

No pine planting would occur in areas outside of Management Areas 1 and 2.

Management efforts to control *Zoysia* grass are expected to create conditions favorable to establishment of native grasses. Based on experience with other restoration areas in Miami Dade County, the Miami Dade County Department of Environmental Resource Management, recommends allowing natural colonization of native grasses for small restoration areas with a nearby source of native seeds. Therefore, planting of native grasses may not be included in the management strategy. Should it be determined that native recolonization is not sufficient to re-establish native grasses, mature seeds would be collected and broadcast over Miami Dade County without pre-treatment. It is expected that native grass overseeding, should it be necessary, would be done in the interval between the pine plantings.

4.5 Seed Collection/Distribution

If mature seeds are available prior to a chemical treatment of an area containing Small's milkpea or sand flax, seeds would be collected prior to chemical treatment to provide a ready source of propagules should the chemical treatment have excessive non-target affects.

While the Army does not have resources to fund such activities, the Army would consider cooperating with other agencies or organizations that wish to conduct research on the populations of Small's milkpea and sandflax occurring on the property. Within mission limitations, the Army would provide reasonable access to the site, provided advance notice is provided and current security policies are followed, to qualified personnel for research, collection, study, compliance monitoring or mitigation monitoring of Small's milk pea or sand flax. Such cooperation could include allowing access to:

- Collect seeds to support restoration efforts in Miami-Dade County.
- Conduct ecological or genetic population studies
- Conduct manipulative investigations where U.S. Fish and Wildlife Service (USFWS) determines in advance that the proposed study is feasible and would not jeopardize existence of Small's milkpea and sand flax.

4.6 Adaptive Management

Certain components of this plan are not accurately predictable. Treatment for exotic species may exhibit variable success and recolonization rates by controlled species may not be consistent. Therefore, intervals and intensities of treatments may vary through time, resulting in more or less effort in a given year compared to the plan. Because the intent of the plan is to benefit the species and not to rigidly implement the printed word, the plan would be adjusted to accommodate years of lesser or greater effort as conditions warrant.

5. EVALUATION AND REPORTING

An annual Monitoring and Maintenance Report will be included in INRMP development and would be submitted to the Army, USFWS, and cooperating State Agencies by January 31 of the following year. The initial report would be submitted following initial woody IPP removal, and subsequent reports would be submitted each year. The annual report would describe the status of the two species on the property and discuss the efficacy of management actions implemented. Trending data on species populations would be summarized. The report would identify whether management actions are working, whether excessive non-target impacts occur, and whether the management approach needs to be modified.

5.1 Monitoring

5.1.1 Small's Milkpea and Sand Flax

Each species would be monitored for population size, vigor, and threats. Management actions would be assessed in coordination with the Service for efficacy with regard enhancing populations of Small's milkpea and sand flax. The aerial extent of populations will be mapped using global positioning system receivers with sub-meter accuracy to track whether the areas occupied by the species are stable or changing. Monitoring efforts will be conducted in July to

allow each year's data to be collected under similar conditions. Because sand flax flowers wilt in the afternoon and make observation of the species more difficult, all monitoring work will be done in the morning. The specific monitoring protocols would be established in the INRMP, but the approach would likely be similar to the following.

A grid consisting of 10-meters (m) by 10-m cells will be established within Management Areas 1 and 2. Coordination with USFWS identified concern regarding potential impacts to protected plants and shallow limestone from establishing a grid with permanent corner markers for each grid cell. Therefore, permanent markers would be placed only in the southeastern corner and one other corner of each of the two areas to identify anchor points for each grid. If there is a need for a second grid within one of the two areas due to odd geometry, then the second marker could be used as the SE corner of the second grid rather than place two points at corners of one grid. A virtual grid will be developed tied to the southeast corner anchor point and loaded into a Global Positioning System (GPS) receiver accurate to 1-m. Each area will be surveyed following the grid system, with each grid cell assessed for density of Small's milkpea and sand flax. If the number of individuals of a species within a cell is less than 50, all plants will be counted. If the number of plants in a cell is more than 50, randomly placed 1-m x 1-m subplots will be placed within the grid cell and all plants within the subplot counted. Then, the number of plants within grid cells with more than 50 plants will be estimated by extrapolating from the subplot count.

The southeast corner of the grids also would serve as permanent photomonitoring points. Photographs will be taken from these locations facing west, northwest, and north, and the photographs will be included in monitoring reports. Should there be any change to the distribution of Small's milkpea or sand flax, the new population boundaries would be mapped using a GPS receiver and the new shapefiles submitted with the monitoring report.

Habitat quality will be described for each area and specific habitat issues will be noted relative to grid location. Specific observations on efficacy of management efforts or additional management needs also will be noted relative to grid location.

IPP areas will be mapped using a GPS receiver. Treatments applied will be described for each area in the monitoring report.

Outside of Management Areas 1 and 2, each identified population of Small's milkpea and sand flax will be investigated. The size of each of these populations will be estimated and observations on general health and vigor will be made.

5.1.2 IPP Species

Observations of IPP species will be made within Management Areas 1 and 2. IPPs will be identified to species and located relative to grid location. Observers will document relative effectiveness of treatments applied since the previous monitoring period and will identify any needs for future management efforts. Areas with an immediate need for treatment based upon perceived threat to Small's milkpea or sand flax would be noted.

Outside of Management Areas 1 and 2 observations of IPP species would be made. Observers would document relative effectiveness of any treatments applied since the previous monitoring period and will identify any needs for future management efforts. Areas with an immediate need for treatment based upon perceived threat to the Management Areas 1 and 2 or to local Small's milkpea or sand flax populations would be noted.

5.1.3 Pine Rockland Habitat

Within Management Areas 1 and 2, observations will be made regarding the general quality of pine rockland habitat. Observations on survival, health, and vigor of planting native pine will be recorded. The aerial crown cover of pines will be estimated. Observations on natural recruitment of other woody species common to pine rockland habitat will be made.

No observations on pine rockland habitat will be made outside Management Areas 1 and 2.

5.2 Reporting

A Monitoring and Maintenance Report will be prepared and submitted to the Army, USFWS, and cooperating State Agencies by January 31 of the year following the monitoring effort. The report will include separate discussions of Management Areas 1 and 2 and other areas. Each section of the report will include:

- Project background and history, including prior management efforts
- Management activities implemented since the previous report
- Population estimates for Small's milkpea and sand flax from the monitoring period, by population
- Trend data for Small's milkpea and sand flax, by population
- Assessment of status of populations of Small's milkpea and sand flax
- Assessment of efficacy of management efforts to include:
    - Woody IPP control
    - Herbaceous IPP control
    - Pine Rockland habitat enhancements
- Identification of future management needs

6. MANAGEMENT COSTS

As part of the INRMP development, a 5-year projected management action schedule and budget to implement those actions would be developed. Yearly and 5-year reviews would modify the schedule and budget as appropriate.

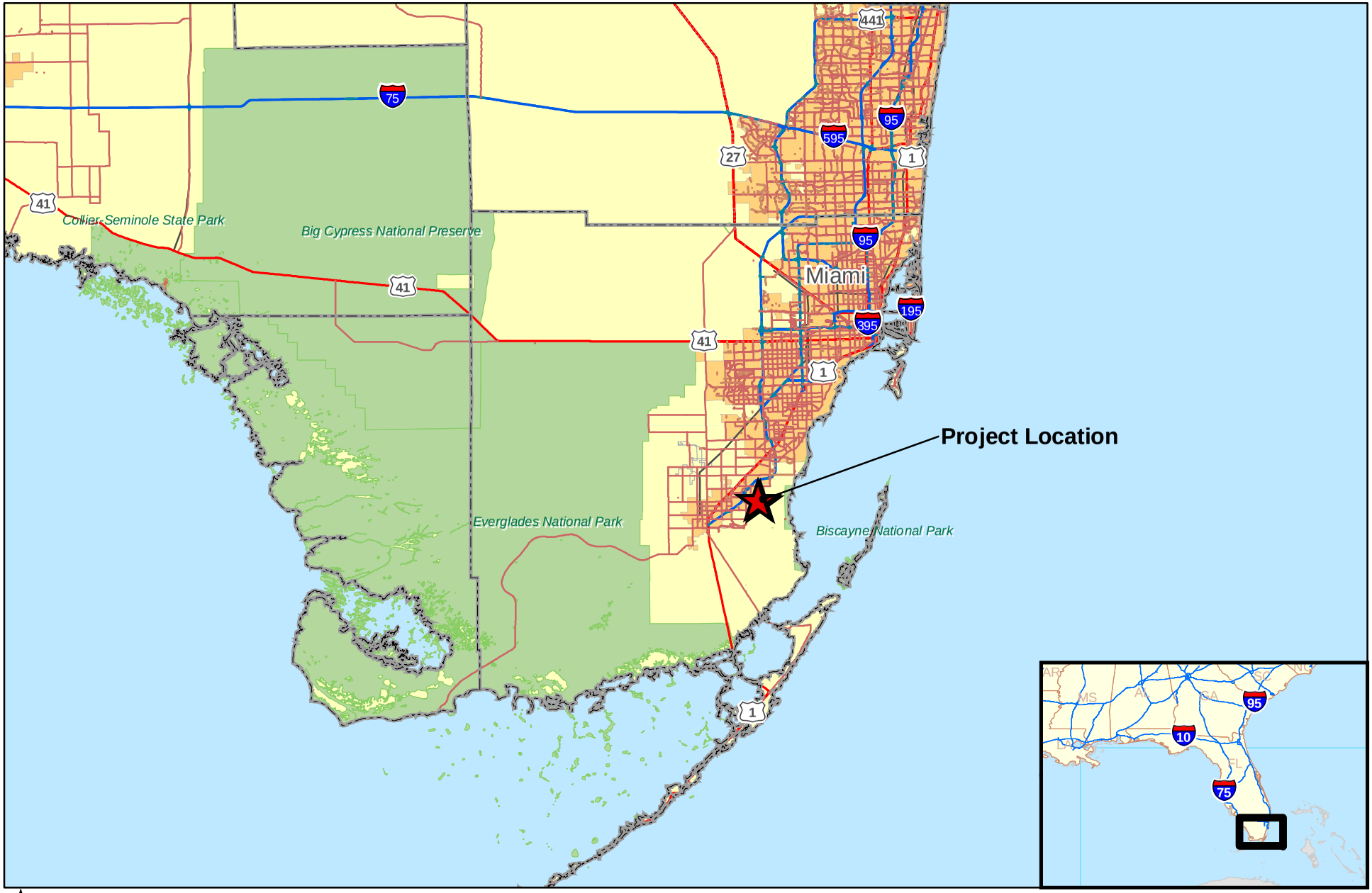

Figure 1
Site Location
MANAGEMENT PLAN

\\GALILEO\PROJ\HOMESTEADAIRRESERVE_383839\MAPFILES\BA\FIGURE1.MXD LSUBER1 11/30/2009 11:35:31

CH2MHILL

Figure 2
Proposed SOCSOUTH Headquarters Location and Related Construction Areas
MANAGEMENT PLAN

Rare Plant Colony
Management Areas
Outer Boundary

Data Source:
Roads, Counties, Urban Areas: ESRI
Imagery: ArcGIS Online 2007

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Figure 3
Location of Rare Plant Populations and Management Areas
MANAGEMENT PLAN

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CH2MHILL

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960

April 11, 2011

John E. Burgess
Director, Public Works
United States Army Garrison, Miami
3511 NW 92nd Avenue
Miami, Florida 33172-1217

Service Federal Activity Code: 41420-2010-CPA-0478
Service Consultation Number: 41420-2010-F-0228
Corps Application Number: SAJ-2009-02470 (IP-IF)
Date Received: August 4, 2010
Project: SOCSOUTH Command
Applicant: United State
County: Miami-Dade

Dear Mr. Burgess,

This document is the U.S. Fish and Wildlife Service's (Service) Biological Opinion based on our review of the proposed action (Project) by the U.S. Army (Army) Garrison, Miami, for construction of a Special Operations Command, South (SOCSOUTH) center, and its effects on two plant species: the endangered Small's milkpea (*Galactia smallii*) and the candidate sand flax (*Linum arenicola*). The Army made a determination in its March 4, 2011, consultation letter that the Project may affect, and is likely to adversely affect, the Small's milkpea and sand flax. As a result of our analysis, the Service concurs with the Army's determination. Critical habitat for the Small's milkpea has not been designated; therefore, none will be affected. This document is provided in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*).

Sand flax is a candidate species and consultation is not required under the Act. However, the Service encourages consultation in case the species is listed later and would require protection. The Army has considered conservation of the species in its mitigation plan. The sand flax may be listed in the future because of its limited range, population and numbers; therefore, the Service is including this species in this opinion because of the large population at the project site, which is over 60 percent of the known population.

A conference is a process of early interagency cooperation involving formal or informal discussions between a Federal agency and the Service pursuant to section 7(a)(4) of the Act regarding the likely impact of an action on proposed species. Although sand flax is not yet a proposed species, there is strong evidence that it meets all criteria to be listed, but has not been because of higher priority listing actions. Because of the importance of the project site to the continued existence of sand flax, the Service held a conference with the Army on May 21, 2009. A strategy was developed to ensure the continued survival of the candidate species at the site and enhance the population.

This Biological Opinion (BO) serves as the Service's biological opinion if the sand flax is listed in the future. This BO is based on information provided in the Army's March 4, 2011, revised consultation letter and March 7, 2011, revised Biological Assessment (BA), and the Service's South Florida Multi-species Recovery Plan (Service 1999), as well as letters, email correspondence and site visits. A complete record of this consultation is maintained and available for review at the Service's South Florida Ecological Services Office, Vero Beach, Florida.

Consultation History

In late 2008, the Service discussed the Project by telephone several times with the applicant's consultant, CH2M HILL.

On March 13, 2009, the Service received a technical assistance request from the applicant.

On April 29, 2009, the Service responded to the technical assistance request stating that additional information was necessary.

On May 21, 2009, the Service, the Army, the Army's consultant CH2M Hill, the U.S. Army Corps of Engineers (Corps), and a qualified botanist met at the site to discuss issues and solutions to protect, enhance and manage Small's milkpea and sand flax. A plan was conceived, which was later incorporated into the applicant's proposed action.

Between May 2009 and August 2010, the Service, the Army, the Corps, and the applicant's consultant exchanged emails and telephone calls discussing the Project, and explored mitigation options for the proposed Project's impacts on Small's milkpea and sand flax.

On August 5, 2010, the Service received a BA from the applicant for the Project and a letter determining that the Project "may affect Small's milkpea, and was likely to adversely affect it."

On February 24, 2011, the Service, the Corps, the Army's Environmental Command along with other Army representatives, and CH2M Hill consulting firm had a conference call to discuss issues associated with the project and to discuss next steps forward. As a result, the Army and the Service agreed to slightly alter the proposed action to allow the Army to resolve certain financial and legal obstacles associated with the originally proposed conservation measures for the species.

On March 7, 2011, the Service received the Army's revised consultation letter and BA. Again, the Army reached a determination of "may affect, is likely to adversely affect" the Small's milkpea and sand flax. In this correspondence, the Army requested consultation with the Service and proposed mitigation and management measures to reduce, avoid and minimize adverse impacts.

