

Appendix B
**CULTURAL RESOURCES
ASSESSMENT**

for the
***J.W. Corbett Wildlife Management Area
Proposed Land Transfer***

Palm Beach and Martin Counties, Florida

JULY 2005

Prepared For:



**An Archaeological and Historical Assessment of the Corbett Land Transfer Parcels
Palm Beach County and Martin County, Florida**

by

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for

Kilday & Associates

AHC Technical Report #553
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EXECUTIVE SUMMARY

In April 2004, the Archaeological and Historical Conservancy conducted a reconnaissance level archaeological and historical assessment of the Corbett swap parcels in Palm Beach County and Martin County for Kilday & Associates. This assessment follows the guidelines of Chapters 267 and 373, Florida Statutes, and was conducted in accordance with Section 106 of the National Historic Preservation Act of 1966 (Public Law 89-665), as amended in 1992, and 36 Code of Federal Regulations (CFR) Part 800: Protection of Historic Properties. The work and the report conform to the specifications set forth in Chapter IA-46, Florida Administrative Code (FAC).

The three project parcels encompass a total of 89.62 acres and are located in Section 24, Township 41 South, Range 40 East; Sections 12 and 13 in Township 42 South, Range 40 East; and Section 30, Township 40 East, Range 40 South. In addition, five alternate plans for roadway right-of-way and a proposed Florida Power & Light (FP&L) substation were assessed.

A review of aerial photographs resulted in the identification of three anomalous targets on the parcels that could be associated with archaeological sites. Subsequent ground truthing of the targets and a pedestrian and wind-shield survey of all the parcels revealed no archaeological or historic sites.

No historic or archaeological sites are located on any of the project parcels. It is the consultant's opinion that there will be no adverse impact to any archaeological or historic resources regarded as significant and potentially eligible for listing on the National Register of Historic Places (NRHP) as a direct or indirect affect of transfer of title, use, or resource management of any of the parcels. In a letter dated December 13, 2004, the State Historic Preservation Officer (SHPO) concurred with these findings. A copy of the SHPO letter is included in Appendix A.

Section 1.0

PURPOSE AND NEED

1.1 INTRODUCTION

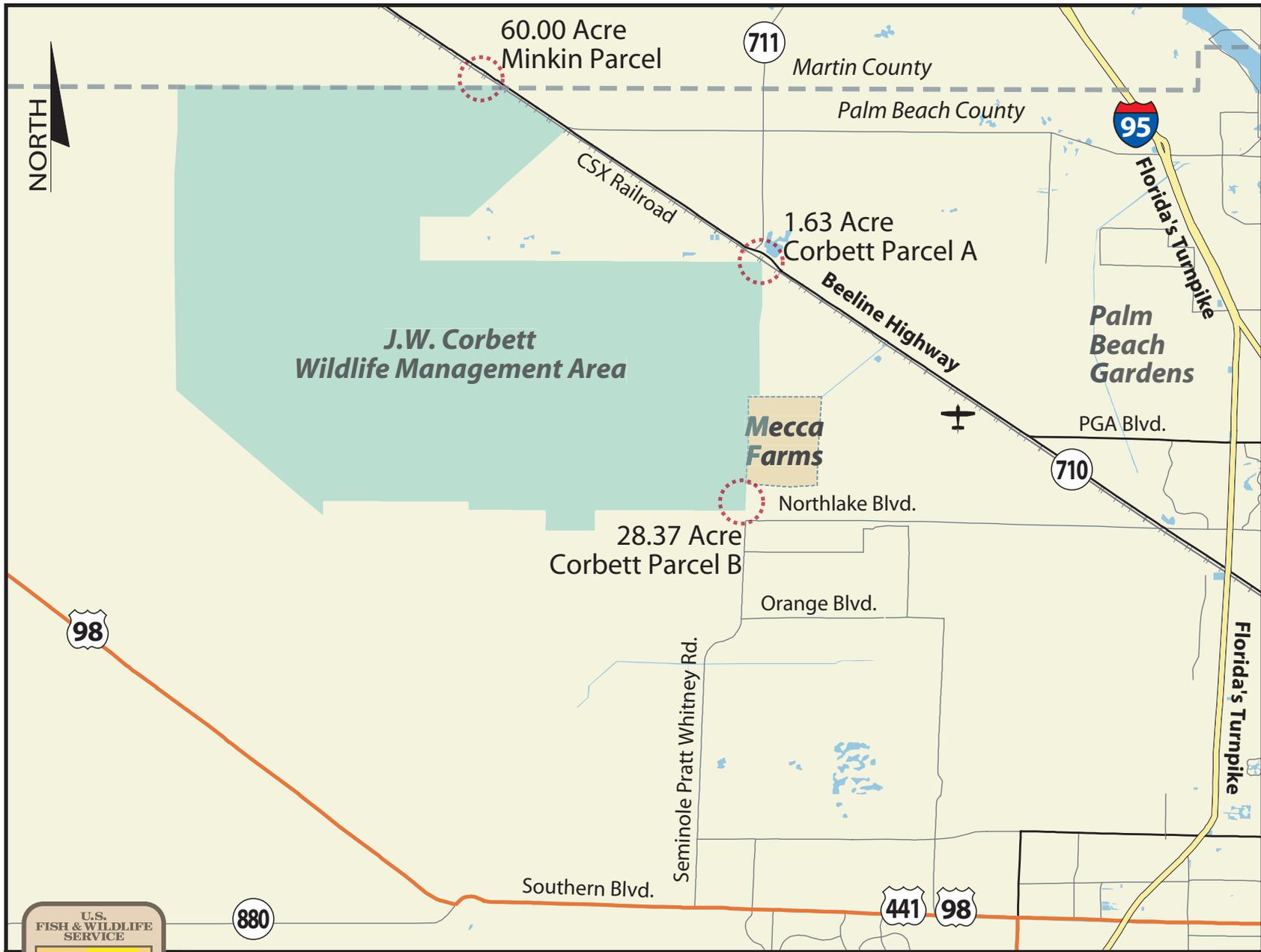
Palm Beach County, Florida (the County), in cooperation with the U.S. Fish and Wildlife Service (the Service, we, our), is preparing an Environmental Assessment (EA) to assess a proposed change in the use of lands within the J.W. Corbett Wildlife Management Area (JWCWMA) in Palm Beach County. Two tracts of JWCWMA land would be used for purposes other than which they were acquired with Federal funds. The proposed action is a transfer of easements, or rights of use, not a fee simple transfer of ownership, which is consistent with the Florida Fish and Wildlife Conservation Commission's (FWC) determination that no surplus lands exist on the JWCWMA. The wildlife-related values of those two tracts would be replaced by adding to the JWCWMA adjacent lands in Martin County, Florida.

This analysis considers the potential direct, indirect, and cumulative impacts associated with the proposed change in use of the JWCWMA lands, as well as the proposed mitigation for those impacts. A vicinity map of the study is depicted on **Figure 1-1**, Project Location Map.

The Service's need is to evaluate and respond to a request that we review for approval, the proposed change in use of the JWCWMA tracts and the replacement of those tracts. The Service's purpose is to maintain and enhance the ecological integrity and wildlife-related values of the JWCWMA and to respond to the request in a manner consistent with our mission, the goals of the Pittman-Robertson Wildlife Restoration Act of 1937, the Employment Act of 1946, the National Environmental Policy Act of 1969 (NEPA), and other statutes, regulations, and Executive Orders.

1.2 BACKGROUND

In a letter dated August 2, 2004, the FWC asked the Service to review for approval the application from the County to the FWC requesting five easement areas on the JWCWMA. The request was made to the Service because acquisition of the JWCWMA was partially funded through the Pittman-Robertson Wildlife Restoration Act (16 US Code [USC] Chapter 669 et seq.). Pittman-Robertson Wildlife Restoration Act funds are generated from excise taxes on certain sporting/hunting equipment and administered through the Service. Accordingly, the Service shares responsibility for authorizing the change in land use and transfer that are to be analyzed.



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PROJECT LOCATION MAP

Figure 1-1

The Scripps Research Institute (TSRI), based in La Jolla, California, has been considering the development of a new East Coast center for biomedical research, technology development, and drug design. The State of Florida (the State), desirous to cultivate a knowledge-based economy through the creation of a biomedical research institute and research cluster, has worked closely with TSRI on locating a potential facility site. After considering several potential locations statewide, a tract in Palm Beach County large enough to accommodate TSRI and any related businesses and support infrastructure that would be expected to follow has been selected and acquired.

The County purchased a 1,919.23-acre tract formerly called Mecca Farms in the north central portion of Palm Beach County, which entirely comprises the proposed future site of the Palm Beach County Biotechnology Research Park (PBCBRP). The site was chosen over other potential locations most significantly because of its size, amount of developable land, and proximity to the amenities offered in north Palm Beach County. The County has asserted, and the State has reviewed and accepted, that none of the other potential sites met the requirements of TSRI and the Palm Beach County Business Development Board.

It is the intention of the County to develop a sustainable and economically viable project by creating a master development plan that clusters land uses specifically to promote intellectual transfer between the researchers and scientists at TSRI and other related companies located nearby within the PBCBRP. Both the State and the County are providing economic stimulus packages to help establish the initial facility.

