Environmental Assessment for the Transfer of Grant Encumbrance within the Bird Drive Restoration Area

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CHAPTER 1. Purpose and Need

1.1 Background

As part of the revised restoration strategy, the South Florida Water Management District (SFWMD) has implemented a process to consolidate properties within the western portion of the historic Bird Drive Recharge Area (BDRA). The revised Bird Drive restoration strategy includes a conveyance system that would provide a surface water connection for water managers to flow/pump surface water from the northern water conservation areas through the Pennsuco project area and BDRA, and then back to the southern water conservation area, and finally to Everglades National Park.

The revised restoration strategy is based on the SFWMD and U.S. Army Corps of Engineers (Corps) evaluation that properties previously acquired in the eastern sections of the historic BDRA area can be excluded from the proposed BDRA restoration strategy project footprint. The exclusion decision was based on the inability to cost-effectively store surface water within the highly permeable porous limestone without realizing excessive percolation to the shallow groundwater aquifer. SFWMD analysis/studies determined that inundation of the site would allow surface water to percolate to the shallow groundwater aquifer and migrate to the east, causing groundwater levels in the urban areas to potentially rise. The engineering review indicated that the cost to mitigate surface water seepage/percolation and eastern groundwater flow would be extremely expensive and therefore not cost-effective. The Project Delivery Team (PDT) analysis in 2008 stated that BDRA "as envisioned in the Restudy is not implementable." In January 2011, at a Joint Project Review Board Meeting, the Corps agreed with the PDT's earlier recommendations and reaffirmed that BDRA was not a viable project and determined that the surplus sale of the easterly 1½-mile portion of the BDRA with retention of the western ½-mile of the area, as proposed by SFWMD, was the best course of action. Based on this determination, it was decided that the eastern property ownership within the BDRA restoration strategy project area should be consolidated along a half-mile corridor east of Krome Avenue.

The consolidated areas (properties) will allow for a more feasible rehydration plan and flow of surface water. The revised restoration plans will include a surface water flow conveyance and water recharge area east of Krome Avenue, which based on measurements, is estimated to be a ½-mile wide. This new water conveyance structure would provide a hydraulic boundary to limit seepage from the water conservation area to the west and provide additional flows to Everglades National Park and recharge to the Miami-Dade County wellfield.

1.2 Real Estate Relocation Activities

The successful implementation of the revised Bird Drive restoration strategy will require the transfer of the U.S. Department of the Interior (DOI) grant funding from properties within the newly proposed Florida Power & Light's (FPL) transmission corridor ("transmission corridor") easement and transfer of grant funding from the eastern BDRA to property along the western boundary of the project area.

1.3 Review Project Components

1.3.1 Florida Power & Light's Transmission Corridor

The high voltage electrical transmission corridor is proposed to transverse through the BDRA. The new alignment is a revision to a previous alignment that proposed for the transmission line to transverse through a section of the ENP and along the eastern water conservation boundary to the west of the BDRA. The proposed eastern shift of the corridor would remove the proposed transmission lines from the western water conservation area and section of the Everglades National Park (ENP). This shift to the BDRA would minimize ecological impacts to the ENP and the western natural areas. The new proposed realignment would parallel Krome Avenue and then transect the Bird Drive project area in an east/west direction rather than a northerly direction. The proposed realignment will require DOI grant funding removal from seven specific properties within the FPL corridor. The impact to the grant-funded properties will be limited to only those areas that will be impacted by the high voltage powerline foundations. SFWMD will retain ownership of the property but provide an easement for the transmission corridor. The proposed easement includes contractual conditions that require the corridor to be constructed in a manner that allows for the continuation of surface water flow across the site. The acreage and cost of the transfer for funding for this transaction is detailed in Table 1. This action proposes to transfer funding from seven properties located within the transmission corridor and transfer funding to two properties that are within the footprint of the proposed BDRA conveyance system.

This transfer is necessary to facilitate the development and permitting of the new transmission corridor and support the proposed water conveyance system along Krome Avenue.

1.3.2 Component Grant Funding Disposition

A review for specific funding details related to the removal of grant funding for the seven properties within the new proposed FPL transmission corridor and transfer to two properties of equal value is located on the western boundary of the BDRA (see Figure 1 for site map and Table 1 for property values).

1.3.3 Florida Power & Light's Electrical Power Transmission Line/Communication Tower

On May 10, 2018, the U.S. Fish and Wildlife Service (USFWS) completed Step 3 of the Everglades Grant Land Disposition Protocol outlined in a letter provided to the South Florida Water Management on March 11, 2016 by the U.S. Department of the Interior. The review focused on the removal of specific grant-funded restrictions on properties owned by SFWMD that are located within a proposed FPL transmission corridor in exchange for the placement of specific grant-funded restrictions on replacement properties owned by SFWMD. The replacement properties are located within the western portion of the BDRA, specifically near the proposed water conveyance structure. The purpose of the transaction is to enable the shift of the transmission corridor to the east, away from the ENP and the conservation area, and transfer grant funding to the replacement properties. The Transmission Corridor Properties consist of 48.25 acres of land located within the BDRA in Miami-Dade County.

The seven properties within the FPL corridor were acquired using federal grant funding. The FPL replacement properties consist of 40 acres, more or less, located within the western ½-

mile corridor lying east of Krome Avenue within the BDRA. The 40 acres consist of two individual tracts. Figures 2-A and 2-B identify encumbered tracts within the FPL proposed corridor, and Figure 2-C proposes land swap tracts.

Benefits of this exchange include:

- SFWMD will grant FPL a utility easement for the relocation of a high voltage electrical transmission line corridor from the previously proposed location within the water conservation area/ENP. The new proposed location within the BDRA would reduce the impacts to the ENP and water conservation areas. Additionally, the proposed easement requires the corridor to maintain surface water flows within the BDRA.

- The transfer of the USFWS encumbrance would provide conservation lands within the western BDRA project area along Krome Avenue, which will eventually serve as a seepage control area and enhance surface water flow to the southern water conservation areas and to the ENP. The proposed restoration strategy project along Krome Avenue will provide a critical link to facilitate water flows in a southerly direction and re-enter the water conservation area and then onto the ENP. Additionally, the project will re-align the proposed FPL transmission corridor mitigating impacts to the ENP and western natural areas.

1.3.4 FPL Transmission Line

Appraisals revealed that the 48.25-acre Transmission Corridor Properties are worth $1,141 million, and the replacement properties consisting of 40 acres within the western ½-mile corridor lying east of Krome Avenue are worth $1.2 million, resulting in a $59,000 difference in value between the two properties, in favor of the replacement properties. The difference in value is a little over 5%, indicating that the properties are similar with respect to value. The Land Exchange overview map in Figure 1 shows the location of the properties.

Table 1. FPL Transmission Properties.

FPL Transmission Properties		
Property Name:	Encumbered Properties	Replacement Properties
Tract ID:	W9308-092, W9308-087, W9308-141, W9308-157, W9308-156, W9307-043, W9307-001	W9308-283 and W9308-582
County:	Miami-Dade	Miami-Dade
Acreage:	48.25	40
Acquisition Date:	April 1999 through June 2003	March 2004 and December 2004
Appraised Value:	$1,141,000	$1,200,000
Federal Grant:	FB-1 and LWCF-1	---
Federal Share:	$570,500	---

1.3 Bird Drive Recharge Area (BDRA) Review

The BDRA, as envisioned in the Comprehensive Everglades Review Study (Restudy), included pumps, water control structures, canals and an aboveground recharge area. The original purposes were to:

- Recharge groundwater and reduce seepage from the Everglades National Park buffer areas by increasing water table elevations east of Krome Avenue.
- Provide C-4 flood peak attenuation.
- Provide water supply deliveries to the South Dade Conveyance Systems and Northeast Shark River Slough.

After an analysis of the transmissivity values in the BDRA, it was determined that the site would not efficiently store water, as envisioned in the Restudy. The analysis indicated that surface water pumped into the BDRA would percolate to the shallow groundwater aquifer and migrate to the east, causing water levels in urban areas to rise. Although three engineering solutions were identified to isolate groundwater impacts to the eastern urban area, the cost of these protective features were determined to be extremely expensive and therefore, not economically feasible. In addition, although SFWMD acquired almost 1,400 acres, this acreage was not contiguous and was less than 50% of the projected needs of the Restudy. The 1,400 acres consist of numerous individual tracts. SFWMD does not have specific condemnation authority for CERP projects in the Miami-Dade County BDRA; therefore, all lands acquired within the area required a willing seller for purchase.

The Project Delivery Team (PDT) analysis in 2008 stated that the BDRA "as envisioned in the Restudy is not implementable." At a Joint Project Review Board Meeting in January 2011, the Corps agreed with the PDT's earlier recommendations and reaffirmed that the BDRA was not a viable project and determined that the surplus sale of the easterly 1½-mile portion of the BDRA with retention of the western ½-mile of the area, as proposed by the SFWMD, was the best course of action.

The SFWMD proposal for the BDRA, which was discussed at public outreach meetings, was to retain SFWMD ownership in the western ½-mile, approximately 340 acres, and surplus the eastern 1½-miles, which encompasses approximately 1,058 acres under SFWMD ownership.

In order to ensure that the recommended proposal would not conflict with potential future project needs, as part of the engineering feasibility assessment, SFWMD staff conducted hydraulic analysis utilizing portions of the landscape between L-31N and Krome Avenue to create an overland flow-way adjacent to the BDRA. This concept was consistent with the Restudy, which recommended the relocation of the S-356 pump station to reintegrate a portion of the Pennsuco flow-way into Everglades National Park. This preliminary analysis showed favorable results and demonstrated that there was a wide range of flexibility to design and distribute water along a portion of the historical Pennsuco flow-way west of Krome Avenue. It was also determined that a ½-mile buffer of land east of Krome Avenue could serve as a seepage control area, if needed, for the higher generated water stages east of Krome Avenue, depending upon final design.

1.4 Transmission Corridor Properties, Replacement Properties

The Transmission Corridor Properties include 48.25 acres and transverse through the BDRA in an east-west direction and then head north. The property consists of a mix of jurisdictional and degraded wetlands. Portions of the property have been degraded by invasive species such as melaleuca and pepper trees, and by off-road vehicles. The property experiences seasonal flooding in low areas.

1.5 Federal Agriculture Improvement and Reform Act of 1996, Section 390, Public Law 104-127 (Farm Bill-1) (FB-1)

The Farm Bill-1 (FB-1) recognized that the properties acquired might not be used for a Corps project. In such circumstances, the FB-1 allowed that the SFWMD may:

1. Retain and use the property for other restoration purposes reasonably deemed suitable.
2. Retain and use the property for purposes other than the restoration of the Everglades ecosystem after compensating DOI for 50% of the fair market value of the property. SFWMD will reasonably consider a request from DOI to provide matching property of matching funds to acquire replacement property to be used for restoration purposes at fair market value.
3. Dispose of the property after compensating DOI for 50% of the fair market value of the property.

Through this proposed exchange, SFWMD is reviewing the second option, which is to provide replacement property. Therefore, SFWMD would provide replacement property to DOI for the fair market value of their share of the relocated properties. SFWMD proposes that DOI's share of the value would be applied to the replacement properties located in an enhanced position within the same project area.

1.6 U.S. Department of the Interior and Related Agencies Appropriations Act of 1999, Public Law 105-277 (Land and Water Conservation Fund Grant Agreement - 1) (LWCF-1)

The Land and Water Conservation Fund Grant Agreement - 1 (LWCF-1) recognized that the properties acquired might not be used for an Everglades restoration project. In such circumstances, LWCF-1 allowed that SFWMD may:

1. Retain and use the property for other Everglades restoration purposes.
2. Acquire replacement property for Everglades restoration. Such replacement property shall be of at least equal fair market value.

Through this proposed exchange, SFWMD is reviewing the second option. Therefore, SFWMD would provide replacement property to DOI for the fair market value of their share of the transmission corridor, communication and relocation properties. SFWMD proposes that DOI's share of the value would be applied to the replacement properties located in an enhanced position within the same project area.

1.7 Scope of Analysis

This supplemental environmental assessment evaluates the removal of federal grant funding for electrical transmission corridor properties purchased pursuant to federal grant agreements FB-1, and LWCF-1. Pursuant to the federal grant agreements, SFWMD proposes to provide replacement properties located within the western ½-mile conveyance corridor located east of Krome Avenue and within the same project area. The specific acreage property tracts and costs associated with the transfers are summarized in Table 1. The DOI encumbered tracts and the proposed land swap property locations are identified in Figure 1.

CHAPTER 2. Alternatives

2.1 Revised Alternative A: No Action - Current Land Ownership

Under Alternative A, there would be no land replacement. The grant funding would continue to encumber the Transmission Corridor Properties owned by SFWMD, which would eliminate the ability to relocate the electric transmission lines out of Everglades National Park and consolidated properties along Krome Avenue, and to facilitate the proposed ½-mile surface water conveyance system along Krome Avenue.

2.2 Alternative B: New Proposed Action - Removal of Federal Interest in Transmission Corridor, Communication Tower and Consolidation Properties for Replacement Properties

The new proposed action would equalize the values of the exchange of properties for the removal of the encumbrance and federal nexus from the Transmission Corridor Properties. Once removed, SFWMD would then be able to grant a utility easement to FPL for the relocation of an electric transmission line out of Everglades National Park and consolidate properties along Krome Avenue for the water conveyance structure. In exchange, SFWMD would transfer the federal interest encumbrance to the replacement properties located in the western boundary of the BDRA. The Transmission Corridor Properties were partially acquired with FB-1 and LWCF-1 funds.

2.3 Alternative C: New Proposed Action - Removal of Federal Interest in Transmission Corridor Properties

The new proposed action would require, if available, the acquisition of properties within the BDRA. The estimated acquisition cost is $1.2 million. Once acquired, SFWMD would grant the utility easement to FPL over the 48.25-acre Transmission Corridor Properties and remove the encumbrance and federal nexus from the Transmission Corridor Properties, which were acquired with funds from the Federal Agriculture Improvement and Reform Act of 1996 and DOI and Related Agencies Appropriations Act of 1999. In exchange**,** SFWMD would transfer the federal interest encumbrance to the newly acquired property. This alternative is problematic, however, due to property availability, and budgetary and time constraints.

CHAPTER 3. Affected Environment

The following sections provide a review of the Bird Drive Recharge Area.

3.1 Bird Drive Restoration Area

3.1.1 Location

The BDRA encompasses approximately 12.5 square miles in southwestern Miami-Dade County. The BDRA is bounded on the north by Tamiami Trail (U.S. 41), on the west by Krome Avenue, and on the south by agricultural lands, and the eastern boundary consists primarily of residential developments.

3.2 Property Use

Substantial portions of the BDRA consist of undeveloped lands with portions of the property that have been converted for seasonal agricultural use. The DOI encumbered tracts are shown in Figures 2-A and 2-B. The proposed land swap tracts are shown in Figure 2-C. The remainder of the BDRA contains physically unaltered and significantly degraded wetlands. The condition of the onsite wetlands varies significantly based on previous site improvements, non-native and invasive vegetation encouragement, and onsite dumping and trespassing. Recreational off-road sport vehicles have impacted some areas onsite, resulting in the erosion of vegetation. Other areas have a monoculture of dense melaleuca and other invasive vegetation. Finally, there are areas onsite consisting of high quality wetlands and vegetation. The quality of onsite wetlands is not uniform and can vary significantly in a minimal distance less than 100 feet. The encumbered tracts are shown in Figures 3-A and 3-B, and the land swap tracts are shown in Figure 3-C.

Surrounding land uses include residential properties to the east, correctional facilities, a casino, a shooting range, a Miami-Dade County park, mining operations and some limited commercial properties to the north and northeast. The western property land use includes agriculture and a rock mining facility. The water conservation areas and Everglades National Park are located further west and south. The areas to the east of the property include undeveloped land and residential development.

3.3 Topography

A review of the Hialeah SW United States Geological Survey (USGS) 7.5-minute quadrangle map and the current and historic South Miami NW quadrangle map indicates that the subject properties within BDRA are relatively flat and have ground surface elevations that range from +6 to +8 feet above mean sea level (msl). Elevations along the right-of-way for U.S. Highway 41 (S.W. 8th Street) and Krome Avenue (177th Street or County Road 997) range from +10 to +13 feet msl. It can be inferred that the pre-construction or pre-development regional surface water and shallow groundwater flow directions would generally follow the ground surface elevations. Site-specific-based surface water flow would be influenced by topography at each land tract. LiDAR aerial maps of the DOI encumbered tracts are shown in Figures 4-A to 4-D. The proposed land swap tracts are shown in Figures 4-E to 4-F.

A review of the historic and current South Miami NW topographic maps and aerial photographs from the 1950s to a more recent time interval was conducted to document changes in land use. During the 1950s, the site was primally undeveloped with some limited farming. During the 1960s, several buildings and structures were located within or adjacent to the site, and then BDRA reportedly was developed for military use, and a rock mining operation was developed to the south. During the 1990s, the correction facility was developed on the northwestern boundary of the BDRA, and during the 2000s, the commercial property was developed west of Krome Avenue.

A review of flood insurance maps for the BDRA dated 2010 illustrated that the site and surrounding areas are located within flood zone AH. The designated flood zone is described as areas with shallow ponding water located within the 100-year flood zone; however, the flood elevations for individual tract elevations vary (County, 2010).

3.4 Hydrology

The BDRA is situated over a shallow and deep aquifer. The shallow Biscayne aquifer is the primary source of fresh water for consumption in Miami-Dade County. The Floridan aquifer is a much deeper aquifer that would require expensive treatment to remove minerals/chlorides prior to use as a potable water use. Soil hydrological survey maps for the DOI encumbered tracts are displayed in Figures 5-A to 5-B. The proposed swap properties are shown in Figure 5-C.

3.4.1 Biscayne Aquifer

The Biscayne aquifer is an unconfined aquifer and is the major source of all potable groundwater in Miami-Dade County. The aquifer is comprised primarily of limestone, sandstone, and sand of marine origin that ranges in age from (oldest to youngest) late Miocene through Pleistocene. The thickness of the consolidated limestone sections and the permeability of the aquifer as a unit generally decreases to the north. The limestone beds in the Biscayne aquifer are capable of yielding large amounts of water. The Miami-Dade County northwest wellfield is located on the southern boundary.

3.4.2 Floridan Aquifer

The Floridan aquifer is artesian in nature and consists of a thick section of carbonate and evaporite rocks underlying all of Florida and parts of Georgia and Alabama. In southeastern Florida, the aquifer underlies a thick section of impermeable marl and clay at depths below 900 feet and extends to a depth of more than 3,000 feet. It is composed primarily of a system of limestones of varying permeability. The system dips to the east and south and is thought to intersect the ocean bottom several miles offshore along the continental slope. The aquifer is unconfined except in recharge areas where the overlying confining materials are very thin or absent. The water is highly mineralized, containing more than 1,500 milligrams per liter (mg/L) of chloride and 3,500 mg/L of dissolved solids. It can also contain a high content of sulfur and can be hard and corrosive. These characteristics greatly limit the use of the water from this aquifer for most purposes.

3.5 Contaminants

The subject tracts within the BDRA were previously evaluated via a Phase I Environmental Assessment completed by BEM Systems. Inc. in May 2003 (BEM, 2003). During August 2018, SFWMD conducted a Screening Level Phase I Environmental Assessment to provide an evaluation of the current site conditions.

A review of the U.S. Army Corps of Engineers Formerly Used Defense Site (FUDS) Geographical Information System identifies two former military sites within the assessment study radius. The first site is a former military installation (transmitter tower located at 2400 SW 177th Avenue (Krome Avenue) approximately 2 miles to the north of the subject tracts. The second site is a former Nike Hercules Unit ("Delta Battery") at the current Krome Detention Center (18201 SW 12th Street) located ¼-mile northwest of the site. A review of site information indicates that no environmental impacts were reported with either of the sites. A review of the Florida Department of Environmental Protection's (FDEP) site regulatory status concerning waste management, soil and/or water contaminant impacts was conducted using historical aerial photographs and the Map Direct website. A review of the FDEP site information indicates that no environmental impacts were reported with the subject sites.

Based on a review of the cumulative available information and the current inspection, there is no evidence of environmental contaminate impairment associated with the subject tracts (Kukleski, 2018).

3.6 Soil Survey

Soils comprising the BDRA were review based on the United States Department of Agriculture's Natural Resources Conservation Service's survey for Miami-Dade County, Florida. Soils primarily fall into the classification of Dania muck, Tamiami muck, and Lauderhill muck. Dania muck is a shallow, nearly level, and very poorly drained soil that is encountered in poorly defined drainageways and is located adjacent to deeper organic soils within areas of sawgrass marshes. Typically, the surface layer consists of black muck that is about 15 inches thick. Soft, porous limestone bedrock is usually encountered below the layer of muck. Lauderdale muck soil is a moderately deep, nearly level, very poorly drained soil that is encountered in narrow drainageways and on broad open areas of sawgrass marshes. Tamiami muck is depressional and is a moderately deep to deep, nearly level, very poorly drained soil that is encountered in freshwater swamps and marshes. This soil type's surface layer consists of black muck that is about 4 inches thick. Hard, porous limestone bedrock is usually encountered at a depth of approximately 30 inches.

Under natural conditions, the site will pond water during the wet season, from 9 to 12 months throughout the year. The water table is typically within 10 inches of the land surface during dry periods and inundated during the rainy season. Permeability through the limestone and muck is relatively rapid. The highly organic muck soil material will subside during dry or drought periods and will experience further subsidence as a result of compaction and oxidation.

The soils at the site typically consist of a layer of muck that is approximately 6 to 12 inches thick. Limestone can be observed to outcrop at those sections of the property where the vegetation is cleared. Soil survey maps for the DOI encumbered tracts are shown in Figures 6-A and 6-B. The proposed land swap tracts are displayed in Figure 6-C.

3.7 Biological Environment – Bird Drive Restoration Area

The USGS Topo Quadrangle Map, 7.5 Minute Series and the National Map Viewer indicate that the project area is not located within an officially designated wilderness area or preserve. The BDRA consists of fallow farmlands and jurisdictional wetlands designated as freshwater emergent wetlands with isolated freshwater forested/shrub wetlands (USFWS, 2018). Site observation indicates that the majority of the site appears to consist of remnant Everglades wet prairie wetlands that have been invaded by invasive/exotic melaleuca trees. The wetlands onsite vary significantly based on site-specific conditions. Previous agricultural use and off-road recreational vehicles have degraded the functionality of some wetlands within the BDRA. While some areas have experienced a decrease in wetland functionality, other areas onsite are of good quality.

3.7.1 Vegetation

The BDRA includes undisturbed natural areas and lands that have been cleared or partially cleared and improved for agriculture, mining, and roads. The site's ecosystems consist primarily of wetlands, hardwood forest, melaleuca wetland forest, wet prairie, freshwater marsh and disturbed lands. A large percentage of the property is dominated by invasive species, including upland and wetland melaleuca and Brazilian pepper; however, the BDRA also includes a good presence of native vegetation, such as dahoon holly, magnolia, bay wax myrtle, button bush and other native and upland and wetland vegetation. The National Wetlands Inventory (NWI) defines the site as primarily freshwater emergent wetlands with some isolated and freshwater forested/shrub wetlands (USFWS, National Wetlands Inventory , 2018). Wetland survey maps for the DOI encumbered tracts are shown in Figures 7-A to 7-B. The proposed land swap tracts are displayed in Figure 7-C.

3.7.2 Wildlife

The site is located east and outside of the Florida Panther Focus Area. Anticipated wildlife usage of wetlands in this area includes species such as bobcat, cotton rat, white-tailed deer, raccoon, marsh rabbit, red-winged blackbird, killdeer, red-tailed hawk, warblers, cricket frog, coyote, cottonmouth snake, southern black racer, ring-necked snake, yellow rat snake, African rock and Burmese python, Florida king snake, eastern diamond-back rattler, and southern chorus frog. The following listed species are also expected to utilize wetlands within this area, such as Marian's marsh wren (Species of Special Concern - SSC), Worthington's marsh wren (SSC), tricolored heron (SSC), snowy egret (SSC), white ibis (SSC), little blue heron (T), wood stork (T), and the Florida bonneted bat (E).