BIOLOGICAL OPINION

DESCRIPTION OF PROPOSED ACTION

The Army has identified an 84.2-acre site adjacent to Homestead Air Reserve Base (HARB), Miami-Dade County, Florida, that is suitable for construction of a new SOCSOUTH Headquarters facility (Figure 1). The federally endangered Small's milkpea, and the Federal candidate sand flax,

are known to occur on the site. Under the proposed action, the Army will lease the 84.2 acres from Miami-Dade County for 50 years, or purchase the property if funds are available, and construct a 125,000-square foot headquarters facility on the southwestern portion of the site.

The proposed headquarters facility will consist of a Secure Compartmentalized Information Facility with sensitive storage areas and general purpose administrative areas located in the southwestern portion of the 84.2-acre site (Figure 2). Fire, intrusion detection, and alarm systems will be included. Supporting facilities include: connection to utilities (water, sewer, electrical, storm drainage and information systems); emergency backup power with an uninterruptible power system; site development; paving (including parking, access drives, sidewalks, curbs and gutters); storm drainage; landscaping and other site improvements (including secure communications reception areas). Antiterrorism measures will be incorporated into the design, to include appropriate stand-off distances, barriers, sliding fence gate and closed circuit TV. Buildings will be designed and built to comply with Category 5 hurricane protection and to prevent progressive collapse. The headquarters will have about 40,000 square feet of paved parking and access, which includes both existing paved areas and new pavement (Figure 2). To provide utility service, a new utility Right-of-Way (ROW) will be placed along the perimeter of the site along St. Lo Boulevard, Rabaul Road, and Bikini Boulevard (Figure 2). Utility lines will be buried in the new ROW.

An existing hangar (Building 741), its associated foam fire retardant system (Building 743 and a 500,000-gallon above-ground storage tank), and a small existing office building (Building 736) will be leased by the Army for use by SOCSOUTH (Figure 2). Building 741 will be used for storage initially. When the fire retardant system is upgraded, the building will be capable of housing aircraft and can then be used as a hangar. Building 736 will be renovated and used as administrative space. Existing structures that are beyond repair or rehabilitation will be demolished, and existing pavement will be removed from some areas.

The Army proposes to construct a temporary warehouse on a vacant paved aircraft parking ramp and renovate Building 736. This area is within a portion of the site classified for related construction and does not encroach upon any existing Small's milkpea or sand flax. These short-term measures will not be sufficient to meet the long-term needs of SOCSOUTH and additional related construction that is interrelated and interdependent with the headquarters facility is planned for other parts of the property. No Small's milkpea or sand flax will be impacted by proposed work, which is separate from the SOCSOUTH Headquarters facility.

Because of Anti-terrorism and Force Protection (AT/FP) requirements, no permanently occupied structures may be placed within 180 feet of the exterior perimeter fence or within 90 feet of interior fences separating SOCSOUTH from HARB. The AT/FP areas also must be maintained free of woody vegetation, such as trees and shrubs that could conceal intruders.

The Army has proposed several measures to minimize impacts and ensure the continued existence of Small's milkpea and sand flax. If the project moves forward, the Army will prepare and implement an Integrated Natural Resource Management Plan (INRMP) for the 84.2-acre site that will primarily focus on the protection and management of two key areas totaling 14.7 acres of the 84.2-acre site (Figure 3). The 14.7 acres managed by the INRMP encompasses about 8.5 acres of pine rockland habitat that currently supports Small's milkpea and sand flax (Table 1) and about

6.2 adjacent acres of potential habitat that is currently unoccupied but may provide suitable habitat once these areas are restored and managed. The INRMP will also focus management on an additional approximately 3.16 acres of occupied habitat scattered throughout the site. The 14.7 acres that will be protected by the INRMP contain 25 areas with Small's milkpea occurrences and 16 areas with sand flax occurrences. They also contain much of the highest quality pine rockland habitat on the 84.2-acre site. The INRMP will preserve these areas and specify the management measures to benefit the two species and the habitat. The Army's *PRELIMINARY MANAGEMENT PLAN for Small's Milkpea (Galactia smallii) and Sand Flax (Linum arenicola) on U.S. Army Special Operations Command South Headquarters, Homestead, Florida* (Preliminary Management Plan; Appendix A) will guide management of the two species until the INRMP is completed

To summarize, under the proposed action, the Army will:

- Construct a new headquarters facility, temporary warehouse and new utility ROW.
- Renovate and operate Building 736 as administrative space.
- Operate the facility for the duration of a 50-year lease agreement, or purchase the property.
- Develop an INRMP for the 84.2-acre property.
- Implement the Preliminary Management Plan until an INRMP is completed.
- Conserve a total of about 17.86 acres of occupied Small's milkpea and sand flax habitat in three areas containing about 8.5 acres, 6.2 acres and 3.16 acres.
- Designate two management areas (8.5 acres and 6.2 acres) where existing populations of Small's milkpea and sand flax will be conserved and managed.
- Avoid impacts to a total of 3.16 acres of occupied Small's milkpea and sand flax habitat. These acres will be managed in the future but not protected due to being spaced throughout the site.
- Erect permanent fencing prior to construction to protect the 8.5-acre and 6.2-acre management areas.
- Erect temporary fencing and/or signage prior to construction to protect Small's milkpea and sand flax habitat outside the management areas that would not be impacted by construction.
- The U.S. Army will support discussions between Miami-Dade County and potential easement holders regarding the possibility of placing a conservation easement on the management areas if a suitable easement holder can be identified.

STATUS OF THE SPECIES/CRITICAL HABITAT

Species/critical habitat description

Small's milk pea

Small's milkpea is a small, trifoliolate, perennial legume with small, purple flowers and a prostrate habit. The stems are grayish, due to a covering of short hairs, and grow up to 2 meters (m) long. The stem internodes are well-developed and have long, straight, soft hairs. The 1 to 2.2 centimeters (cm) long leaflets are broadly ovate to elliptic. The undersides of the leaves have long, soft, wavy hairs lying almost flat against the surface. The upper surface of the leaves is either hairless (glabrate) or have sparse, stiff hairs, lying flat on the surface (strigose). The

inflorescences are 2 to 6 cm long with one to five flowers at the apex or along the axis. The flower buds are 5 to 7 millimeters (mm) long, and the calyx is about 7 mm long and loosely strigulose. The corolla is 11 to 12 mm long and pinkish purple or lavender. The legume is 3 to 4 cm by about 4 m in size and is strigulose or villosulous (Isley 1990). Five species of *Galactia* occur in Miami-Dade County, and four of these occur in pine rocklands (O'Brien and Koptur 1995). *Galactia smallii*, *G. pinetorum*, and *G. floridana* each have large flowers and a prostrate habit. *Galactia parvifolia* is a single, small-flowered species. *Small's milkpea* has been confused with *G. pinetorum* because the key characters given by Small (1903) to distinguish the two taxa were unstable. The two species are distinct, however, and can be separated by the nature of the pubescence on the stems (Herndon 1981). The pubescence on the stems of Small's milkpea is ascending or spreading-sericeous, while *G. pinetorum* is strigose, retrorse appressed, and thin. The third large flowered milkpea, *G. floridana* has some intergrading with *G. smallii*, but Herndon (1981) feels their appearance in the field is strikingly distinct. *Galactia floridana* has conspicuously sericeous pubescence covering the stem and leaves, but the pubescence of *G. smallii* leaves is not apparent without close inspection (Herndon 1981).

Sand flax

Sand flax is a glabrous, perennial herb with wiry stems reaching up to 28 inches tall. Bradley and Gann (1999) described it as a wiry, yellow-flowered herb. Bradley and Gann (1999, p. 61) stated that sand flax "is a glabrous perennial herb; stems 1-several from the base, wiry, 35-53 centimeters (cm) (14-21 inches (in)) tall; leaves mostly alternate, linear, 7-10 mm (0.3-0.4 in) long, 0.6-1 mm (0.02-0.04 in) wide, entire or with scattered marginal glands; stipules glandular, reddish; inflorescence a cyme of a few slender, spreading or ascending branches; pedicels 2 mm (0.08 in) long or less; sepals lanceolate to ovate with a prominent midrib, 2.4-3.2 mm (0.09-0.13 in) long; petals yellow, obovate, 4.5-5.5 mm (0.18-0.22 in) long; fruit 2.1-2.5 mm (0.08-0.1 in) long, 2-2.3 mm (0.08-0.09 in) diameter, pyriform, dehiscing into ten segments; seeds ovate, 1.2-1.4 mm (0.05-0.06 in) long, 0.7-0.8 mm (0.027-0.031 in) wide. (Adapted from Rogers 1963)". Leaves are few, alternate, and early deciduous. Flowers are in terminal cymes, 5-parted, less than 2.5 inches wide, with ephemeral yellow petals and separate styles.

No critical habitat has been designated for these two species; therefore, none will be affected.

Life history/Population dynamics

Small's milk pea

Small's milkpea is a perennial legume that usually flowers during the summer months. However, numerous flowers may occur following a burn at anytime throughout the year (Small 1933, and Long and Lakela 1971). Fire may synchronize and intensify flowering of plants in the burned area (A. Herndon, personal communication 1998). Its pollinators include three species of bees, one species of wasp, and the Cassius blue butterfly (*Leptotes cassius theonus*).

Sand flax

Little is known about the pollination, reproductive biology or population dynamics of sand flax. Longevity is not known. Studies addressing these topics need to be conducted in order to develop meaningful conservation strategies. Lack of pollinator information makes assessing the affects of mosquito spraying impossible (Hodges and Bradley 2006).

Status and distribution

Small's milkpea

Small's milkpea was listed as endangered because of the loss of pine rockland habitat to residential and commercial development (50 FR 29349). At the time of its listing, Small's milkpea was only known at two sites near Homestead in Miami-Dade County. A 1994 survey found Small's milkpea at seven additional sites on public land. Miami-Dade County Park and Recreation Department is actively managing five of the six publicly owned sites. Small's milkpea was also found in small numbers on privately owned pine rockland fragments. The privately owned sites are not managed, have become overgrown, and have high densities of exotic plants that threaten Small's milkpea on these sites (J. O'Brien, Florida International University, personal communication 1996). Small's milkpea is not known to occur on Long Pine Key in Everglades National Park (Herndon 1998). By 1984, about 98 to 99 percent of Miami-Dade County's pine rocklands had been destroyed; and that destruction continues today. Most of the remaining pine rocklands in the county are small fragments that are difficult to manage because of their size and proximity to residential housing. In addition, fire suppression and invasion by exotic plants also threaten the survival of Small's milkpea.

Sand flax

Sand flax occurs in the Redland pine rocklands of southern Miami-Dade County, Florida (O'Brien and Koptur 1995). Its distribution is spotty because of the limited habitat available. The type locality is listed as near Silver Palm, Miami-Dade County, in an area now encompassed by Redland pine rocklands.

Sand flax occurs in pine rockland and marl prairie habitats which require periodic wildfires to maintain an open, shrub-free sub canopy and reduce litter levels. Available data indicate there are 11 extant occurrences of sand flax, with 11 others extirpated or destroyed (Service 2010). Only small and isolated occurrences remain in a restricted range of southern Florida and the Florida Keys. Sand flax is currently known from four occurrences in the Keys and seven occurrences in Miami-Dade County (Bradley 2006), including the project site, which contains the majority of the known population. Habitat loss and degradation due to development is a major threat to this species. Most remaining occurrences are on private land or non-conservation public land.

Current threats

Small's milkpea and sand flax

Nearly all remaining populations of Small's milkpea and sand flax are threatened by development, fire suppression, road maintenance activities, exotic species and/or illegal dumping and clearing. Most threats to the species are ongoing and are considered imminent.

Analysis of the species/critical habitat likely to be affected

Small's milkpea

Critical habitat for Small's milkpea has not been designated, therefore none will be affected.

Sand flax

Sand flax is a candidate species and is not eligible for critical habitat designation, therefore none will be affected.

ENVIRONMENTAL BASELINE

Climate change

According to the Intergovernmental Panel on Climate Change Report (IPCC) (2007), warming of the earth's climate is "unequivocal," as is now evident from observations of increases in average global air and ocean temperatures, widespread melting of snow and ice, and rising sea level. The 2007 IPCC report describes changes in natural ecosystems with potential wide-spread effects on many organisms, including marine mammals and migratory birds. The potential for rapid climate change poses a significant challenge for fish and wildlife conservation. Species' abundance and distribution are dynamic, relative to a variety of factors, including climate. As climate changes, the abundance and distribution of fish and wildlife will also change. Highly specialized or endemic species are likely to be most susceptible to the stresses of changing climate. Based on these findings and other similar studies, the Department of the Interior requires agencies under its direction to consider potential climate change effects as part of their long-range planning activities (Service 2007).

Climate change at the global level drives changes in weather at the regional level, although weather is also strongly affected by season and local effects (*e.g.*, elevation, topography, latitude, proximity to the ocean, etc). Temperatures are predicted to rise from 2°C to 5°C for North America by the end of this century (IPCC 2007). Other processes to be affected by this projected warming include rainfall (amount, seasonal timing and distribution), storms (frequency and intensity), and sea level rise. However, the exact magnitude, direction, and distribution of these changes at the regional level are not well understood or easy to predict. Seasonal change and local geography make prediction of the effects of climate change at any location variable. Current models offer a wide range of predicted changes.

Climatic changes in south Florida could amplify current land management challenges involving habitat fragmentation, urbanization, invasive species, disease, parasites, and water management (Pearlstine 2008). Global warming will be a particular challenge for endangered, threatened, and other "at risk" species. It is difficult to estimate, with any degree of precision, which species will be affected by climate change or exactly how they will be affected. The Service will use Strategic Habitat Conservation planning, an adaptive science-driven process that begins with explicit trust resource population objectives, as the framework for adjusting our management strategies in response to climate change (Service 2006).

IPCC (2008, p. 3, 103) concluded that "climate change is likely to increase the occurrence of saltwater intrusion into coastal aquifers as sea level rises" and that "sea-level rise is projected to extend areas of salinisation of groundwater and estuaries, resulting in a decrease of freshwater availability for humans and ecosystems in coastal areas." Since the 1930s to 1950s, increased salinity of coastal waters contributed to the decline of cabbage palm forests in southwest Florida (Williams et al. 1999), expansion of mangroves into adjacent marshes in the Everglades (Ross et

al. 2000), and loss of pine rockland in the Keys (Ross et al. 1994). Hydrology has a strong influence on plant distribution in these and other coastal areas (IPCC 2008). Such communities typically grade from salt to brackish to freshwater species. In the Keys, not only are elevation differences between such communities very slight (Ross et al. 1994, p. 146), but the horizontal distances are small as well. Human developments will also likely be significant factors influencing whether natural communities can move and persist (IPCC 2008; CCSP 2008). Hodges and Bradley (2005) stated that the trend of upland habitat reduction will undoubtedly impact sand flax in the Keys. Similarly, Clough (2008) concluded that a significant proportion of upland habitat will be lost on Big Pine Key by 2100.