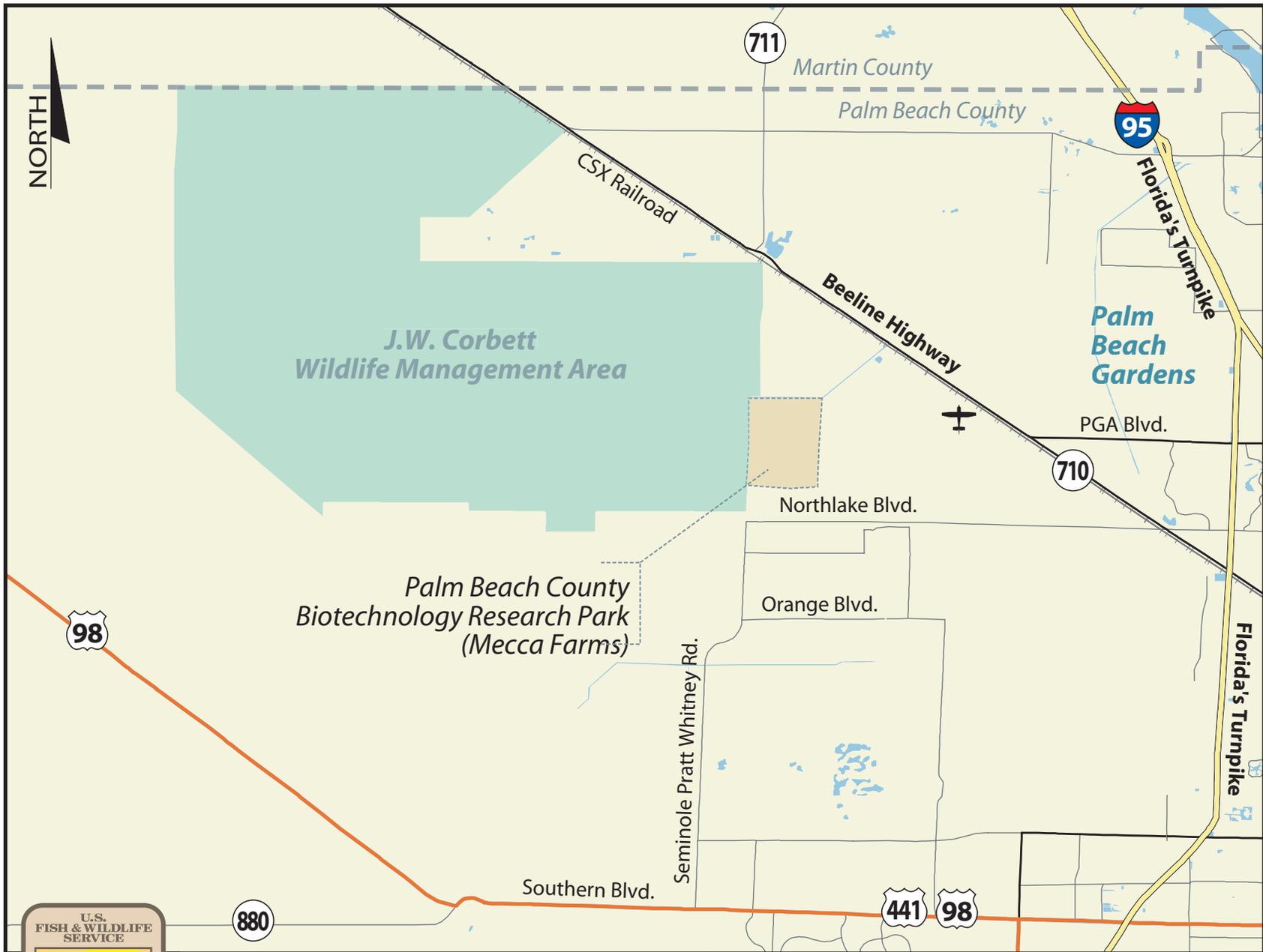
In May 2004, the County submitted a Development of Regional Impact (DRI) Application for Development Approval (ADA) for the PBCBRP project site (see **Figure 1-2**) to the State for subsequent approval. TSRI would occupy approximately 102.03 acres of the site.¹ Much of the remaining land would be made available to other biotechnology companies and related high technology industries and support infrastructure. The County also proposes to use a portion of the property to enhance surrounding environmentally-sensitive lands, meet regional water management goals, and to buffer nearby residents.

The County has determined that key infrastructure components of the proposed PBCBRP would occur off the PBCBRP project site. The County, with concurrence from FWC, has determined that there is no other reasonable alternative but to utilize parts of the JWCWMA, which adjoins the proposed PBCBRP, for these key infrastructure components.² The infrastructure plans call for the construction of a new Florida Power & Light (FP&L) substation and transmission poles/lines, modifications to the Corbett Canal, and the widening and extension of Seminole Pratt Whitney Road, all which are within the JWCWMA. The FWC also determined that the proposed change in use of the JWCWMA tracts is inconsistent with the purposes for which the tracts were acquired.³

¹ PBCBRP ADA, Part II, Question 10, Page 10-1, May 10, 2004.

² Palm Beach County Request for JWCWMA Easements, June 3, 2004.

³ FWC letter dated August 2, 2004.



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**PALM BEACH COUNTY
BIOTECHNOLOGY RESEARCH PARK
LOCATION MAP**

Figure 1-2

Plans to widen and extend Seminole Pratt Whitney Road and to modify the Corbett Canal existed as speculative plans before the PBCBRP proposal was developed. Widening and extending Seminole Pratt Whitney Road is included in the adopted 2030 Long Range Transportation Plan (LRTP) for Palm Beach County and the 2030 Adopted Cost Feasible Plan Map. The 2030 Thoroughfare Roadway Plan has also identified the widening and extension of Seminole Pratt Whitney Road as necessary to accommodate future growth in north central Palm Beach County. In addition, the Comprehensive Everglades Restoration Plan (CERP) calls for creating new waterway corridors to move water from the L-8 reservoir located south of the JWCWMA northward along the property to the existing C-18 canal and eventually to the Loxahatchee Slough and River. The proposed Master Plan for the PBCBRP shows a “flow way” to be constructed along its western boundary to accommodate the waterway corridor through its site. The proposed land transfer on the JWCWMA takes into account flow way alternatives being considered by CERP to improve flows to the Loxahatchee River.

1.3 SUMMARY OF PUBLIC PARTICIPATION, ISSUES, AND CONCERNS

The scoping process indicates that there is broad public interest in a range of secondary and related cumulative effects of the proposal to transfer interests in approximately 30 acres of the JWCWMA to the County and receive a 60-acre tract of land as replacement land. That is, the public appears to view the proposed transfer of JWCWMA lands from the perspective of regional development trends. Furthermore, the public interest in development trends encompasses a wide range of factors, from traffic and pollution to infill of undeveloped areas.

This suggests that, to facilitate public involvement, our analysis should follow a presentation format that differs from the Service’s traditional approach. Typically, the Service separates anticipated effects into direct, indirect (or secondary), and cumulative analyses. Direct and indirect effects are the activity-specific effects on resource, ecosystem, and human community components of interest for the analysis (Components or Indicators). Cumulative effects, on the other hand, are Component-based. Cumulative effects analyses start with an understanding of the general status and trends of the Component and try to predict how the activity would affect those trends; the influence could be neutral, synergistic, countervailing, additive, or subtractive.

The presentation format suggested by our scoping process is incorporated into the Environmental Consequences section of this document. The Service and other stakeholders and coordinating agencies must consider some specific Components, such as those that indicate how the proposal would affect the ecological integrity and wildlife-related values of the JWCWMA, so the Environmental Consequences section blends the Service’s traditional presentation format with the public involvement format suggested in the scoping process. The scoping process also leads us to believe that this document successfully incorporates the planning, analytic, and public inputs, including public comments, that informed local, state, and Federal decisions related to various aspects of the PBCBRP proposal.

The Service, in conjunction with the FWC and the County, initiated an inclusive outreach program in conjunction with our analysis of the proposal. The Service provided opportunities for public comment and review of this EA and open house style public information meetings. The proposed land transfer is a small but related part of a larger development project that is controversial in the County.

Key elements of the project outreach program are discussed here. These outreach elements are comprehensive and form a framework to solicit and incorporate public involvement during our consideration of the proposed action.

1.3.1 EA ADVANCE NOTIFICATION PROCESS

The Service, through the Advance Notification Process, informed Federal, state, and local government agencies of the outline of this EA and its scope. The Service initiated project coordination on November 16, 2004, by distribution of an Advance Notification package to the Florida Department of Environmental Protection (DEP) - Florida State Clearinghouse. The Service and DEP will ensure that the County's request for permission to change the authorized use of certain tracts within the JWCWMA and the related environmental documents are reviewed in accordance with the intergovernmental coordination and review procedures administered by the State Clearinghouse. Appendix A of the EA contains a copy of the Advance Notification package and the cover letter with the agency mailing list.

1.3.2 EA NOTICE OF AVAILABILITY

The Service has advertised in the local Palm Beach Post newspaper the public availability of the EA. The Service has also noticed the public, media, elected officials, agencies, and special interest groups of the EA's availability through the use of individual notification letters, media packages, press releases, teleconferences, and creation of a dedicated internet web site (<http://southeast.fws.gov>).

1.3.3 EA PUBLIC INFORMATION MEETING

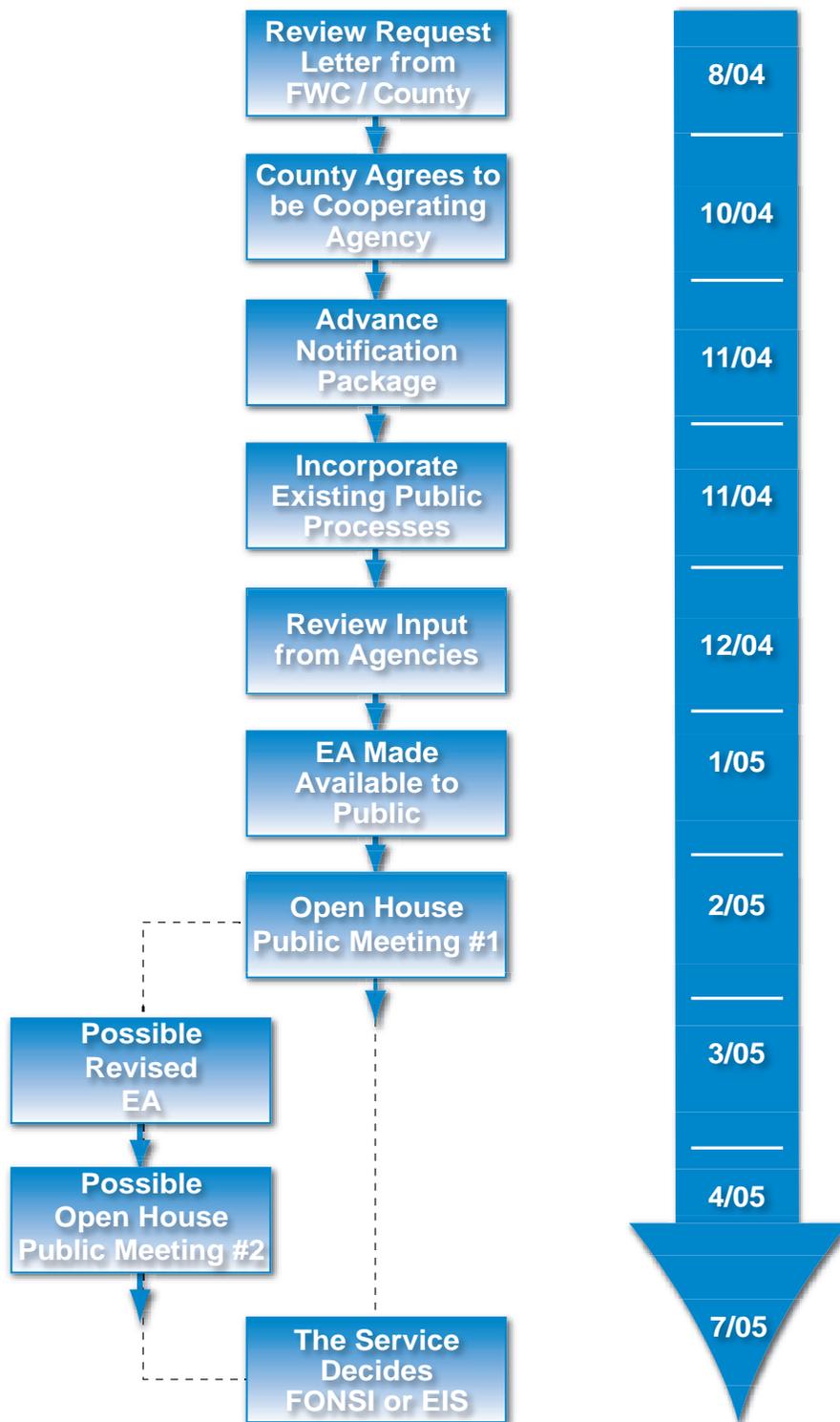
On February 2, 2005 (after 23 days of EA public availability), the Service conducted a Public Open House Meeting to allow the public to review and comment on the EA. The comment period for the EA remained open for 10 days after the Public Open House Meeting, with the comment period ending February 14, 2005 (public comment period was a total of 33 days). A total of 30 comments were received as a result of the Service's request for public comments. A summary of the meeting and copies of all comments are included in Appendix F. Appendix F also includes the Service's responses to the comments. The comments have been incorporated and text revised in the EA where appropriate.