3.8 Water Quality

The site is relatively level with minimal constructed water impoundment canals or ditches within the interior of the property. A former mining pit is located on the eastern boundary on the property. The C-4 A drainage canal transverses the BDRA from the east to along the northern boundary. The L31N canal is located west of the subject site, and the C-2 canal is located east of the subject site. Surface water onsite is controlled by seepage and sheet flow. The Miami-Dade County wellfield is located on the southern boundary of the BDRA (County, Enviromental Consideration, 2018). No water issues related to the BDRA were documented.

3.9 Noise

The primary source of noise within the BDRA is associated with a roadway located north, south and west of the subject tracts. No industrial facilities were identified near the site that would pose a concern for noise levels. The standard measurement unit of noise is the decibel (dB), which represents the acoustical energy present and is an indication of the loudness or intensity of the noise. Noise levels are commonly measured in weighted decibels (dBA) using a Day/Night Noise Level (DNL) site exposure. In general, noise dissipates quickly with distance, and noise generated by traffic on roads north and west of the subject tract would generally not be perceptible on the eastern section of the BDRA. The second and much less significant source of noise is generated from the Miami International Airport, which is located approximately 11 miles east. Based on the proximity of the road to the site, a site-specific assessment for noise within the subject site was not calculated. No unusual impacts associated with noise were observed.

3.5 Socio-economic Environment

3.5.1 Demographics

The BDRA is located within southwestern Miami-Dade County and east of the water conservation area. The property is currently undeveloped and consists of fallow farm lands. Miami-Dade County designated the property as open lands and outside of the Urban Development Boundary (Dade, Land Use , 2018). The proposed grant funding would allow for the relocation of an electrical corridor through the BDRA. Additionally, a water conveyance system would be developed on the western property boundary of the BDRA. The water conveyance system will benefit the wellfield recharge.

3.5.2 Recreation Use

No recreational opportunities are currently available on the BDRA property based on the lack of improved site access for public use or development of infrastructure. Public recreational opportunities are available on the adjacent lands to the west, including the Everglades and Francis S. Taylor Wildlife Management Area, the Milton E. Thompson County Park to the North, and the Everglades National Park located to the south.

3.5.3 Bird Drive Recharge Area

The BDRA has been in state ownership with federal restrictions since its purchase, as described previously. No recreational opportunities are currently available on the BDRA property based on the lack of improved site access for public use or development of infrastructure. The plan is to develop the western property along Krome Avenue with the water conveyance structure. Opportunities for public access would be considered part of the design/construction of the proposed water conveyance structure.

Public recreation opportunities are available on the adjacent lands to the west, including the Everglades and Francis S. Taylor Wildlife Management Area, the Milton E. Thompson County Park to the north, and the Everglades National Park located to the south. No restrictions or impacts are anticipated to public recreational use.

3.5.4 Cultural and Historic Resources

The Florida Master Site List FMSF background search identified no previously recorded historic resources within the historic resources study area. No potential historic resources were identified during the property appraiser parcel data search or during the examination of historic aerials. Future work conducted onsite within the BDRA would require approval of one or more federal, state and local government agencies, as well as permits from the U.S. Army Corp of Engineers, USFWS, SFWMD and Miami-Dade County. The SFWMD as the fee owner of the property is required to protect cultural resources, if any cultural resources were discovered as part of the proposed design and implementation of the electrical corridor. The state of Florida's historic preservation responsibilities is delineated in Chapter 267.061 of the Florida Statutes and the Division of Historical Resources 2014 Management Procedures and Guidelines for Archaeological and Historical Sites and Properties on State-owned or Controlled Lands. In addition, Chapter 872 of the Florida Statutes provides supplementary assurances that sites would be protected. The Janus Research Inc. Cultural Resource Desktop Analysis is included as Appendix D.

CHAPTER 4. Environmental Consequences

This chapter describes the foreseeable environmental consequences of removing restrictions on the BDRA property. The parcels that have been included in the land exchange between the USFWS and SFWMD are proposed to achieve equitable value in the exchange. When detailed information is available, a scientific and analytic comparison between alternatives and their anticipated consequences is presented, which is described as "impacts" or "effects." When detailed information is not available, those comparisons are based on the professional judgment and experience of SFWMD staff and concurrence from the USFWS.

4.1 Physical Consequences

4.1.2 Bird Drive Properties

The proposed plan is to remove grant funding for the electrical corridor and consolidate SFWMD land ownership along the western boundary and east of Krome Avenue. The consolidation of property along the western boundary will provide the necessary property ownership to implement a water conveyance structure to improve water flow. The objective of the proposed property consolidation is to allow for a surface water connection to facilitate the flow of fresh water from the northern water conservation areas to the southern water conservation areas, and then on to the ENP. The increase of water flow is a vital component for the enhancement of natural ecological systems. The transfer of the grant funding will also allow for the facilitation of an electrical corridor to transverse the property from an east to west direction, and then through the north section of the BDRA. The discussion between the SFWMD and FPL as part of an easement will require that the proposed electrical corridor be designed to maintain surface water flow. Impacts to wetlands caused by the development of the electrical corridor foundation would be discussed in a site-specific permit requiring federal, state, and local permit approval. Impacts realized by the electrical corridor would require mitigation as part of the permit approval process.

The transfer of DOI grant funding does not inherently cause a change in the physical environment of this property. Thus, Alternative B would have no impacts on the physical environment, including hydrology, water quality, and air quality.

4.2 Impacts to Physical Environment

4.2.1 Bird Drive Recharge Area

The proposed grant funding transfer from the BDRA property is consistent with the SFWMD restoration strategy for this property. The land transfer would allow for the consolidation of lands along the western boundary for the construction of a water conveyance structure. An electrical corridor consisting of overhead line, power poles and a service road are also proposed for sections of the BDRA. The actual area of impact associated with the electrical corridor would be limited to the service roads and power pole foundations. Impacts associated with the water conveyance structure would be located along a ½-mile western

corridor of the BDRA. Impacts that would be realized as part of the conveyance structure and electrical transmission line would require a separate assessment that would be developed and approved to assess any future impacts associated with the development of the new electrical corridors.

The transfer of DOI grant funding does not inherently cause a change in the physical environment of this property (no impacts anticipated).

4.3 Impacts to Refuge Facilities

4.3.1 Bird Drive Recharge Area

The Arthur R. Marshall Loxahatchee National Wildlife Refuge is estimated to be located 5 miles northwest of the subject site. The refuge is managed under a license agreement between the South Florida Water Management District and the U.S. Fish and Wildlife Service. The refuge consists of 143,954 acres and provides a habitat for migratory and wading birds, mammals, amphibians, and reptiles (USFWS, Arthur R. Marshall Loxahatchee Wildlife Refuge, 2015). Endangered and threatened species, including the Everglades snail kites, wood stork, American Alligator and Florida sandhill crane utilized the habitat provided by the refuge.

The refuge is buffered by the BDRA by Krome Avenue, vacant properties and levees on the perimeter to the west. The northeastern boundary of the Everglades National Park is located west and south of the subject properties. The proximity to the refuge and proposed restoration strategy, which includes a water conveyance structure, would provide ecological benefits to western natural areas.

The proposed electrical corridor is not anticipated to impact the refuge (no impacts anticipated).

4.4 Biological Consequences

4.4.1 Bird Drive Recharge Area

There are no immediate or anticipated biological consequences associated with the BDRA property tracts in the proposed federal grant funding transfer. The SFWMD revised restoration strategy proposes to consolidate properties within the historic Bird Drive project area along the Krome Avenue corridor. The consolidation of properties will provide a surface water connection from the northern water conservation areas (Arthur R. Marshall Loxahatchee National Wildlife Refuge) through the Pennsuco/BDRA and then back to the southern water conservation area, and finally to Everglades National Park. This new water flow conveyance structure would provide a hydraulic boundary to maintain water hydration to the water conservation area to the west, a new conveyance for fresh water to the ENP, and a recharge area to the Miami-Dade County wellfield, which is located on the southern border of the proposed project. The addition of the freshwater flow to the south will provide ecological benefits to both the project area and ecologically sensitive lands to the south.

The electrical and road corridor projects proposed for these project areas would be designed to allow for the continual flow of surface water. During construction, invasive species like melaleuca and Brazilian pepper trees within the corridor alignment that degraded the functionality of the BDRA would be removed.

Both the SFWMD easement agreement and the permitting requirement for the electrical corridor projects will require assessment and mitigation plans to offset any potential impacts associated with the construction activities, such as electrical power poles.

The proposed grant funding transfer is not anticipated to impact biological resources (no impacts anticipated).

4.5 Impacts to Vegetation and Habitat

4.5.1 Bird Drive Recharge Area

The proposed federal grant funding transfer on the BDRA will not cause measurable changes to vegetation within this property. The onsite vegetation is highly variable with a mix of wetlands, invasive non-native vegetation, and degraded lands from motor vehicle usage.

The SFWMD easement agreement with FPL for the electrical corridor requires that the electrical corridor is designed and constructed to allow for the continuation of surface water flows within the BDRA. Additionally, it is anticipated that both invasive and native vegetation will be disturbed as part of the electrical corridor construction. The easement agreement, along with the permit, will require mitigation to native vegetation.

The consolidation of the property along the western boundary will allow for construction of the proposed water conveyance structure. The construction of the water conveyance structure will also require some site clearing and excavation. While some site clearing is proposed, the overall site is presumed to have an ecological benefit associated with the increased hydration and water flows. Similar to the electrical corridor, it is anticipated that both invasive and native vegetation will be disturbed as part of the water conveyance structure construction. The SFWMD construction permits for the water conveyance structure will require assessment and mitigation for impacts to wetland vegetation.

Thus, the proposed grant funding transfer is not anticipated to have impacts on localized vegetation, soil, water, or wildlife habitat (no impacts anticipated).

4.6 Impacts to Wildlife

4.6.1 Bird Drive Recharge Area

The SFWMD revised restoration strategy proposes to consolidate properties within the BDRA project area along the Krome Avenue corridor. The consolidation of properties would provide property ownership for the development of a surface water conveyance structure connection from the northern water conservation areas (Arthur R. Marshall Loxahatchee

National Wildlife Refuge) through the Pennsuco/Bird Drive Recharge Area (BDRA) and then back to the southern water conservation area, and finally to Everglades National Park. The development of the project's proposed water conveyance structure would stabilize the hydration period in the project area.

Both the water conveyance structure and the electrical corridor proposed for these project areas would be designed to allow for the protection of wildlife habitat. Permitting requirements for this project would also require assessment and mitigation plans to offset any potential impacts. It is anticipated that some wetland improvements would be realized as part of the electrical corridor and construction of the water conveyance structure. The anticipated improvements to the wild habitat would be based on the removal of invasive vegetation and rehydration through the construction of the water conveyance structure.

The proposed federal grant funding transfer within the BDRA property does not impact onsite wildlife habitat. There are no immediate or anticipated biological consequences associated with the proposed federal grant funding transfer within the BDRA property tracts.

The proposed grant funding transfer does not impact wildlife (no impacts anticipated).

4.7 Impacts to Threatened and Endangered Species

4.7.1 Bird Drive Recharge Area

The proposed federal grant funding transfer within the BDRA will not negatively impact threatened or endangered species. The SFWMD revised restoration strategy proposes to consolidate properties within the historic BDRA area along the Krome Avenue corridor. The consolidation of properties would provide property ownership for the development of a surface water connection from the northern water conservation areas (Arthur R. Marshall Loxahatchee National Wildlife Refuge) through the Pennsuco/Bird Drive Recharge Area (BDRA) and then back to the southern water conservation area, and finally to Everglades National Park. The development of the proposed project would provide a water conveyance structure to improve freshwater flow to the southern Everglades.

The proposed land for the property where grant funding is being removed would include an electrical corridor. The electrical corridor projects proposed for these properties would be designed to allow for the protection of threatened and endangered species. Permitting requirements for the projects would also require assessment and mitigation plans to offset any potential impacts. The proposed re-hydration to improve the natural hydrologic patterns will continue to improve the ecological system and habitat for USFWS trustee species both within the BDRA and properties to the south.

The proposed grant funding transfer does not impact threatened or endangered species (no impacts anticipated).

4.8 Socioeconomic Consequences

4.8.1. Bird Drive Recharge Area

The proposed federal grant transfer is not presumed to have an adverse effect on socioeconomic parameters that would affect the public. Portions of the of the BDRA are proposed for development of an electrical corridor. The new proposed electrical corridor re-alignment would mitigate impacts to ecologically sensitive lands within the ENP and the western water conservation areas. The proposed electrical corridor alignment provides a buffer to residential homes to the east. Prior to sitting and development of the electrical corridor, a site-specific Environmental Assessment for the electrical corridor alignment would be required, as well as a regulatory permitting process. During this process, a more comprehensive review would be assessed for the selected alignment and review of any potential socioeconomic impacts.

The relocation properties in the proposed grant funding transfer will remain fallow lands pending construction of a water conveyance structure. The proposed water conveyance structure will assist with the restoration of natural areas within the BDRA and improve water quality, flow, ecological habitat and public access. The proposed water conveyance structure will be beneficial to communities through the recharge of the wellfield and ecological improvements to the western water conservation areas.

The development of the proposed grant funding transfer will not cause negative socioeconomic consequences (no impacts anticipated).

4.9 Impacts on Environmental Justice

President Bill Clinton signed the Executive Order 12898 “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” on February 11, 1994, to focus federal attention on the environmental and human health conditions of minority and low-income populations with the goal of achieving environmental protection for all communities. The Order directed federal agencies to develop environmental justice strategies to aid in identifying and addressing disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. The Order is also intended to promote nondiscrimination in federal programs substantially affecting human health and the environment and to provide minority and low-income communities with access to public information and participation in matters relating to human health or the environment. The proposed electrical corridor through the BDRA is not anticipated to impact residential or commercial properties. The federal grant funding transfer proposed for the implementation of the water conveyance structure/electrical corridor does not cause adverse effects to human health, or economically or socially, or to the environment.

The proposed grant funding transfer will not disproportionately place any adverse environmental, economic, social, or health impacts on minority or low-income populations (no impacts anticipated).

4.10 Impacts on Public Health and Safety

4.10.1 Bird Drive Recharge Area

The proposed federal grant funding transfer of the BDRA property will not negatively change any infrastructure that serves public health and safety. The proposed water conveyance system would provide benefits to the public by limiting water seepage from the water conservation area and by increasing groundwater recharge to the Miami-Dade County wellfield. Development of an electrical corridor would provide a benefit to public health and safety through the installation of electrical transmission lines that are hardened for hurricanes. The implementation of both of these proposed construction projects will require a separate environmental assessment, including health and safety plans to address any public health safety risks associated with the proposed construction.

Relocation of the grant funding is not anticipated to have any impacts on human health and safety (no impacts anticipated).

4.11 Impacts on Recreation

4.11.1 Bird Drive Recharge Area

No recreational opportunities are currently available on the BDRA property based on the lack of improved site access for public use or development of infrastructure. Public recreational opportunities are available on the adjacent lands to the west, including the Everglades and Francis S. Taylor Wildlife Management Area, the Milton E. Thompson County Park to the North, and the Everglades National Park located to the south. The development of the water conveyance structure on the west side of the property would improve ecological conditions in the vicinity of the proposed BDRA water conveyance structure, thereby improving regional recreational opportunities. As part of the design and construction of the proposed water conveyance structure, a review of recreational opportunity would be assessed.

The proposed federal grant funding transfer will not negatively affect recreational opportunities on this site (no impacts anticipated).

4.12 Cultural Resource Consequences

The BDRA site, which is included in Alternative B, has no known archaeological or historic resources, and removing restrictions from these parcels does not inherently cause disturbance or disruption of the physical conditions of the properties. The properties are proposed for the designation as an FPL electrical corridor. Prior to implementing construction activities that disturbed site conditions, typically a more comprehensive assessment that includes site work would be conducted. While the SFWMD would provide an easement for the FPL electrical corridor, the SFWMD would maintain fee ownership of the lands. As the fee owner of the land, the SFWMD is required to comply with the state of Florida's historic preservation responsibilities delineated in Chapter 267.061 of the Florida Statutes and the Division of Historical Resources 2014 Management Procedures and

Guidelines for Archaeological and Historical Sites and Properties on State-owned or Controlled Lands. In addition, Chapter 872 of the Florida Statutes provides supplementary assurances that sites would be protected. The Janus Research Inc. Cultural Resource Desktop Analysis is included as Appendix D.

4.13 Cumulative Impacts Analysis

The analysis reviewed the cumulative impacts to the environment resulting from incremental effects of a proposed action when these are added to other past, present, and reasonably foreseeable future actions.

The USFWS is currently assessing the cumulative impacts through a Section 7 Intra-Service Biological Evaluation related to this proposal. That decision will be included upon receipt as an addendum to the Final Environmental Assessment for this proposed action. While cumulative effects may result from individually minor actions, they may become substantial over time. The proposed plan is to transfer funding from the BDRA fallow eastern agricultural land containing poor quality wetlands to the western BDRA to allow for the construction of a water conveyance structure. It is anticipated that the USFWS's Section 7 Biological Evaluation will report no impacts to listed or proposed resources.

As stated in Chapter 2, the new proposed grant funding transfer (Alternative B) would transfer funding from the eastern portion of the BDRA to the western BDRA project. The proposed restoration strategy for the BDRA is to develop surface water conveyance structures to enhance water flows from the northern water catchment areas to the southern water catchment areas and then to the ENP. This restoration strategy requires that land ownership is consolidated along the western boundary of the BDRA.

In the proposed land exchange (Alternative B), the proposed federal grant funding may be transferred from the eastern BDRA to the western BDRA to allow for the construction of a water conveyance structure and electrical corridor. It is the SFWMD staff's opinion that the proposed fund transfer would provide an equitable value and would enhance the physical, biological, socioeconomic, and cultural and historic characteristics of the current environment after the proposed transfer to the state of Florida. As such, there are no expected cumulative impacts of this action.

CHAPTER 5. Consultation and Coordination

The SFWMD and DOI have worked together over the past several years to identify and assess properties that could be included in the proposed federal land grant transfer that would result in an equitable exchange and would provide benefits to the mission and goals of both entities. The transfer of the land grant funding within the BDRA site would include other federal, state, and tribal agencies, as well as the interested public, who will have an opportunity to review and comment on this proposal. Notification of the opportunity to comment and where to obtain copies of the Environmental Assessment were announced in the Sun Sentinel (Appendix C).

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APPENDIX A: Environmental Action Statement

Within the spirit and intent of the Council on Environmental Quality regulations for implementation of the National Environmental Policy Act (NEPA) and other statute orders and polices that protect fish and wildlife resources, I have established the following administrative record and determined the proposed land exchange with the State of Florida and the Department of the Interior. The actions include removal of specific grant-funded restrictions on a property owned by the SFWMD known as the eastern Bird Drive properties in exchange for the placement of specific grant-funded restrictions on a second property owned by the SFWMD known as the western Bird Drive properties.

Check one:

_____ Is a categorial exclusion as provided by 516DM2, Appendix 1 and 516DM5, Appendix 1, Section 1.4 A (4). No further NEPA documentation will therefore be made.

_____ Is found not to have significant environmental effects as determined by the attached Environmental Assessment finding and No Significant Impacts.

_____ Is found to have a significant effect and therefore further consideration of this action will require a notice of intent to be published in the Federal Register announcing the decision to prepare an EIS.

_____ Is not an emergency action within the context of the 40 CFR 1 506 1 1. Only those actions necessary to control the immediate impacts of the emergency will be taken. Other related actions remain subject to NEPA review.

Other Supporting Documents

Environmental Assessment Report
FWS Endanger Species Act, Section 7 Consultation

Signature Approval:

APPENDIX B: Finding of No Significant Impact (FONSI)

Finding of No Significant Impact (FONSI)

Introduction

On May 10, 2018, the U.S. Fish and Wildlife Service (USFWS) completed Step 3 of the Everglades Grant Land Disposition Protocol outlined in a letter provided to the South Florida Water Management on March 11, 2016 by the U.S. Department of the Interior. The review focused on the removal of specific grant-funded restrictions on properties owned by SFWMD located within a proposed Florida Power & Light Company (FPL) transmission corridor in exchange for the placement of specific grant-funded restrictions on replacement properties owned by SFWMD. The replacement properties are located within the western portion of BDRA, specifically near the proposed water conveyance structure. The purpose of the transaction is to enable the shift of the electrical corridor to the east, away from the ENP and the conservation area, and transfer grant funding to the replacement properties. The Transmission Corridor Properties consist of 48.25 acres of land located within the BDRA in Miami-Dade County.

These seven transmission corridor properties proposed for the FPL easement were acquired using federal grant funding. The FPL replacement properties consist of 40 acres, more or less, located within the western ½-mile corridor lying east of Krome Avenue within the BDRA. The 40 acres consist of two individual tracts. Figures 2-A and 2-B identify encumbered tracts within the FPL proposed corridor, and Figure 2-C shows the proposed land swap tracts.

An Environmental Assessment (EA) has been prepared to inform the public of the possible environmental consequences of removing the grant-funded restrictions. A description of the alternatives, the rationale for selecting the preferred alternative, the environmental effects of the preferred alternative, the potential adverse effects of the action, and a declaration concerning the factors determining the significance of effects, in compliance with the National Environmental Policy Act of 1969, are outlined below. The supporting information can be found in the Environmental Assessment.

Alternatives

The grant-funded restrictions removal process access three alternatives. Alternative B was selected as the “Preferred Alternative," which is the proposed action to allow for long-term resource protection, enhanced wildlife habitat and population management, and further public wildlife-oriented recreation. The overriding concern reflected in this plan is ensuring quality habitat and protection to native species while providing compatible recreational experiences for the public.

Revised Alternative A: No Action - Current Land Ownership

Under Alternative A, no land replacement would occur. The grant funding would continue to encumber the Transmission Corridor Properties owned by SFWMD, which would eliminate the ability to relocate the subject electric transmission lines out of Everglades

National Park and consolidated properties along Krome Avenue, and to facilitate the proposed ½-mile surface water conveyance system along Krome Avenue.

Alternative B: New Proposed Action - Removal of Federal Interest in Transmission Corridor, Communication Tower and Consolidation Properties for Replacement Properties

The new proposed action would equalize the values of the exchange of properties for the removal of the encumbrance and federal nexus from the Transmission Corridor Properties. Once removed, SFWMD would then be able to grant a utility easement to FPL for the relocation of an electric transmission line out of Everglades National Park and consolidate properties along Krome Avenue for the water conveyance system. In exchange, SFWMD would transfer the federal interest encumbrance to the replacement properties located in the western boundary of the BDRA. The Transmission Corridor Properties were partially acquired with FB-1 and LWCF-1 funds.

Alternative C: New Proposed Action - Removal of Federal Interest in Transmission Corridor Property

The new proposed action would require, if available, the acquisition of properties within the BDRA. The estimated acquisition cost is $1.2 million. Once acquired, SFWMD would grant the utility easement to FPL over the 48.25-acre Transmission Corridor Properties and remove the encumbrance and federal nexus from the Transmission Corridor Properties, which were acquired with funds from the Federal Agriculture Improvement and Reform Act of 1996 and DOI and Related Agencies Appropriations Act of 1999. In exchange**,** SFWMD would transfer the federal interest encumbrance to the newly acquired property. This alternative is problematic, however, due to property availability, and budgetary and time constraints.