The Science and Technology Committee of the Miami-Dade County Climate Change Task Force (MDCCCTF) (2008) recognized that significant sea level rise is a very real threat to the near future for Miami-Dade County. In a January 2008 statement, the MDCCCTF (2008) warned that sea-level is expected to rise from 3 to 5 feet (0.9-1.5 m) within this century. With a 3 to 4 foot (0.9 to 1.2 m) sea-level rise (above baseline) in Miami-Dade County: "Spring high tides would be at about + 6 to 7 feet; freshwater resources would be gone; the Everglades would be inundated on the west side of Miami-Dade County; the barrier islands would be largely inundated; storm surges would be devastating; landfill sites would be exposed to erosion contaminating marine and coastal environments. Freshwater and coastal mangrove wetlands will not keep up with or offset sea level rises of 2 feet per century or greater. With a 5 foot rise (spring tides at nearly +8 feet), Miami-Dade County will be extremely diminished." (MDCCCTF 2008).

In summary, all known occurrences of these species are at some risk to habitat loss and modification from ongoing threats. Extant occurrences on private land are threatened by development. The magnitude of the threat level of habitat loss from development is high; several sites are not protected. However, the Army's management plan includes protection and management of approximately 60,000 plants at the largest remaining population site through an INRMP or potentially a conservation easement (Reaves 2011). Therefore, habitat loss at this site is now not imminent. Most occurrences are in low-lying areas and will be affected by rising sea level. The magnitude of the threat level of habitat loss from sea-level rise is currently low, but expected to increase in the future.

Status of the species within the action area

Small's milkpea is generally concentrated in the west-central portion of the Project area, but they occur scattered throughout much of the 84.2-acre site (Figure 3, Table 2). At the west end of the Project area, the surface elevation is generally lower than optimal and densities of these species are reduced. The eastern portion of the Project area is more highly disturbed and the level of disturbance may contribute to lower abundance and densities for the species. A site survey documented 27 occurrences of Small's milkpea, estimated to contain 100,702 plants.

Sand flax is also generally concentrated in the west-central portion of the Project area, but they occur scattered throughout much of the 84.2-acre site (Figure 3, Table 2). At the west end of the Project area, the surface elevation is generally lower than optimal and densities of these species are reduced. The eastern portion of the Project area is more highly disturbed and the level of disturbance may contribute to lower abundance and densities for the species. A site survey report estimated the site contains 73,759 sand flax plants.

Factors affecting the species' environment within the action area

Continued habitat loss and fragmentation due to development, disturbance, fire suppression and invasion by exotic plant species (extensive cover by Australian pine [*Casuarina equisetifolia*] and Brazilian pepper [*Schinus terebinthifolius*]), may threaten the existence of Small's milkpea and sand flax within the action area. The densest occurrences of Small's milkpea and sand flax are in the proposed management areas (potential future conservation easement areas) and are imbedded in Zoysia grass (*Zoysia* sp.). It is unclear if the Zoysia grass is benefitting the protected species in some way, possibly by reducing competition or providing cover, or if it is slowly displacing them.

EFFECTS OF THE ACTION

Factors to be considered

The factors considered in this section are those that result directly from the proposed action. The Project occurs within habitat occupied by Small's milkpea and sand flax. Critical habitat has not been designated for these species and, therefore will not be affected. Factors to be considered include habitat loss, habitat fragmentation, invasion by exotic plants, loss of plants, fire control, exotic removal, mitigation, conservation, and management.

Analyses for effects of the action

It is estimated that the project site contains about 50 percent of the known Small's milkpea population and about 96 percent of the known sand flax population (Kernan and Bradley 1996 and Bradley 2009a, b). About 1,033 Small's milkpea individuals and 1,015 sand flax individuals and 0.80 acre of habitat would be destroyed by the proposed action. The Army proposes protection and management of 14.7 acres of high-quality habitat. The Army and Miami-Dade County will protect and manage an estimated 96 percent of the onsite population of each species and 85 percent of the onsite pine rockland habitat, or about 96,764 Small's milkpea individuals and about 70,911 sand flax individuals. The Army was able to minimize or eliminate impacts to high quality habitat from construction of the headquarters facility, new utility ROW, and related construction by redesigning its development plan after consulting with the Service to reduce impacts to Small's milkpea. Re-design of the Project resulted in less than one-half of the impacts projected for the original Project design.

Twenty-seven areas containing Small's milkpea and sand flax were documented on the property. Table 2 identifies the size of each discreet population and the anticipated effects of the action.

Beneficial effects

The proposed action will preserve most of the suitable habitat on the 84.2-acre site and manage the preserved areas for the benefit of the species. An INRMP will be developed to protect and manage two management areas, about 14.7 acres, which contain 8.5 acres of the most suitable occupied habitat and adjacent areas. The management areas will be enhanced by removal of exotics and restoration of a natural fire regime beneficial to the species. They will be managed for the benefit of the species for at least 50 years. In addition, the Army will avoid development on 3.16 acres of moderate to high quality habitat outside the management areas, and maintain it for Small's milkpea and sand flax.

With enactment of the Plan and implementation of the INRMP, the Army will protect and manage about 85 percent of the onsite pine rockland habitat and about 96 percent of the onsite population of each species, or about 96,764 Small's milkpea plants and about 70,911 sand flax plants. The Army was able to minimize the impacts to high quality habitat from construction of the headquarters facility, new utility ROW, and related construction; this resulted in the Project related impacts to the species being less than one-half of that originally proposed.

Based on 2009 population estimates (Bradley 2009a), the Project will protect 49,254 Small's milkpea individuals (about 49 percent of the total) and 57,725 individuals of the candidate species sand flax (about 78 percent of the total). The area protected through the INRMP (which may eventually be placed under a conservation easement) will be managed to conserve the two species and pine rockland habitat. Development will be avoided on and an additional 3.16 acres of management areas located outside the preserved area that encompass an estimated 47,510 Small's milkpea individuals (about 47.2 percent of the estimated onsite population) and 13,184 sand flax individuals (about 17.9 percent of the estimated onsite population). Because these areas are scattered about the property, and not near an outer boundary, it is not practical to include them as preserve areas in the INRMP or future conservation easement. While the Army is committed to protecting and managing these areas identified in this BO (which addresses construction of the headquarters facility, new utility ROW, and known related construction areas), the potential for future changes in the military mission may necessitate use of some other areas on the property not identified or considered in this Opinion. Should the U.S Army identify a future need to impact areas outside of those considered in this BO, the Army will reinitiate section 7 consultation with the Service prior to taking any such actions.

As a proactive measure, the Army developed the Preliminary Management Plan that will guide management of the plants until an INRMP is in place to manage the species and their habitat throughout the property. The Plan incorporates adaptive management through evaluation and revision based on data collected during monitoring. Measures with no potential for impacts to non-target species will be implemented across the 84.2-acre site. Where a management measure could have potential for non-target species impacts that could extend to Small's milkpea and sand flax, the measure will first be tested within a known habitat area that is planned for related construction. After documenting the efficacy of the management measure and demonstration of no or minimal non-target impacts, the measure will be applied more broadly. Because occurrences of Small's milkpea and sand flax have remained robust on the site with no management for about 15 years, the Army has determined that a deliberate approach to active management would be in the best interest of the species.

Specifically, and in summary, the applicant proposes the following measures to benefit the species and pine rockland habitat:

- Develop an INRMP for the 84.2-acre property.
- Utilize the Preliminary Management Plan until the INRMP is completed.
- Conserve and manage about 17.86 acres of occupied Small's milkpea and sand flax habitat in three areas containing about 8.5 acres, 6.2 acres and 3.16 acres.
- Designate two preservation areas, 8.5 acres and 6.2 acres, to protect and manage Small's milkpea and sand flax.
- Avoid impacts to 3.16 acres of occupied Small's milkpea and sand flax habitat.

- Erect permanent fencing prior to construction to protect the 8.5-acre and 6.2 acre preservation areas.
- Erect temporary fencing and/or signage prior to construction to protect Small's milkpea and sand flax habitat outside the preservation areas that will not be impacted by construction.
- The U.S. Army will support discussions between Miami-Dade County and potential easement holders regarding the possibility of placing a conservation easement on the management areas if a suitable easement holder can be identified.

Direct effects:

The Project will result in the direct loss of about 0.80 acre of Smalls' milkpea and sand flax suitable habitat, which contains an estimated 1,033 Small's milkpea plants and 1,015 sand flax plants. It is estimated the project site contains about 50 percent of the known Small's milkpea population and about 60 percent of the known sand flax population (Kernan and Bradley, 1996).

Implementation of the proposed action would:

- Eliminate about 0.78 acre (about 5.9 percent) of the available onsite habitat for Small's milkpea and sand flax through construction and operation of the headquarters facility and associated parking.
- Eliminate 878 individuals (about 0.9 percent) of the estimated onsite population of Small's milkpea through development of the headquarters facility and associated parking.
- Eliminate 836 individuals (about 1.1 percent) of the estimated onsite population of sand flax through development of the headquarters facility and associated parking.
- Eliminate about 0.02 acre (about 0.2 percent) of the available onsite habitat for Small's milkpea and sand flax through construction of utility lines along St. Lo Boulevard and Rabaul Road.
- Eliminate 155 individuals (about 0.15 percent) of the estimated onsite population of Small's milkpea through construction of utility lines along St. Lo Boulevard and Rabaul Road.
- Eliminate 179 individuals (about 0.24 percent) of the estimated onsite population of sand flax through construction of utility lines along St. Lo Boulevard and Rabaul Road.

Interrelated and interdependent actions

Interrelated and interdependent actions are activities that would not occur "but for" the proposed action. The U.S. Army also has specified certain areas within the 84.2-acre site where related construction would be done to meet mission requirements concurrent with or subsequent to construction of the headquarters (Figure 4). These areas of related construction are interrelated and interdependent with the construction of the headquarters facility and would potentially:

- Eliminate about 0.68 acre (about 5.2 percent) of the available onsite habitat for Small's milkpea and sand flax through related construction.
- Eliminate 2,905 individuals of Small's milkpea (about 2.9 percent of the estimated onsite population), based on 2009 estimates (Bradley, 2009a), through related construction.
- Eliminate 1,835 individuals of sand flax (about 2.5 percent of the estimated onsite population), based on 2009 estimates (Bradley, 2009a), through related construction.

Beyond the interrelated and independent construction, additional potential future development has not been evaluated in this BO and will be evaluated for effects on the species through future consultations.

Indirect effects

Long-term operation of the SOCSOUTH Headquarters is not likely to further impact Small's milkpea, sand flax, or pine rockland habitat. However, future mission changes or assignment of new units or tenants to the facility could result in a need for additional structures or infrastructure on the 84.2-acre site. The uncertainty regarding future needs, the need to restrict non-military access to portions of the facility, and the dispersed arrangement of the Small's milkpea and sand flax occurrences outside the designated management areas make it impractical to include additional occurrences. Once the Army has control of the 84.2-acre site, the Army will arrange to prepare an INRMP per the Sikes Act (16 United States Code 670 et seq.), which requires that all military installations with significant natural resources prepare an INRMP. The INRMP will be developed in accordance with Army Regulation 200-1 (Environmental Protection and Enhancement) and Department of Defense Instruction 4715.3, and will be developed in coordination with the Service and relevant State agencies. The INRMP will incorporate the Plan for Small's milkpea and sand flax, and will also address the Army's management responsibilities for the areas outside the management areas. Potential future development by the Army, beyond the interrelated and independent construction discussed above, will be evaluated for effects on the species through future consultations in accordance with section 7.

Additional management areas outside the 14.7 acres of preserved habitat area are not identified in Figure 4 and Table 1, have not been evaluated for impacts in this BO, and will be evaluated for effects on the species through future consultations should development in these areas be considered

Species Response to the proposed action

The Project will result in a direct loss of about 0.80 acre of Smalls' milkpea suitable habitat, which contains an estimated 1,033 Small's milkpea plants and 1,015 sand flax plants. About 15.76 acres of habitat will be improved through management, which includes exotic removal and restoring pine rockland habitat and reinstating a natural fire regime.

The species should benefit from protection, exotic removal, restoration of pine rockland habitat and reinstatement of a natural fire regime.

CUMULATIVE EFFECTS

Cumulative effects include future state, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this BO. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

The Army will enter into a 50-year lease with Miami-Dade County to use the 84.2- acre property as the SOCSOUTH Headquarters, or may purchase the property in the future. Miami-Dade County may decide to sell or transfer this property during the term of the lease. If this occurs, the Army will work with the new owner to transition management of Small's milkpea and sand flax on the property, if the management agreement with DERM could not be maintained.

CONCLUSION

Implementation of the proposed action will result in impacts to Small's milkpea, sand flax, and their habitat, but the Project will also preserve and enhance most of the existing habitat on the 84.2-acre site and manage the preserved areas for the benefit of the species (Table 3).

In summary, the Project, when implemented, will have the following significant effects (also see Table 3):

- Eliminate a total of approximately 1.48 acre (approximately 11.3 percent) of the available onsite habitat for Small's milkpea and sand flax due to the following activities
    - Construction and operation of the headquarters facility and associated parking (0.78 acre, 5.9 percent),
    - Construction of utility lines along St. Lo Boulevard and Rabaul Road (0.02 acre, 0.2 percent),
    - Related construction (0.68 acre, 5.2 percent).
- Eliminate a total of 3,938 individuals (approximately 3.95 percent of the estimated onsite population) of Small's milkpea found onsite through the following activites
    - Construction and operation of the headquarters facility and associated parking (878 individuals, 0.9 percent),
    - Construction of utility lines along St. Lo Boulevard and Rabaul Road (155 individuals, 0.15 percent),
    - Related construction (2,905 individuals, 2.9 percent).
- Eliminate a total of 2,850 individuals (approximately 3.84 percent of the estimated onsite population) of Small's milkpea found onsite through the following activites
    - Construction and operation of the headquarters facility and associated parking (836 individuals, 1.1 percent),
    - Construction of utility lines along St. Lo Boulevard and Rabaul Road (179 individuals, 0.24 percent),
    - Related construction (1,835 individuals, 2.5 percent).
- Conserve and manage about 8.5 acres of habitat occupied by Small's milkpea and sand flax and 6.2 acres of potential habitat (not currently occupied) through the Preliminary Management Plan, INRMP and a possible future conservation easement. These 14.7 acres includes areas containing 49,254 individuals of Small's milkpea (about 49 percent of the estimated onsite population) and 57,725 individuals of sand flax (about 78 percent of the estimated onsite population) based on 2009 estimates (Bradley, 2009a).
- Preserve an additional 3.16 acres of Small's milkpea and sand flax habitat, including an additional 47,510 individuals of Small's milkpea (about 47 percent of the estimated onsite population) and 13,184 individuals of sand flax (about 18 percent of the estimated onsite population) based on 2009 estimates (Bradley, 2009a).
- Implement the Army's March 2011 Preliminary Management Plan (Appendix A) to conserve and benefit Small's milkpea and sand flax on the 84.2-acre site, and prepare an INRMP for implementation once the Army occupies the SOUSOUTH site.