1.3.4 REVISED EA PUBLIC NOTICE

The Service is committed and has revised all or parts of this document where public comments or our analysis raised new information or issues that warranted such actions.

Based on comments we received during the public comment period and our own analysis of information presented in the EA, the Service determined that additional public review and comment was not warranted.

The Service's NEPA process and milestones are shown on **Figure 1-3**. The Service has determined that the proposal is unlikely to have a significant impact. Therefore, we have published an associated Finding of No Significant Impact (FONSI) based on this EA.



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**US FISH AND WILDLIFE SERVICE
NEPA PROCESS AND MILESTONES**

Figure 1-3

Section 2.0

ALTERNATIVES

2.1 INTRODUCTION

As part of the EA process for analyzing the proposed JWCWMA land transfer, the following factors were taken into consideration:

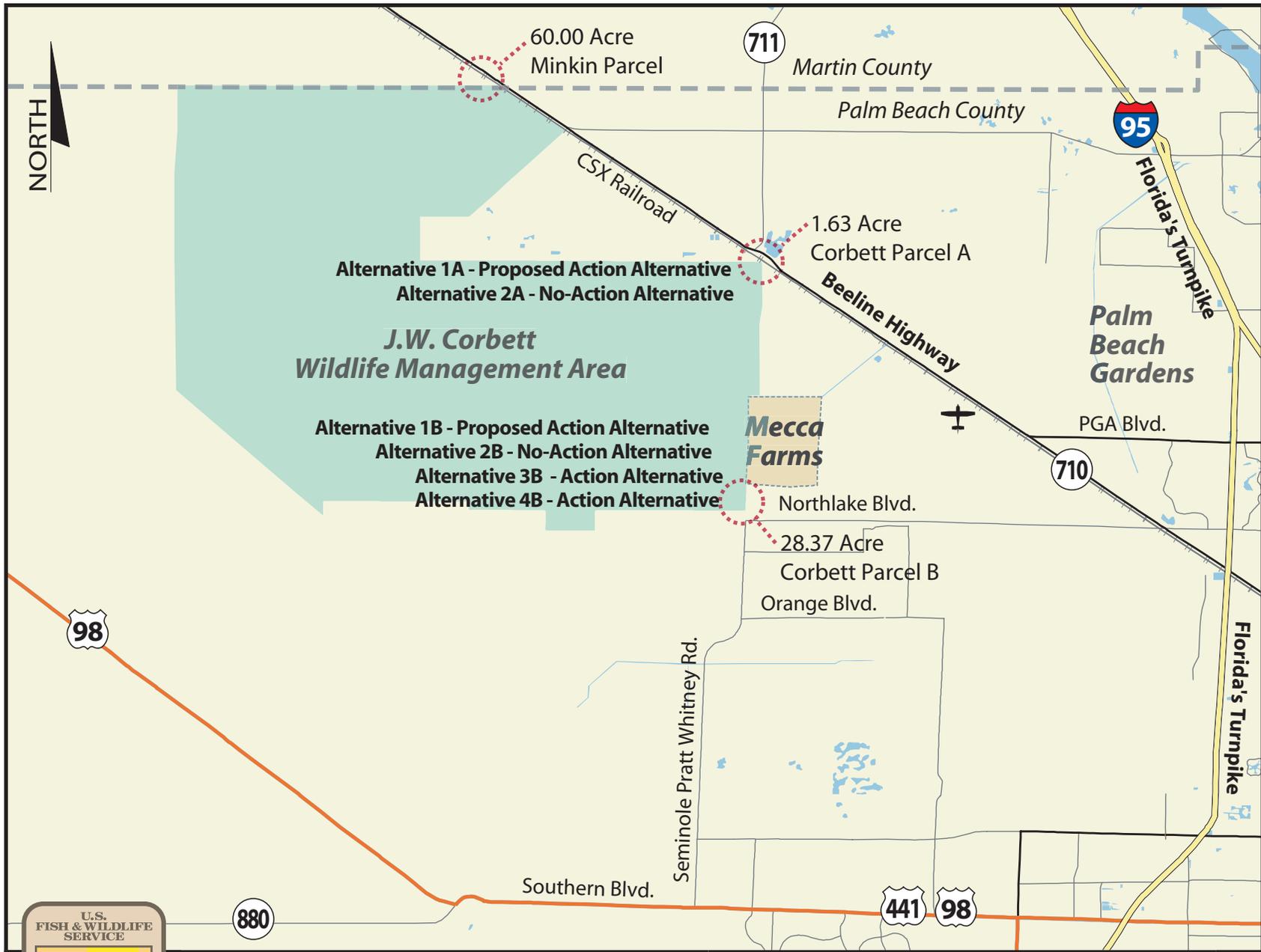
- **Engineering:** The design and location of the proposed improvement facilities;
- **Environmental:** Social, cultural, natural and physical factors; and
- **Public Involvement:** Needs and concerns of the local community.

The following sections describe the viable alternatives that were considered and could fulfill the purpose and need for the proposed action.

The proposed action includes a change in the use of lands within the JWCWMA. Two tracts of JWCWMA land (Corbett Parcel A and Corbett Parcel B) located in Palm Beach County, Florida, would be used for purposes other than those for which they were acquired; the wildlife-related values of those tracts would be replaced through the addition of lands adjoining the JWCWMA in Martin County, Florida (see Section 1.0, Purpose and Need, and Figure 1-1, Project Location Map). The change in land use within Corbett Parcels A and B and the associated replacement of wildlife-related values through the addition of Martin County lands would accommodate key infrastructure components of the proposed PBCBRP.

There are alternative actions for each of the JWCWMA parcels under evaluation in this EA. **Figure 2-1** shows the alternative actions for Corbett Parcels A and B. To enhance our analysis, we consider alternatives to the proposed Parcel A transfer independent of the proposed Parcel B transfer. Thus, we have two alternatives that comprise the proposed transfer (1A and 1B), two alternatives that comprise our no-action alternative (2A and 2B), and two alternative configurations of Parcel B that could address our need and partially address the County's goals (3B and 4B). Listed below are the alternatives discussed in this section:

- **Parcel A Alternative 1A:** This alternative is identified as the proposed action alternative and would require the transfer of 1.63 acres of JWCWMA land;
- **Parcel A Alternative 2A:** This alternative is identified as the no-action alternative and would not require any land from the JWCWMA;
- **Parcel B Alternative 1B:** This alternative is identified as the proposed action alternative and would require the transfer of 28.37 acres of JWCWMA land;



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ALTERNATIVE ACTION LOCATIONS

Figure 2-1

- **Parcel B Alternative 2B:** This alternative is identified as the no-action alternative and would not require any land from the JWCWMA;
- **Parcel B Alternative 3B:** This alternative is an optional action alternative and would require the transfer of 8.11 acres of JWCWMA land; and
- **Parcel B Alternative 4B:** This alternative is an optional action alternative and would require the transfer of 5.44 acres of JWCWMA land.

2.2 *ALTERNATIVES*

2.2.1 *CORBETT PARCEL A ALTERNATIVES*

2.2.1.1 *Alternative 1A*

The Service, in coordination with Palm Beach County and the Florida Department of Transportation (FDOT), has modified the size of the proposed Parcel A easement transfer as a result of discussions initiated through the Advanced Notification process. The total acreage believed necessary for the proposed realignment of the Seminole Pratt Whitney Road extension is 1.63 acres. The proposed transfer of Parcel A has been increased from the FWC's request of 1.25 acres to 1.63 acres. This modification would accommodate the typical section of a staged two-lane and four-lane roadway, and if ultimately necessary a six-lane roadway. The modified proposal takes advantage of the present process to ensure a holistic analysis instead of piece-mealing easement requests. The proposal would approve the FWC's current request, and would pre-approve FWC authorization of an additional easement transfer request, which is anticipated to coincide with the start of construction of the realignment of the Seminole Pratt Whitney Road extension. The FWC's original request to approve the transfer of easements on 1.25 acres at Parcel A will not be considered because of information gained during the Advanced Notification process.

Alternative 1A is the proposed action alternative for Corbett Parcel A (see **Figure 2-2**). Located at the northeast corner of the JWCWMA, this 1.63-acre parcel would accommodate the construction of a future two-lane, expandable to four- or six-lane divided, connection of Seminole Pratt Whitney Road to the Beeline Highway (State Road 710 [SR 710]). South of Parcel A, the County is proposing a four-lane roadway, expandable to six lanes, through the Mecca property to its south boundary, and from there continuing south as a six-lane roadway to Northlake Boulevard. In order for Seminole Pratt Whitney Road to connect to SR 710, it is necessary to cross existing CSX railroad tracks; the proposed action calls for utilizing the existing railroad crossing at the Pratt Whitney facility entrance. The CSX rail crossing would be upgraded as necessary to safely accommodate the additional lanes in accordance with the County, FDOT, and CSX rules and regulations. In order to make the westerly turn required to align with the existing crossing, it is necessary to cross a corner of the JWCWMA; this crossing results in the 1.63-acre impact.

2.2.1.2 *Alternative 2A*

Alternative 2A is the no-action alternative for Parcel A (see **Figure 2-3**) and would not involve an easement across the JWCWMA. This concept would place the new alignment for the Seminole Pratt Whitney Road extension entirely to the east of Parcel A on County-owned lands, cross the CSX railroad line above-grade, and interchange with SR 710 without any direct impact to the JWCWMA. Due to the close proximity of the potential new CSX crossing to the CSX spur track immediately to the east, and the existing Pratt-Whitney facility road crossing to the west, a grade-separated crossing of CSX would be required. This grade-separated crossing would require a minimum 23.5-foot clearance over the railroad. Approximately 19 to 20 trains per day use this section of CSX railroad line and it is also an AMTRAK route.

2.2.2 *CORBETT PARCEL B ALTERNATIVES*

2.2.2.1 *Alternative 1B*

Alternative 1B is the proposed action alternative for Corbett Parcel B (see **Figure 2-4**). This alternative would utilize an easement across the southeast corner of the JWCWMA. The easement would include 4.73 acres to accommodate the proposed 60-foot widening of Seminole Pratt Whitney Road including an underground power distribution line; 13.91 acres to allow for the construction of a 150-foot “canal/flow way” (i.e., Corbett Canal) by the South Florida Water Management District (SFWMD) as part of the CERP Project; 3.36 acres for the construction of a 40-foot canal maintenance area; and 6.37 acres to accommodate an electrical substation for FP&L adjacent to the existing power line transmission corridor. The canal maintenance area on the east side of the proposed Corbett Canal would also provide for a hiking/biking/equestrian trail (activities trail) to a proposed trailhead located immediately east of the JWCWMA South Entrance. The total acreage that would be impacted in the JWCWMA for this alternative is 28.37 acres. In addition to the JWCWMA impacts, the expansion of Seminole Pratt Whitney Road south of the JWCWMA to Northlake Boulevard would require the taking of land from six residential properties on the west side of Seminole Pratt Whitney Road.