Selection Rationale

The transfer of grant funding restrictions from the proposed FPL corridor easement lands would facilitate the consolidation of western BDRA lands necessary to develop a water conveyance system. The development of a water conveyance system requires the addition/consolidation of lands located within the western boundary of the BDRA along Krome Avenue. The funding transfer provides DOI with conservation lands for the development of a water conveyance system, which will enhance hydrologic restoration and provide ecological and wildlife benefits. The consolidation of the western BDRA properties is necessary to improve freshwater flows and ecological resources. This newly proposed FPL corridor will also allow for the relocation of the previously proposed electrical corridor away from the ENP and the western conservation lands.

Environmental Effects and Consequences

The physical, biological, socioeconomic, and cultural and historic characteristics of the BDRA site will be retained. The proposed western BDRA water conveyance systems would provide hydrologic restoration and ecological and wildlife benefits through increased freshwater flow. The project would also include the addition of the FPL corridor within the BDRA. The cumulative effects of this proposed transfer for grant funding are not expected to be substantial.

Cumulative Impacts

Cumulative impacts on the environment result from the incremental effects of a proposed action when these are added to other past, present, and reasonably foreseeable future actions. While cumulative effects may result from individually minor actions, they may become substantial over time. The proposed land exchange (Alternative B) would transfer funding restrictions from eastern to western BDRA properties. The eastern BDRA will be developed for an FPL corridor. The western BDRA properties will be included within the proposed water conveyance structure. The development of the western water conveyance system will enhance hydrologic restoration and will provide ecological and wildlife benefits Therefore, the cumulative effects of this action are not expected to be substantial.

Coordination

The U.S. Fish and Wildlife Service (USFWS) and the SFWMD have actively communicated and coordinated regarding the proposed land exchange. The USFWS and SFWMD have discussed the possibility of a land exchange involving BDRA properties for several years, and the public has been kept well-informed of this land exchange through various media. The SFWMD has communicated about grant funding restriction removal and transfers at meetings with various stakeholders over the past year and in a public meeting on the transfer of funding restrictions and land exchange. The Service Regional Office (RO) personnel and staff biologists have conducted reviews of the transfer of funding restrictions.

Findings

Based on the findings of the EA's and the USFWS's reviews, the proposed removal of funding restriction does not constitute a major federal action significantly affecting the quality of the human environment under the meaning of Section 102(2)(c) of the National Environmental Policy Act of 1969 (as amended). As such, an environmental impact statement is not required.

1. Both beneficial and adverse effects have been considered, and this action will not have a significant effect on the human environment. (Environmental Assessment, page 13)

2. The actions will not have a significant effect on public health and safety. (Environmental Assessment, page 23)

3. The project will not significantly affect any unique characteristics of the geographic areas, such as proximity to historical or cultural resources, wild and scenic rivers, or ecologically critical areas. (Environmental Assessment, page 17)

4. The effects on the quality of the human environment are not likely to be highly controversial. (Environmental Assessment, page 14)

5. The actions do not involve highly uncertain, unique, or unknown environmental risks to the human environment. (Environmental Assessment, page 14)

6. The actions will not establish a precedent for future actions with significant effects, nor do they represent a decision in principle about a future consideration. (Environmental Assessment, page 15)

7. There will be no cumulatively significant impacts on the environment. Cumulative impacts have been analyzed with consideration of other similar activities on adjacent areas. (Environmental Assessment, page 15)

8. The actions will not significantly affect any site listed in, or eligible for listing in, the National Register of Historic Places, nor will they cause loss or destruction of significant scientific, cultural, or historic resources. (Environmental Assessment, page 18)

9. The actions are not likely to adversely affect threatened or endangered species, or their habitats. (Environmental Assessment, page 21; Section 7, Chapter VII.)

10. The actions will not lead to a violation of federal, state, or local laws imposed for the protection of the environment. (Environmental Assessment, page 14)

Supporting References

U.S. Fish and Wildlife Service. 2018. RO Vero Beach Statement on Trustee Species
Cultural Resources Assessment Property, Janus Research: May, 2018.

Document Availability

The Environmental Assessment was made available to the public electronically on the South Florida Water Management District website in March of 2018. Additional copies are available by writing:

_____ _____

Mike Piccirilli Date
U.S. Fish and Wildlife Service
Chief of Wildlife and Sportfish Restoration Program
Atlanta, Georgia

APPENDIX C: Public Comment

Transfer of Grant Fund Restrictions
Bird Drive Recharge Area Property

On November 4th, an announcement of the proposed grant funding transfer appeared in the Sun Sentinel, a daily newspaper distributed in Miami-Dade, Broward and Palm Beach counites.

APPENDIX D: Cultural Resource Desktop Analysis of Ten Parcels in the Bird Drive Restoration Area, Miami-Dade County, Florida by Janus Research

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Janus Research

Memo

To: Robert Taylor, SFWMD

CC: Armando Ramirez, SFWMD

From: Diane K. Kloetzer, Janus Research

Date: October 19, 2018

Re: Cultural Resource Desktop Analysis of Ten Parcels in the Bird Drive Restoration Area, Miami-Dade County, Florida

Introduction

At the request of the South Florida Water Management District (SFWMD), Janus Research conducted a cultural resources desktop analysis of ten parcels in the Bird Drive Restoration Area (BDRA) in Miami-Dade County, Florida (study area). As shown in Figure 1, the parcels include W930E-006 (9.91 acres), W930E-007 (0.82 acres), W930E-012 (5.72 acres), W930E-013 (5.63 acres), W930E-010 (11.17 acres), W930E-011 (11.35 acres), W930E-008 (8.56 acres), W930E-009 (5.91 acres), W9308-283 (9.99 acres), and W9308-582 (29.47 acres). The purpose of this analysis is to identify any previously recorded resources within the study area that have been determined or considered eligible for the National Register of Historic Places (National Register). and any resources with documented or suspected human remains. The analysis will also identify areas of archaeological probability within the project areas.

As part of the revised Bird Drive restoration strategy, the SFWMD has implemented a process to consolidate properties within the western portion of the historic Bird Drive Recharge Area (BDRA). The revised Bird Drive restoration strategy includes a conveyance system that would provide a surface water connection for water managers to flow/pump surface water from the northern water conservation areas through the Pennsuco project area and BDRA, back to the southern water conservation area, and finally on to Everglades National Park.

The successful implementation of the revised Bird Drive restoration strategy will require the transfer of the U.S. Department of the Interior (DOI) grant funding from properties within the new proposed Florida Power and Light (FPL) transmission corridor easement and transfer of grant funding from the eastern BDRA to property along the western boundary of the BDRA project area.

The FPL high voltage electrical transmission corridor is proposed to traverse through the BDRA. The new alignment is a revision to a previous alignment that proposed for the transmission line to traverse through a section of the Everglades National Park (ENP) and along the eastern water conservation boundary to the west of the BDRA. The proposed eastern shift of the corridor would


W930E-006
9.91 Acres
W930E-007
0.82 Acres
C-4
DADE BROWARD LEVEE
W930E-009
5.91 Acres
W930E-011
11.35 Acres
W930E-013
5.63 Acres
W930E-008
8.56 Acres
W930E-010
11.17 Acres
W930E-012
5.72 Acres
Bird Drive Recharge Area
1/2 Mile
W9308-283
9.99 Acres
W9308-582
29.47 Acres
Major Highways and Roads
FP&L Right of Way
Proposed DOI Land Transfer
Existing DOI Fund Landswap
Krome Avenue Conveyance
CERP Study Area
DOI Funding Proposed
Tract Relocation
Acrial Mapping
Miami - Dade County, Florida
Map Date: October 2018
South Florida Water Management District
3301 Gun Club Rd., West Palm Beach, Florida 33406
(561) 686-8800 www.sfwmd.gov
GEOSPATIAL SERVICES

remove the proposed transmission lines from the western water conservation area and section of the ENP. This shift to the BDRA would minimize ecological impacts to the ENP and the western natural areas. The new proposed realignment would parallel Krome Avenue and then transect the Bird Drive project area in an east/west direction rather than a northerly direction. The proposed realignment will require DOI grant funding removal from seven specific properties within the FPL corridor. The impact to the grant fund properties will be limited to only those areas that will be impacted by the high voltage powerline foundations. SFWMD will retain ownership of the property but provide an easement for the transmission line corridor. The proposed easement includes contractual conditions that require the corridor to be constructed in a manner that allows for the continuation of surface water flow across the site. This action proposes to transfer funding from eight properties located within the power line corridor and transfer funding to two properties that are within the footprint of the proposed BDRA conveyance system (Figure 1). This transfer is necessary to facilitate the development and permitting of the new electrical corridor and support the proposed water conveyance system along Krome Avenue.

On May 10, 2018, the U.S. Fish and Wildlife Service (USFWS) completed Step 3 of the Everglades Grant Land Disposition Protocol outlined in a letter provided to the SFWMD on March 11, 2016 by the DOI. The review focused on the removal of specific grant-funded restrictions on properties owned by SFWMD located within a proposed FPL transmission corridor in exchange for the placement of specific grant-funded restrictions on replacement properties owned by SFWMD. The replacement properties are located within the western portion of BDRA, specifically near the proposed water conveyance structure. The purpose of the transaction is to enable the shift of the transmission line corridor to the east, away from the ENP and the conservation area, and transfer grant funding to the replacement properties.

The transmission corridor properties include 59.07 acres and transvers through the BDRA in an east west direction then heads north. The FPL replacement properties consist of approximately 40 acres located within the western ½-mile of the transmission line corridor lying east of Krome Avenue within the BDRA. Portions of the property have been degraded by the invasive species of melaleuca and pepper trees as well as off road vehicles. The property experience seasonal flooding in low areas. The parcels included in this desktop are located in Sections 5, 7, 8, and 19 in Township 54 South, Range 39 East, on the Hialeah SW (1995) and South Miami NW (1994) United States Geological Survey (USGS) quadrangle maps (Figure 2).

Study Area

No improvements to the property are currently proposed. Therefore, the study area for archaeological and historic resources was confined to the footprint of the ten parcels (Figure 3).

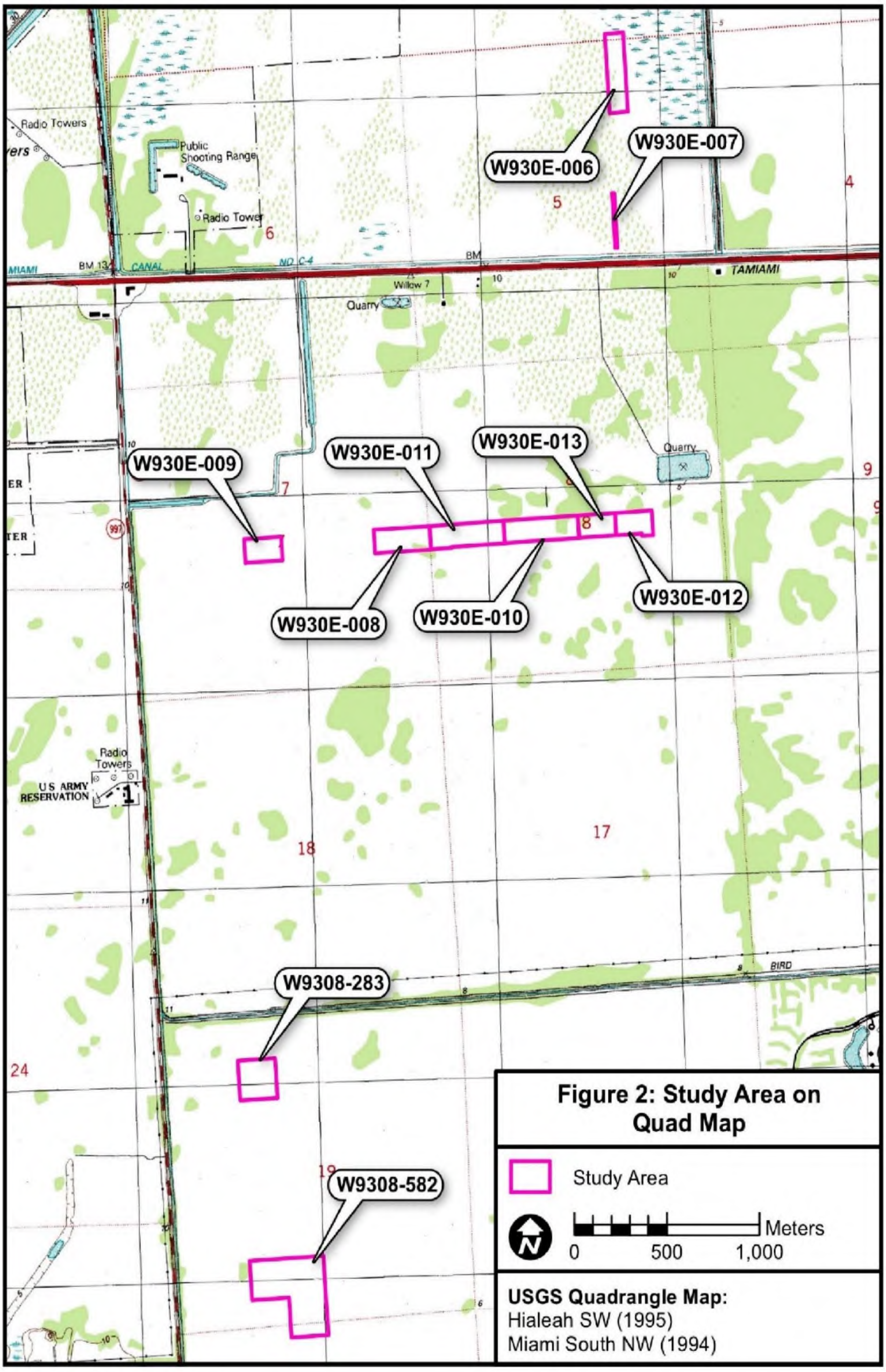
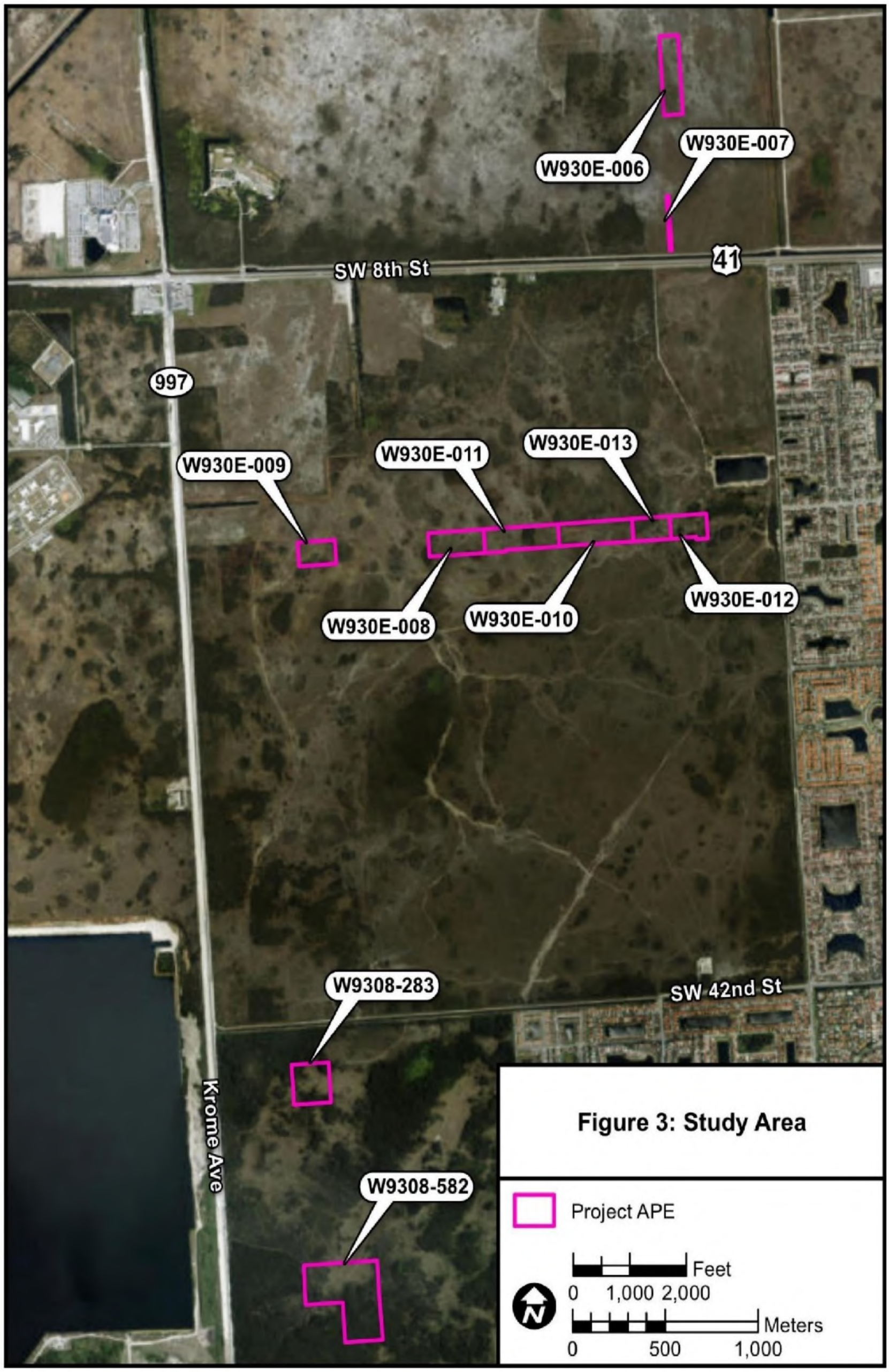


Figure 2: Study Area on Quad Map


W930E-006
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SW 8th St
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997
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W930E-013
W930E-008
W930E-010
W930E-012
W9308-283
SW 42nd St
Krome Ave
W9308-582
Figure 3: Study Area
Project APE
Feet
0 1,000 2,000
Meters
0 500 1,000

Methods

An archaeological and historical literature and background information search pertinent to the study area was conducted to determine the types, chronological placement, and spatial patterning of cultural resources adjacent to the cultural resources study area. This included a search of county and local site inventories, unpublished Cultural Resource Management (CRM) reports, Miami-Dade County Property Appraiser records, and other relevant historical research materials.

Background research methods also included a search of the Florida Master Site File (FMSF) to identify cultural resources that are listed, eligible, or considered eligible for listing in the *National Register of Historic Places* (National Register) and resources with potential or confirmed human remains. The FMSF is an important planning tool that assists in identifying potential cultural resources issues and resources that may warrant further investigation and protection. It can be used as a guide but should not be used to determine the official position of the Florida Division of Historical Resources/State Historic Preservation Officer (FDHR/SHPO) regarding the significance of a resource.

Desktop Analysis

Cultural Resource Surveys

A search of the FMSF identified five previous surveys that included portions of the study area, but no comprehensive survey has been conducted (Table 1). FMSF Manuscript Nos. 340, 602, and 2127 are County-wide surveys from the 1980s that did not include a systematic survey specific to the study area. The FMSF GIS data indicates that FMSF Manuscript No. 9018 consisted of a survey for a cell tower located south of US 41. The archaeological APE for this survey did not extend into the study areas. It also indicated that the actual tower was not located within or adjacent to the current study area and that no subsurface testing was conducted as it was an existing tower with no proposed ground disturbing activities. FMSF Manuscript No. 327, which was conducted in 1976, included both a surface inspection and subsurface testing of proposed spoil areas along the north bank of the Tamiami Canal. The survey area included the southern end of parcel W930E-007. No archaeological sites were identified within or adjacent to the parcel.

Table 1. Previously Conducted Cultural Resource Surveys Containing or Partially Containing the Study Area

FMSF Survey No.	Title	Author(s)	Publication Date
327	An Archaeological and Historical Survey of Possible Spoils Disposal Areas Adjacent to the Proposed Enlargement of Approximately 4 Miles of the Westerly End of Canal 4	Gagel, Katherine	1976
340	Dade County Archaeological Survey Interim Report	Carr, Robert S.	1980
2127	Dade County historic survey, Phase II: Final Report	Metropolitan Dade County	1989

FMSF Survey No.	Title	Author(s)	Publication Date
602	Dade County Historic Survey Final Report	Carr, Robert S.	1981
9018	Cultural Resource Assessment of the GHW Tower Location in Miami-Dade County, Florida	Sims, Cynthia L.	2003

In addition to the previous surveys included in the FMSF, Janus Research, in association with Stantec, is currently conducting a cultural resource assessment survey (CRAS) of the Miami-Dade Expressway Authority (MDX) SR 836/Dolphin Expressway Southwest Expansion Project Development and Environment Study (Janus Research 2018 in progress). A portion of the area of potential effect (APE) for the MDX project includes parcels W930E-008 and W930E-010. Although determined to have a low potential for archaeological sites, three shovel tests were excavated within parcel W930E-008 and one shovel test was excavated in parcel W930E-010. The locations of these shovel tests are shown in Figure 4. No archaeological sites or cultural material were identified in any of these shovel tests, confirming the low potential for archaeological sites.

Archaeological Sites

A search of the FMSF data identified no archaeological sites within or adjacent to the archaeological study area. Six previously recorded sites were identified within 1/2 mile of the study areas, as summarized in Table 2 and shown in Figure 5. All of these sites were identified on hammocks or tree islands, which are visible on the historic aerials of the project area.

Table 2. Previously Recorded Archaeological Sites within 0.5 miles of the Study Area

FMSF Site No.	Site Type	SHPO National Register Evaluation *
8DA1059	Late Archaic and Glades Period Midden	Potentially Eligible
8DA1651	Glades Period Midden	Not Evaluated
8DA1652	Glades Period Midden	Not Evaluated
8DA2102	Glades Period Midden/Campsite	Not Evaluated
8DA2108	Precontact Period Midden	Not Evaluated
8DA6991	Glades Period Midden/Campsite	Ineligible

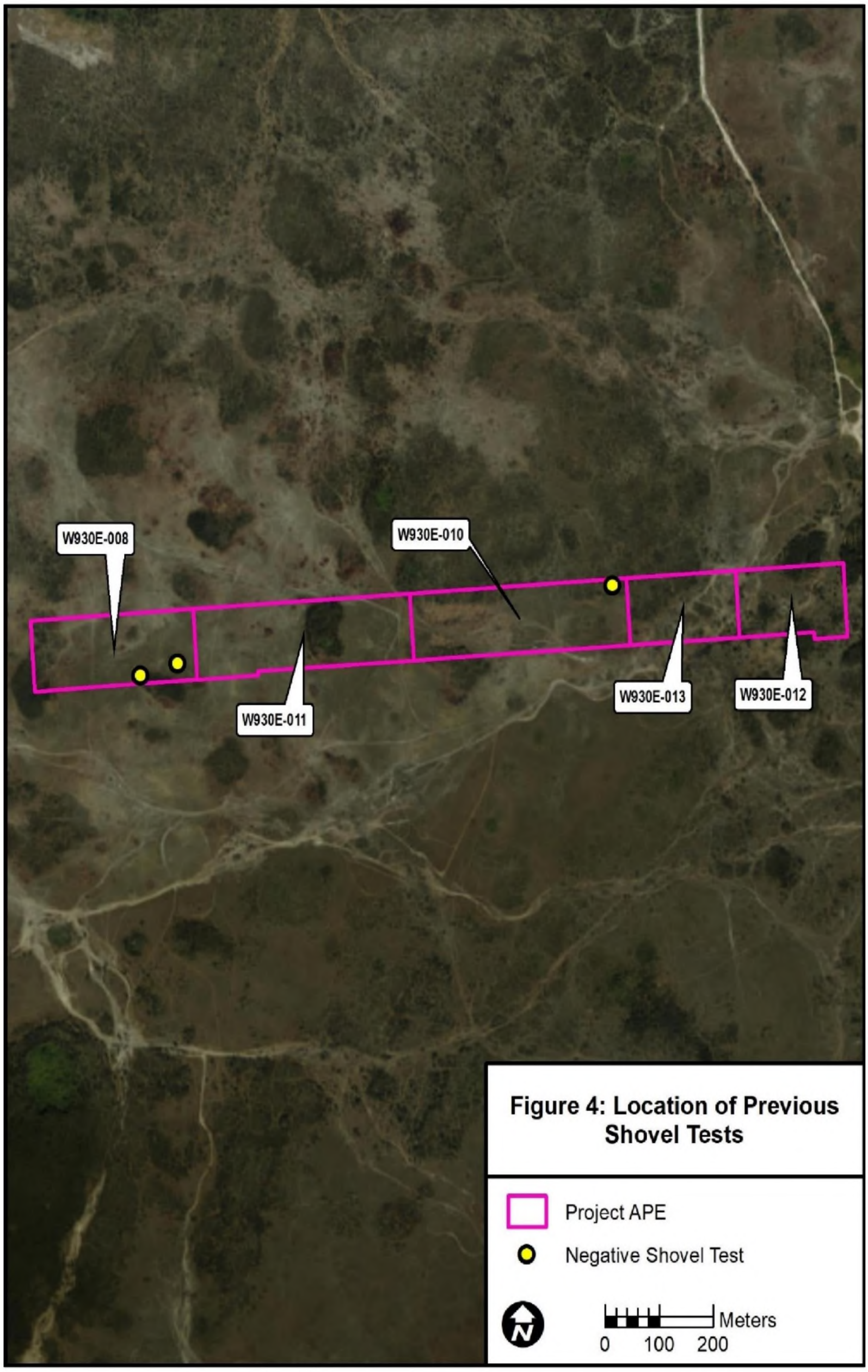
* As recorded in the FMSF-may need to be re-evaluated

Historic Resources

There are no previously recorded historic resources located within the historic resources study area. The review of the historic aerial photographs did not identify any potential historic resources within or adjacent to the parcels.