With implementation of the INRMP, the Army will protect and manage approximately 85 percent of the onsite pine rockland habitat and approximately 96 percent of the onsite population of each species: approximately 96,764 individuals of Small's milkpea and approximately 70,909 individuals of sand flax (Table 3).

The current available data indicates the Small's milkpea on the project site (100,702 estimated plants) represents about 50 percent of the total known population (about 201,500 plants based on this estimate) and the sand flax on the project site (73,759 estimated plants) represents about 96 percent of the total known population (about 77,000 plants based on this estimate). A potential remains for additional plants to be in unknown locations; however, remaining habitat for these species is rare and additional significant populations are unlikely. The project will impact 3,398 Small's milkpea individuals (about 2 percent of the total estimated known population) and 2,850 sand flax individuals (about 3.7 percent of the total estimated known population). The project will preserve and manage 96,794 Small's milkpea individuals (about 48 percent of the total estimated known population) and 70,909 sand flax individuals (about 92.1 percent of the total estimated known population). The project will also preserve and enhance an additional 6.2 acres of suitable habitat that is currently unoccupied, thereby providing for potential expansion of these plants onsite.

After reviewing the current status of the Small's milkpea and sand flax, the environmental baseline for the action area, the effects of the proposed Project and the cumulative effects, it is the Service's biological opinion that the Project, as proposed, is likely to adversely affect these two species, but is not likely to jeopardize their continued existence. Critical habitat for the Small's milkpea and sand flax has not been designated; therefore, none will be affected.

Amount or extent of take

Sections 7(b)(4) and 7(o)(2) of the Act generally do not apply to listed plant species. However, limited protection of listed plants from take is provided to the extent that the Act prohibits the removal and reduction to possession of Federally listed endangered plants or the malicious damage of such plants under Federal jurisdiction, or the destruction of endangered plants on non-Federal areas in violation of State law or regulation or in the course of any violation of a State criminal trespass law.

Effect of take

In the accompanying Biological Opinion, the Service determined that the proposed action is not likely to result in jeopardy to the species.

REASONABLE AND PRUDENT MEASURES

Reasonable and Prudent Measures are actions that the Director believes necessary to or appropriate to minimize the impacts, i.e., the amount or extent of take. Since take of listed plants is not authorized under Sections 7(b)(4) and 7(o)(2) of the Act, there are no Reasonable and Prudent Measures.

TERMS AND CONDITIONS

Since there are no Reasonable and Prudent Measures, the Service has not identified any terms and conditions to implement the reasonable and prudent measure.

In the event of significant unanticipated impacts or population decline, notification must be made to the Service's South Florida Ecological Services Office (1339 20th Street; Vero Beach, Florida 32960-3559; 772-562-3909). Care should be taken in the preservation of specimens in the best possible state for later analysis of cause of death or injury.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to further minimize or avoid adverse effects of a Project on listed species or critical habitat, to help implement recovery plans, or to develop information. We do not have any additional conservation recommendations at this time.

If, during the course of the action, any impact considered in our biological opinion is exceeded, such impact represents new information and requiring reinitiation of consultation. The Federal agency must immediately review with the Service the need for possible modification of the project.

REINITIATION NOTICE

This concludes formal consultation on the proposed SOCSOUTH facility. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Service involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this Opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this Opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Thank you for your cooperation in the effort to protect fish and wildlife resources. If you have any questions regarding this project, please contact Winston Hobgood at 772-562-3909, extension 306.

Sincerely yours,

For Paul Souza
Field Supervisor
South Florida Ecological Services Office

cc: electronic only
Corps, Mobile, Alabama (Brian Peck)
FWC, Tallahassee, Florida (FWS-CPS, MaryAnn Poole, Traci Wallace)
Miami-Dade DERM, Miami, Florida (Robert Warren - rwarren@miamidade.gov)
Service, Vero Beach, Florida (Dave Bender, Paula Halupa, Marilyn Knight)

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Table 1. Small's Milkpea and Sand Flax Habitat Preserved and Impacted

Habitat Polygon [1]	Size (ac)	Protected Area (possible CE) - (ac)	Preserved Additional Management Areas (ac) [2]	Area Impacted by Headquarters and Utility ROW (ac) [3]
A	6.050	5.810	0.010	0.230
B	1.100	1.090	0.000	0.010
C	0.690	0.000	0.000	0.000
D	0.330	0.260	0.012	0.048
E	0.810	0.000	0.020	0.000
F	0.540	0.000	0.000	0.000
G	1.230	1.230	0.000	0.000
H	0.260	0.000	0.200	0.000
I	0.210	0.000	0.000	0.000
J	0.610	0.000	0.000	0.000
K	0.040	0.000	0.000	0.000
M	0.010	0.000	0.000	0.005
O	0.004	0.000	0.000	0.004
P	0.250	0.060	0.000	0.100
Q	0.020	0.000	0.000	0.010
R	0.350	0.040	0.000	0.280
S	0.050	0.000	0.000	0.005
T	0.020	0.010	0.000	0.006
V	0.130	0.000	0.130	0.000
W	0.004	0.000	0.004	0.000
X	0.070	0.000	0.000	0.000
Y	0.120	0.000	0.120	0.000
Z	0.020	0.000	0.020	0.000
AA	0.004	0.000	0.004	0.000
BB	0.090	0.000	0.090	0.000
CC	0.070	0.000	0.070	0.000
DD	0.060	0.000	0.000	0.060
Totals	**13.142**	**8.500**	**3.159**	**0.680**
Percentage of Total				

[1] Habitat Polygon refers to mapped areas on Figures 3 where Small's milkpea or sand flax were identified growing in 2009 (Bradley, 2009a).
[2] Scattered areas outside the main protected area (potential CE) that would not be developed and would be managed for the species. Plans for additional development in these areas would require additional Section 7 Consultation.
[3] Impacts assessed under this Biological Opinion.

Table 2. Population Sizes, Habitat Size and Quality, and Future Status of Small's Milkpea, Sand Flax, and their Habitat

Area	Population of Species [a]	Habitat Size and Quality	Status Following Project Implementation [b]
A	*Galactia smallii*: 33,735 *Linum arenicola*: 37,287	6.05 acres of high quality habitat, largest contiguous tract of suitable habitat	96% managed for the species and pine rockland habitat. Anticipated loss of about 0.24 ac of habitat, 1,391 Small's milkpea, and 1,491 sand flax from proposed and related construction.
B	*Galactia smallii*: 10,870 *Linum arenicola*: 3,705	1.10 acres with habitat quality ranging from good to poor	99% managed for the species and pine rockland habitat. Anticipated loss of about 0.01 ac of habitat, 99 Small's milkpea, and 34 sand flax from proposed development and related construction.
C	*Galactia smallii*: Trace *Linum arenicola*: 4,494	0.69 acre of high quality habitat	Not impacted and not within the management areas. Area will be managed to maintain species and habitat, as directed in INRMP.
D	*Galactia smallii*: 1,116 *Linum arenicola*: 2,903	0.33 acre with habitat quality ranging from medium to good	80% protected and managed for the species and pine rockland habitat. Anticipated loss about of 0.07 ac of habitat, 223 Small's milkpea, and 581 sand flax from utility ROW and related construction.
E	*Galactia smallii*: 14,471 *Linum arenicola*: 2,199	0.81 acre of medium quality habitat	2% of area within proposed related construction areas may be impacted. Anticipated loss of about 0.02 acre of habitat, 289 Small's milkpea, and 44 sand flax from related construction. Remainder of area will be managed to maintain species and habitat, as directed in INRMP.
F	*Galactia smallii*: 12,379 *Linum arenicola*: Trace	0.54 acre with habitat quality ranging from medium to good	Not impacted and not within the management areas. Area will be managed to maintain species and habitat, as directed in INRMP.
G	*Galactia smallii*: 5,174 *Linum arenicola*: 15,928	1.23 acres of high quality habitat	Protected and managed for the species and pine rockland habitat.
H	*Galactia smallii*: 8,395 *Linum arenicola*: 2,799	0.26 acre of medium quality habitat	80% of area within related construction areas may be impacted. Anticipated loss of about 0.21 ac of habitat, 6,716 Small's milkpea, and 2,239 sand flax from related construction.
I	*Galactia smallii*: Trace *Linum arenicola*: 3,935	0.21 acre of medium quality habitat	Not impacted and not within the management areas. Area will be managed to maintain species and habitat, as directed in INRMP.
J	*Galactia smallii*: 13,614 *Linum arenicola*: Trace	0.61 acre of medium quality habitat	Not impacted and not within the management areas. Area will be managed to maintain species and habitat, as directed in INRMP.
K	*Galactia smallii*: 205 *Linum arenicola*: 359	0.04 acre of high quality habitat	Not impacted and not within the management areas. Area will be managed to maintain species and habitat, as directed in INRMP.
M	*Galactia smallii*: 5 *Linum arenicola*: 0	0.01 acre of low quality habitat	All plants and habitat would be impacted through development of headquarters facility and associated parking.
O	*Galactia smallii*: 5 *Linum arenicola*: 0	0.004 acre of low quality habitat	All plants and habitat would be impacted through development of headquarters facility and associated parking.

Table 2. Population Sizes, Habitat Size and Quality, and Future Status of Small's Milkpea, Sand Flax, and their Habitat

Area	Population of Species [a]	Habitat Size and Quality	Status Following Project Implementation [b]
P	*Galactia smallii*: 75 *Linum arenicola*: 0	0.25 acre of low quality habitat	25% protected and managed for the species and pine rockland habitat. Anticipated loss of about 0.19 ac of habitat and 56 Small's milkpea from development of headquarters facility and associated parking.
Q	*Galactia smallii*: 5 *Linum arenicola*: 0	0.02 acre of low quality habitat	All plants and habitat would be impacted through development of headquarters facility and associated parking.
R	*Galactia smallii*: 50 *Linum arenicola*: 100	0.35 acre high quality habitat in patches	10% protected and managed for the species and pine rockland habitat. Anticipated loss of about 0.32 ac of habitat and 45 Small's milkpea from proposed development of headquarters facility and associated parking.
S	*Galactia smallii*: 50 *Linum arenicola*: 0	0.05 acre of low quality habitat	All plants and habitat would be impacted through development of headquarters facility and associated parking.
T	*Galactia smallii*: 25 *Linum arenicola*: 0	0.02 acre of medium quality habitat	30% protected and managed for the species and pine rockland habitat. Anticipated loss of about 0.01 ac of habitat, 17 Small's milkpea, and 90 sand flax from proposed development of headquarters facility and associated parking.
V	*Galactia smallii*: 0 *Linum arenicola*: 20	0.13 acre of high quality habitat	All plants and habitat may be impacted from related construction..
W	*Galactia smallii*: 0 *Linum arenicola*: 10	0.004 acre of low quality habitat	All plants and habitat may be impacted from future related construction..
X	*Galactia smallii*: 413 *Linum arenicola*: 0	0.07 acre of medium quality habitat	Not impacted and not within the management areas. Area will be managed to maintain species and habitat, as directed in INRMP.
Y	*Galactia smallii*: 20 *Linum arenicola*: 20	0.12 acre of medium quality habitat	Plants and habitat may be impacted from related construction.
Z	*Galactia smallii*: 25 *Linum arenicola*: 0	0.02 acre of low quality habitat	Plants and habitat may be impacted from related construction..
AA	*Galactia smallii*: 5 *Linum arenicola*: 0	0.004 acre of low quality habitat	Plants and habitat may be impacted from related construction..
BB	*Galactia smallii*: 25 *Linum arenicola*: 0	0.09 acre of low quality habitat	Plants and habitat may be impacted from related construction..
CC	*Galactia smallii*: 20 *Linum arenicola*: 0	0.07 acre of low quality habitat	Plants and habitat may be impacted from related construction..
DD	*Galactia smallii*: 20 *Linum arenicola*: 0	0.06 acre of medium quality habitat	Plants and habitat would be impacted through development of headquarters facility and associated parking.

a Survey conducted in June 2009
b Population impact estimates based on assumption of even distribution within a partially impacted area.
Source: Bradley, 2009a.

Table 3. Projected Impacts to and Preservation of Small's Milkpea, Sand Flax, and Their Habitat

Mission Component	Habitat [1] Lost (ac)	Small's Milkpea Lost [2]	Sand flax Lost [2]	Habitat [1] Preserved (ac)	Small's Milkpea Preserved [2]	Sand flax Preserved [2]
Construct Headquarters	0.78	878	836	None	None	None
New Utility ROW	0.02	155	179	None	None	None
Renovate and Operate Building 736	None	None	None	None	None	None
Use Building 741	None	None	None	None	None	None
Upgrade and Operate Foam Fire System	None	None	None	None	None	None
Related Construction[3]	0.68	2,905	1,835	None	None	None
INRMP managed areas[4]	None	None	None	8.50	49,254	57,725
Additional Managed Areas[5]	None	None	None	3.16	47,510	13,184
Totals	1.48	3,938	2,850	11.66	96,764	70,909
Percentage of Total	11.3%	3.9%	3.9%	88.7%	96.1%	96.1%

[1] Habitat refers to land where either Small's milkpea or sand flax were identified growing in 2009 (Bradley, 2009a).

[2] Numbers based on population estimates from 2009 (Bradley, 2009a).

[3] This includes all of parts of 10 habitat areas containing Small's milkpea and sand flax. These areas will be managed until they are developed.

[4]This area is included in the 14.7 total acres preserved and is the occupied portion of that total acreage, an additional 6.2 acres may be restored to pine rockland habitat.

[5]Additional Small's milkpea and sand flax population areas (all or parts of 8 habitat areas) outside of the INRMP managed areas.

Figure 1: Project Location

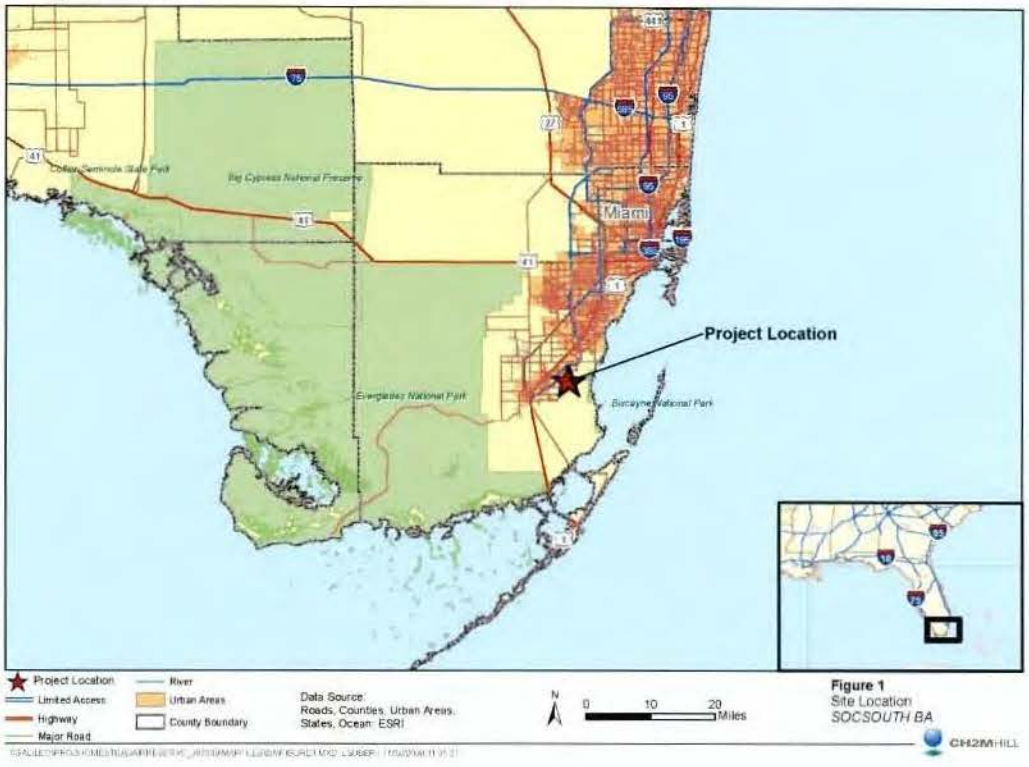

Figure 2: Proposed SOCSOUTH Headquarters Location and Related Construction Areas

Figure 3: Locations of the plant colonies on the site and the proposed management areas.