2.2.2.2 *Alternative 2B*

Alternative 2B is the no-action alternative for Parcel B (see **Figure 2-5**). This alternative accepts County assertions that all of the right-of-way for the expansion of Seminole Pratt Whitney Road within a 60-foot right-of-way would be obtained from properties on the east side of the existing Seminole Pratt Whitney Road, including residential lots in the area known as “The Acreage” between Northlake Boulevard and the Mecca property.⁴ The electrical substation would be sited on 7.13 acres at the northeast corner of the intersection of the existing electrical transmission lines and Seminole Pratt Whitney Road. Underground power distribution lines would be run within a 60-foot additional FP&L easement north from the substation to the PBCBRP site. This alternative would have no involvement with the JWCWMA adjacent to and south of the PBCBRP site. This alternative does not include any accommodation for a canal/flow way or an activities trail.

⁴ Memorandum from Palm Beach County to U.S. Fish and Wildlife Service, December 28, 2004.

The Service accepts, for the purpose of this analysis, the County's assertion that condemnation of the 60-foot road right-of-way and 60-foot utility easement would be required from several residential properties fronting on the east side of the existing Seminole Pratt Whitney Road from Northlake Boulevard north to the Mecca property. County condemnation proceedings for approximately eight residential properties (whole takes) would be required for the substation and roadway right-of-way.⁵ A total of 20 residential properties would be directly impacted by condemnation under this alternative.

2.2.2.3 Alternative 3B

Alternative 3B would include the 60-foot expansion of Seminole Pratt Whitney Road on the east side of the existing roadway (requiring condemnation of right-of-way from 17 residential lots in The Acreage) and two new overhead power transmission lines in the JWCWMA to connect to a proposed utility pod in the PBCBRP (see **Figure 2-6**). One of the new overhead transmission lines would be a single circuit transmission line within a 30-foot easement (4.02 acres) that would run along the west side of Seminole Pratt Whitney Road north to an electric substation within the PBCBRP. The second proposed overhead transmission line within a 60-foot easement (4.09 acres) would be a single circuit from the existing transmission corridor in the JWCWMA east to the electric substation in the PBCBRP, a distance of approximately 3,000 feet, with an above-grade patrol road for maintenance purposes. This alternative does not include any accommodation for a canal/flow way or an activities trail. The total acreage that would be impacted in the JWCWMA for this alternative is 8.11 acres. In addition to the 8.11 acres directly impacted, this alternative creates, from a management perspective, a completely isolated 138-acre parcel of property within the JWCWMA bordered by the existing and proposed FP&L transmission line easements.

2.2.2.4 Alternative 4B

Alternative 4B would include the 60-foot expansion of Seminole Pratt Whitney Road on the east side of the existing roadway (requiring right-of-way taking from 17 residential lots in The Acreage) and a new power transmission line in the JWCWMA to connect to a proposed utility pod in the PBCBRP (see **Figure 2-7**). The new transmission line would run from the existing transmission corridor in the JWCWMA east to the substation in the PBCBRP, a distance of approximately 3,000 feet. The corridor for this transmission line would be 80 feet in width and requires 5.44 acres of land from the JWCWMA. This alternative does not include any accommodation for a canal/flow way or an activities trail. The total acreage that would be impacted in the JWCWMA for this alternative is 5.44 acres. In addition to the 5.44 acres directly impacted, this alternative creates, from a management perspective, a completely isolated 138-acre parcel of property within the JWCWMA bordered by the existing and proposed FP&L transmission line easements.

⁵ Chapter 361.01, Florida Statutes (F.S.), 2004.

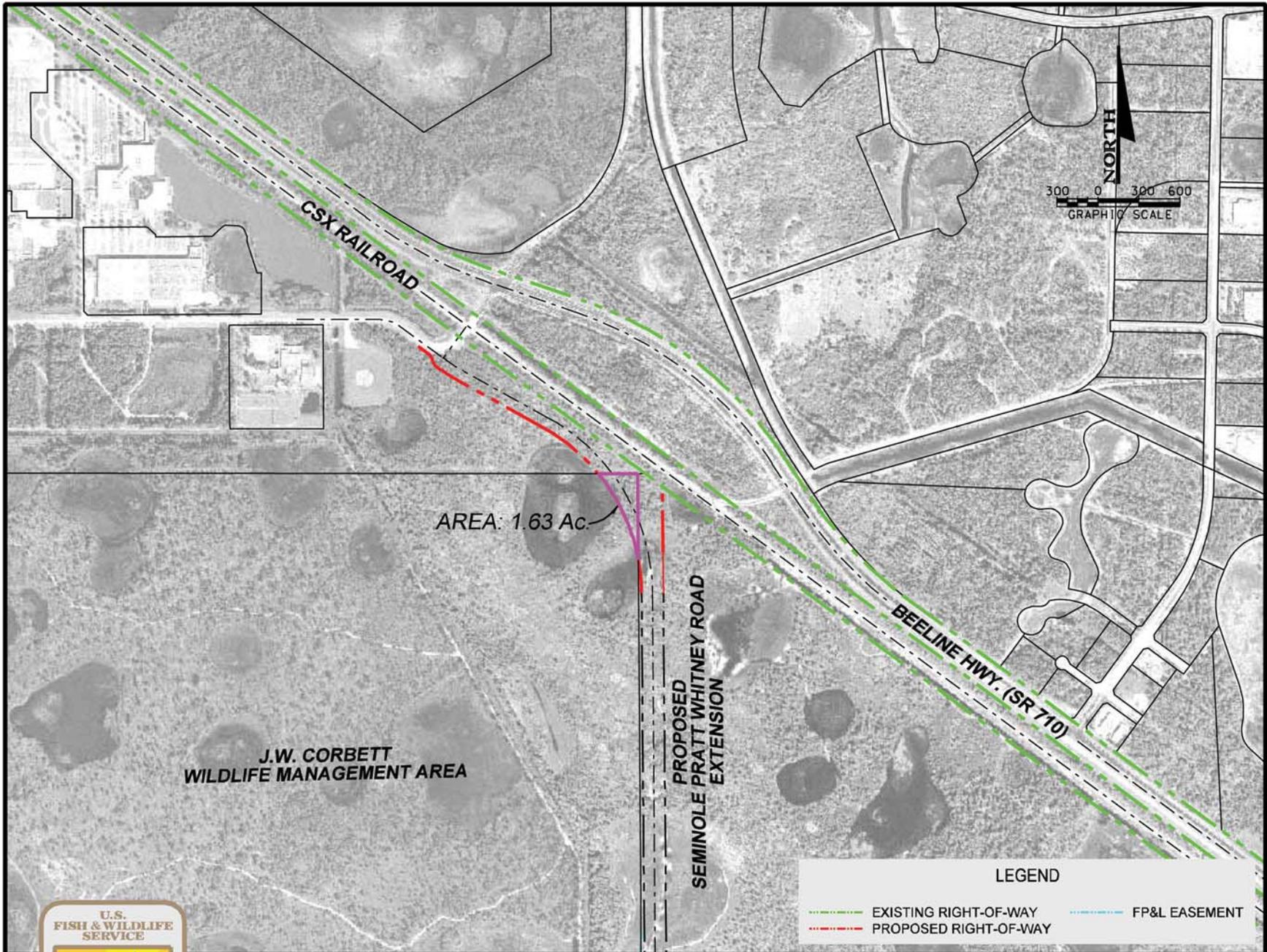
The direct, indirect (secondary), and cumulative impacts to the JWCWMA associated with the land transfer and easement actions are discussed in the Environmental Consequences section of this report.

Table 2-1 provides a summary of the alternatives.

**TABLE 2-1
SUMMARY OF ALTERNATIVES**

	Alternative 1A	Alternative 2A	Alternative 1B	Alternative 2B	Alternative 3B*	Alternative 4B*
Total Land (acres)	11.55	20.19	30.66	15.95	14.51	11.84
JWCWMA Land (acres)	1.63	0	28.37	0	8.11	5.44
Outside JWCWMA Land (acres)	9.92	20.19	2.29	15.95	6.40	6.40
Residential Relocations	0	0	0	8	5	5
Non-JWCWMA Parcels Impacted	2	4	6	20	17	17
CSX Crossing	At-Grade	Above-Grade	N/A	N/A	N/A	N/A

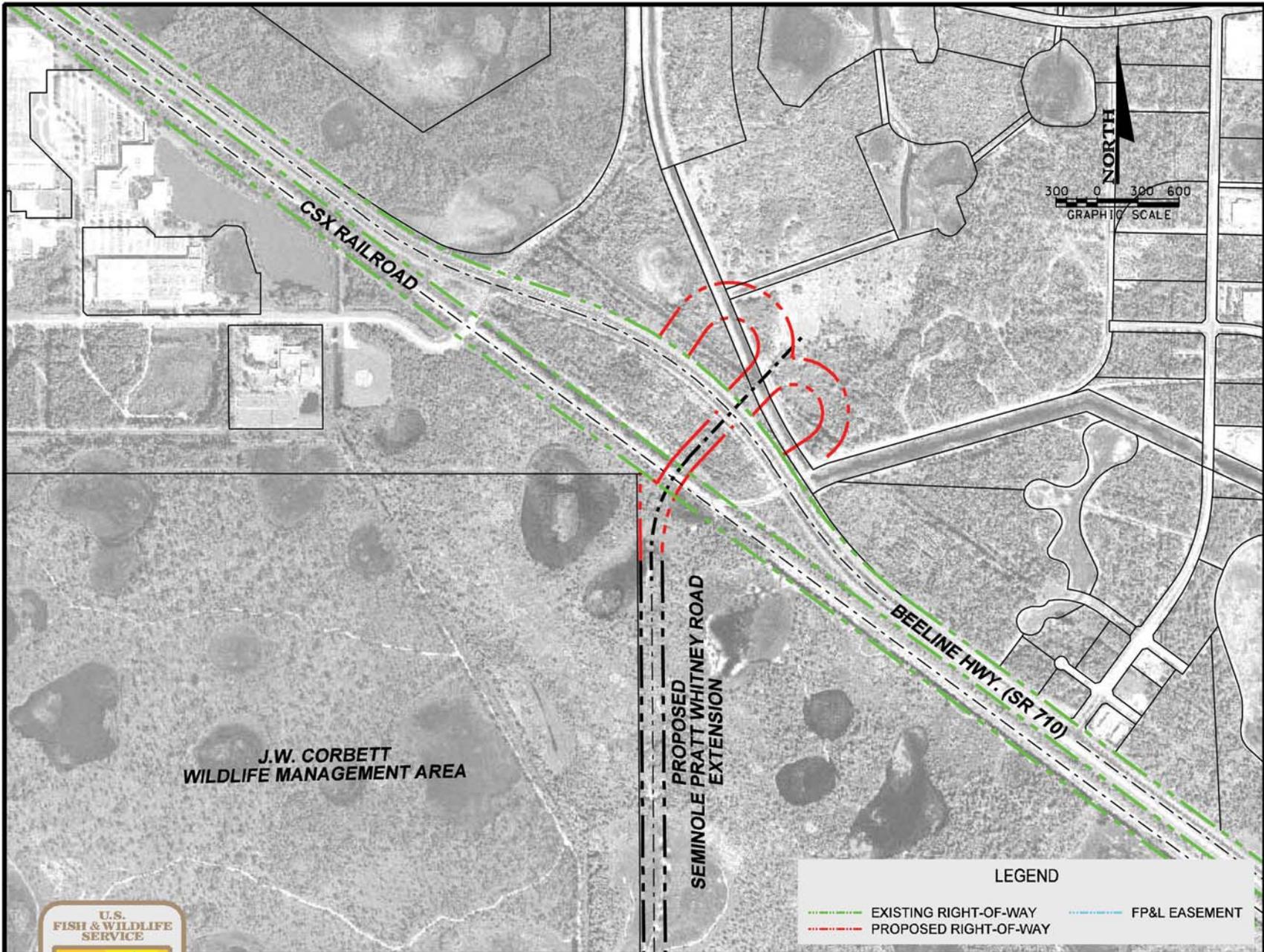
* Impacts associated with Alternatives 3B and 4B do not include the additional 138-acre parcel isolated within the JWCWMA.