Property Appraiser Records

A search of the Miami-Dade County Property Appraiser records was conducted to assess the potential for unrecorded historic buildings within the historic resources study area. No parcels within the study area have 'Actual Year Built' (AYRB) dates indicative of containing buildings with a historic date of construction before or during 1970.


W930E-008
W930E-010
W930E-011
W930E-013
W930E-012
Figure 4: Location of Previous Shovel Tests
Project APE
Negative Shovel Test
N
Meters
0 100 200

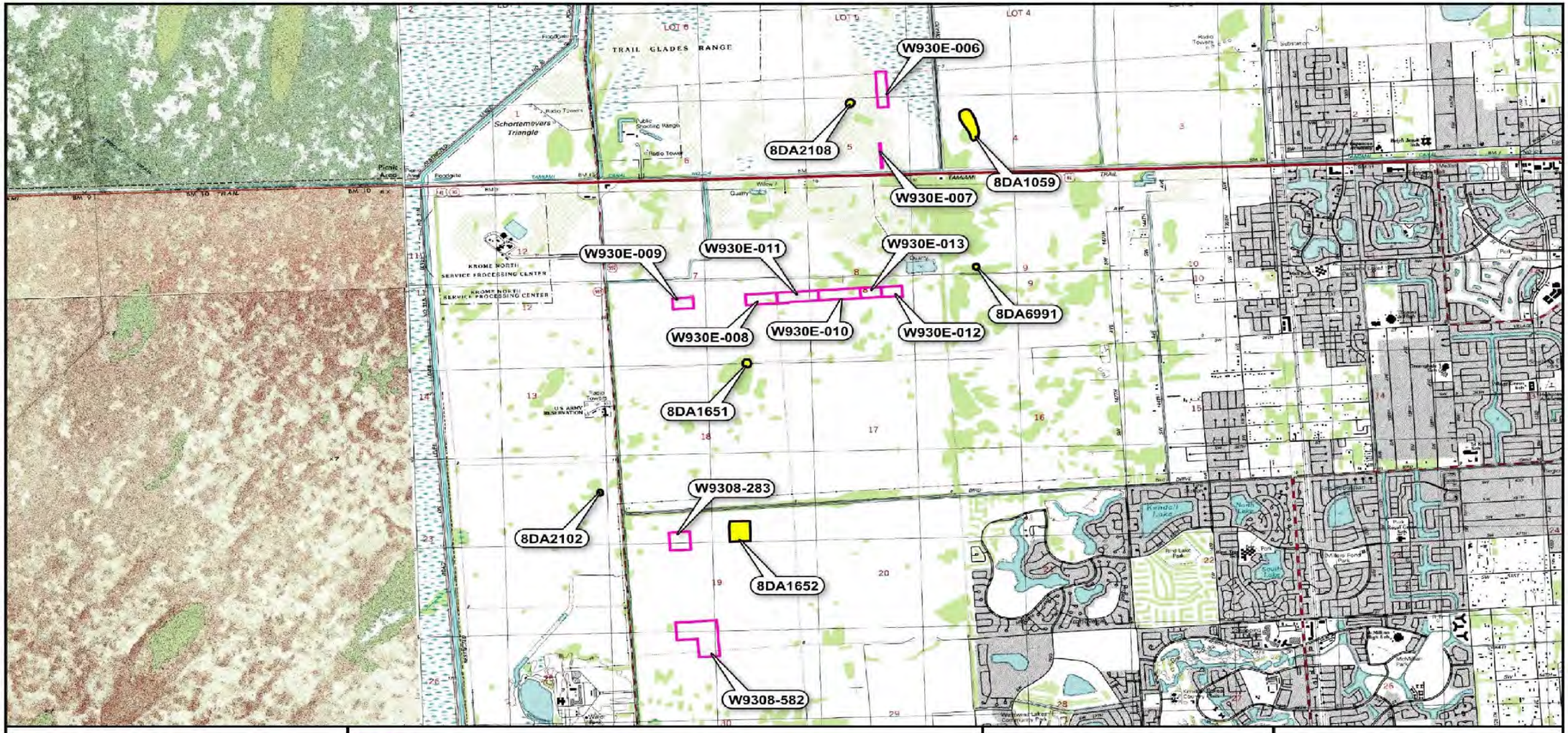


Figure 5: Archaeological Sites Within Half a Mile of the Study Area

Archaeological Desktop Analysis Results

A review of the General Land Office (GLO) historic plat map for Township 54 South, Range 39 East (Florida Department of Environmental Protection [FDEP] 1918) was conducted to examine past environmental conditions within the vicinity of the study area in the early-20th Century (Figure 6. Associated surveyors' notes for this township and range were not available.

As shown in Figure 6, the GLO plat map shows three hammocks within or adjacent to three parcels (W930E-006, W930E-009, and W930E-012). Although the GLO plat maps represent a valuable resource for helping to reconstruct pre-development environmental conditions, vegetation, and the potential locations of archaeological sites, there are limitations with their accuracy. As noted by Knetsch and Smith (1992:352), the surveyors were often left to their own judgment and the pressure to survey as much land as possible led to many omissions and inaccuracies. Surveys also focused on survey lines and the extent of features, such as hammocks or trails, that extended outside of the survey line were extrapolated. For these reasons, early historic aerials, particularly those that show conditions prior to development are more reliable for indicating the locations of hammocks or tree islands.

Historic aerial photographs from 1940, 1950, 1963, and 1968 were examined to obtain information regarding land use and the locations of hammocks during the 20th Century (Florida Department of Transportation, Surveying and Mapping Office 2018; United States Geological Survey 2018; University of Florida, George A. Smathers Libraries 2018). All of the parcels are visible on the 1940 and 1950 aerials. The 1963 aerial only includes eight parcels located in the northern part of the study area while the 1968 includes the two most southern parcels. The aerials show that the study area was low and wet. Although several tree islands are visible on the aerials, none are within or adjacent to any of the parcels (Figures 7–10).

The *Soil Survey of Dade County, Florida* (United States Department of Agriculture [USDA] 1996) was reviewed to help determine the predevelopment environment, assess the level of modification, and identify natural features within the study area indicative of increased archaeological site potential. The study area is located within the Lauderhill-Dania-Pahokee soil association. These soils consist of organic material that is 8 to 51 inches deep over limestone bedrock and is found in freshwater marshes and ponds (USDA 1996:9–10). Native vegetation is sawgrass, willows, and cattails. The drainage characteristics and environmental associations of the soil types found within the study area are included in Table 3.

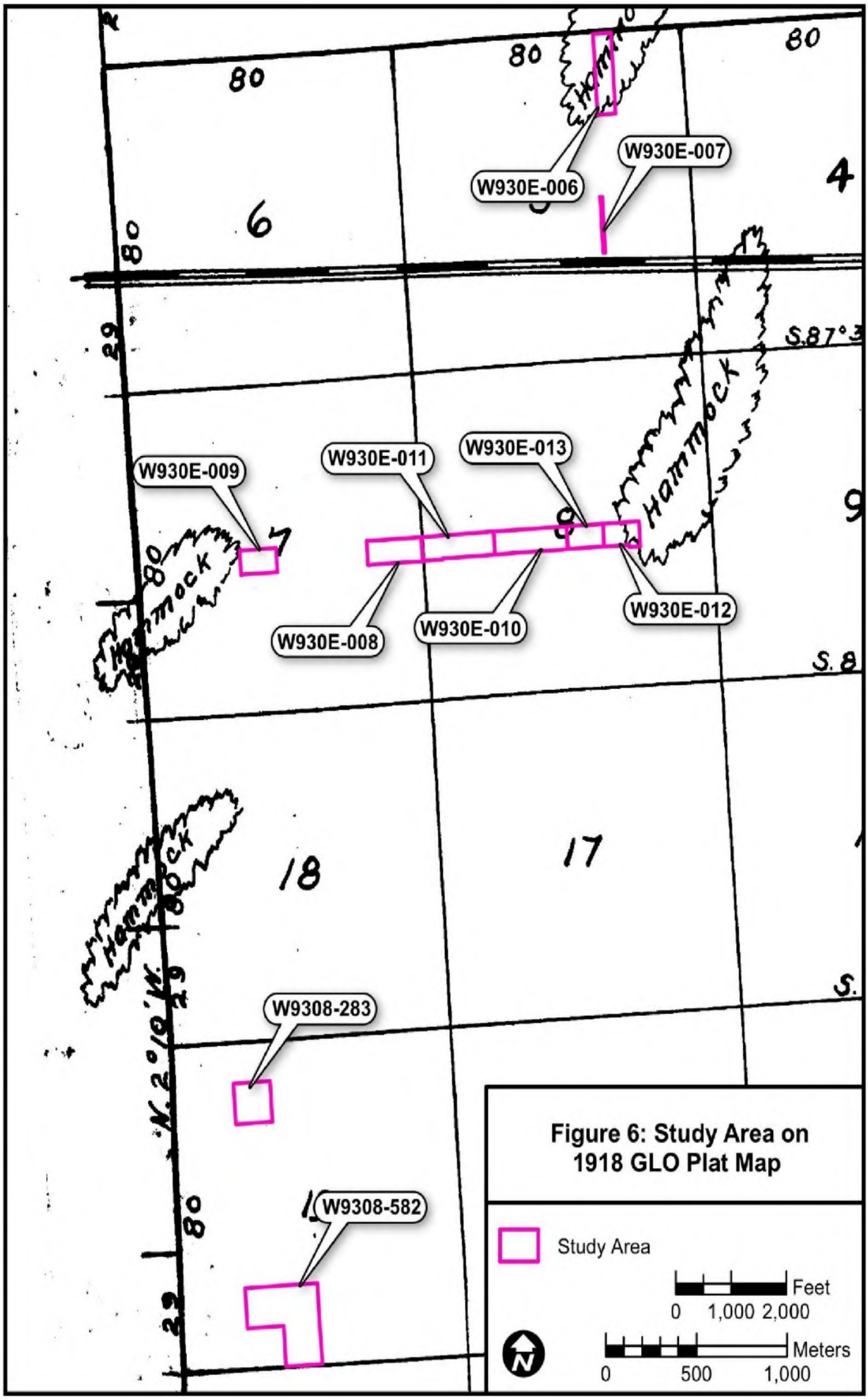
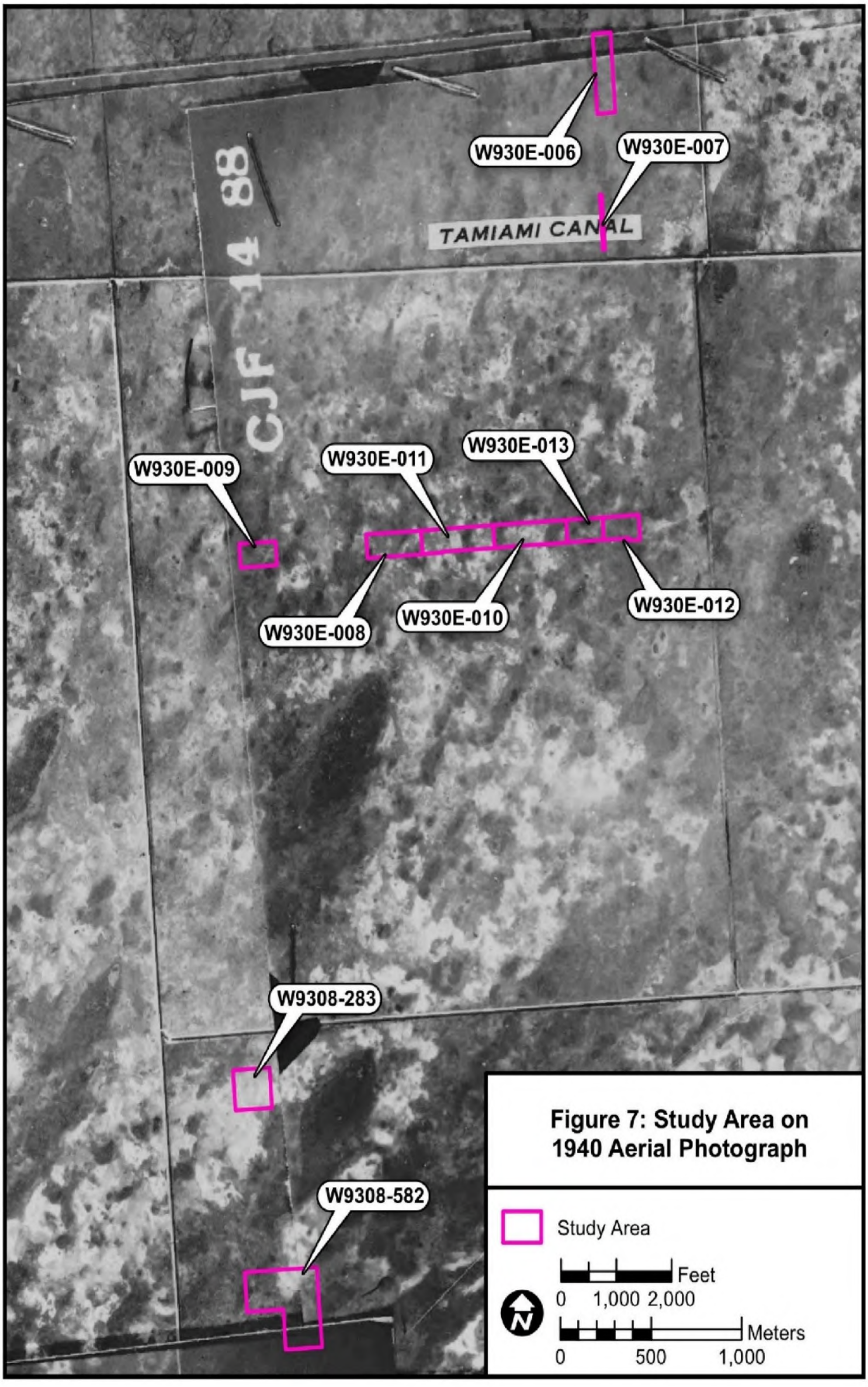


Figure 6: Study Area on 1918 GLO Plat Map


W930E-006
W930E-007
TAMIAMI CANAL
W930E-009
W930E-011
W930E-013
W930E-008
W930E-010
W930E-012
W9308-283
W9308-582
Figure 7: Study Area on
1940 Aerial Photograph
Study Area
Feet
0 1,000 2,000
Meters
0 500 1,000

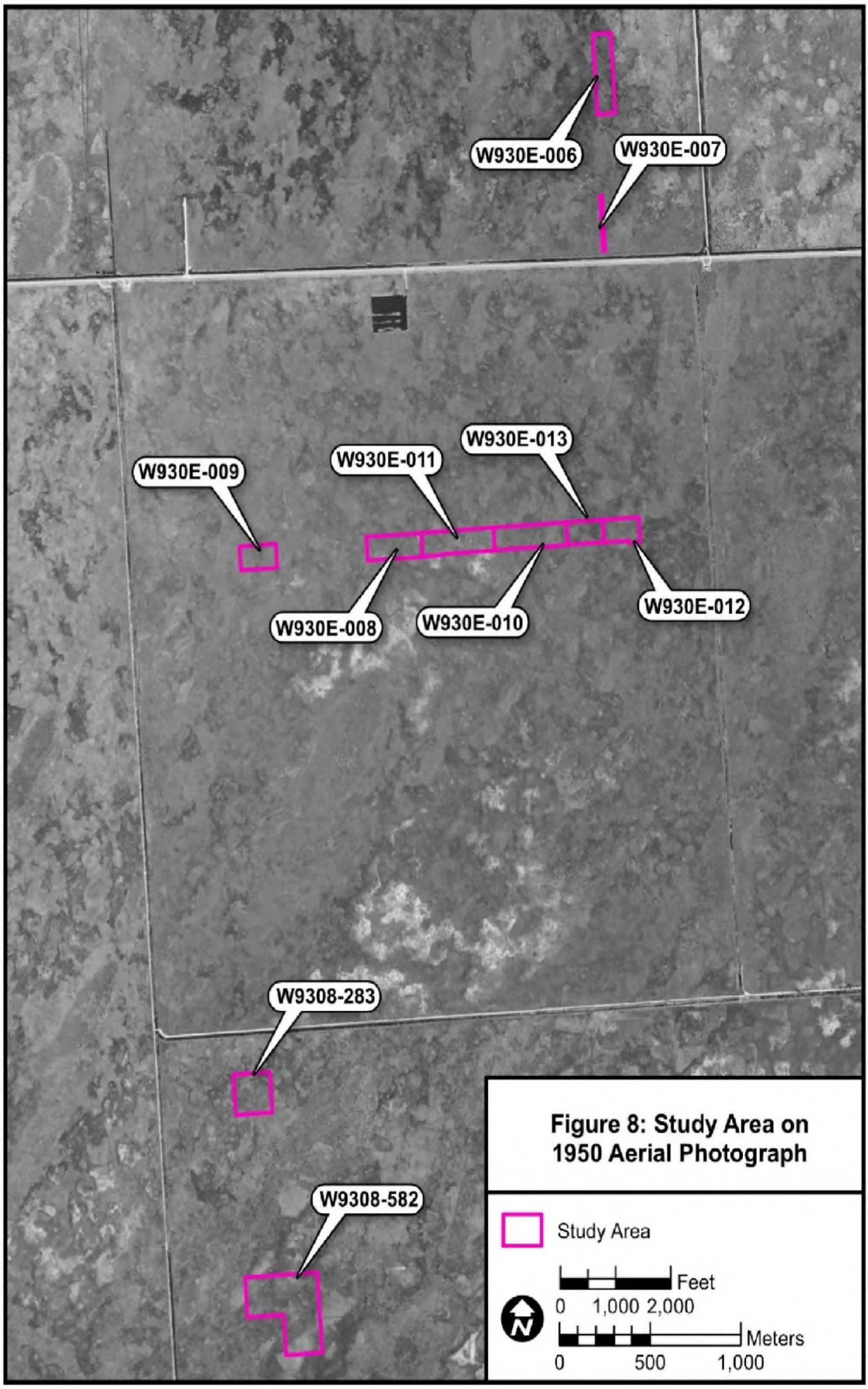
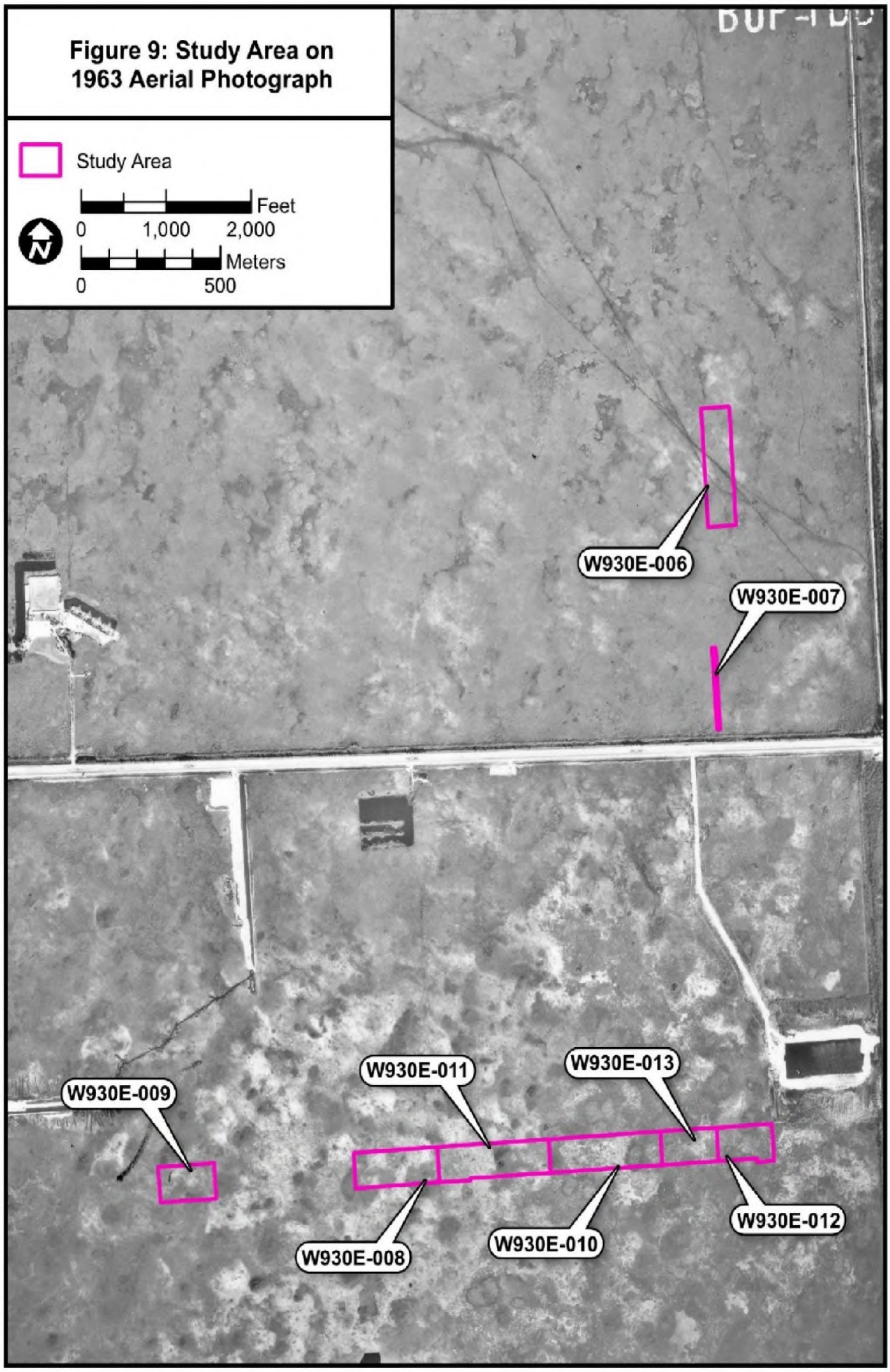

W930E-006
W930E-007
W930E-009
W930E-011
W930E-013
W930E-008
W930E-010
W930E-012
W9308-283
W9308-582
Figure 8: Study Area on
1950 Aerial Photograph
Study Area
Feet
0 1,000 2,000
N
Meters
0 500 1,000