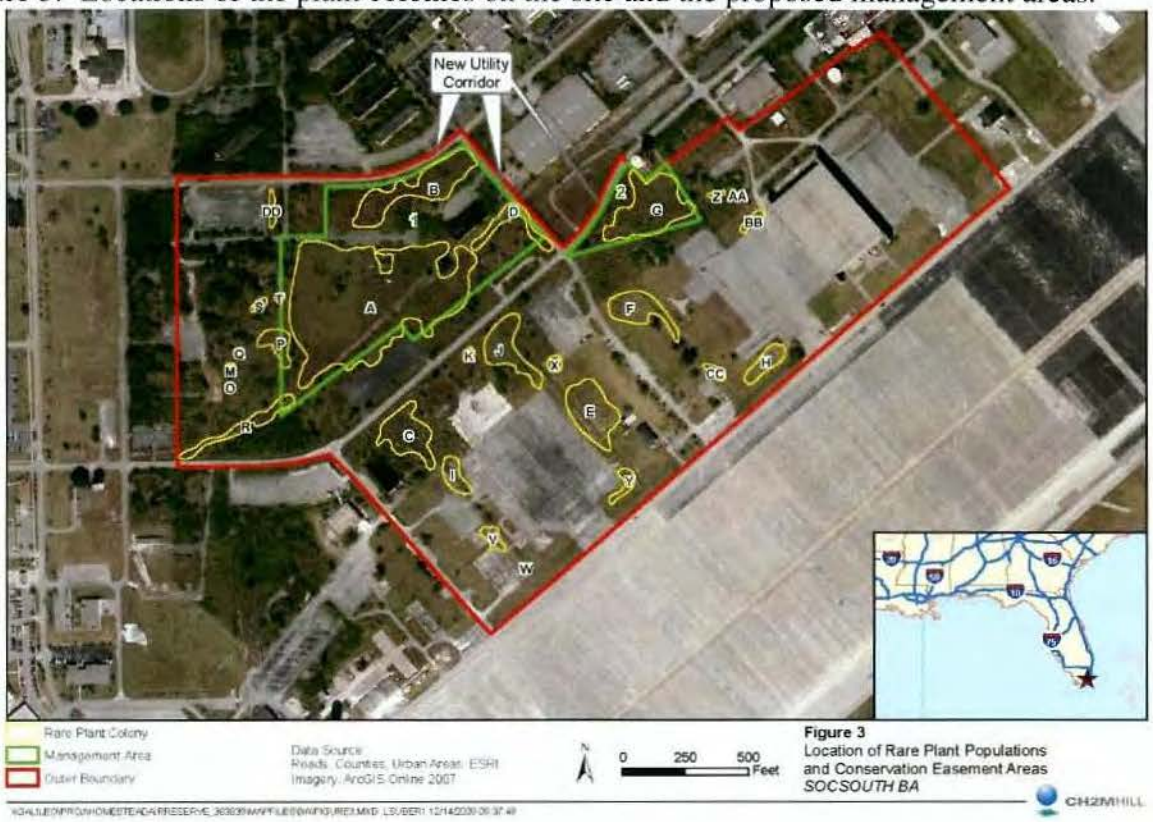

Figure 4: Proposed Impacts and Management Areas

Appendix A

PRELIMINARY MANAGEMENT PLAN

PRELIMINARY MANAGEMENT PLAN

for

Small's Milkpea (*Galactia smallii*) and Sand Flax (*Linum arenicola*)
on
U.S. Army Special Operations Command South Headquarters,
Homestead, Florida

Prepared For
United States Army Garrison – Miami
and
Special Operations Command – South

Prepared By
CH2M HILL
July 2010

PRINTED ON RECYCLED PAPER

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LIST OF ACRONYMS, ABBREVIATIONS, AND SYMBOLS

Army	United States Army
INRMP	Integrated Natural Resources Management Plan
IPP	Invasive Pest Plant
m	Meter
SOCSOUTH	Special Operations Command SOUTH
U.S.	United States

1. INTRODUCTION

The U.S. Army (Army) Special Operations Command SOUTH (SOCSOUTH) Headquarters facility is proposed on a property containing a Federal endangered plant, Small's milkpea (*Galactia smallii*) and a Federal candidate plant species, sand flax (*Linum arenicola*). Development of the headquarters facility will result in the unavoidable loss of approximately four percent of the population of each species on the property. One of the requirements resulting from formal section 7 consultation under the Endangered Species Act was that the Army develop a management plan for implementation to conserve Small's milkpea and sand flax, and their habitat, on the property where the new SOCSOUTH Headquarters would be located.

This Preliminary Management Plan identifies measures that may be implemented to manage the habitat for Small's milkpea and sand flax on approximately 17.66 acres within the property. This area includes Management Areas 1 and 2, which cover 14.7 acres and include 8.5 acres of pine rockland habitat plus an additional 6.2 acres that may be restored to pine rockland habitat, and additional population areas (totaling 3.16 acres) outside of Management Areas 1 and 2. The additional 3.16 acres are identified by the population polygons identified during site survey (Bradley, 2009a). No surrounding land is included with the additional 3.16 acres because restoration of surrounding land would not be practical. This preliminary management Plan will be used as a basis for development of an Integrated Natural Resources Management Plan (INRMP) that will guide long-term management for these species.

2. SITE DESCRIPTION

The Army will lease an 84.2-acre property from Miami-Dade County for construction of the new SOCSOUTH Headquarters facility. The property is in Dade County, approximately 4 miles northeast of Homestead, Florida. Homestead Air Reserve Base borders the site to the east, south, and west, with the air strip adjacent to the site along the eastern border. The area north of the property also is owned by Miami-Dade County and being developed as an industrial park.

The site is unoccupied and consists mostly of old building foundations and unused parking lots. Six structures and a Dade County sanitary sewer lift station remain on the property, including an old office building (Building 736), a large hangar (Building 741), a 500,000-gallon aboveground storage tank and associated pump house (Building 743), an open-sided shed (Building 746), and a small un-numbered shed containing an air compressor (Figure 2). The headquarters building and its associated parking would be constructed near the southwestern boundary of the property. Additional areas on the property would be used or developed in the future (Figure 1). The remainder of the property is not planned for development and includes Management Area 1, Management Area 2, and an additional 3.16 acres of Small's milkpea/sand flax habitat.

Prior to development, the area was predominantly native pine rockland habitat. This sensitive vegetation community occurs only in southern Miami-Dade County, the Florida Keys, and parts of the Bahamas that are restricted to outcrops of three limestone formations: Miami Limestone, Key Largo Limestone, and Tamiami Limestone (Austin, 1997; Taylor, 1998). Remnant native pine rockland communities likely still occur within and around the 84.2-acre property. Pine rockland species previously observed on the property include Bahama brake (*Pteris bahamensis*), locustberry (*Byrsonima lucida*), pineland jacquemontia (*Jacquemontia curtissii*), quail berry (*Crossopetalum ilicifolium*), small Porter's sandmat (*Chamaesyce porteriana*), white-top sedge (*Dichromena floridensis*), West Indian lilac (*Tetrazygia bicolor*), and five-petaled leaf-

flower (*Phyllanthus pentaphylus* var. *floridanus*) (PBS&J, 1996). These species and other pine rockland species were observed on portions of the property in 2009 (Bradley, 2009a). Several exotic species occur on the property, including Brazilian pepper (*Schinus terebinthifolius*), silk reed (*Neyraudia reynaudiana*), napier grass (*Pennisetum purpureum*), and Australian pine (*Casuarina equisetifolia*) (Bradley, 2009a).

3. SPECIES DESCRIPTIONS

3.1 Small's Milkpea

Small's milkpea is a small, trifoliolate, perennial legume with small, purple flowers and a prostrate habit. The stems are grayish, due to a covering of short hairs, and grow up to 79 inches. Stem internodes are well-developed and have long, straight, soft hairs. Leaflets are broadly ovate to elliptic and 0.4 - 0.9 inch long. The underside of the leaflet has long, soft, wavy hairs lying almost flat against the surface. The upper surface of the leaflet is either hairless or has sparse, stiff hairs, lying flat. Flowers are about 0.5 inch long and pinkish-purple or lavender.

Small's milkpea is endemic to the pine rocklands of Miami-Dade County. Pine rockland habitat has been destroyed throughout much of its historic range in south Florida and replaced by residential housing, commercial construction, or agriculture. Less than 2 percent of the original pine rockland habitat remains and most occurs in small, isolated stands. Prior to this discovery, only seven additional populations of Small's milkpea were known, none of which are as large as that on the project site. Habitat loss and fragmentation, fire suppression, and invasion by exotic plant species threaten the existence of Small's milkpea. The species typically is reduced or eliminated in areas where invasive exotic species, such as Brazilian pepper and silk reed, are prevalent. Most threats to Small's milkpea are ongoing and are considered imminent.

3.2 Sand Flax

Sand flax is a glabrous, perennial herb with wiry stems reaching up to 28 inches tall. Leaves are few, alternate, and early deciduous. Flowers are in terminal cymes, 5-parted, less than 2.5 inches wide, with ephemeral yellow petals and separate styles.

Sand flax occurs in pine rockland and marl prairie habitats which require periodic wildfires to maintain an open, shrub-free subcanopy and reduce litter levels. Available data indicate there are 11 extant occurrences of sand flax, with 11 others extirpated or destroyed. Only small and isolated occurrences remain in a restricted range of southern Florida and the Florida Keys. Habitat loss and degradation due to development is a major threat to this species. Most remaining occurrences are on private land or non-conservation public land. Nearly all remaining populations are threatened by fire suppression, difficulty in applying prescribed fire, road maintenance activities, exotic species, and/or illegal dumping. Most threats to the species are ongoing and are considered imminent.

3.3 Distribution of Small's Milkpea and Sand Flax in the Project Area

Sand flax and Small's milkpea are generally concentrated in the west-central portion of the project area, but they occur scattered throughout much of the property (Figure 3). At the west end of the project area, the surface elevation is generally lower than optimal and densities of these species are reduced. The eastern portion of the project area is more highly disturbed and the level of disturbance may contribute to lower abundance and densities for the species.

This plan addresses management of Management Area 1 and Management Area 2 (Table 1, Figure 3), habitat areas on the property that are outside these designated management areas that also would be preserved, and habitat areas that would not be impacted by the headquarters facility, but that would eventually be lost to related construction (Table 2, Figure 3). No management would be proposed for habitat areas that would be lost as a direct result of the construction of the headquarters facility parking and structures. Some identified habitat areas would be partially encroached upon by the headquarters facility or related construction. The INRMP will address all natural resources on the property.

Table 1
Population Sizes of Small's Milkpea and Sand Flax and Habitat Size and Quality Within Areas to be Managed for the Species

Area	Population of Species	Habitat Size and Quality
A	*Galactia smallii*: 33,735 *Linum arenicola*: 37,287	6.05 acres of high quality habitat, largest contiguous tract of suitable habitat within Management Area 1
B	*Galactia smallii*: 10,870 *Linum arenicola*: 3,705	1.10 acres with habitat quality ranging from good to poor within Management Area 1
C	*Galactia smallii*: Trace *Linum arenicola*: 4,494	0.69 acre of high quality habitat outside of Management Area 1 and Management Area 2
D	*Galactia smallii*: 1,116 *Linum arenicola*: 2,903	0.33 acre with habitat quality ranging from medium to good within Management Area 1
E	*Galactia smallii*: 14,471 *Linum arenicola*: 2,199	0.81 acre of medium quality habitat Management Area 1 and Management Area 2
F	*Galactia smallii*: 12,379 *Linum arenicola*: Trace	0.54 acre with habitat quality ranging from medium to good Management Area 1 and Management Area 2
G	*Galactia smallii*: 5,174 *Linum arenicola*: 15,928	1.23 acres of high quality habitat within Management Area 2
I	*Galactia smallii*: Trace *Linum arenicola*: 3,935	0.21 acre of medium quality habitat Management Area 1 and Management Area 2
J	*Galactia smallii*: 13,614 *Linum arenicola*: Trace	0.61 acre of medium quality habitat Management Area 1 and Management Area 2
K	*Galactia smallii*: 205 *Linum arenicola*: 359	0.04 acre of high quality habitat Management Area 1 and Management Area 2
P	*Galactia smallii*: 75 *Linum arenicola*: 0	0.25 acre of low quality habitat within Management Area 1
T	*Galactia smallii*: 25 *Linum arenicola*: 0	0.02 acre of medium quality habitat within Management Area 1
X	*Galactia smallii*: 413 *Linum arenicola*: 0	0.07 acre of medium quality habitat Management Area 1 and Management Area 2

Source: Bradley, 2009a.

Table 2
Population Sizes of Small's Milkpea and Sand Flax and Habitat Size and Quality In Areas to be Managed Under This Plan Until lost to Related construction

Area	Population of Species	Habitat Size and Quality
H	*Galactia smallii*: 8,395 *Linum arenicola*: 2,799	0.26 acre of medium quality habitat
R	*Galactia smallii*: 50 *Linum arenicola*: 100	0.35 acre high quality habitat in patches
V	*Galactia smallii*: 0 *Linum arenicola*: 20	0.13 acre of high quality habitat
W	*Galactia smallii*: 0 *Linum arenicola*: 10	0.004 acre of low quality habitat
Y	*Galactia smallii*: 20 *Linum arenicola*: 20	0.12 acre of medium quality habitat
Z	*Galactia smallii*: 25 *Linum arenicola*: 0	0.02 acre of low quality habitat
AA	*Galactia smallii*: 5 *Linum arenicola*: 0	0.004 acre of low quality habitat
BB	*Galactia smallii*: 25 *Linum arenicola*: 0	0.09 acre of low quality habitat
CC	*Galactia smallii*: 20 *Linum arenicola*: 0	0.07 acre of low quality habitat

Note: A portion of Population T would be protected within managed areas, but most of this population would be eliminated by development.

Source: Bradley, 2009a.