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ALTERNATIVE 1-A

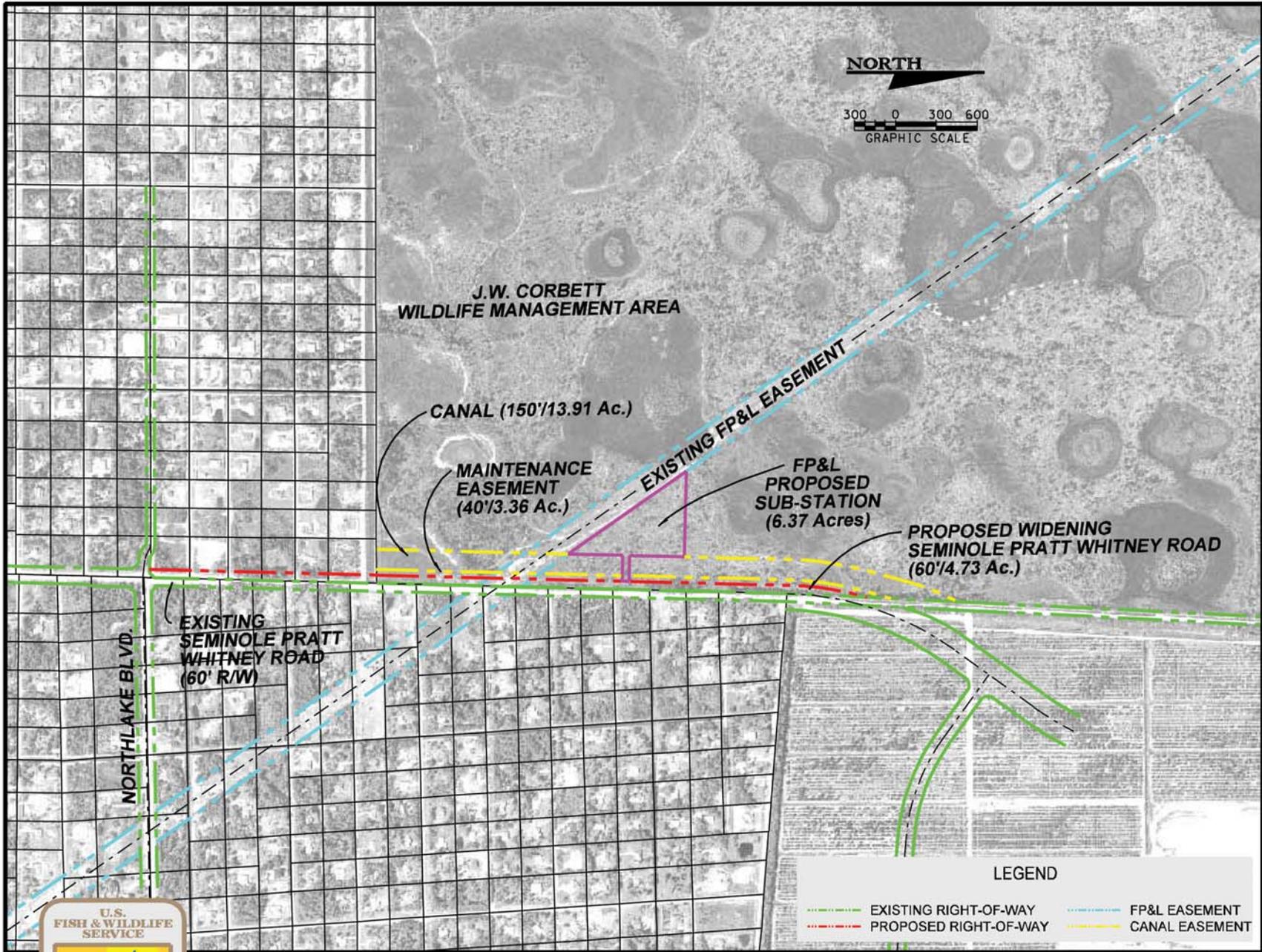
Figure 2-2



*J.W. Corbett Wildlife Management Area
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**ALTERNATIVE 2-A
(NO ACTION)**