Figure 9: Study Area on 1963 Aerial Photograph



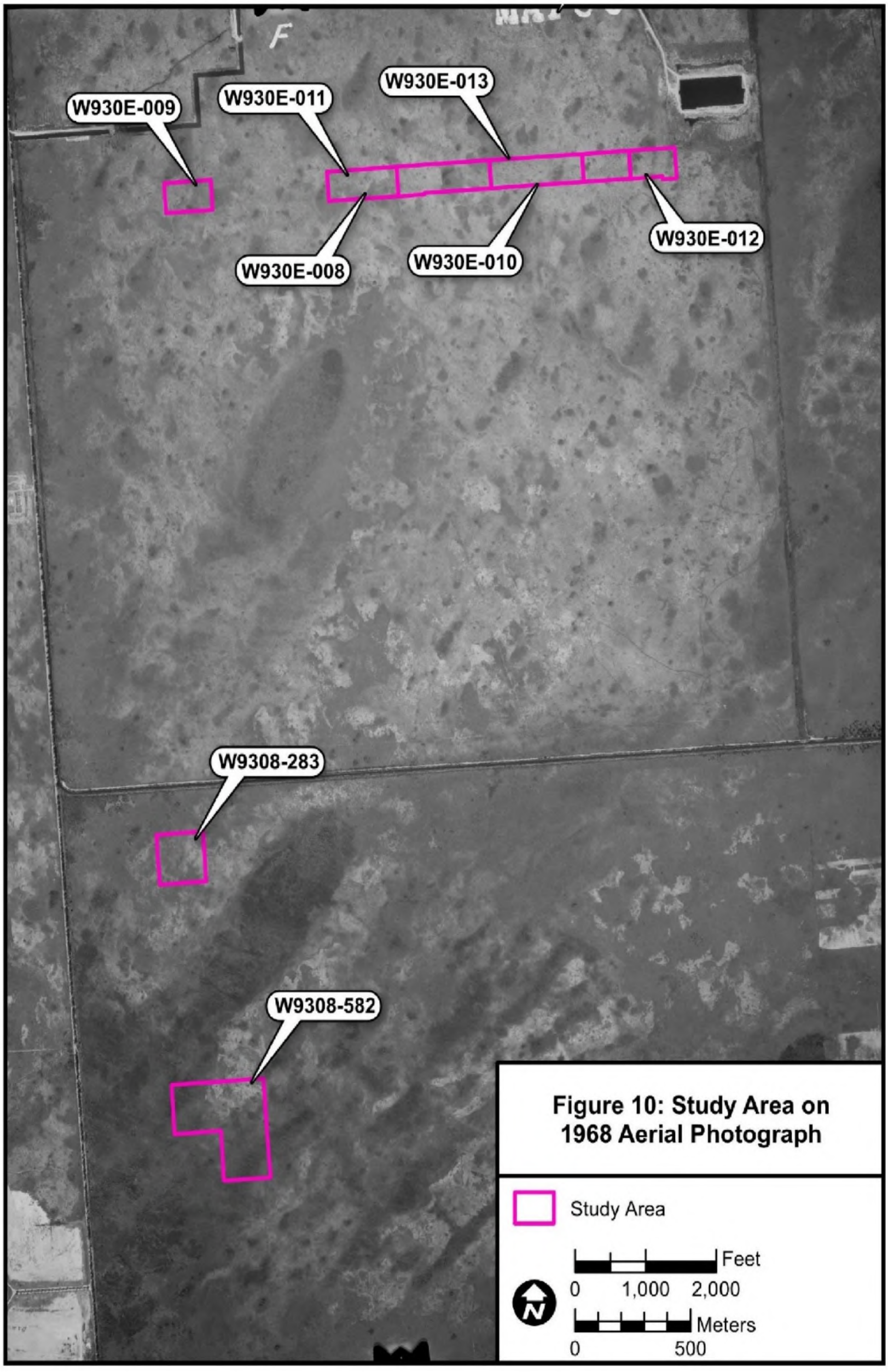

W930E-009
W930E-011
W930E-013
W930E-008
W930E-010
W930E-012
W9308-283
W9308-582
Figure 10: Study Area on
1968 Aerial Photograph
Study Area
Feet
0 1,000 2,000
Meters
0 500

Table 3. Drainage Characteristics and Environmental Associations of Detailed Soil Types within the Study Area

Drainage Characteristics	Soil Type	Environmental Association
Very Poorly Drained	Dania muck, depressional	Poorly defined drainageways in sawgrass marshes. Under natural conditions soil is ponded 9 to 12 months in most years. Natural vegetation is sawgrass and cattail.
	Lauderhill muck, depressional	Narrow drainageways and open areas in sawgrass marshes. Under natural conditions soil is ponded 9 to 12 months during most years. Natural vegetation is cattail and sawgrass.
	Tamiami muck, depressional	Freshwater swamps and marshes. Under natural conditions soil is ponded 9 to 12 months during most years. Natural vegetation is cattail, sawgrass, gulf muhly, star rush, milkwort, and sedges.

Source: USDA 1996:14–15, 21–23

Based on the review of environmental variables of the study area, the area consisted of freshwater marshes in the Everglades and is considered to have a low archeological site potential. Although the plat map illustrates hammocks at three locations within the study area, there is no evidence of tree islands at those locations on the aerial photographs.

Historic Resources Results

The FMSF background search identified no previously recorded historic resources within the historic resources study area. No potential historic resources were identified during the property appraiser parcel data search or during the examination of historic aerials.

Conclusions

No previously recorded archeological resources or historic resources are located within the study area. Based on the results of this desktop analysis, all of the parcels included in the study area have a low potential for archaeological sites. No potential historic resources are located within the study area.

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Knetsch, Joe and Marion F, Smith, Jr.
1992 The Map is Not the Territory (But it Helps): Maps of the Public Lands and Cultural Resources in Florida. The Florida Anthropologist 45(4): 352-356

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2018 Aerial Photography: Florida Collection. University of Florida Digital Collections. Electronic documents, http://ufdc.ufl.edu/aerials, accessed September 28, 2018.

United States Department of Agriculture (USDA)
1996 *Soils Survey of Dade County Area, Florida*. United States Department of Agriculture/Natural Resources Conservation Service.

United States Geological Survey
2018 Aerial Photography. Electronic documents, https://earthexplorer.usgs.gov/, accessed October 15, 2018.

APPENDIX E: Hydrologic Soil Group, Aggregation Method, Miami-Dade County Area, Florida

Hydrologic Soil Group

Aggregation Method: Dominant Condition
Tie-break Rule: Higher

Miami-Dade County Area, Florida
Survey Area Version and Date: 9 - 10/05/2017

Map symbol	Map unit name	Rating	Map unit percent
3	Lauderhill muck, frequently ponded, 0 to 1 percent slopes	A/D	96
14	Dania muck, frequently ponded, 0 to 1 percent slopes	A/D	89
18	Tamiami muck, depressional	B/D	100

Hydrologic Soil Group

Rating Options

Attribute Name: Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Aggregation Method: Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value to represent the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. The components in the map unit name represent the major soils within a map unit delineation. Minor components make up the balance of the map unit. Great differences in soil properties can occur between map unit components and within short distances. Minor components may be very different from the major components. Such differences could significantly affect use and management of the map unit. Minor components may or may not be documented in the database. The results of aggregation do not reflect the presence or absence of limitations of the components which are not listed in the database. An on-site investigation is required to identify the location of individual map unit components.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be generated. Aggregation must be done because, on any soil map, map units are delineated but components are not.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie. The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

APPENDIX F: Map Unit Description, Miami-Dade County Area, Florida

Map Unit Description

Miami-Dade County Area, Florida

[Minor map unit components are excluded from this report]

Map unit: 3 - Lauderhill muck, frequently ponded, 0 to 1 percent slopes

Component: Lauderhill (85%)

The Lauderhill component makes up 85 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of herbaceous organic material over residuum weathered from limestone. Depth to a root restrictive layer, bedrock, lithic, is 16 to 36 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 75 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 14 - Dania muck, frequently ponded, 0 to 1 percent slopes

Component: Dania (85%)

The Dania component makes up 85 percent of the map unit. Slopes are 0 to 1 percent. This component is on marshes on marine terraces on coastal plains. The parent material consists of herbaceous organic material over limestone. Depth to a root restrictive layer, bedrock, lithic, is 10 to 29 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 75 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 18 - Tamiami muck, depressional

Component: Tamiami, depressional (90%)

The Tamiami, depressional component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on marshes on marine terraces on coastal plains. The parent material consists of herbaceous organic material over limestone. Depth to a root restrictive layer, bedrock, lithic, is 20 to 51 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 70 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 35 percent. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map Unit Description

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

The Map Unit Description (Brief, Generated) report displays a generated description of the major soils that occur in a map unit. Descriptions of non-soil (miscellaneous areas) and minor map unit components are not included. This description is generated from the underlying soil attribute data.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

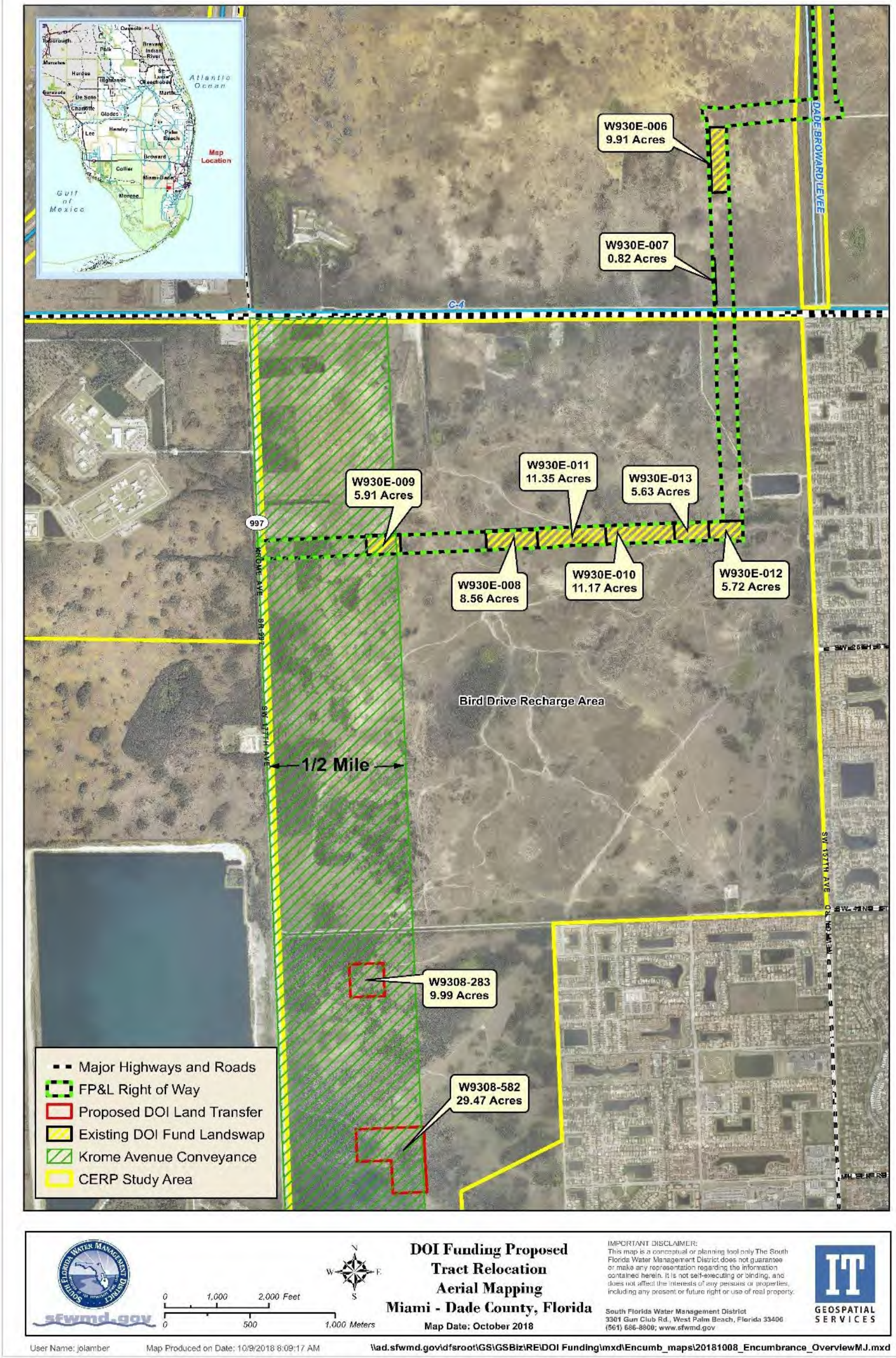

Figure 1. Aerial Map of DOI Funding Proposed Tract Relocation in Miami-Dade County, Florida.

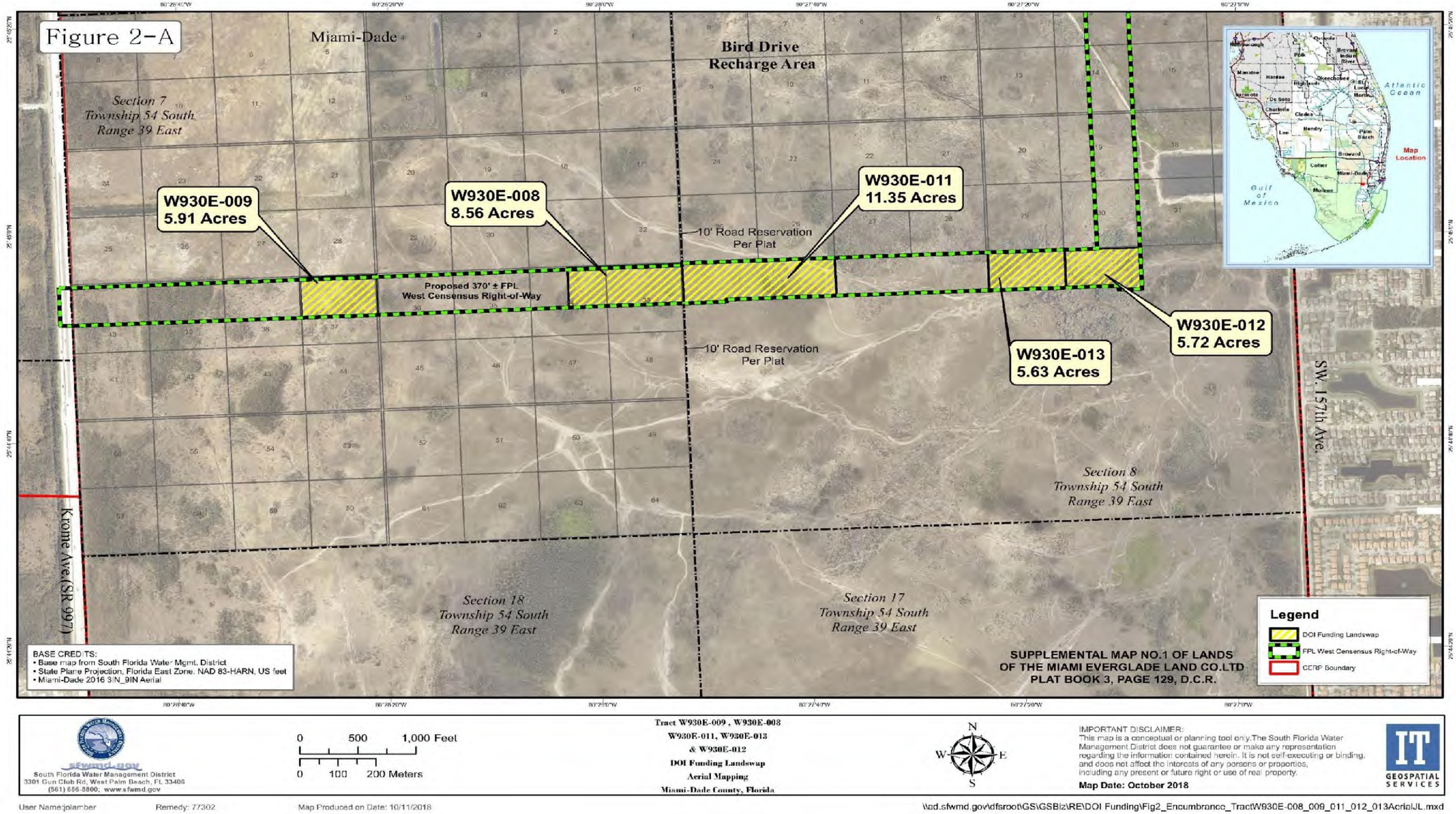

Figure 2-A. Aerial Map of DOI Funding Land Swap in Miami-Dade County, Tracts W930E-009, W930E-008, W930E-011, W930E-013 & W930E-012.

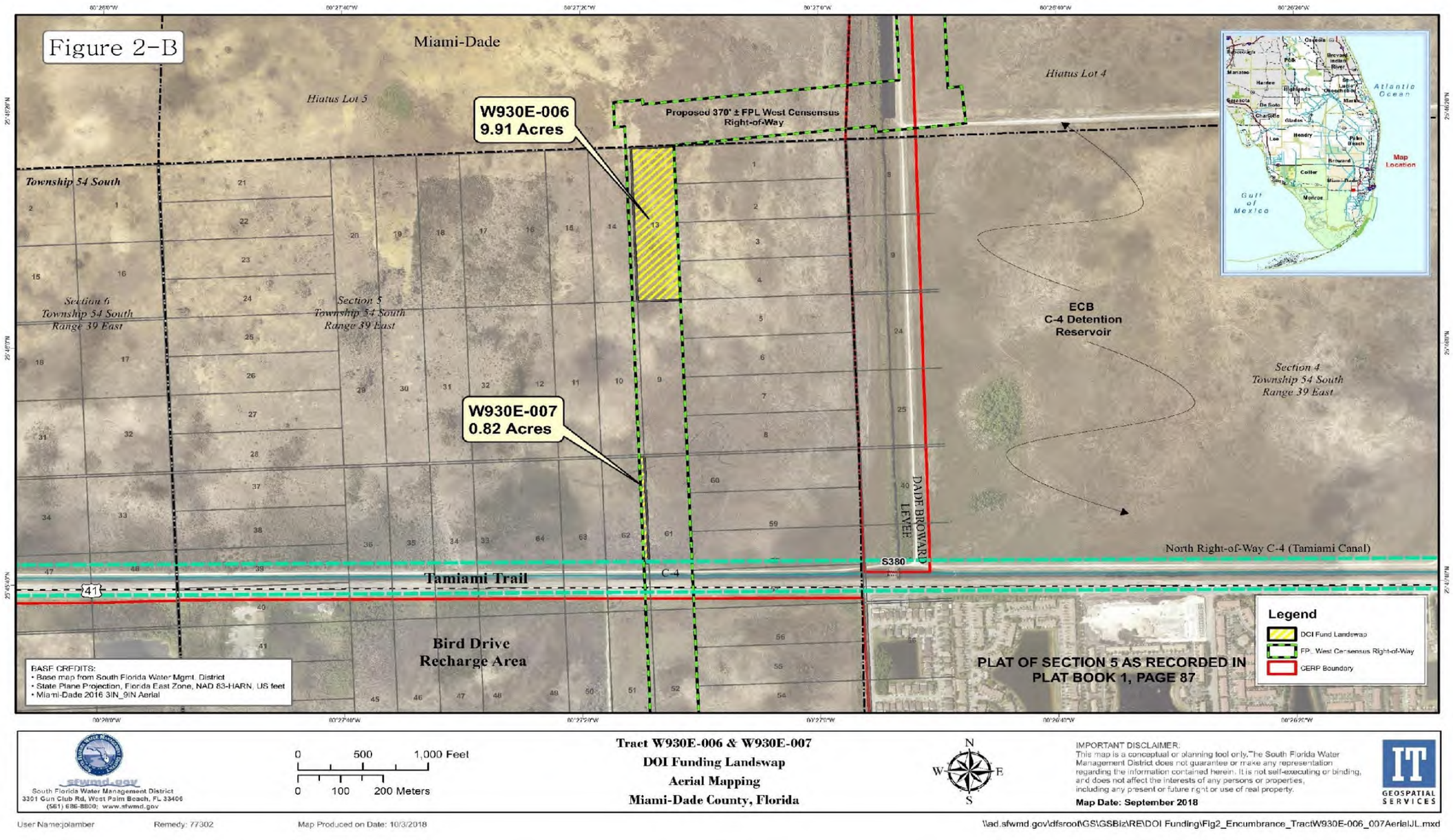

Figure 2-B. Aerial Map of DOI Funding Land Swap in Miami-Dade County, Florida, Tracts W930E-006 & W930E-007.

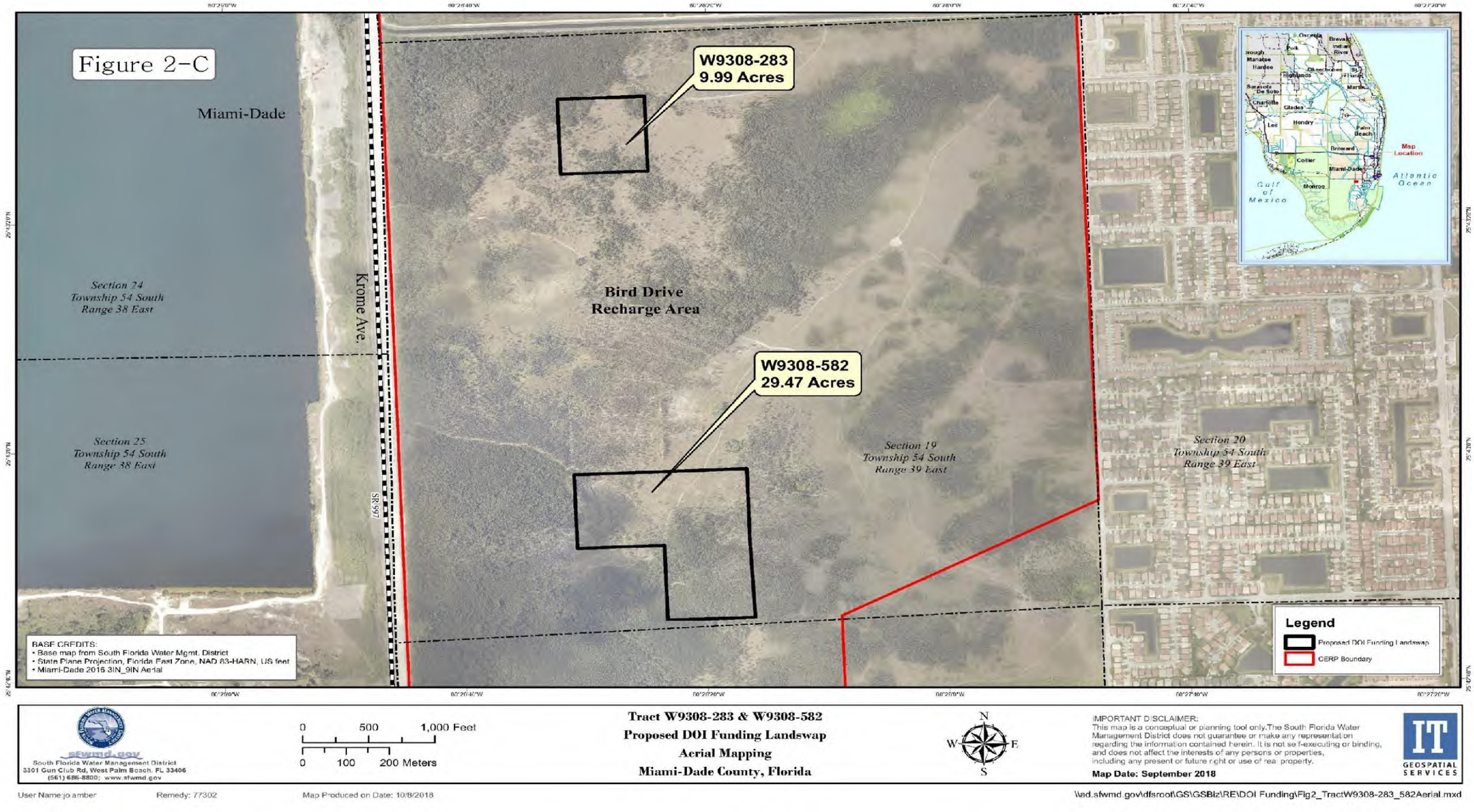

Figure 2-C. Aerial Map of Proposed DOI Funding Land Swap in Miami-Dade County, Florida, Tracts W9308-283 & W9308-582.