4. MANAGEMENT ACTIONS

This section identifies the management actions that would be implemented under this plan. Management will follow an adaptive approach and it is expected that the plan will be revised and updated through time. All management would likely begin as annual efforts within each area, but as these habitat conditions improve and exotic species are more under control, active management in smaller areas could transition to every other year or every third year, depending on site-specific needs.

4.1 Invasive Pest Plant Control

Several invasive pest plants (IPPs) occur on the property, including Brazilian pepper (*Schinus terebinthifolius*), silk reed (*Neyraudia reynaudiana*), napier grass (*Pennisetum purpureum*), and Australian pine (*Casuarina equisetifolia*) (Bradley, 2009a). Control measures that would be implemented differ depending on the plant species being targeted, with obvious differences in the approach to controlling woody IPPs compared to herbaceous IPPs. Control of Woody IPPs poses little risk to nontarget species, including Small's milkpea and sand flax, and these control efforts can be implemented without special measures as long as the root mass is left in place and

no ground disturbance occurs. However, because the herbaceous IPPs are intermixed with Small's milkpea and sand flax, control efforts must be designed to minimize the risk to nontarget species.

4.1.1 Chemical Woody IPP Control

Control of woody IPPs on the property would be implemented on all areas not developed for the headquarters facility and associated parking. Because the headquarters facility and associated parking would be cleared and graded and then maintained in a landscaped condition, woody IPPs and the associated persistent seedbank would be eliminated from these areas. Control of woody IPPs on the remainder of the property would include a phased approach of elimination and removal of existing woody IPPs followed by continued treatments to control new growth from the persistent seedbank.

Initial elimination of woody IPPS would be accomplished through injection with an herbicide using a tree lance or hypodermic axe (hack and squirt) or through cut and stump paint with concentrated herbicide. The tree lance and hypodermic axe place the herbicide directly in the target plants with no risk of non-target contact while cutting and stump painting minimizes the risk to non-target species. It is expected that triclopyr (due to its specific effectiveness on many woody plants) or glyphosate (due to its general effectiveness) would be used for the control efforts because each compound is readily available, but other appropriate herbicides would be considered. Once the woody vegetation dies, the standing material would be cut and removed from the site with stumps left in place.

The initial treatment is expected to eliminate the mature woody IPPs and remove the seed source for these species. However, it is likely that woody herbaceous species would continue to grow on the site as a result of germination from the persistent seedbank. Seedlings would be treated the same as herbaceous IPPs, described below. Should any woody seedlings manage to develop into saplings, they would be treated in the same manner as the original woody IPP treatment. Eradication from the site will likely take several years, but the ability of these species to rapidly spread would be curtailed by the initial treatment.

4.1.2 Chemical Herbaceous IPP Control

Herbaceous IPPs would be controlled in a stepwise manner. One treatment method would be used where herbaceous IPPs occur without co-occurrence of either Small's milkpea or sand flax. A different approach would be used where the protected species and IPPs co-occur to minimize the risk to the protected species.

Where IPPs and protected species do not co-occur, IPP areas will be treated with broadcast foliar applications of herbicide. The chemical selected for application will have demonstrated effectiveness against the target species. Treatments would be repeated through time, as needed. Treatments would be applied under conditions when there is little to no potential for wind drift to transport broadcast foliar chemicals to non-treatment areas (little or no wind, no immediate forecast for rain).

Where herbaceous IPPs co-occur with protected species, chemical treatment may not be viable. A monocot-selective herbicide may be used on grass species that respond to this type of treatment. For *Zoysia* grass, which does not respond well to monocot-specific herbicides, chemical treatment may have to be combined with other treatments to achieve control. Broad-

leaved IPPs would be controlled through directed foliar applications rather than broadcast spraying of herbicides to minimize the potential for non-target exposure and wind drift. The treatments would be repeated as necessary to achieve control.

For *Zoysia* grass, chemical treatment could be combined with prescribed fire to achieve control. *Zoysia* typically resprouts faster than Small's Milkpea and sand flax after a fire. A broad-spectrum herbicide, preferably glyphosate as it has been shown to be most effective on this species, may be applied immediately following a prescribed burn if the *Zoysia* does resprout ahead of the protected species. Multiple treatments likely would be required because *Zoysia* is extremely difficult to eradicate.

Because of the potential risk to Small's milkpea and sand flax, this treatment should be tested in an areas targeted for related construction prior to applying to managed areas. If the test indicates positive control of *Zoysia* and minimal impact to Small's milkpea and sand flax, the treatment could then be applied to managed areas. Prior to use of chemical treatment in managed areas with protected plants, seeds of Small's Milkpea and sand flax would be collected, if available, from the treatment area to be available for seeding following treatment of the area. This would maintain the genetic diversity present in the treatment area in the event of unintentional nontarget impacts.

Outside of Management Areas 1 and 2, IPP treatment will focus on woody IPP species and herbaceous IPP species with wind-dispersed propagules that would have greatest potential for re-invading the management areas. Other IPP species will be treated, as appropriate, but such treatments will be prioritized based on relative threat.

4.2 Mowing

An area around the perimeter fence would be mowed to a distance of 10 feet from the fence to maintain a patrolable perimeter for installation security. Mowing typically would be done during the period from mid-January to mid-February. Where exotic species occur in this mowed area, approximately one month after mowing, a 5 percent glyphosate solution could be broadcast applied to the areas with exotic species.

Where Small's milkpea and sand flax occur within the fenced perimeter, winter mowing, as described above, would avoid primary seed set by these species. Additional managed areas may be mowed to retard growth of woody IPPs. As with the perimeter fence area, mowing would be done in winter.

4.3 Prescribed Fire

Fire is considered a necessary environmental component of pine-rockland habitat. Fire helps retard growth of woody species and maintains openings for the herbaceous plants associated with this habitat type. The Army could implement prescribed burns over areas where a pine rockland system could be maintained. Prescribed fires would only be implemented under appropriate conditions (wind speed, fuel moisture level, humidity) for containing the fire within the desired area.

Because the populations of Small's milkpea and sand flax are robust where no fire has occurred for approximately 15 years, and because the property is in proximity to substantial human activity, it is likely that a long burn interval (4 to 7 years) within the recommended range for this species would be selected. The four-year window for implementing burns would allow

management to accommodate years in which fuel load, weather conditions, or mission requirements may preclude a burn. Monitoring data would be analyzed to determine whether the interval should change in any given area.

Prescribed fire would be initiated in Management Areas 1 and 2 following woody IPP removal, when the fuel load would be more suitable. Prescribed fire treatments would be done in winter.

Prescribed fire may be used in other areas, but a specific burn rotation would not be established for these areas. The decision on whether to burn outside of Management Areas 1 and 2 would be based on overall conservation objectives and whether the burn could be safely implemented considering surrounding uses.

4.4 Native Pine and Grass Propagation

Within Management Areas 1 and 2, scattered plantings of native pine will be made in an effort to restore pine to the habitat. In a year following woody IPP removal, 250 South Florida slash pine (*Pinus elliottii* var. *densa*) seedlings would be planted with the goal of establishing an open pine community and restoring the canopy vegetation of the pine rockland community. The pines would be planted in areas where exotic woody vegetation was removed and other areas within the Management Areas 1 and 2 where Small's milkpea and sand flax do not occur to avoid accidental impacts to these herbaceous species. Spacing of pine seedlings would be approximately 35 per acre in the planted areas.

It is expected that seedlings would be purchased from the Florida Division of Forestry Andrews Nursery, or a similar native plant supplier, to assure that local genotypes are obtained. If a supplier other than the Florida Division of Forestry Andrews Nursery is selected, the supplying nursery must certify that all seedlings are *Pinus elliottii* var. *densa.*

The planted areas would not be burned for at least 4 years following planting of pine seedlings to allow the pines to become well-established prior to burning. An assessment of pine health and vigor would be made prior to implementing a burn to minimize the potential for accidental loss to fire. When the initial planted pines are well-established, a second planting would be done to create the start of an uneven-aged stand. The second planting would be scheduled 10 – 13 years following the initial pine planting, and would be done in a year following prescribed fire treatment. As with the initial planting, the areas where seedlings are placed would not be burned for a minimum of 4 years. After the second planting, no additional planting would be expected and natural recruitment would then continue development of an uneven-aged canopy with a cover of approximately 25 percent.

No pine planting would occur in areas outside of Management Areas 1 and 2.

Management efforts to control *Zoysia* grass are expected to create conditions favorable to establishment of native grasses. Based on experience with other restoration areas in Miami Dade County, the Miami Dade County Department of Environmental Resource Management, recommends allowing natural colonization of native grasses for small restoration areas with a nearby source of native seeds. Therefore, planting of native grasses may not be included in the management strategy. Should it be determined that native recolonization is not sufficient to re-establish native grasses, mature seeds would be collected and broadcast over Miami Dade County without pre-treatment. It is expected that native grass overseeding, should it be necessary, would be done in the interval between the pine plantings.

4.5 Seed Collection/Distribution

If mature seeds are available prior to a chemical treatment of an area containing Small's milkpea or sand flax, seeds would be collected prior to chemical treatment to provide a ready source of propagules should the chemical treatment have excessive non-target affects.

While the Army does not have resources to fund such activities, the Army would consider cooperating with other agencies or organizations that wish to conduct research on the populations of Small's milkpea and sandflax occurring on the property. Within mission limitations, the Army would provide reasonable access to the site, provided advance notice is provided and current security policies are followed, to qualified personnel for research, collection, study, compliance monitoring or mitigation monitoring of Small's milk pea or sand flax. Such cooperation could include allowing access to:

- Collect seeds to support restoration efforts in Miami-Dade County.
- Conduct ecological or genetic population studies
- Conduct manipulative investigations where U.S. Fish and Wildlife Service (USFWS) determines in advance that the proposed study is feasible and would not jeopardize existence of Small's milkpea and sand flax.

4.6 Adaptive Management

Certain components of this plan are not accurately predictable. Treatment for exotic species may exhibit variable success and recolonization rates by controlled species may not be consistent. Therefore, intervals and intensities of treatments may vary through time, resulting in more or less effort in a given year compared to the plan. Because the intent of the plan is to benefit the species and not to rigidly implement the printed word, the plan would be adjusted to accommodate years of lesser or greater effort as conditions warrant.

5. EVALUATION AND REPORTING

An annual Monitoring and Maintenance Report will be included in INRMP development and would be submitted to the Army, USFWS, and cooperating State Agencies by January 31 of the following year. The initial report would be submitted following initial woody IPP removal, and subsequent reports would be submitted each year. The annual report would describe the status of the two species on the property and discuss the efficacy of management actions implemented. Trending data on species populations would be summarized. The report would identify whether management actions are working, whether excessive non-target impacts occur, and whether the management approach needs to be modified.

5.1 Monitoring

5.1.1 Small's Milkpea and Sand Flax

Each species would be monitored for population size, vigor, and threats. Management actions would be assessed in coordination with the Service for efficacy with regard enhancing populations of Small's milkpea and sand flax. The aerial extent of populations will be mapped using global positioning system receivers with sub-meter accuracy to track whether the areas occupied by the species are stable or changing. Monitoring efforts will be conducted in July to

allow each year's data to be collected under similar conditions. Because sand flax flowers wilt in the afternoon and make observation of the species more difficult, all monitoring work will be done in the morning. The specific monitoring protocols would be established in the INRMP, but the approach would likely be similar to the following.

A grid consisting of 10-meters (m) by 10-m cells will be established within Management Areas 1 and 2. Coordination with USFWS identified concern regarding potential impacts to protected plants and shallow limestone from establishing a grid with permanent corner markers for each grid cell. Therefore, permanent markers would be placed only in the southeastern corner and one other corner of each of the two areas to identify anchor points for each grid. If there is a need for a second grid within one of the two areas due to odd geometry, then the second marker could be used as the SE corner of the second grid rather than place two points at corners of one grid. A virtual grid will be developed tied to the southeast corner anchor point and loaded into a Global Positioning System (GPS) receiver accurate to 1-m. Each area will be surveyed following the grid system, with each grid cell assessed for density of Small's milkpea and sand flax. If the number of individuals of a species within a cell is less than 50, all plants will be counted. If the number of plants in a cell is more than 50, randomly placed 1-m x 1-m subplots will be placed within the grid cell and all plants within the subplot counted. Then, the number of plants within grid cells with more than 50 plants will be estimated by extrapolating from the subplot count.

The southeast corner of the grids also would serve as permanent photomonitoring points. Photographs will be taken from these locations facing west, northwest, and north, and the photographs will be included in monitoring reports. Should there be any change to the distribution of Small's milkpea or sand flax, the new population boundaries would be mapped using a GPS receiver and the new shapefiles submitted with the monitoring report.

Habitat quality will be described for each area and specific habitat issues will be noted relative to grid location. Specific observations on efficacy of management efforts or additional management needs also will be noted relative to grid location.

IPP areas will be mapped using a GPS receiver. Treatments applied will be described for each area in the monitoring report.

Outside of Management Areas 1 and 2, each identified population of Small's milkpea and sand flax will be investigated. The size of each of these populations will be estimated and observations on general health and vigor will be made.

5.1.2 IPP Species

Observations of IPP species will be made within Management Areas 1 and 2. IPPs will be identified to species and located relative to grid location. Observers will document relative effectiveness of treatments applied since the previous monitoring period and will identify any needs for future management efforts. Areas with an immediate need for treatment based upon perceived threat to Small's milkpea or sand flax would be noted.

Outside of Management Areas 1 and 2 observations of IPP species would be made. Observers would document relative effectiveness of any treatments applied since the previous monitoring period and will identify any needs for future management efforts. Areas with an immediate need for treatment based upon perceived threat to the Management Areas 1 and 2 or to local Small's milkpea or sand flax populations would be noted.

5.1.3 Pine Rockland Habitat

Within Management Areas 1 and 2, observations will be made regarding the general quality of pine rockland habitat. Observations on survival, health, and vigor of planting native pine will be recorded. The aerial crown cover of pines will be estimated. Observations on natural recruitment of other woody species common to pine rockland habitat will be made.

No observations on pine rockland habitat will be made outside Management Areas 1 and 2.

5.2 Reporting

A Monitoring and Maintenance Report will be prepared and submitted to the Army, USFWS, and cooperating State Agencies by January 31 of the year following the monitoring effort. The report will include separate discussions of Management Areas 1 and 2 and other areas. Each section of the report will include:

- Project background and history, including prior management efforts
- Management activities implemented since the previous report
- Population estimates for Small's milkpea and sand flax from the monitoring period, by population
- Trend data for Small's milkpea and sand flax, by population
- Assessment of status of populations of Small's milkpea and sand flax
- Assessment of efficacy of management efforts to include:
    - Woody IPP control
    - Herbaceous IPP control
    - Pine Rockland habitat enhancements
- Identification of future management needs

6. MANAGEMENT COSTS

As part of the INRMP development, a 5-year projected management action schedule and budget to implement those actions would be developed. Yearly and 5-year reviews would modify the schedule and budget as appropriate.