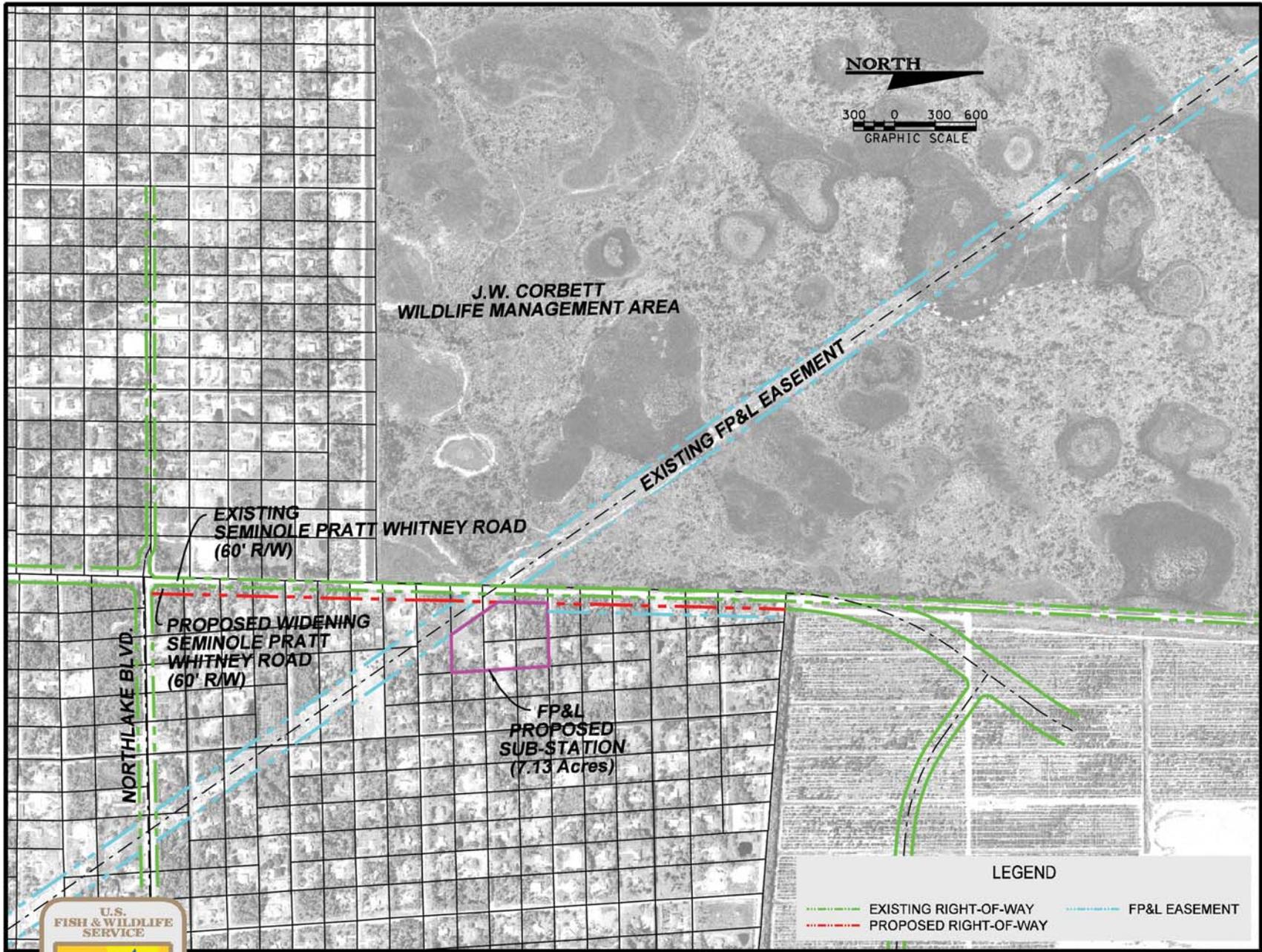
Figure 2-3



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ALTERNATIVE 1-B

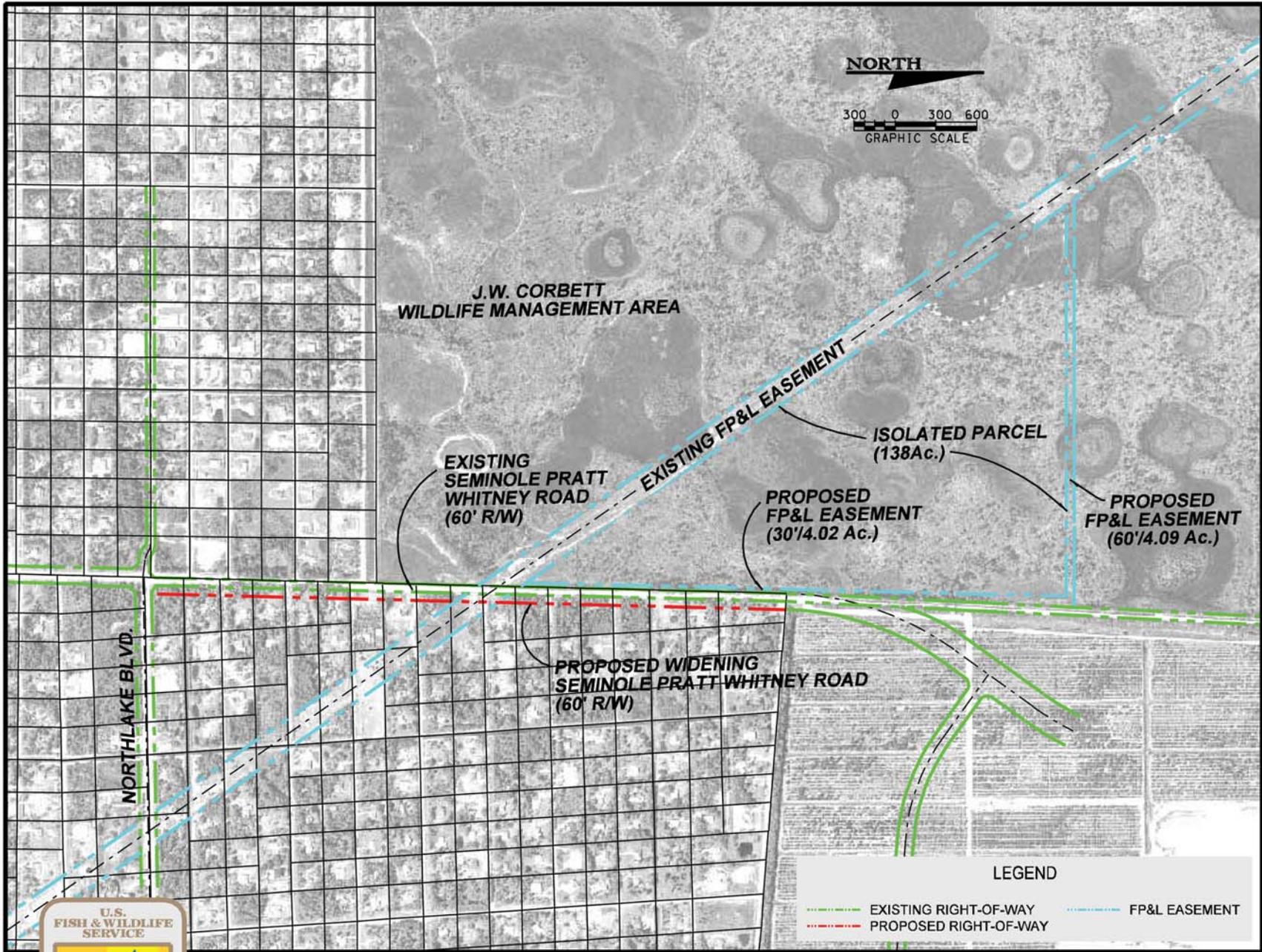
Figure 2-4



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**ALTERNATIVE 2-B
(NO ACTION)**

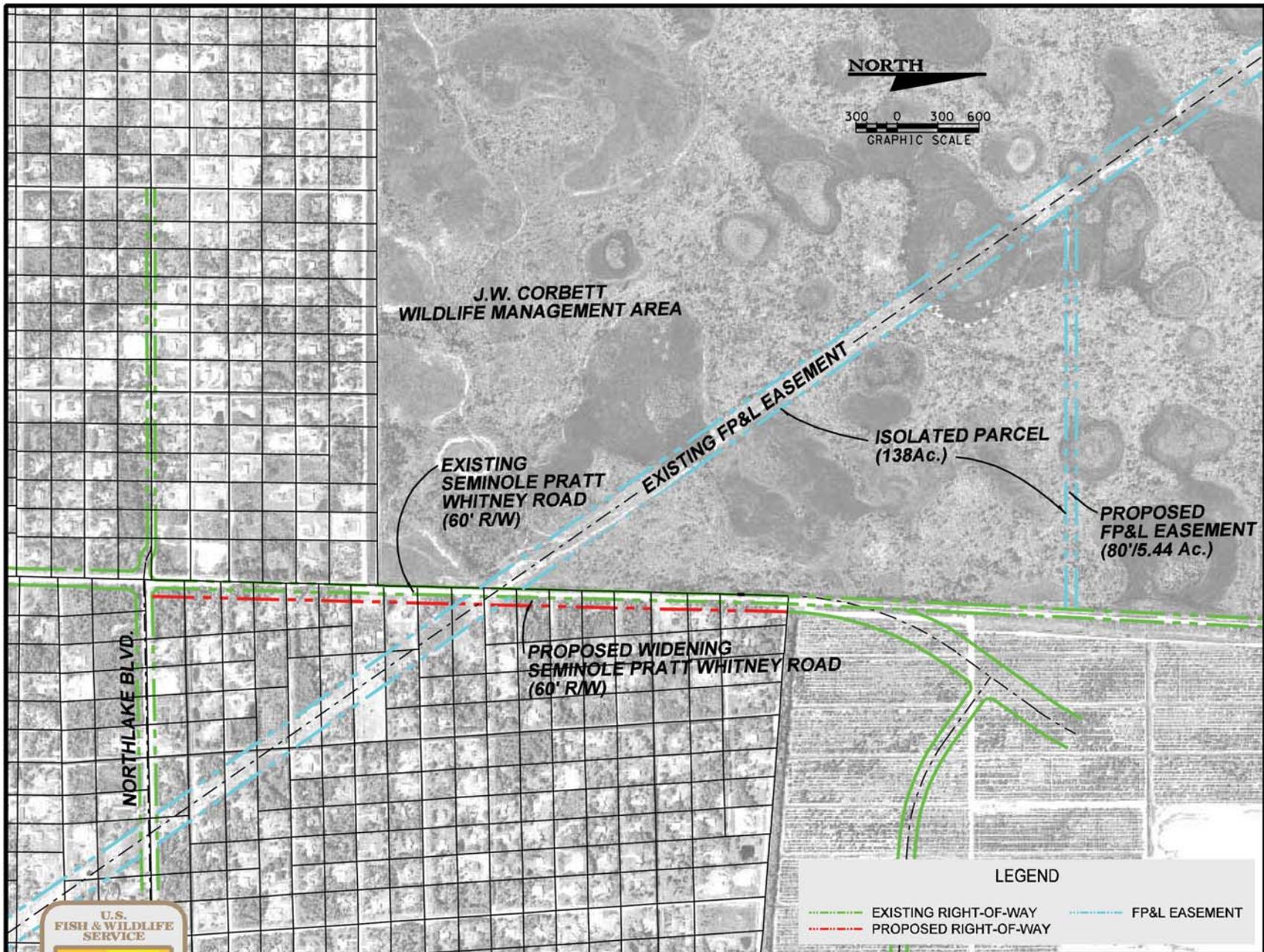
Figure 2-5



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ALTERNATIVE 3-B

Figure 2-6



*J.W. Corbett Wildlife Management Area
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ALTERNATIVE 4-B

Figure 2-7

Section 3.0

PROJECT SETTING

The three Corbett land transfer parcels are non-contiguous and include two parcels (Parcels A and B) in Palm Beach County which encompass 1.25 acres and 28.37 acres, respectively. The third parcel, the Minkin Parcel, encompasses 60 acres and is in Martin County on the Palm Beach county line. The parcels are within Section 24 of Township 41 South, Range 40 East; Sections 12 and 13 of Township 42 South, Range 40 East; and Section 30, Township 40 East, Range 40 South. In addition, six alternative plans for proposed right-of-way modifications and a proposed FP&L sub-station were assessed.

The parcels are within or adjacent to the JWCWMA. Parcel A and the Minkin Parcel are next to SR 710 and Parcel B is at the southwest corner of the JWCWMA (see Figure 1-1).

Parcels A and B are inundated pine flatwoods. Disturbances to Parcel A include a firebreak across it. Parcel B also has been impacted by bulldozing possibly associated with the FP&L transmission line and construction of the adjacent Seminole Pratt Whitney Road. The Minkin Parcel is in an excellent natural state characterized with inundated pine flatwoods and several cypress ponds. The alternative plan parcels are located in the area of Seminole Pratt Whitney Road. No cabbage palm or oak hammocks, areas often associated with archaeological sites, were observed on any of the parcels or alternatives.

Section 4.0

PREVIOUS RESEARCH

The archaeology of the area east of Lake Okeechobee, including coastal Palm Beach and Martin counties, is not well understood. John M. Goggin was probably the first to recognize this area as being somewhat unique and defined it as being the East Coast Region of the Okeechobee archaeological subarea (Goggin n.d.). In his description of the region, Goggin noted that no “local” ceramic forms could be found here. Undoubtedly, this is partly a reference to a lack of unique incised types. In addition, Goggin also lists a number of traits for the region that are usually considered to be more common in northern Florida, such as the common occurrence of St. Johns Plain and St. Johns Check-Stamped.

Little archaeological work was conducted in the region until the 1970s. In the early 1970s, John Furey, a graduate student at Florida Atlantic University, conducted an investigation of several sites in the Boca Raton area. Collectively, these sites are known as the Spanish River Complex (Furey, 1972). Although the complex was supposed to fall just within the southern border of Goggin’s East Coast Region of the Okeechobee subarea, Furey’s ceramic analysis revealed that almost half of the shard collection consisted of the type Belle Glade Plain. Partly because of this, Furey interpreted the Spanish River Complexes as representing a coastal extension of the interior Belle Glade area. Furey also generalized that all of coastal Martin and Palm Beach counties was influenced mainly from the Lake Okeechobee Area. Furey’s interpretation was seemingly strengthened by Browning’s (1975) work at the Rocky Point 2 Site (8MT33) in northern Martin County. Here, Browning reported a shard assemblage that consisted of 25 percent Belle Glade Plain.

Despite this, Milanich and Fairbanks (1980) included the coastal portions of Martin and Palm Beach counties in a “Circum-Glades” area. They defined this area as including all of southeastern Florida and the east coast as far north as Indian River County. The term, “Circum-Glades,” was coined earlier by Griffin (1974) who argued that the major focus for settlement and subsistence in southeastern Florida was along the coasts. He interpreted the smaller tree-island sites within the Everglades themselves as small, temporary hunting camps, which were used sporadically by the coastal inhabitants. Apparently, Milanich and Fairbanks considered this interpretation to be appropriate for coastal Palm Beach and Martin counties as well, although they provided little explanation for this argument.

Carr and Beriault (1984) rejected most of the cultural names and boundaries used by Milanich and Fairbanks for southern Florida and reiterated Furey’s generalizations on the coastal portions of Martin and Palm Beach counties. In their analysis, Boca Raton was considered to be the southern boundary of a separate cultural area, which they called “East Okeechobee,” and was mainly influenced from the west. Based on the work of Browning at Rocky Point, Carr and Beriault suggested that the northern boundary for the area was probably somewhere around the border of Martin and St. Lucie counties. A western boundary was chosen that would exclude inland sites in Martin and Palm Beach counties like Big Mound City (8PB48), the Boynton Mounds (8PB100), Barley Barber I (8MT19), and Belle Glade (8PB41), as these sites seem to be complexes and earthworks associated with the Lake Okeechobee culture area.

In his synthesis of Everglades archaeology, Griffin (1988) provided a detailed description of his thoughts concerning southern Florida prehistoric cultural boundaries. He supported the boundaries that Carr and Beriault used for their East Okeechobee Area, but he did not accept a name for the area. Instead, Griffin referred to the area as being “unclassified,” probably due to the lack of archaeological work conducted there. He also refers to the area as being transitional between three different areas, presumably the Belle Glade Area to the west, the Everglades Area to the south, and another cultural area to the north. Because of this, he suggested that it might be more appropriate to consider this area to be a district of one of its neighboring areas.

In doctoral work conducted under the direction of Milanich, McGoun (1989) renamed the Circum-Glades area “Southeast Florida.” Overall, he kept Milanich’s boundaries for this area intact, arguing that there were no major differences within the area from Cape Canaveral to Cape Sable. He also stressed the predominance of sand-tempered plain pottery within this area.