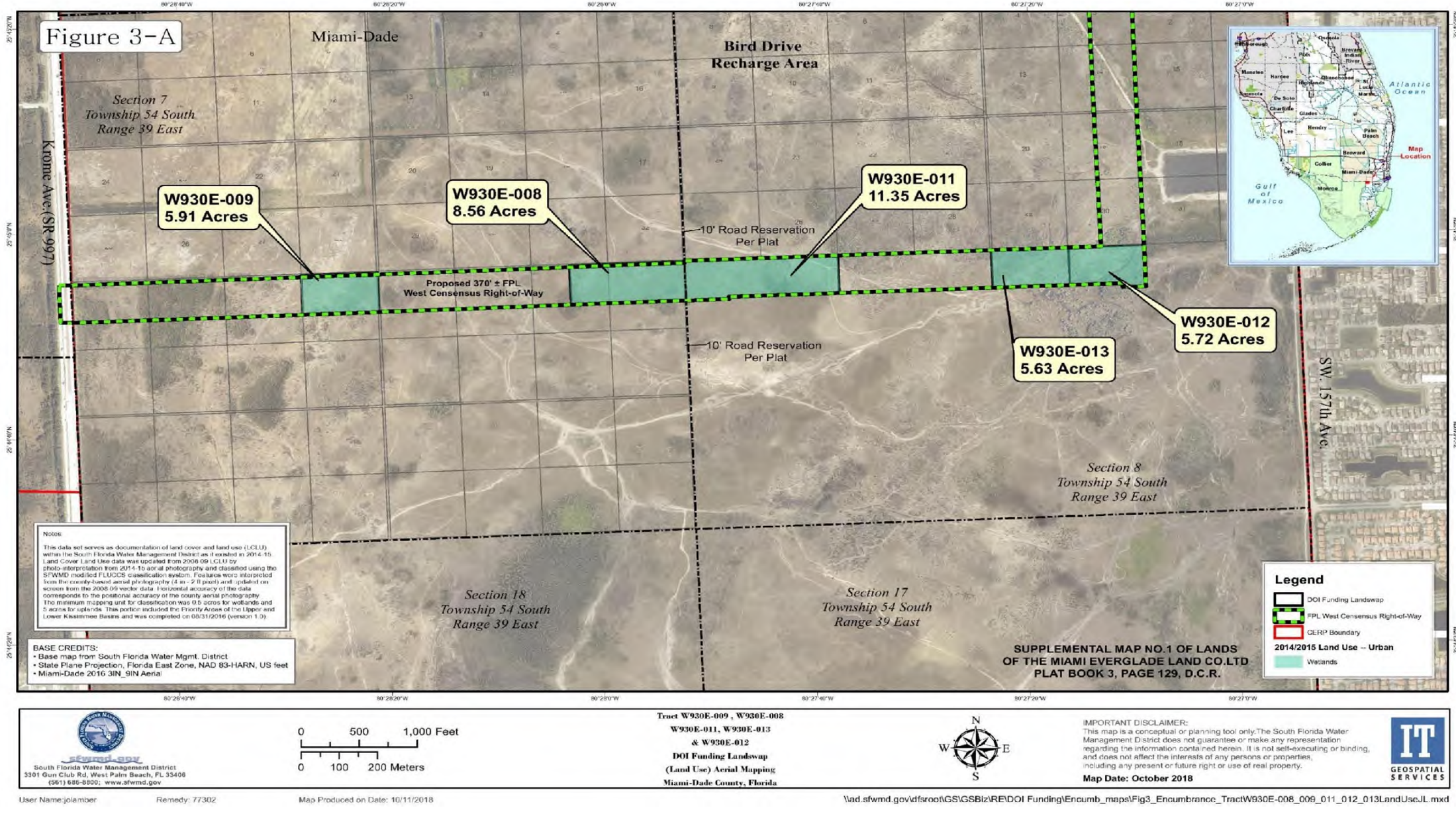

Figure 3-A. Aerial Map of DOI Funding Land Swap (Land Use) in Miami-Dade County, Florida, Tracts W930E-009, W930E-008, W930E-011, W930E-013 & W930E-012.

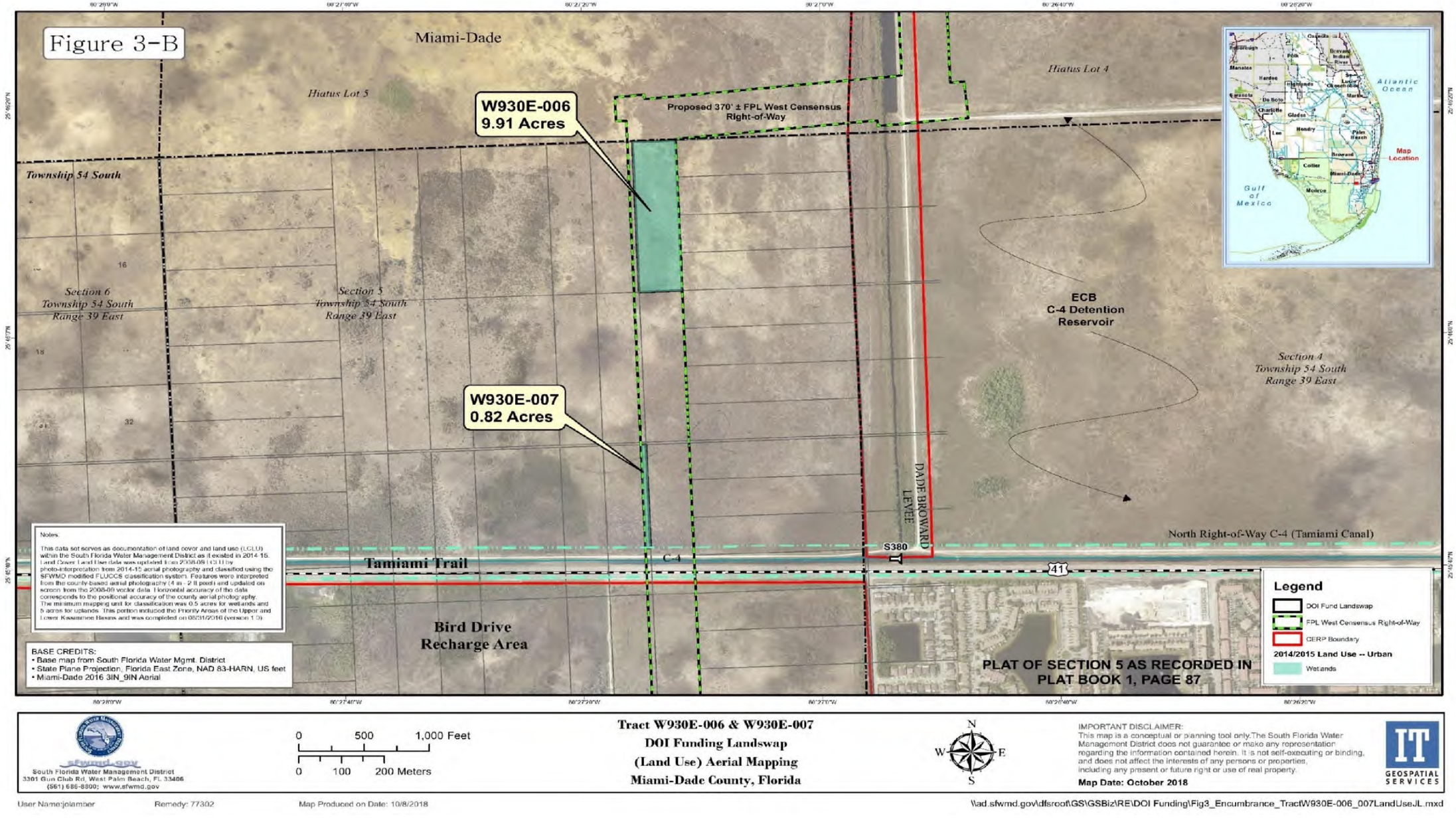

Figure 3-B. Aerial Map of DOI Funding Land Swap (Land Use) in Miami-Dade County, Florida, Tracts W930E-006 & W930E-007.

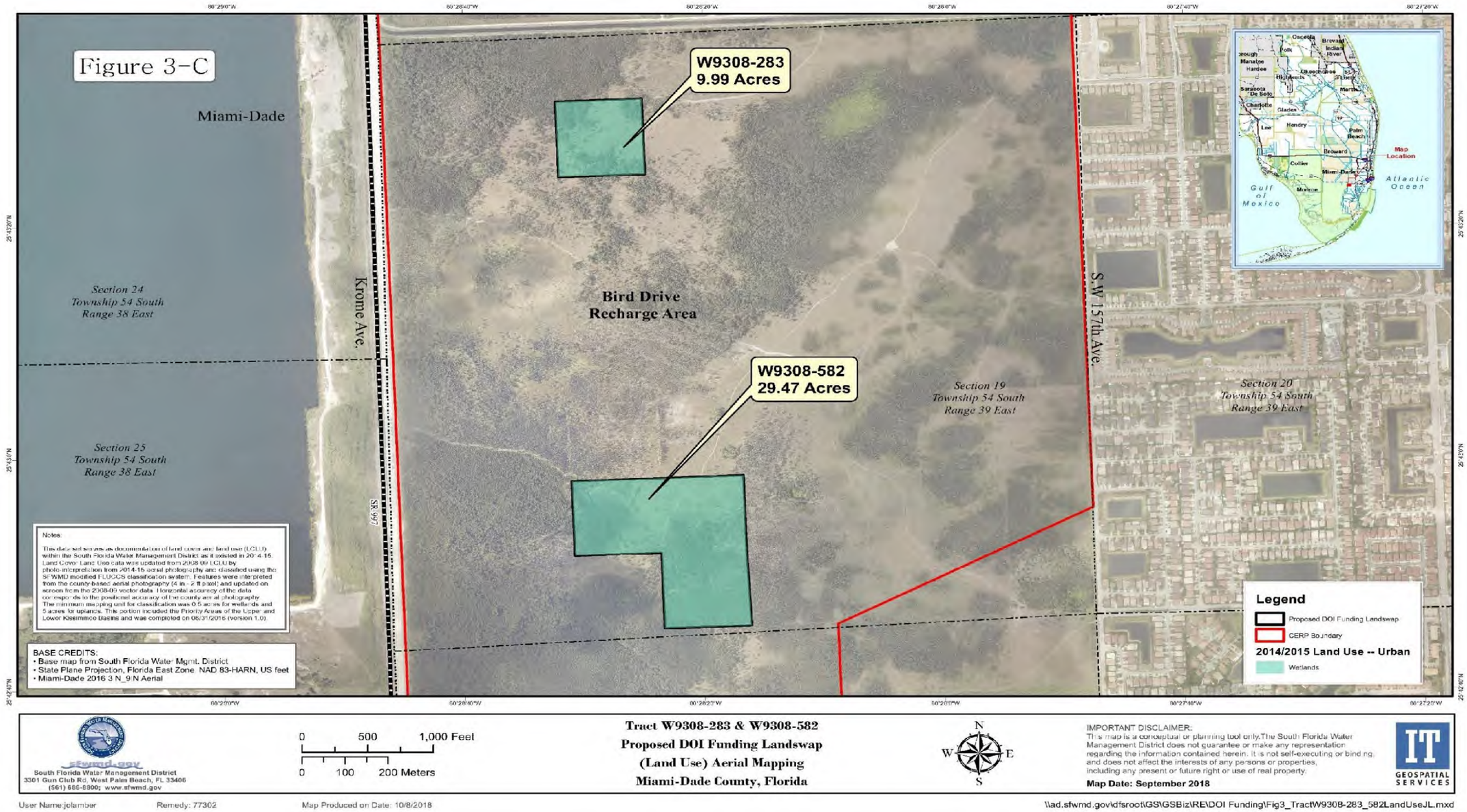

Figure 3-C. Aerial Map of Proposed DOI Funding Land Swap (Land Use) in Miami-Dade County, Florida, Tracts W9308-283 & W9308-582.

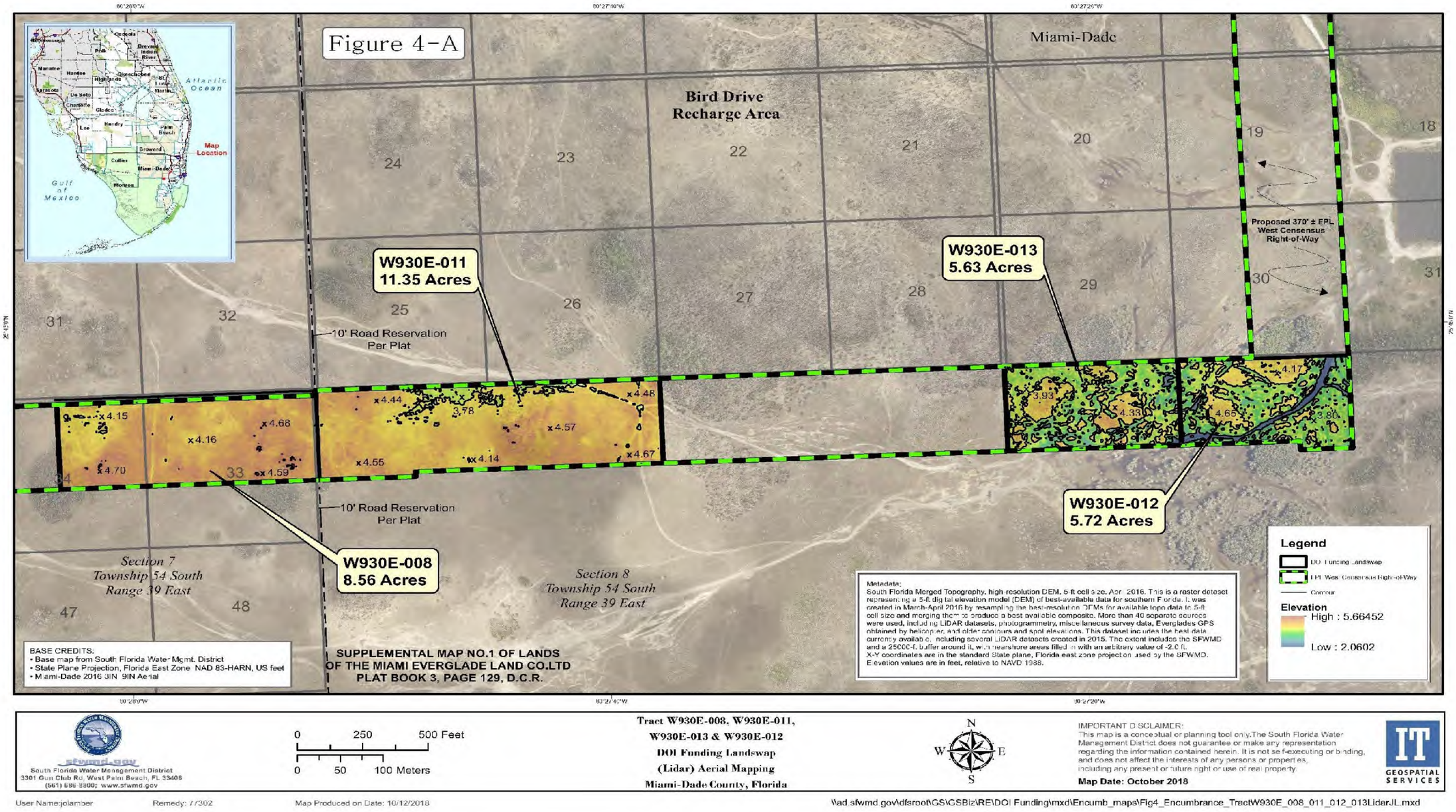

Figure 4-A. Aerial Map of DOI Funding Land Swap (LiDAR) in Miami-Dade County, Florida, Tracts W930E-008, W930E-011, W930E-013 & W930E-012.

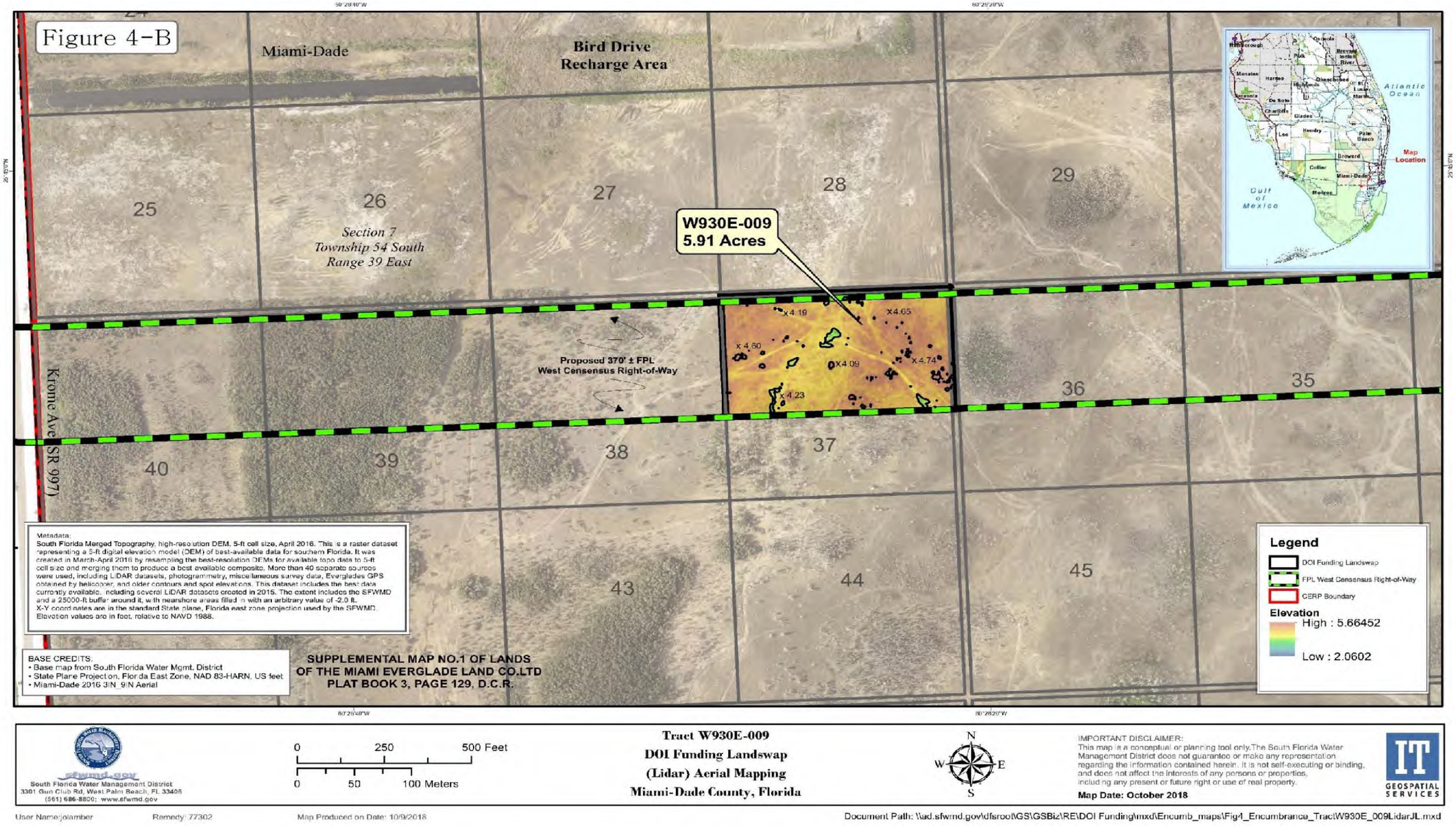

Figure 4-B. Aerial Map of DOI Funding Land Swap (LiDAR) in Miami-Dade County, Florida, Tract W930E-009.

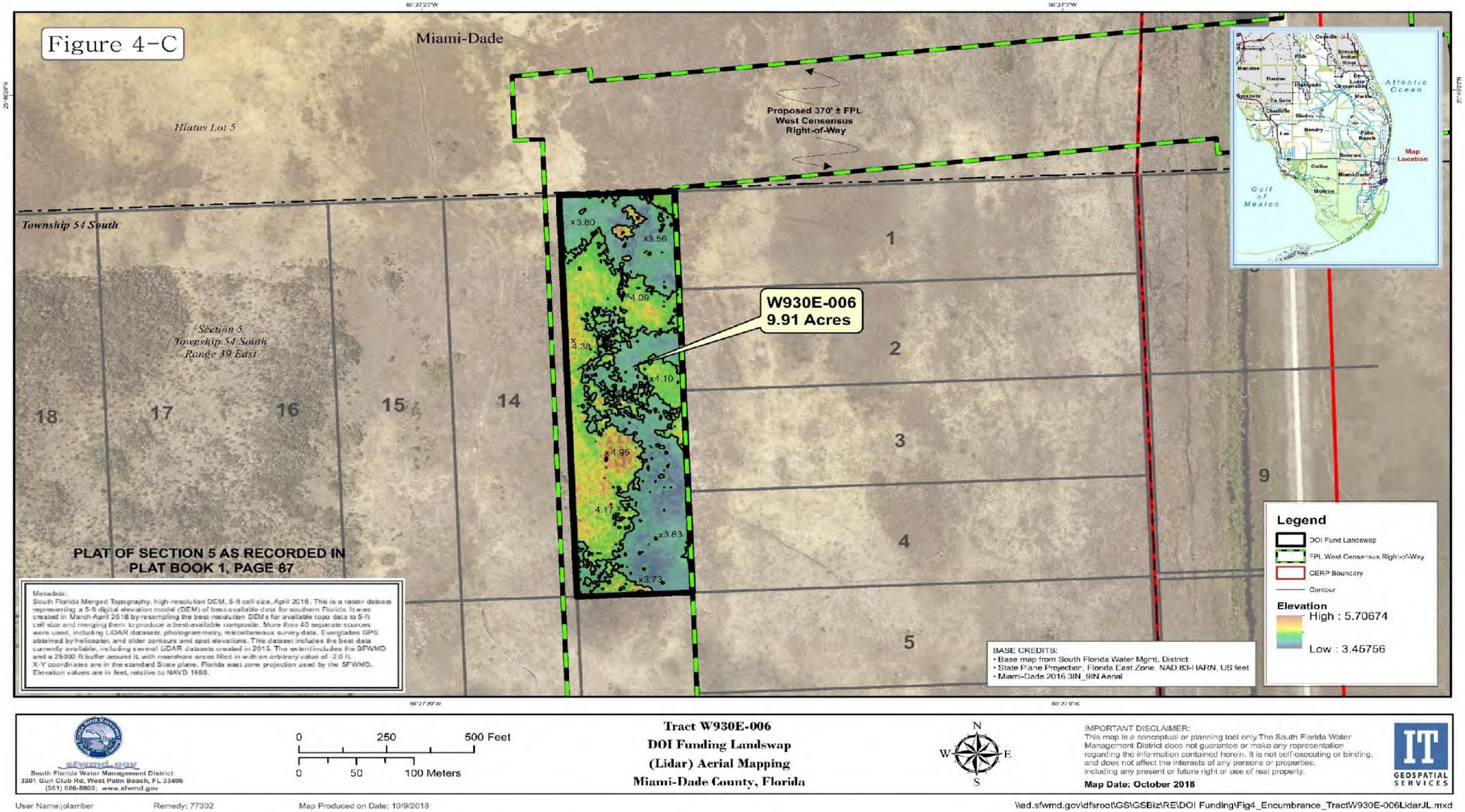

Figure 4-C. Aerial Map of DOI Funding Land Swap (LiDAR) in Miami-Dade County, Florida, Tract W930E-006.