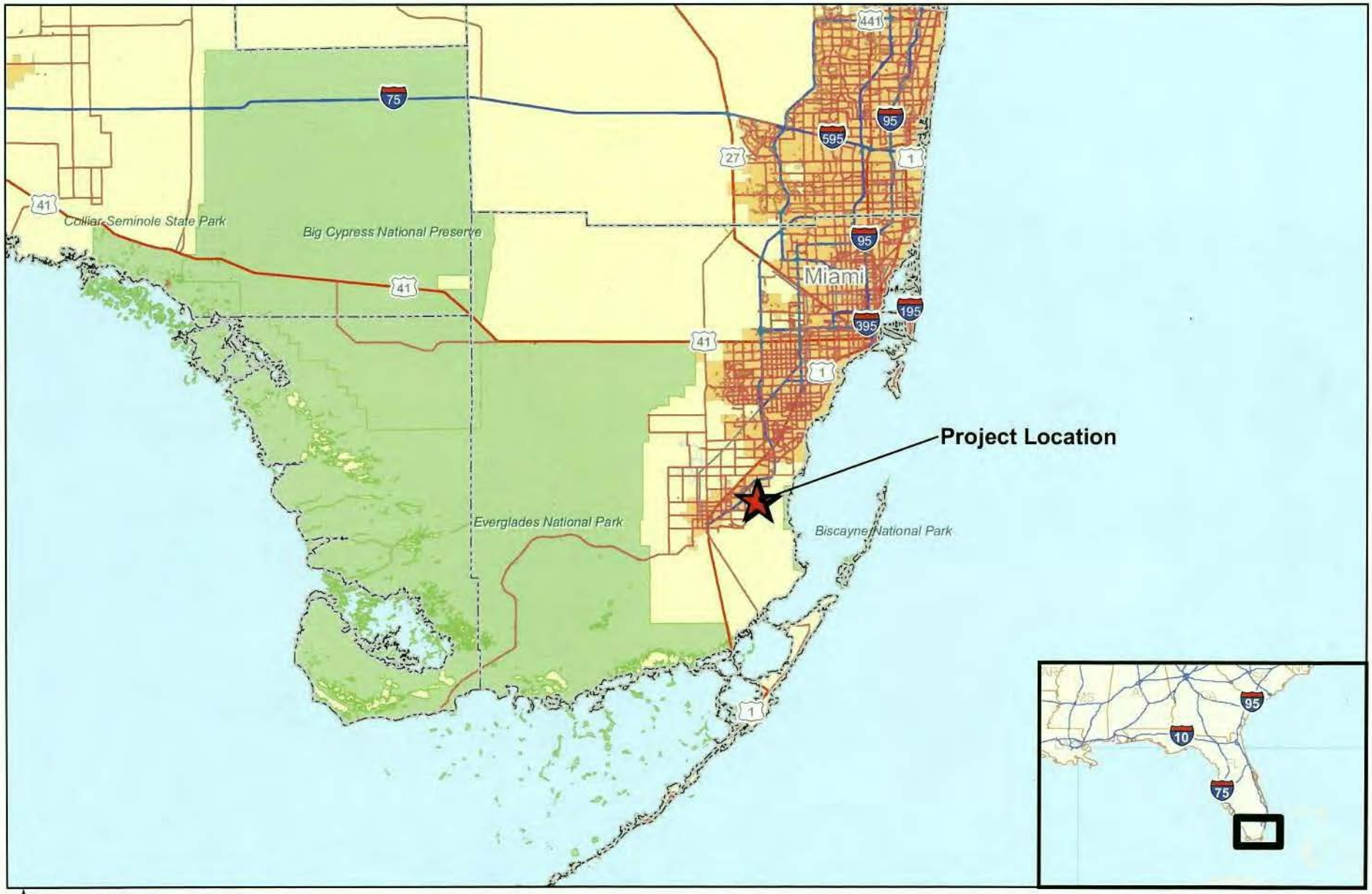

Figure 1
Site Location
MANAGEMENT PLAN

CH2MHILL

\\GALILEO\PROJ\HOMESTEADAIRRESERVE_383839\MAPFILES\BA\FIGURE1.MXD LSUBER1 11/30/2009 11:35:31

Figure 2
Proposed SOCSOUTH Headquarters Location and Related Construction Areas
MANAGEMENT PLAN

CH2MHILL

\\GALILEO\PROJ\HOMESTEADAIRRESERVE_383839\MAPFILES\MANAGEMENT PLAN\FIGURE2.MXD TALLEN10 2/26/2010 12:20:12

Rare Plant Colony
Management Areas
Outer Boundary

Data Source:
Roads, Counties, Urban Areas: ESRI
Imagery: ArcGIS Online 2007

N

0 250 500 Feet

Figure 3
Location of Rare Plant Populations and Management Areas
MANAGEMENT PLAN

CH2MHILL

APPENDIX C

Public Comments

Miami Herald
MiamiHerald.com

PUBLISHED DAILY
MIAMI-DADE-FLORIDA

STATE OF FLORIDA
COUNTY OF MIAMI-DADE

Before the undersigned authority personally appeared:

AMELIA CARTER

Who on oath says that he/she is

CUSTODIAN OF RECORDS

of The Miami Herald, a daily newspaper published at Miami in Miami-Dade County, Florida; that the attached copy of advertisement was published in said newspaper in the issues of:

April 21, 2011

Affiant further says that the said The Miami Herald is a newspaper published at Miami, in the said Miami-Dade County, Florida and that the said newspaper has heretofore been continuously published in said Miami-Dade County, Florida each day and has been entered as second class mail matter at the post office in Miami, in said Miami-Dade County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper(s).

Sworn to and subscribed before me this
21st day of April 2011

My Commission
Expires: August 1, 2014
Silvia Sendra

Notary

SILVIA SENDRA
MY COMMISSION # DD 977762
EXPIRES: August 1, 2014
Bonded Thru Notary Public Underwriters

PUBLIC NOTICE OF ENVIRONMENTAL ASSESSMENT AND DRAFT FINDING OF NO SIGNIFICANT IMPACT FOR THE CONSTRUCTION AND OPERATION OF U.S. SPECIAL OPERATIONS COMMAND SOUTH HEADQUARTERS ADJACENT TO HOMESTEAD AIR RESERVE BASE, HOMESTEAD, FLORIDA

Pursuant to the Council on Environmental Quality regulations for implementing the procedural provisions of the National Environmental Policy Act (40 Code of Federal Regulation [CFR] 1500) and 32 CFR Part 651 Environmental Analysis of Army Actions, the U.S. Army conducted an Environmental Assessment (EA) of the potential environmental and socioeconomic effects associated with construction and operation of a headquarters facility for Special Operations Command South (SOCSOUTH) adjacent to Homestead Air Reserve Base (HARB) in Homestead, Florida. SOCSOUTH would enter into a 50-year agreement with Miami-Dade County to lease or acquire in fee title an approximately 84.2-acre property adjacent to HARB, construct a new headquarters and operate SOCSOUTH.

SOCSOUTH proposes to construct its headquarters on approximately 28 acres of the property. The headquarters would consist of a planned three story 123,842 square foot administrative facility, rated as LEED Silver, with associated sitework and parking. Supporting facilities would include connection to utilities, emergency backup power with an uninterruptible power system, site development, paving (including parking), and landscaping. Antiterrorism measures would be incorporated into the design, to include appropriate stand-off distances and barriers. Buildings would comply with Category 5 hurricane protection. Existing structures would be demolished except for four buildings, including an existing hangar, that would be retained. SOCSOUTH would upgrade one building and an associated 500,000-gallon aboveground storage tank for a foam fire retardant system for the hangar. SOCSOUTH also has identified a need for related construction to meet mission needs. SOCSOUTH has identified areas within the property where this related construction would occur and the EA analyzes the potential impacts of construction in these areas. The property would be fenced, incorporating a 10-foot cleared strip maintained by mowing between the fence and property line. This mowed strip would contain utility rights-of-way along the northern perimeter.

The EA and Draft Finding of No Significant Impact (FNSI) will be available for public review from April 25 through May 25, 2011. This is in accordance with requirements specified in 32 CFR Part 651.14 Environmental Analysis of Army Actions. During this period the public may submit comments on the EA and the Draft FNSI. Printed copies of the EA and Draft FNSI can be viewed at the following libraries:

Miami-Dade Public Library System
Homestead Branch
700 North Homestead Blvd
Homestead, Florida 33030

Miami-Dade Public Library System
Main Library
101 West Flagler Street
Miami, Florida 33130

The EA and Draft FNSI may also be accessed on the World Wide Web at:
http://projects.ch2m.com/SOCSOUTHEA/

Comments on the EA and Draft FNSI should be submitted during the 30-day public comment period via mail, fax, or electronic mail to:

Rich Reaves/CH2M HILL
Northpark 400
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No comments were received during the Public Comment period.

APPENDIX D

Coastal Zone Consistency Determination

FEDERAL AGENCY COASTAL ZONE MANAGEMENT ACT (CZMA) CONSISTENCY DETERMINATION

Introduction

This document provides the State of Florida with the Consistency Determination under CZMA Section 307 and 15 Code of Federal Regulations (CFR) Part 930 sub-part C developed by the United States Special Operations Command South (SOCSOUTH). The information in this Consistency Determination is provided pursuant to 15 CFR Section 930.39 and Section 307 of the Coastal Zone Management Act, 16 U.S.C. § 1456, as amended, and its implementing regulations at 15 CFR Part 930. This federal consistency determination addresses the Proposed Action in the Environmental Assessment: *Construction and Operation of U.S. Army Special Operations Command South Headquarters Adjacent to Homestead Air Reserve Base, Homestead, Florida* for the building of a new SOCSOUTH Headquarters on property leased or acquired in fee title from Miami-Dade County and adjacent to Homestead Air Reserve Base (HARB).

Proposed Action

The proposed action is for SOCSOUTH to enter into a 50-year agreement with Miami-Dade County to lease or acquire in fee title an approximately 84.2-acre property adjacent to HARB, construct a new 125,000-square-foot (ft^2) headquarters facility for SOCSOUTH on the approximately 84.2-acre property, and operate SOCSOUTH from the new headquarters facility.

SOCSOUTH would construct its headquarters facility on approximately 28 acres of the approximately 84.2-acre site. The primary facility would consist of a Secure Compartmentalized Information Facility with sensitive storage areas and general purpose administrative areas. Fire, intrusion detection, and alarm systems would be included. Supporting facilities would include connection to utilities (water, sewer, electrical, storm drainage, and information systems), emergency backup power with an uninterruptible power system, site development, paving including parking, sidewalks, curb and gutter, storm drainage, landscaping, and other site improvements, including secure communications reception areas

Antiterrorism measures would be incorporated into the design, to include appropriate stand-off distances, barriers, sliding fence gate, and closed circuit TV. Buildings would be designed and built to comply with Category 5 hurricane protection and to prevent progressive collapse. Demolition of existing structures, existing paved surfaces, and utilities would be included in the proposed action.

Four buildings on the approximately 84.2-acre property would be retained by SOCSOUTH: Building 741, an old hangar that is currently used for storage, Building 736, a small office building that is not currently in use, Building 743, a pumphouse for the associated 500,000 gallon aboveground storage tank (located adjacent to the building) and both currently not in use, and Building 746, an open-sided shed that is also not currently in use. SOCSOUTH would continue to use Building 741 for storage.

Figure 1
Proposed SOCSOUTH Headquarters Location and Related Construction Areas
CZMA Consistency

Building 736 would be renovated and used for additional administrative space. SOCSOUTH may renovate Building 741 in the future to meet specific mission needs. SOCSOUTH would upgrade Building 743 and the aboveground storage tank to a foam fire retardant system for Building 741. Once the system is operation, the hanger would be capable of housing aircraft. The small un-numbered structure on the property would be demolished. Building 746 would be used for storage.

In addition to the headquarters facility, SOCSOUTH has identified a need for related construction concurrent with or subsequent to construction of the headquarters facility to meet mission needs and secure military assets. Because this related construction would constitute interrelated and interdependent actions relative to construction of the headquarters facility, the U.S. Army has identified sections within the larger 84.2-acre site where related construction would be placed and analyzed the impacts of this construction. While specific construction details cannot be identified at this time, the maximum footprints of the related construction areas have been identified to define the limits of potential disturbance.

The entire approximately 84.2-acre property would be fenced. SOCSOUTH would install approximately 6,429 feet of new fencing along the northern border and between the 25- and 37-acre parcels. SOCSOUTH would also utilize the existing fence (approximately 7,278 feet) present along the southern border. All fencing would be made of galvanized chain link and be 7 feet in height with 1-foot of additional outrigging of barbed wire or concertina wire. SOCSOUTH would remove existing fence poles prior to installing the new fence. A 10-foot cleared strip would be maintained by mowing between the fence and property line.

To provide utility service, new utility rights-of-way would be placed in a corridor along the perimeter of the property along St. Lo Boulevard, Rabaul Road, and Bikini Boulevard. Utility lines would be buried in the new utility corridor.

Miami-Dade County operates a subsurface sanitary sewer lift station on the property that the county will retain and the U.S. Army will provide the County access to this area for maintenance purposes.

Federal Consistency Review

Statutes addressed as part of the Florida Coastal Zone Management Program consistency review and considered in the analysis of the proposed action are discussed in the following table. Pursuant to 15 CFR § 930.41, the Florida State Clearinghouse has 60 days from receipt of this document in which to concur with or object to this Consistency Determination, or to request an extension, in writing, under 15 CFR § 930.41(b). Florida's concurrence will be presumed if SOCSOUTH does not receive its response on the 60th day from receipt of this determination.

Florida Coastal Management Program Consistency Review

Statue	Consistency	Scope
Chapter 161 *Beach and Shore Preservation*	The proposed project would not adversely affect beach and shore management, specifically as it pertains to: • The Coastal Construction Permit Program. • The Coastal Construction Control Line (CCCL) Permit Program.	Authorizes the Bureau of Beaches and Coastal Systems within DEP to regulate construction on or seaward of the states' beaches.