Recent surveys, stratigraphic excavations, and salvage work in Jupiter by students from Florida Atlantic University seem to contradict interpretations of a Gold Coast or East Okeechobee Area influenced mainly from the west. Stratigraphic excavations at Jupiter Inlet I (8PB34) revealed that Belle Glade Plain was a minor type, accounting for less than 4 percent of the entire shard assemblage. The St. Johns ceramic series, including St. Johns Plain, St. Johns Check-Stamped, St. Johns Simple-Stamped, and Dunns Creek Red makes up a greater proportion of the total ceramics recovered at this site (about 11 percent) than Belle Glade Plain, even though the St. Johns series was only recovered from the uppermost, or more recent stratigraphic levels. Radiocarbon dates from the site also demonstrate that St. Johns Check-Stamped pottery was first used at this site around A.D. 1000 (Kennedy *et al.*, 1993). Previously in southern Florida, the earliest date for this ceramic type was A.D.1200, although it was present as early as A.D. 1000 in the St. Johns culture area (Purdy, 1990).

Salvage work conducted on the Suni Sands oyster midden (8PB7718) corroborates evidence that the region is distinct (Pepe and Kehoe, 1992). Here, unprovenienced collections were made from the spoil piles resulting from the installation of new electrical lines. No Belle Glade Plain or St. Johns Check-Stamped shards were recovered during these investigations, although 192 sand-tempered plain, 33 St. Johns Plain, and 3 Dunns Creek Red shards were recovered.

Surveys much farther upstream from the Jupiter Inlet, along the Northwest Fork of the Loxahatchee River on the Shunk Tract (8PB7944, 8PB7945) and at the Loxahatchee River Corridor Site (8PB7946), also failed to turn up any Belle Glade Plain pottery (Kennedy *et al.*, 1994a, 1994b). It is also interesting to note that no St. Johns Check-Stamped shards and only a small number of St. Johns Plain shards (N=2) were recovered in these investigations, with by far, the most dominant ceramic type being sand-tempered plain (N=254). Belle Glade Plain shards were not recovered in recent surveys near the original headwaters of the Loxahatchee River either (Kennedy *et al.*, 1994a 1994b; Carr *et al.*, 1995). In addition, the work in Jupiter demonstrates that the St. Johns ceramic series makes up a large part of the ceramic assemblages from the coastal sites and is virtually absent from those farther inland.

Section 5.0

CULTURAL SUMMARY

Frequent contact and trade between the St. Johns, Indian River, and East Okeechobee culture areas is documented in the archaeological record. The presence of St. Johns pottery, type X *Busycon* picks, *Busycon* adzes, and exotic northern trade goods such as greenstone celts and plummets in these areas demonstrate communication between them (Rouse, 1951; Goggin, 1952; DuBois, 1957; Kennedy *et al.*, 1993; Wheeler, 1993).

Ethnographic evidence for contact and trade between various regions, at least in historic times, can be found in *Jonathan Dickinson's Journal* (Dickinson, 1985). On his journey up the coast to St. Augustine, Dickinson and his party stopped at Jece, which was almost certainly an Ais village. When the leader of this village learned that the people of Jobe, a Jeaga town, had a good deal of European goods which had been salvaged from Dickinson's wrecked ship, he went to Jobe himself and returned with most of it. This illustrates that the Jeaga, or at least the Jeaga town of Jobe, was in some kind of vassal-type relationship with the Ais, or at least with the town of Jece.

Thus, the main influence on the East Okeechobee Area during the seventeenth century seems to have come from those cultural areas to the north, such as the Indian River and St. Johns Areas, rather than from the Lake Okeechobee Area, as was previously thought. Contact and trade with the west certainly did occur, though. Influence from and trade with the Lake Okeechobee Area is evident in the East Okeechobee Area from the presence of Belle Glade Plain pottery. Several earthworks reminiscent of the Lake Okeechobee Area can also be found in the East Okeechobee Area. The Riviera Complex, for instance, was reported to have had sand earthworks (Goggin n.d.; Small, 1928).

St. Johns pottery can also be found in the Lake Okeechobee, Caloosahatchee, and Ten Thousand Island Areas. It is possible that this pottery, or at least the idea of making this type of pottery, made its way to the southwest coast from East Okeechobean contact with the Lake Okeechobee Area. The same can be said for the *Busycon* adzes which have been found in post-archaic contexts in the Belle Glade and Ten Thousand Island areas (Wheeler, 1993).

The strong influence of the Lake Okeechobee Area shown in the Boca Raton sites requires a more sophisticated political explanation, but a reasonable explanation can be given if patterns throughout southern Florida are examined. First, the Lake Okeechobee Area itself must be examined. This area is distinguished in part by remarkable earthworks. Complexes and earthwork sites like Fort Center, Big Mound City (8PB48), Big Gopher (8PB6292), Tony's Mound (8HN3) and others all provide evidence that demonstrates that the Lake Okeechobee peoples were, at least for a time, populous, successful, organized, and stratified enough to engage in such major undertakings. It is entirely possible that the Lake Okeechobee Area was

dominated by a chiefdom or proto-chiefdom long before their neighbors, the Calusa, were dominated by one. It is also entirely possible that the Lake Okeechobee proto-chiefdom established permanent coastal villages as a way to expand their influence and subsistence base and obtain marine tools and materials such as shark teeth and shell tools. It is suggested here that the dominance of Belle Glade Plain pottery in the Caloosahatchee Area from A.D. 650-1350 (Cordell, 1992), the dominance of this type in Boca Raton during part of this same period (Furey, 1972) and the construction of large linear earthworks in the Lake Okeechobee Area also during this period (Sears, 1982; Carr *et al.*, 1995; Griffin, 1988) provide evidence for these hypotheses.

It is also suggested here that the colonization of the Atlantic coast by Lake Okeechobee peoples was directed towards only one area, the region of present-day Boca Raton. Evidence for this hypothesis is provided in part by the presence of the Boynton Mound Complex (8PB56), about 11 miles to the northwest of Boca Raton, in what was once the eastern Everglades. This site contains several associated mounds and earthworks and is quite similar to sites farther north and west in the Lake Okeechobee Area. No other site like this has been identified in eastern Martin, Palm Beach, Broward, or Dade counties. Because of this fact and its close proximity and similarities to the Spanish River Complex, it is probable that the people living at the Boynton Mounds were Lake Okeechobean peoples who, like the Spanish River residents, migrated to the southeast at some point. The Boynton Mounds may represent the initial colony and/or a group of Spanish River residents who split from the main group on the coast. The Boynton residents probably served as intermediaries between the Lake Okeechobee Area heartland and the Spanish River colony.

Decorated ceramics are absent in this area until the appearance of St. Johns Check-Stamped pottery. The numerous incised sand-tempered types, which are used so successfully in the Everglades Area for relative dating of sites, are almost completely absent from the East Okeechobee Area, especially as one moves further north in the area. Sand-tempered plain is the dominant type, except in and around Boca Raton, which, as discussed, seems to be an eastern outpost for a Lake Okeechobee proto-chiefdom. Thus, sites closest to Boca Raton are expected to have a greater proportion of Belle Glade Plain pottery than sites farther to the north in this area. The types Belle Glade Plain, sand-tempered plain, St. Johns Plain, and St. Johns Check-Stamped make up the bulk of all ceramic artifacts found here. Other types, such as Savannah Fine Cord-marked, Surfside Incised, Engelwood Incised, Opa Locka Incised, Dunn's Creek Red, Carrabelle Punctated, Little Manatee Zoned Shell Stamped, St. Johns Simple Stamped, Weeden Island Incised, and Sarasota Incised have been recovered in very small amounts in the area and probably represent trade wares.

Non-ceramic artifacts that distinguish the East Okeechobee Area are *Busycon* adzes and picks typical of the Indian River and St. John's Areas. Rare trade items typical of these areas include greenstone artifacts like celts and plummets. Bone artifacts, such as points and hair pins, are not uncommon and a few have been recovered which display incised decorations (Wheeler, 1992b; Kennedy *et al.*, 1993).

Burials that have been encountered and reported demonstrate several mortuary practices, such as primary burial, extended burial, and bundle burial. Isolated burials have even been noted in village midden contexts (Kennedy *et al.*, 1993; DuBois, 1994). However, it is probable that the lack of discernable temporal and spatial patterns is due to a lack of general evidence and research in the area.

Site types are generally oyster shell or black earth middens. Both villages and camp sites have been located, with the largest sites being along the coast. Small coastal procurement sites have also be recorded, though. The Singer Island Site (8PB214), for instance, is located on a barrier island and seems to have served as both a site of procurement of sea turtles and other marine fauna and as a lookout point for the salvaging of shipwrecked European vessels (Dickel, 1988). Sand earthworks have also been occasionally noted, such as at the Riviera Complex mentioned earlier, at the Loxahatchee Earthwork Complex (8PB49), and at the Jupiter Inlet Complex (Douglass, 1880). Sand burial mounds, such as the Highland Beach Burial Mound (8PB11), the Nebot Site (8PB219), the Palm Beach Inlet Mound (8PB29), Palm Beach 4 (8PB26) and 8PB4 of the Boca Raton Complex are not uncommon and are usually associated with coastal village complexes. Some, such as the Highland Beach Mound, are, or were, quite extensive, containing large numbers of burials. A. E. Douglass (1882, 1885, 1890), an early explorer and amateur archaeologist, also reported excavating in a burial mound associated with the Jupiter Inlet Complex, although recent attempts to find this mound proved unsuccessful.

Almost all recorded habitation sites are located in what are now or what once were hardwood hammocks. Coastal sites are located in tropical hammocks and inland sites are generally located in “low” hammocks. There were several adaptive advantages associated with these ecosystems that made them quite attractive to the aborigines of the East Okeechobee Area and southern Florida in general. First, hammock vegetation especially that of low or “hydric” hammocks, produces a great amount of edible fruits and seeds (Ewel, 1990). Species that were or probably were important aboriginally include the cabbage palm, pigeon plum, *Ficus aurea* (strangler fig), and *Ficus citrifolia*, sea grape, “fox grapes,” laurel and live oaks, persimmon, and dahoon holly (Austin, 1980). In addition, large numbers of potential game animals, including deer, are attracted to hammocks during mast (acorn) producing season. Low hammocks are also usually tree islands, surrounded by water or other ecosystems. Camping or living in such a place would allow easy access to drinking water and other ecosystems for foraging. Hammocks are also generally moist enough so that fires, especially campfires, would not have been a potential problem. Flooding would not have been a problem either, as hammocks usually occupy fairly high ground. Hammocks in their natural state are also often fairly free of underbrush or herbs of any kind. This would make movement easy and provide work and living areas. Hammocks also lack the temperature extremes found in other ecosystems, providing enough shade during the day to keep temperatures within them fairly cool and trapping enough heat at night to keep temperatures from dropping too low. Finally, many hammock soils contain clay deposits, important for the manufacture of ceramic vessels.