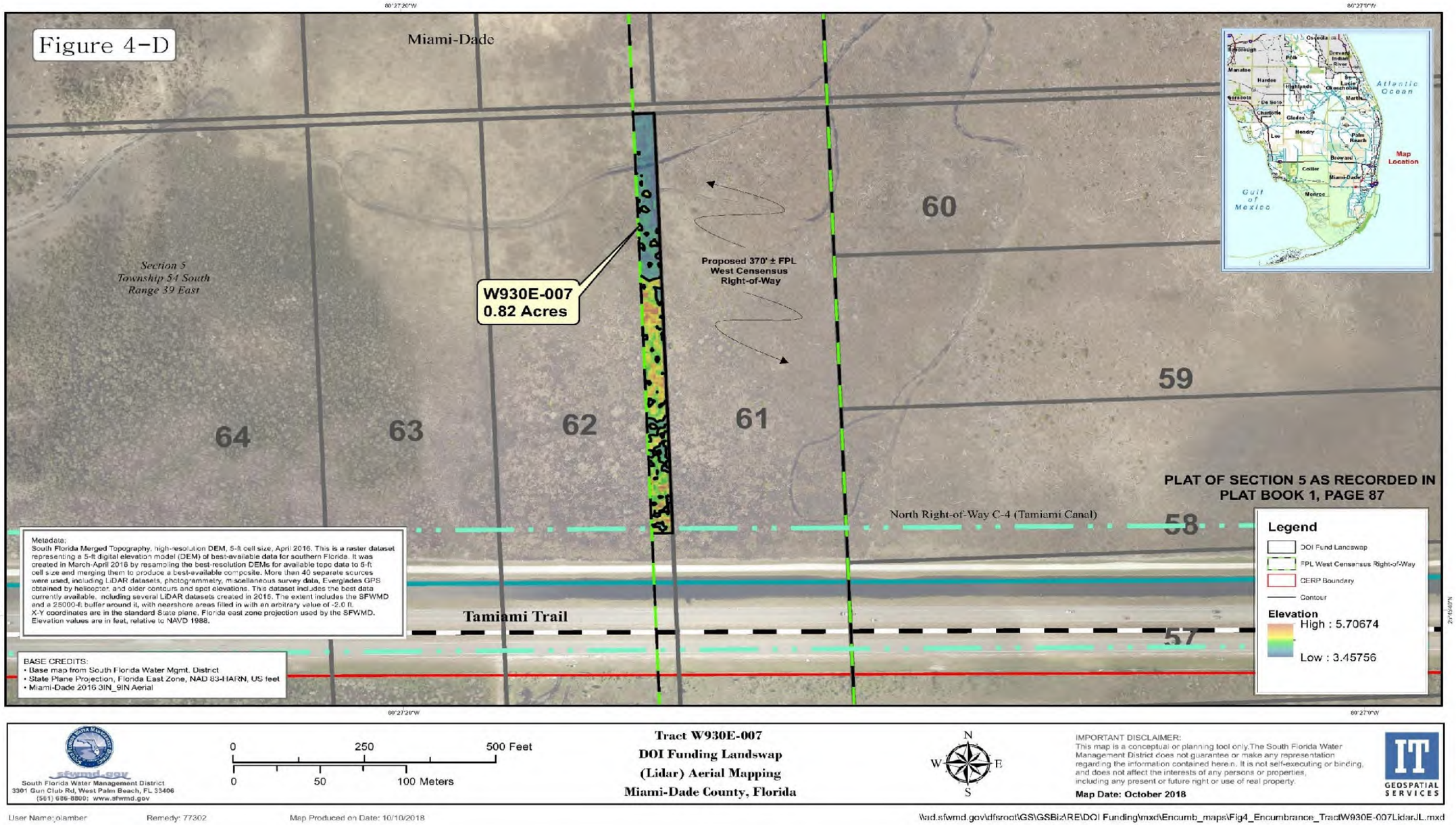

Figure 4-D. Aerial Map of DOI Funding Land Swap (LiDAR) in Miami-Dade County, Florida, Tract W930E-007.

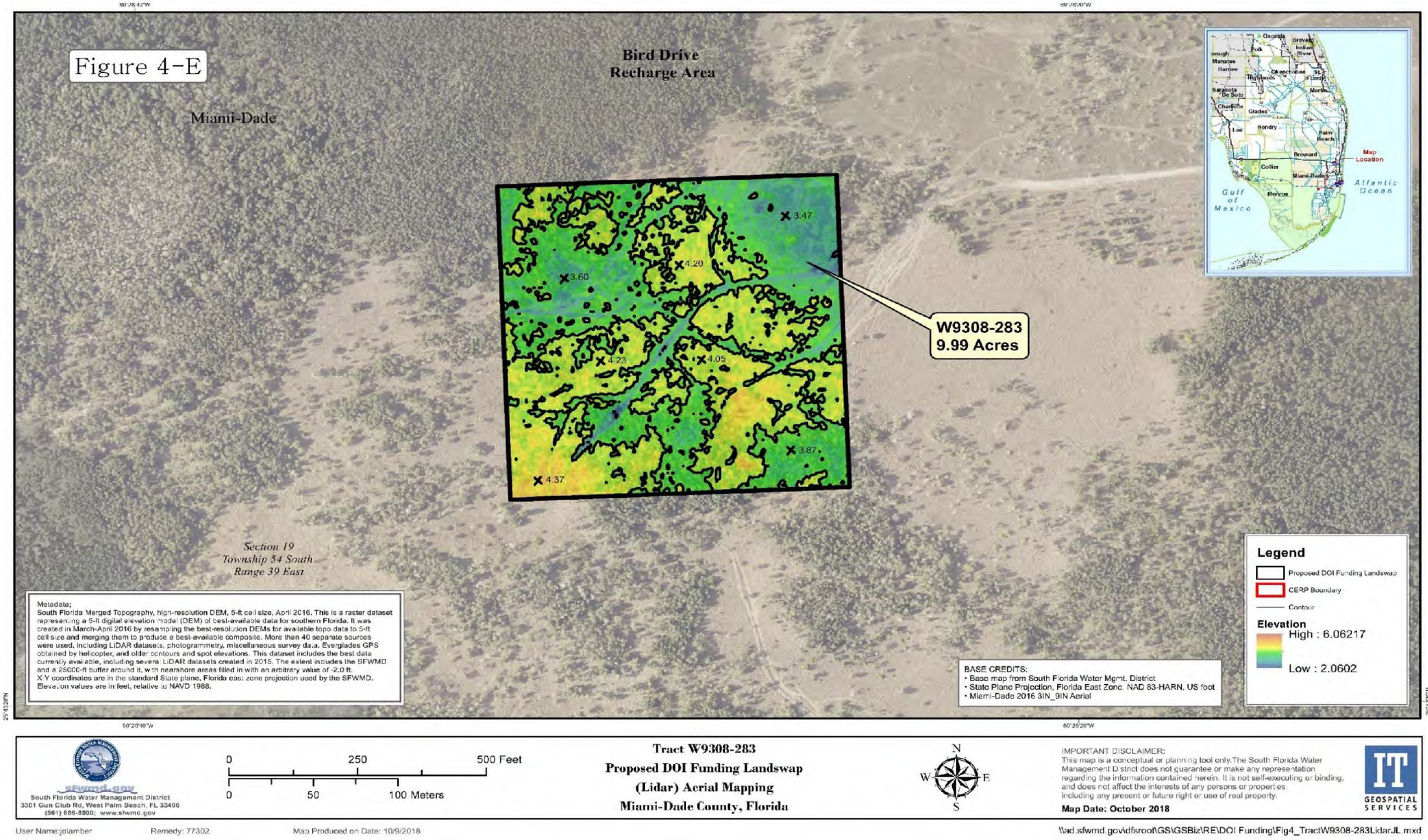

Figure 4-E. Aerial Map of Proposed DOI Funding Land Swap in Miami-Dade County, Florida, Tract W9308-283.

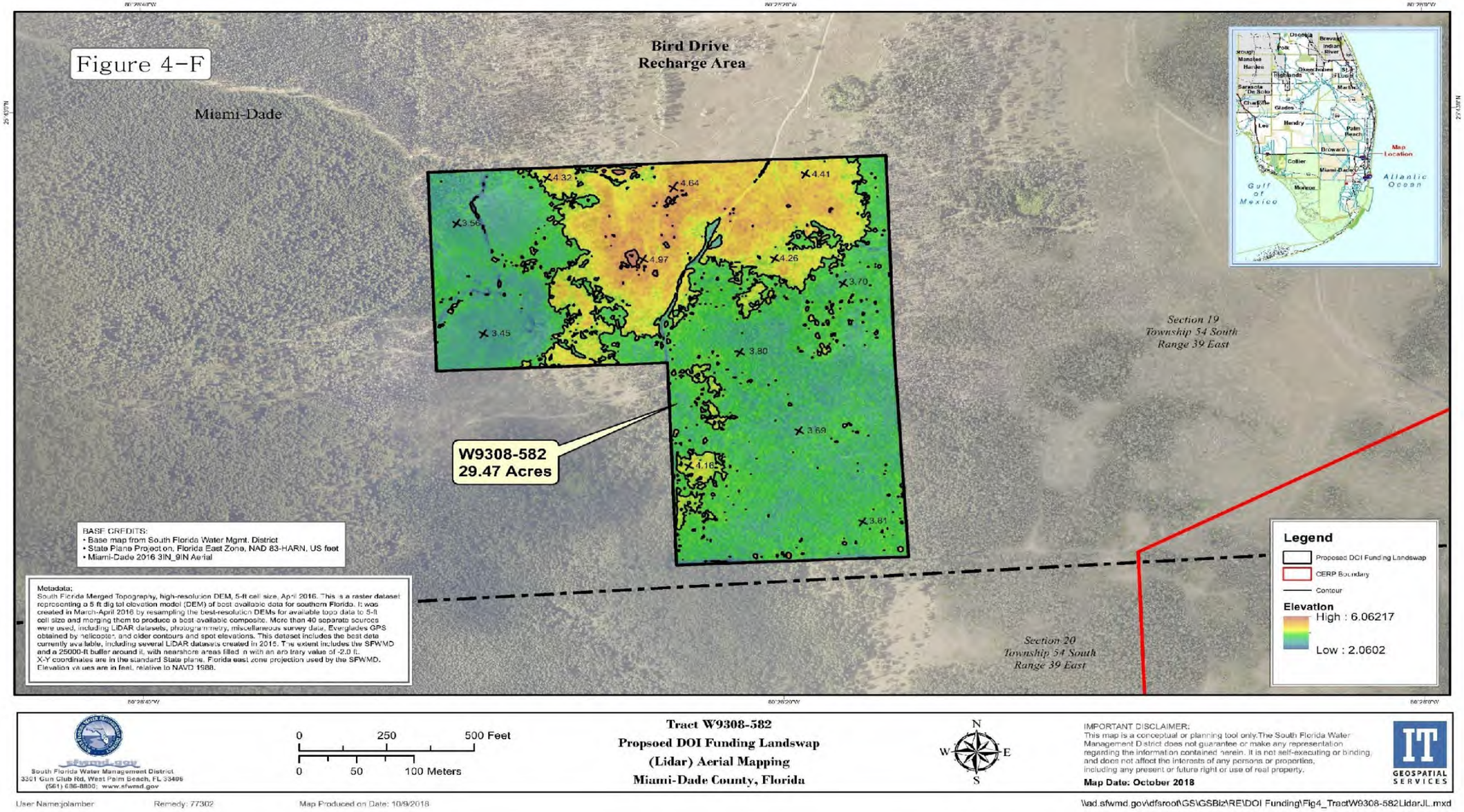

Figure 4-F. Aerial Map of Proposed DOI Funding Land Swap (LiDAR) in Miami-Dade County, Florida, Tract W9308-582.

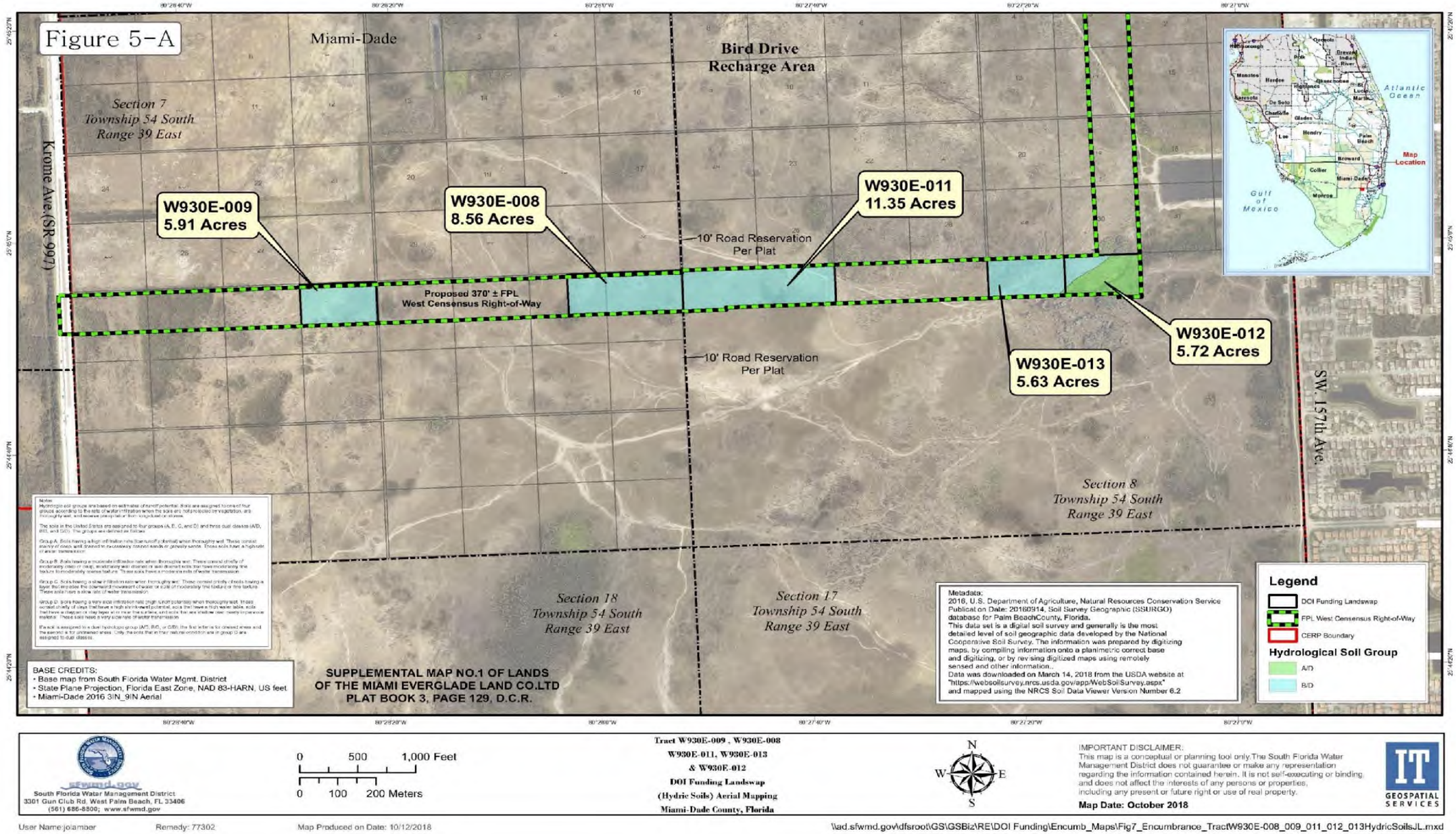

Figure 5-A. Aerial Map of DOI Funding Land Swap (Hydric Soils) in Miami-Dade County, Florida, Tracts W930E-009, W930E-008, W930E-011, W930E-013 & W930E-012.

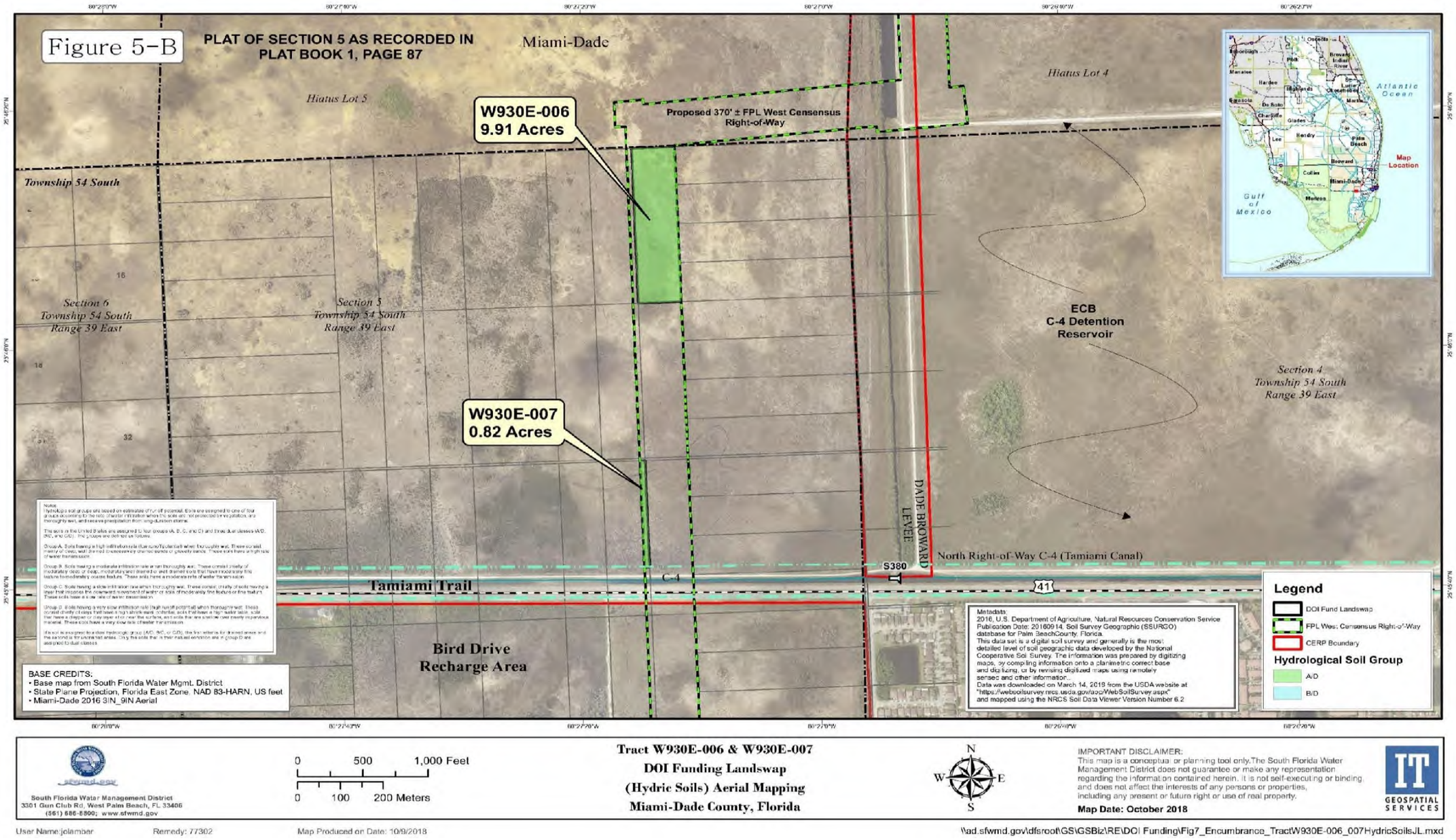

Figure 5-B. Aerial Map of DOI Funding Land Swap in Miami-Dade County, Florida, Tract W930E-006 & W930E-007.

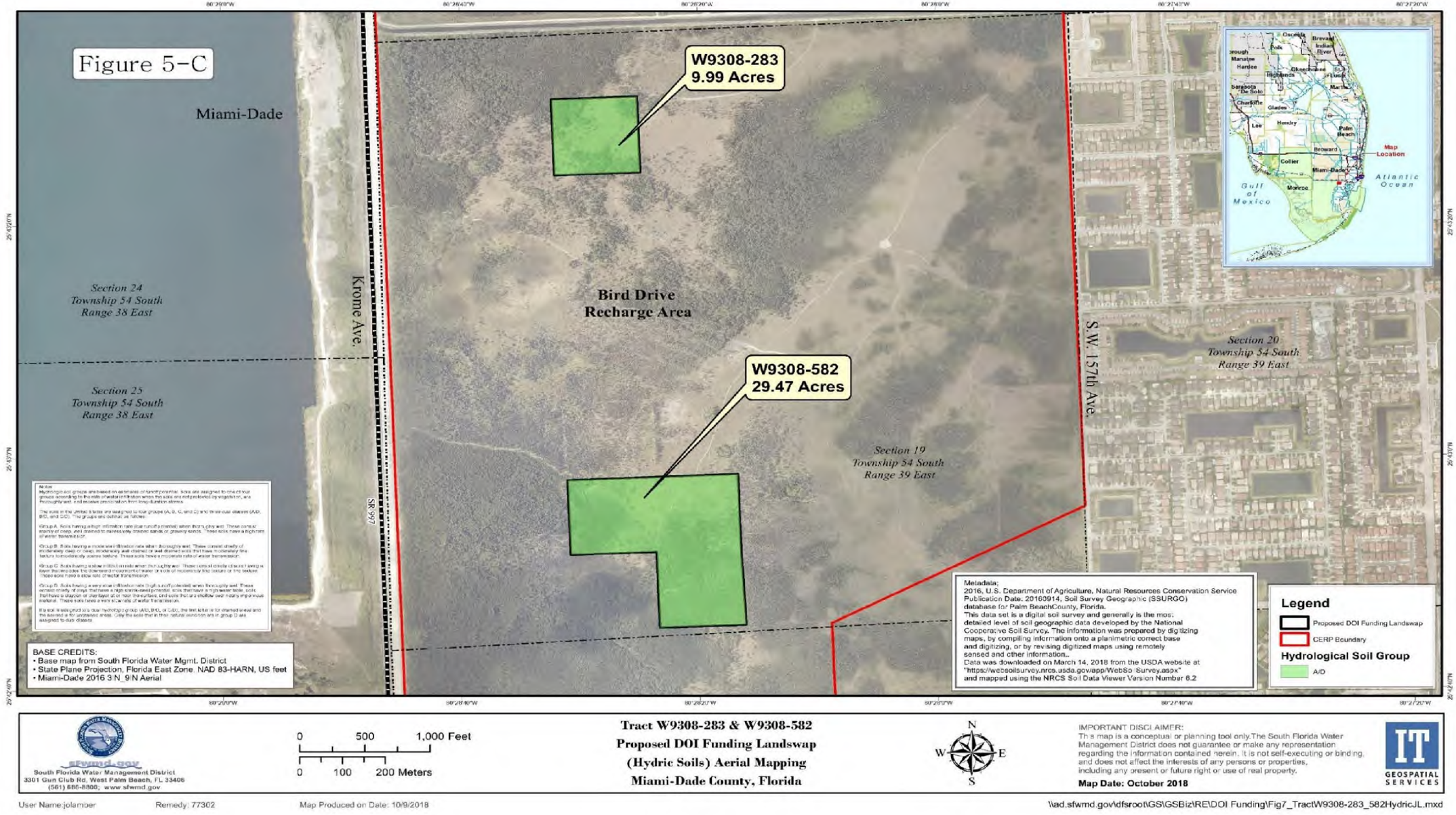

Figure 5-C. Aerial Map of Proposed DOI Funding Land Swap (Hydric Soils) in Miami-Dade County, Florida, Tracts W9308-283 & W9308-582.