Statue	Consistency	Scope
	• The Coastal Zone Protection Program. All land activities would occur inland on county property under federal control.	
Chapter 163, Part II *Growth Policy; County and Municipal Planning; Land Development Regulation*	The proposed action is supported by the Miami-Dade County Department of Planning and Zoning and is included in their comprehensive plans.	Requires local governments to prepare, adopt, and implement comprehensive plans that encourage the most appropriate use of land and natural resources in a manner consistent with the public interest.
Chapter 186 *State and Regional Planning*	The proposed action would not have a negative affect on state plans for water use, land development or transportation.	Details state-level planning requirements. Requires the development of special statewide plans governing water use, land development, and transportation.
Chapter 252 *Emergency Management*	The proposed action would not increase the state's vulnerability to natural disasters. Emergency response and evacuation procedures would not be impacted by the proposed action.	Provides for planning and implementation of the state's response to, efforts to recover from, and the mitigation of natural and manmade disasters.
Chapter 253 *State Lands*	All activities would occur on county property already designated for development, therefore there would be no impact to state or public lands.	Addresses the state's administration of public lands and property of this state and provides direction regarding the acquisition, disposal, and management of all state lands.
Chapter 258 *State Parks and Preserves*	State parks, recreational areas and aquatic preserves would not be affected by the proposed action.	Addresses administration and management of state parks and preserves (Chapter 258).
Chapter 259 *Land Acquisition for Conservation or Recreation*	Tourism and outdoor recreation would not be affected.	Authorizes acquisition of environmentally endangered lands and outdoor recreation lands (Chapter 259).
Chapter 260 *Recreational Trails System*	Opportunities for recreation on state lands would not be affected.	Authorizes acquisition of land to create a recreational trails system and to facilitate management of the system (Chapter 260).
Chapter 375 *Multipurpose Outdoor Recreation; Land Acquisition, Management, and Conservation*	Opportunities for recreation on state lands would not be affected. SOCSOUTH would manage portions of the property to sustain populations of the federally endangered Small's milkpea (*Galactia smallii*) and the federal candidate species sandflax (*Linum arenicola*)	Develops comprehensive multipurpose outdoor recreation plan to document recreational supply and demand, describe current recreational opportunities, estimate need for additional recreational opportunities, and propose means to meet the identified needs (Chapter 375).
Chapter 267 *Historical Resources*	In support of the 2000 Supplemental Environmental Impact Statement: *Disposal of Portions of the Former Homestead Air Force Base, Florida,* a Phase I survey for archeological resources was conducted. The survey found no resources listed or eligible for listing on the NRHP occurring	Addresses management and preservation of the state's archaeological and historical resources.

Statue	Consistency	Scope
	within the project area. This survey was coordinated with the State Historic Preservation Office. There would be no impacts to cultural resources under the proposed action.	
Chapter 288 *Commercial Development and Capital Improvements*	The proposed action would occur on county property and is supported by the Miami-Dade County Department of Planning and Zoning. The proposed action is included in their comprehensive plan.	Provides the framework for promoting and developing the general business, trade, and tourism components of the state economy.
Chapter 334 *Transportation Administration*	The proposed project would not have an impact on transportation.	Addresses the state's policy concerning transportation administration (Chapter 334).
Chapter 339 *Transportation Finance and Planning*	The proposed project would have no effect on the finance and planning needs of the state's transportation system.	Addresses the finance and planning needs of the state's transportation system (Chapter 339).
Chapter 370 *Saltwater Fisheries*	The proposed action would not have an effect on saltwater fisheries.	Addresses management and protection of the state's saltwater fisheries.
Chapter 372 *Wildlife*	The proposed project area is significantly disturbed and is dominated by exotic, invasive vegetation. Wildlife use would be limited. The state protected burrowing owl is known to occur in the area. However, neither this species nor burrows suitable for its use were observed in the project area during a site investigation. The proposed action would not have a negative impact on wildlife resources.	Addresses the management of the wildlife resources of the state.
Chapter 373 *Water Resources*	No impacts to water resources would occur. To reduce the potential for impact to water resources, best management practices (BMPs) will be used to control erosion and stormwater runoff. Applicable permitting requirements will be satisfied in accordance with 62-25 Florida Administrative Code (FAC) and National Pollutant Discharge Elimination System (NPDES). An application for a NPDES stormwater permit would be filed prior to project initiation.	Addresses the state's policy concerning water resources.
Chapter 376 *Pollutant Discharge Prevention and Removal*	The proposed action would not involve the discharge of pollutants.	Regulates transfer, storage, and transportation of pollutants, and cleanup of pollutant discharges.
Chapter 377 *Energy Resources*	Energy resource production, including oil and gas, and the transportation of oil and gas, would not be affected by the proposed action.	Addresses regulation, planning, and development of oil and gas resources of the state.
Chapter 380 *Land and Water Management*	Under the proposed action, development of state lands with regional (i.e. more than one county) impacts would not occur. No changes to coastal infrastructure such as capacity increases of existing coastal infrastructure, or use of state funds for	Establishes land and water management policies to guide and coordinate local decisions relating to growth and development.

Statue	Consistency	Scope
	infrastructure planning, designing or construction would occur.	
Chapter 381 *Public Health, General Provisions*	The proposed action does not involve the construction of an on-site sewage or treatment system.	Establishes public policy concerning the state's public health system.
Chapter 388 *Mosquito Control*	The proposed action would not affect mosquito control efforts.	Addresses mosquito control effort in the state.
Chapter 403 *Environmental Control*	The groundwater on a portion of the proposed site has elevated levels of arsenic. Groundwater use in the area has been restricted as a result of the arsenic contamination. The proposed action would have no impact on groundwater, water quality, air quality, pollution control, solid waste management, or other environmental control efforts.	Establishes public policy concerning environmental control in the state.
Chapter 582 *Soil and Water Conservation*	The proposed action would include construction activities and soil disturbance. Appropriate BMPs would be applied to prevent soil erosion and water quality degradation.	Establishes policies that require the conservation, development and use of soil and water resources to preserve natural resources and control and prevent soil erosion.

APPENDIX E

Record of Non-applicability

General Conformity – Record of Non-Applicability

Project/Action Name: Construction and Operation of U.S. Army Special Operations Command South (SOCSOUTH) Headquarters

Project/Action Identification Number:

Project/Action Point of Contact: Major Kyle Merolla/SOCSOUTH

Begin Date: March 2011

End Date: September 2012

General Conformity under the Clean Air Act, Section 176 has been evaluated for the project described above according to the requirements of 40 Code of Federal Regulations (CFR) 93, Subpart B. The requirements of this rule are not applicable to this action because total direct and indirect volatile organic compounds (VOCs) and nitrogen oxides (NO_X) are below the conformity threshold values established at 40 CFR 93.153 (b) and this action is not considered regionally significant under 40 CFR 93.153(i).

Supporting documentation and emission estimates are attached.

SIGNED

Kyle M. Merolla, P.E.
MAJ, U.S. Army
Command Engineer

TABLE OF CONTENTS

LIST OF ATTACHMENTS

GENERAL CONFORMITY REVIEW (GCR)

CONSTRUCTION AND OPERATION OF U.S. ARMY SPECIAL OPERATIONS COMMAND SOUTH HEADQUARTERS FACILITY HOMESTEAD, FL

1.0 PROPOSED ACTION

From March 2011 through September 2012, the U.S. Army Special Operations Command South (SOCSOUTH) proposes to construct a headquarters facility on approximately twenty-eight acres of land adjacent to Homestead Air Reserve Base (HARB) in Homestead, Florida.

The headquarters is needed to provide permanent facilities for SOCSOUTH, which has been operating from temporary buildings since being relocated to HARB. The lease with HARB has expired and SOCSOUTH must relocate to new a headquarters facility. The proposed action would provide SOCSOUTH headquarters a permanent facility capable of fully supporting the SOCSOUTH mission.

A small pre-existing storage building will be demolished and existing concrete foundations and asphalt will be removed within the project area. No new significant stationary sources will be added to the site during the project. The general conformity review for this project pertains only to construction-related emissions and facility space heating. The emissions types of interest are volatile organic compounds (VOCs) and nitrogen oxides (NO_X).

CALCULATION OF EMISSIONS FROM NEW MOBILE SOURCES

There will be mobile emissions associated with new government owned vehicles (GOVs) and privately owned vehicles (POVs) due to the proposed action.

1.1 Government Owned Vehicles

The proposed action will relocate approximately 250 personnel from the temporary facilities to the new SOCSOUTH headquarters. However, the SOCSOUTH headquarters will be constructed with a 390 person capacity for additional personnel in the future. Therefore, for a conservative estimate, the air quality models were performed for 140 additional personnel relocating to the area.

There will be mobile emissions associated with GOVs operating on the facility. Mobile emissions are calculated by a MOBILE6 module within the ACAM program and are based upon the number of assigned personnel, personnel operational frequency, and the annual vehicle miles traveled (VMT) per employee, not the number of vehicles assigned to the facility. The following data were input into the model:

- Emission factors for GOV fleet mix were kept at default values
- Total SOCSOUTH Personnel – 140
    - Operational Frequency – Fulltime
    - VMT per employee – 805 miles

1.2 Privately Owned Vehicles

The proposed action will relocate approximately 250 personnel from the temporary facilities to the new SOCSOUTH headquarters. However, the SOCSOUTH headquarters will be constructed with a 390 person capacity for additional personnel in the future. Therefore, for a conservative estimate, the air quality models were performed for 140 additional personnel relocating to the area.

There will be mobile emissions associated with POVs operating on the facility. Mobile emissions are calculated by a MOBILE6 module within the ACAM program and are based upon the number of assigned personnel, personnel operational frequency, and the annual vehicle miles traveled (VMT) per employee, not the number of POVs on the facility. The following data were input into the model:

- Emission factors for POV fleet mix were kept at default values
- Total Army Reserve Personnel – 140
    - Operational Frequency – Fulltime
    - One-way average commute distance – 15 miles

1.3 Construction-Related Emissions

The proposed project will include a 31,144 sq ft special compartmented information facility and 92,698 sq ft administrative facility. The project will also include 17,500 sq yd for parking and 12,000 sq ft of sidewalk.

The U.S. Air Force Air Conformity Application Model (ACAM), version 4.3.3, was used to estimate construction-related emissions and facility space heating emissions. For construction related-emissions, ACAM splits facility construction into two phases; Phase 1 is grading and Phase 2 is the actual construction activity. The following data were input into the model:

- Gross Sq ft Office/Employment Units – 123,842 sq ft
    - Special Compartmented Information Facility – 31,144 sq ft
    - Administrative Facility – 92,698 sq ft
- Duration of Phase 1 – 30 days
- Gross Area to be Graded – 3 acres (includes proposed buildings and parking area)
- Soil Piles – covered or watered twice daily
- Loads – Secure Cover
- Exposed Surface/Grading – watered with frequency, keeping soil moist at all times
- Truck Hauling Road – unpaved and watered twice daily
- Start Date of Construction – 1st Quarter 2011
- End Date of Construction – 3rd Quarter 2012
- Duration of Phase 2 – 515 days
- Total Acres Paved with Asphalt – 3.92 (parking area)
    - A/C Surface – 17,500 sq yd (3.61 acres)
    - Sidewalk – 12,000 sq ft (0.28 acres)

The model calculates emissions for the following activities:

- Grading Equipment Emissions (pounds/day, assume 1 grader, 1 wheeled and 1 tracked loader/grader per 10 acres. All equipment is diesel powered and used 6 hours per day)
- Emissions Due to Construction Worker Trips (based on 0.42 trip per 1,000 sq ft-day)
- Stationary Equipment Emissions (based on sq ft to be constructed during Phase 2, assume 2 pieces of gasoline-powered equipment per 10,000 sq ft, equipment used 6 hours per day, and equipment average horsepower of 10 hp each)

- Mobile Equipment Emissions (mobile equipment used during Phase 2 construction, assume 2 pieces of diesel-powered equipment per 10,000 sq ft and equipment used 6 hours per day)
- Grading Operations Emissions (pounds/day, assume one storage pile on 1/5 of an acre per 10 acres graded, 3 pieces of heavy equipment per day per 10 acres graded)
- Architectural Coating Emissions (based on square root of gross sq ft of non-residential building space)
- Daily VOC Emissions from Asphalt paving (based on total acres to be paved)
- Facility Heating (based on regional heating energy requirements and emission factors for natural gas)

Based on ACAM, an increase of 16.93 tons of NO_X and 3.39 tons of VOCs would be expected due to the construction project (see Attachment 1) in 2011, the highest year during construction. The annual average increase in emissions would be 1.33 tons per year of NO_X and 1.06 tons per year of VOCs during operation of the proposed SOCSOUTH headquarters (See Attachment 1).

2.0 CONCLUSION

Total annual emissions generated by the SOCSOUTH project are expected to peak with the release of 16.93 tons of NO_X and 3.39 tons of VOCs due to construction-related emissions in 2011, as well as an ongoing increase of 1.33 ton/year of NO_X and 1.06 ton/year of VOC during operation of the proposed SOCSOUTH headquarters. These increases are well below the conformity threshold values. Therefore, a general conformity review is deemed unnecessary at this time.

Attachment E-1
Model Results

Homestead ACAM Output					
SOURCE CATEGORY	**CO**	**NO_X**	**SO_2**	**VOC**	**PM_{10}**
Emissions (tpy)					
2011					
Area Sources					
Other Phase I Const. – Grading Operations	0.00	0.00	0.00	0.01	0.00
Other Phase II Const. – Acres Paved	0.00	0.00	0.00	0.00	0.00
Other Phase II Const. – Mobile Equipment	6.53	15.58	1.93	1.42	1.26
Other Phase II Const. – Non-Res. Arch. Ctgs.	0.00	0.00	0.00	0.19	0.00
Other Phase II Const. – Res. Arch. Ctgs.	0.00	0.00	0.00	0.00	0.00
Other Phase II Const. – Stationary Equip.	44.30	1.15	0.06	1.66	0.03
Other Phase II Const. – Workers Trips	2.28	0.11	0.00	0.10	0.00
Other Phase I Const. – Grading Equipment	0.02	0.09	0.01	0.01	0.01
Grand Total	53.13	16.93	2.00	3.39	1.30
2012					
Area Sources					
Other Phase II Const. – Mobile Equipment	3.51	8.37	1.04	0.77	0.68
Other Phase II Const. – Non-Res. Arch. Ctgs.	0.00	0.00	0.00	0.10	0.00
Other Phase II Const. – Res. Arch. Ctgs.	0.00	0.00	0.00	0.00	0.00
Other Phase II Const. – Stationary Equip.	23.81	0.62	0.03	0.89	0.02
Other Phase II Const. – Workers Trips	1.23	0.06	0.00	0.06	0.01
Other Phase II Const. – Acres Paved	0.00	0.00	0.00	0.00	0.00
Total	28.55	9.05	1.07	1.82	0.71
Mobile Sources					
Mobile – Base Employee Commute VMT	13.99	0.54	0.01	0.96	0.03
Mobile – On-Road GOV VMT	1.63	0.06	0.00	0.11	0.00
Off-Road Base Support Vehicles	0.28	0.11	0.01	0.03	0.01
Total	15.90	0.71	0.02	1.10	0.04
Point Sources					
Miscellaneous Point Sources	0.00	0.00	0.00	0.00	0.00
Other Const. – Facility Heating	0.22	0.28	0.00	0.01	0.02
Residential Space Heating	0.00	0.00	0.00	0.00	0.00
Total	0.31	0.37	0.00	0.02	0.03
Grand Total	44.76	10.13	1.09	2.94	0.78
2013					
Mobile Sources					
Mobile – Base Employee Commute VMT	13.41	0.49	0.01	0.88	0.03
Mobile – On-Road GOV VMT	1.56	0.06	0.00	0.10	0.00
Off-Road Base Support Vehicles	0.55	0.23	0.02	0.05	0.02
Total	15.52	0.78	0.03	1.03	0.05
Point Sources					
Miscellaneous Point Sources	0.00	0.00	0.00	0.00	0.00
Other Const. – Facility Heating	0.45	0.55	0.00	0.03	0.04
Residential Space Heating	0.00	0.00	0.00	0.00	0.00
Total	0.45	0.55	0.00	0.03	0.04
Grand Total	15.97	1.33	0.03	1.06	0.09