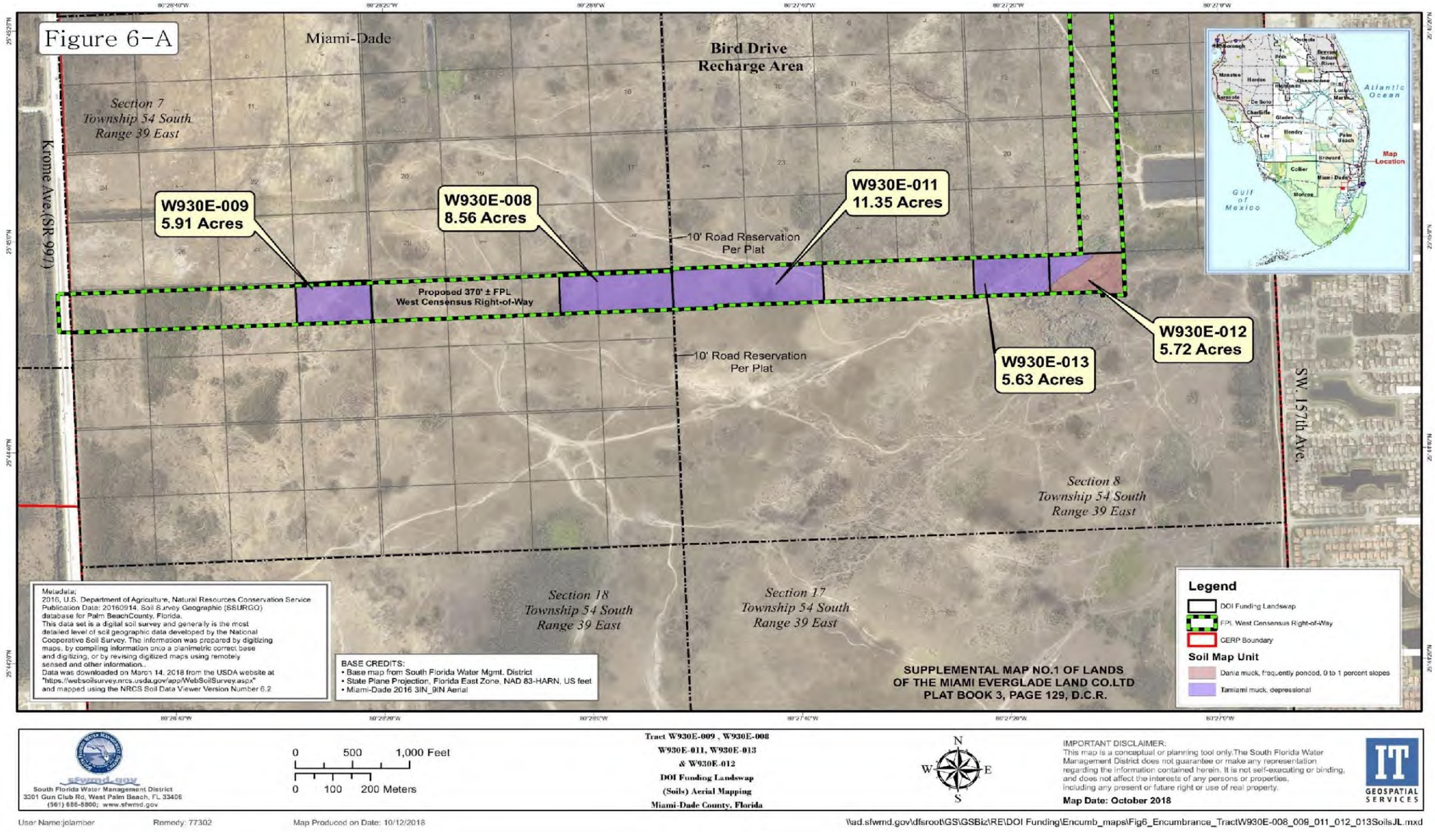

Figure 6-A. Aerial Map of DOI Funding Land Swap in Miami-Dade County, Tracts W930E-009, W930E-008, W930E-011, W930E-013, & W930E-012.

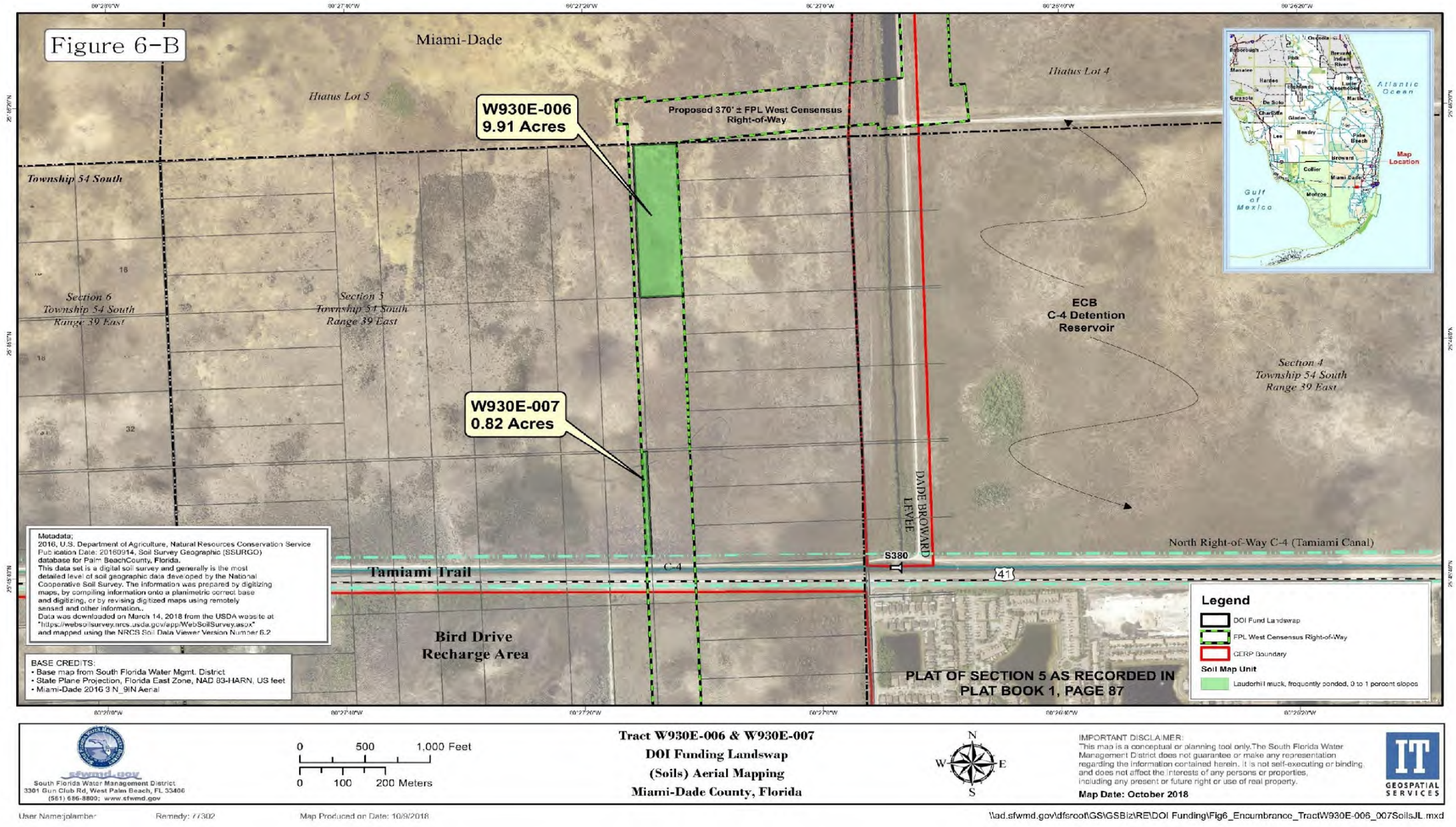

Figure 6-B. Aerial Map of DOI Funding Land Swap (Soils) in Miami-Dade County, Florida, Tracts W930E-006 & W930E-007.

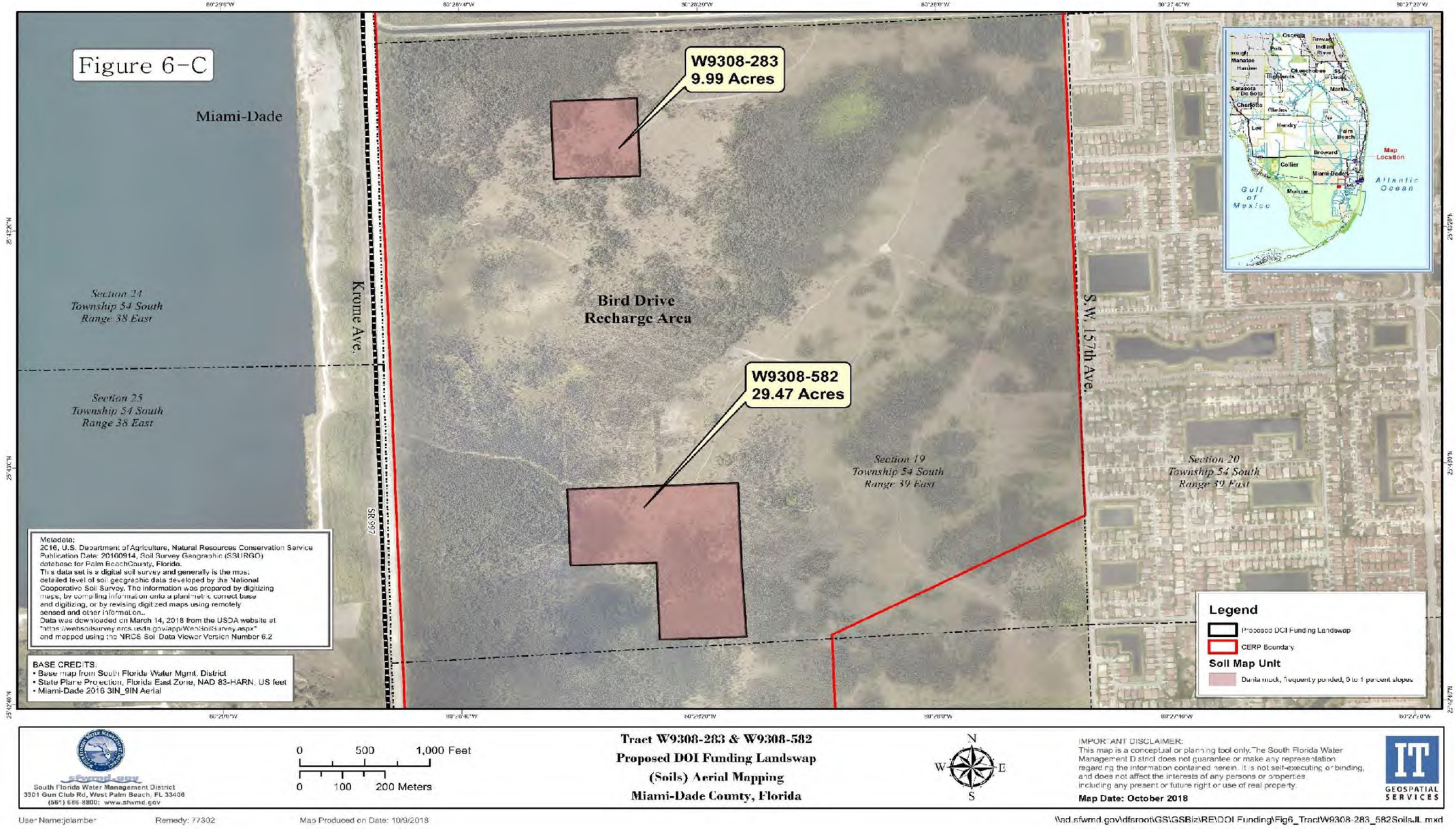

Figure 6-C. Aerial Map of Proposed DOI Funding Land Swap (Soils) in Miami-Dade County, Florida, Tracts W9308-283 & W9308-582.

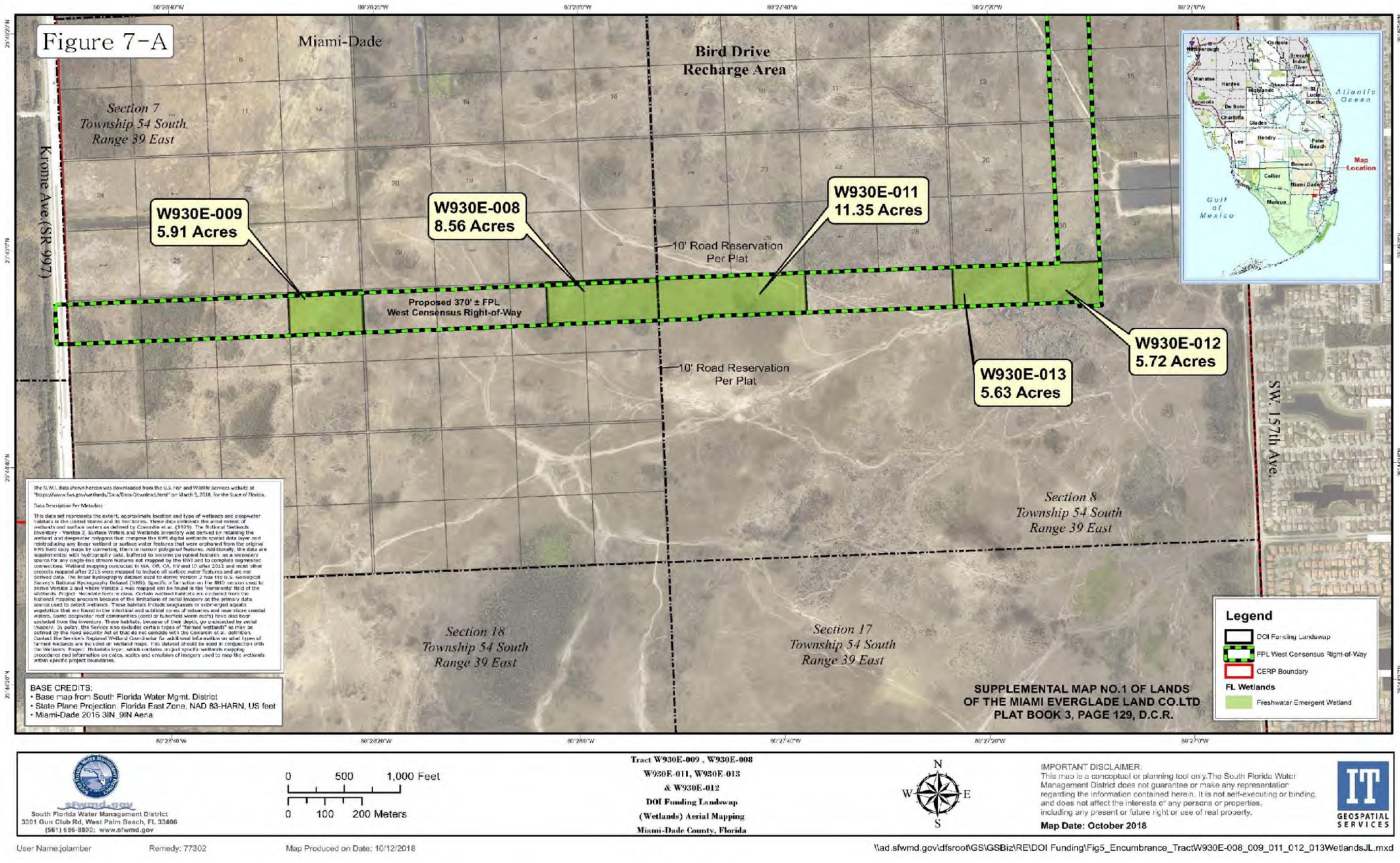

Figure 7-A. Aerial Map of DOI Funding Land Swap (Wetlands) in Miami-Dade County, Florida, Tracts W930E-009, W930E-008, W930E-011, W930E-013, & W930E-012.

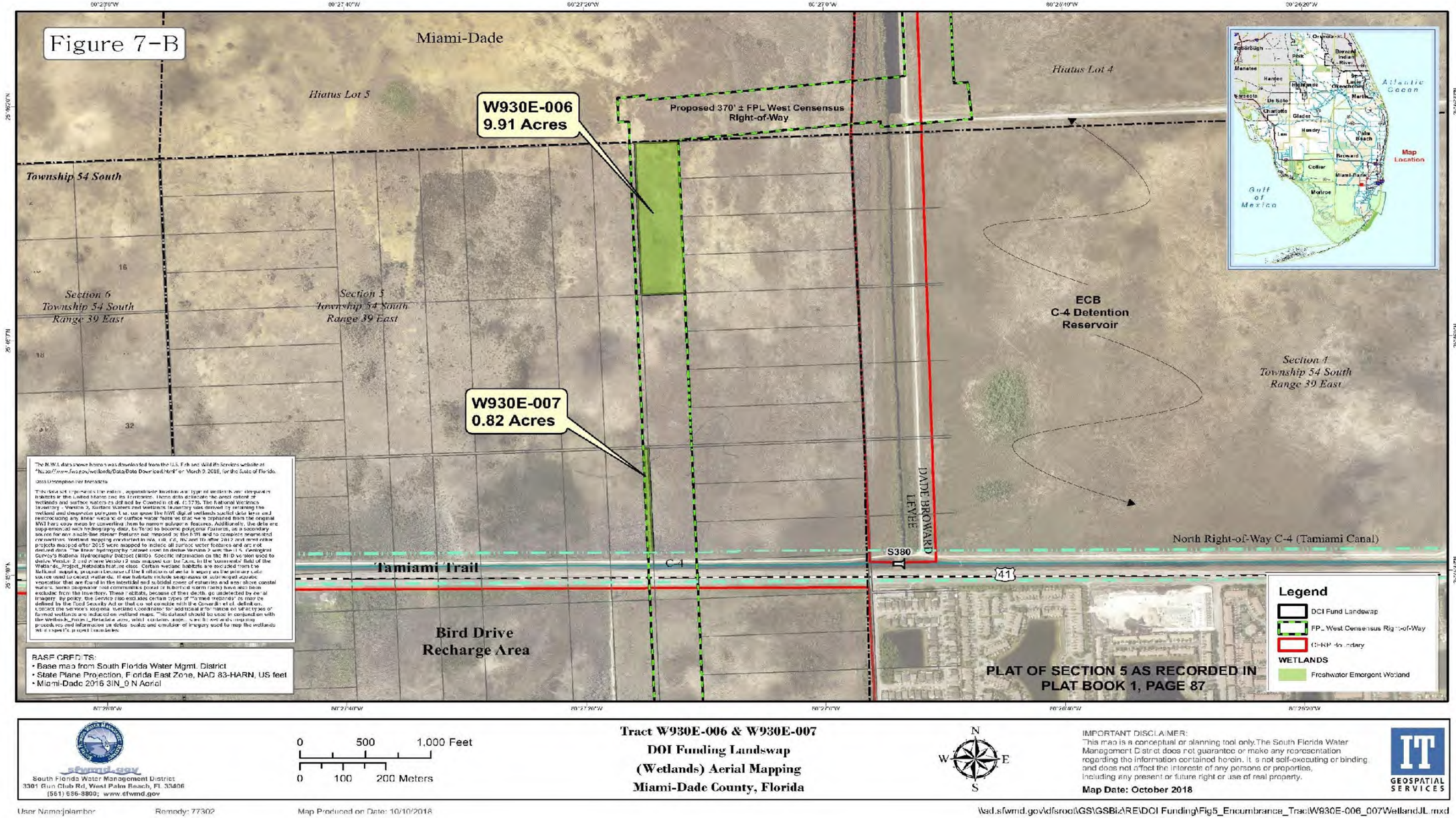

Figure 7-B. Aerial Map of DOI Funding Land Swap (Wetlands) in Miami-Dade County, Florida, Tracts W930E-006 & W930E-007.

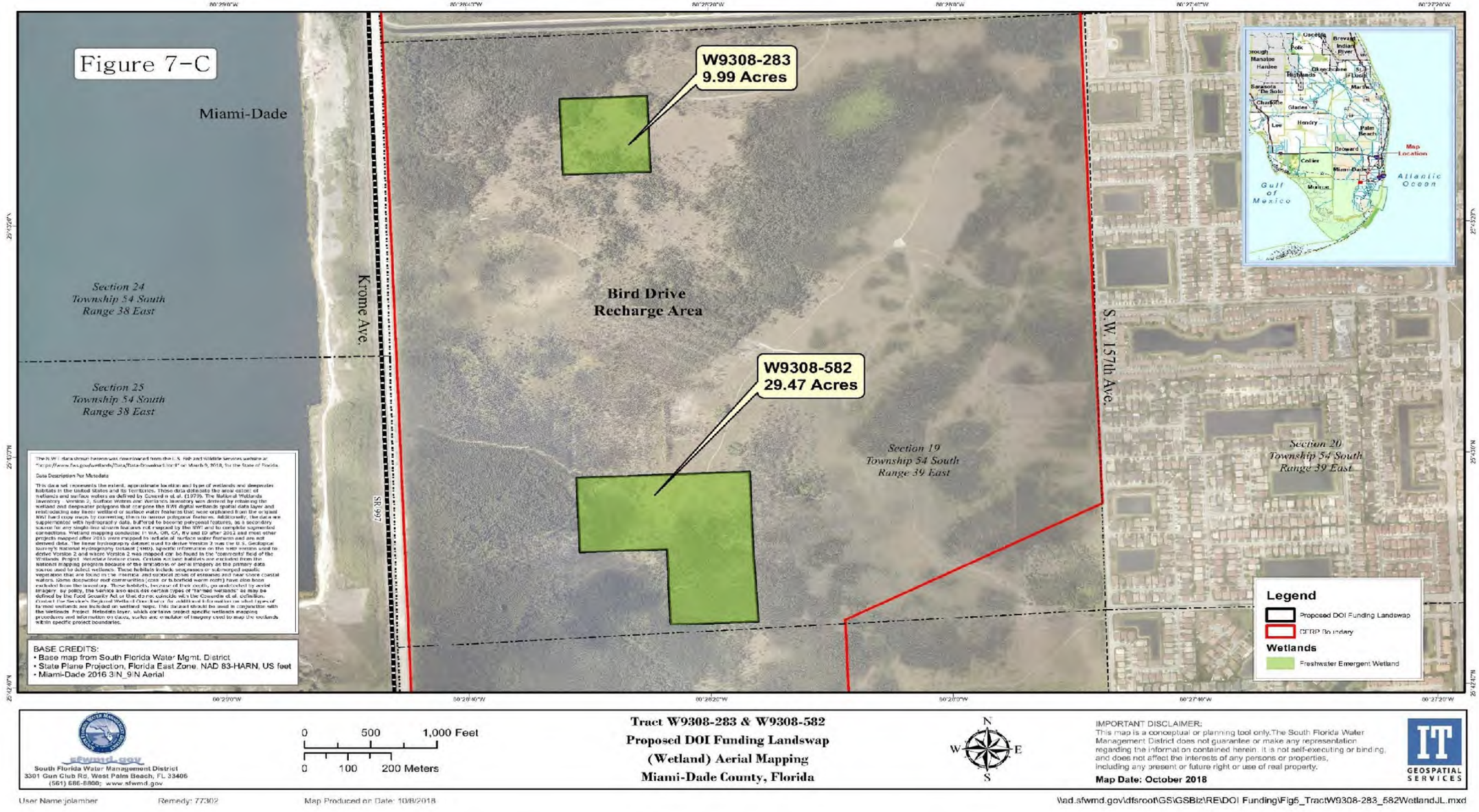

Figure 7-C. Aerial Map of Proposed DOI Funding Land Swap (Wetland) of Miami-Dade County, Florida, Tracts W9308-283 & W9308-582.