A tentative and general chronology for the East Okeechobee Area follows. It must be stressed though, that very little research has been done in the area, and this chronology must certainly undergo future revisions and even wholesale changes as more evidence is collected.

Paleo Period (10000 B.C. to 8000 B.C.)

Paleoindians lived in southern Florida in association with mammoths, bison, and other types of megafauna. Deposits of fossilized Pleistocene bone have been uncovered by dredging operations from several locations in southern Florida and from solution holes in south Dade County. These deposits yielded a wide range of grazing ungulates and sloths, indicating the presence of more extensive grasslands than present (Webb and Martin, 1974). With the extinction of the megafauna by about 11000 B.P., Paleoindians apparently adapted to the emerging wetlands of southern Florida, and began to establish the patterns of subsistence that were to provide the basis of resource procurement for the subsequent 10,000 years. Evidence of the Paleo period in southern Florida is now well established with the discovery of a late Paleo/Early Archaic site at Cutler in south Dade County (Carr, 1986). Radiocarbon dates of 9640 ± 120 years B.P. were determined for this site, which yielded evidence of exploitation of deer and rabbit, some marine fauna, and some indication of hunting extinct horse and peccary. However, the majority of data from this site reflects Indian adaptation to the extinction of New World megafauna.

Archaic Period (7500 B.C. to 750 B.C.)

During the Post Glacial, the sea level rose and greatly diminished Florida's land size. It has been calculated that the rate of sea level rise was approximately 8.3 cm per 100 years from 6000 to 3000 B.P. That rate has decreased to about 3.5 cm per 100 years from 3000 B.P. to present (Scholl and Stuiver, 1967).

By 5000 B.P., cypress swamps and hardwood forests characteristic of the sub-tropics began to develop in southern Florida (Carbone, 1983; Delcourt and Delcourt, 1981). The Archaic Period was characterized by an increased reliance on the shellfish and marine resources on the coast by the native populations, and a generally expanded hunting, fishing, and plant gathering base throughout southern Florida.

Florida archaeologists recognize three temporal divisions for the Florida Archaic: early, middle, and late. Although these divisions have traditionally been based on changes in projectile points and pottery types, new environmental and climatic data and increased knowledge of artifact assemblages and site types are now also used for dividing the Archaic (Milanich, 1994).

Early Archaic (7500 B.C. to 5000 B.C.)

To date, only a few sites are known in southern Florida that contain early Archaic components. The Cutler Ridge site seems to date mainly to the early Archaic, as do the Little Salt Spring and Warm Mineral Spring sites in Sarasota County. These two sites are both deep sinkholes that were probably utilized as waterholes in the early Archaic. Other southern Florida sites from this time period may as yet be unidentified. If such sites are found they would be expected to be ancient cenotes or sinkholes, similar to the Sarasota sites, which served as ponds or waterholes in the past (Milanich, 1994).

Middle Archaic (5000 B.C. to 3000 B.C.)

During the middle Archaic more and larger areas of surface water were present in southern Florida. However, most known habitation sites are again located around ancient hydric sinkholes or around similar features, which would have been good sources of water in the past. Little Salt Spring and Warm Mineral Spring have sizable middle Archaic components as do the Bay West site in Collier County and the Republic Grove site in Hardee County (Milanich, 1994).

One extremely interesting culture trait that seems to be peculiar to the Early and Middle Archaic of southern Florida is the mortuary pond. The Bay West site (Beriault *et al.*, 1981), Little Salt Spring (Clausen *et al.*, 1979), Warm Mineral Spring (Royal and Clark, 1960), and the Republic Grove site (Wharton *et al.*, 1981) all contain human interments in what were shallow ponds during the middle Archaic. Preservation of organic materials from these pond burials is excellent because of the anaerobic condition of the ponds and the mucky soils that underlie them. Middle Archaic village middens are or were once located on the edges of these mortuary ponds.

In addition to mortuary ponds, small campsites are also common for the middle Archaic. These camps frequently occur as scatters of lithic artifacts and debitage. The Westridge site (8BD1119) on Pine Island ridge may be the only such mid-Archaic site identified so far in southeastern Florida (Carr *et al.*, 1992).

Late Archaic (3000 B.C. to 750 B.C.)

By 3000 B.C., the climate and environments of Florida had reached essentially modern conditions. This allowed for a regionalization of cultures as individual societies throughout Florida developed adaptations specific to their local environments (Milanich, 1994). During the late Archaic, the first pottery was produced by the aborigines of Florida. The development of ceramics is important as it suggests that the peoples of this time had adopted a more sedentary lifestyle.

In southeastern Florida, semi-fiber-tempered pottery has been recovered along Biscayne Bay at the Atlantis site (Carr, 1981a, b) and at interior sites such as the Honey Hill site (8DA411) (Carr *et al.*, 1992), the 202nd Street site in northern Dade County (Laxson, 1962), and the Markham Park site (8BD183) in Broward County (Mowers and Williams, 1974). Along the Atlantic coast east of Lake Okeechobee, a possible semi-fiber-tempered shard was recovered from the House of Refuge Midden on Hutchinson Island in Martin County during avocational excavations (Feaster, 1965). In addition, several possibly semi-fiber-tempered shards from another Hutchinson Island site, Santa Lucea (8MT37), are on display at the Elliot Museum. Several semi-fiber-tempered shards are also reported for Jupiter Inlet I (8PB34) farther south in Palm Beach County (Kennedy *et al.*, 1993). Semi-fiber-tempered shards were also recovered from the coastal Mt. Elizabeth site (8MT30) in a recent survey of Martin County (Carr *et al.*, 1995).

Other sites did not contain any ceramics. This suggests that they represent short-term hunting camps occupied temporarily by coastal inhabitants, or that they date to earlier mid-Archaic times. The extreme densities of some of these sites argues against them being anything other than permanent habitation sites. Research also shows that these tree island communities date back no farther than 5000 B.P., or 3000 B.C. (Kremer and Spackman, 1981). This seems to rule out habitation of these sites during periods earlier than the late Archaic, although the possibility remains that initial occupation may have begun during mid-Archaic times at some.

This Glades Archaic culture seems to have had little contact with other cultures. This is documented in part by the non-ceramic nature of these sites. As Sassaman (1993) discussed, the fiber-tempered pottery tradition was adopted and practiced intensively in only a few areas. Thus, it should not be difficult to imagine that a population dispersed among and well adapted to the interior marshes of southern Florida would have had no trouble avoiding contact with or resisting the influences of neighboring cultures. The ability of the Seminoles to do this well into modern times can be considered adequate evidence for this postulation.

The general lack of stone tools in southern Florida is obviously due in part to a corresponding lack of good lithic procurement sites here, but it may also have something to do with the postulated isolationist nature of the Glades Archaic peoples. The natural resources utilized and eaten by these people probably required little of the sort of archaeologically recognizable material culture represented by ceramic and lithic artifacts. Vegetable fibers, including wood, and bone probably provided most of the raw materials needed for artifact production. The use of biodegradable material translates into an incredibly low number of artifacts known from these sites. Most artifacts recovered are made from bone, although *Strombus* celts have been recovered from some sites. These celts may represent contact with coastal Orange cultures but most likely represent occasional coastal procurement by Glades Archaic populations themselves.

The Glades Archaic is postulated as being a culture that was well adapted to life within the newly formed interior wetlands of the late Archaic. This adaptation was so complete that Glades Archaic peoples were able to remain relatively unchanged for over 2,000 years.

East Okeechobee Period (Ca. 750 B.C. to 1750)

The recent research conducted by Florida Atlantic University makes it clear that Goggin's (1947) Glades chronology is not useful for the East Okeechobee Area. Therefore, a new chronology, specific to this area, is proposed. It must be noted though, that the only radiocarbon dates recorded in the area have come from Jupiter Inlet I (8PB34) and the following chronology is based mainly on sites in the Jupiter area. Thus, the chronology will be most successfully applied to sites found along the Loxahatchee River.

The East Okeechobee I period (750 B.C.-ca. A.D. 800) is characterized by the use of undecorated sand-tempered pottery in most of the area, such as in the Hungryland Midden (8PB6294) (Kennedy *et al.*, 1991), the numerous sites recently identified along the upper Loxahatchee River (Kennedy *et al.*, 1991; Kennedy, Jester, Pepe, Sinks, and Wernecke, 1994; Kennedy, Jester, Pepe, Sinks, Wernecke, and Flaherty, 1994; Carr, *et al.*, 1995), and in basal

levels of Jupiter Inlet I (8PB34) (Kennedy *et al.*, 1993). Belle Glade Plain is a minor type except in and around Boca Raton where it is the dominant type and sand-tempered plain is the minor type. This pattern is evidenced by the ceramic assemblage from the Spanish River Complex (Furey, 1972). Again, this is probably the result of a Lake Okeechobean settlement in the Boca Raton area. Other types of pottery are absent or make up only trace amounts of total assemblages from this period. It is important to note that this period is marked by an absence of St. Johns pottery. This seems to demonstrate a direct transition from the Glades Archaic culture rather than from the Orange culture.

As with the Glades Archaic, sites seem to be concentrated in the interior wetlands rather than on the coast. However, the upper Loxahatchee River sites seem to demonstrate that, unlike the earlier Glades Archaic, East Okeechobee I sites may be found along the upper reaches of rivers and streams in the area. These sites probably represent camps that were occupied seasonally and not located in exactly the same place every year. This would explain the extended length and unevenly distributed middens of most of the upper Loxahatchee sites. Coastal sites such as Jupiter Inlet I were probably occupied seasonally as well during this time. The time span for this period is quite long but it could possibly be broken down into sub-periods if more research is done in the area. Changes in ceramic rim styles may prove to be the most useful tool for this purpose.

The East Okeechobee II period can be tentatively stated as starting around A.D. 800 and extending to about A.D. 1000. This relatively short period is marked by the appearance of St. Johns Plain ceramics as documented at Jupiter Inlet I (8PB34) and Suni Sands (8PB7718). The noticeable lack of St. Johns ceramics in the interior sites mentioned for the last period testify to a change in settlement patterns for East Okeechobee II. It appears that permanent settlements in this period were concentrated along the coast for the first time (excepting earlier Orange settlements). In the southern part of the area, dominated by the proposed Lake Okeechobean settlement, this period is marked by an increase in the use of sand-tempered plain pottery and by a corresponding slight decrease in Belle Glade Plain. The dates for this period in and around Boca Raton may also be slightly later, perhaps from about A.D. 950 to A.D. 1200.

Jupiter Inlet I (8PB34) has provided a radiocarbon date on the beginning of the next period, East Okeechobee III. The marker type for this period, St. Johns Check-Stamped, makes its first appearance at about A.D. 1000. No date on the first appearance of this type has been obtained from the Spanish River Complex, but it may very well appear somewhat later, perhaps at around A.D. 1200, as it does in the rest of southern Florida. In all parts of the East Okeechobee Area though, this period is marked by a substantial increase in the St. Johns ceramic series, until St. Johns Plain and St. Johns Check-Stamped eventually become the dominant types. This can be seen at the Riviera Site (8PB30) (Wheeler, 1992). Before the St. Johns series becomes dominant in the Boca Raton area though, the increase in sand-tempered plain and decrease in Belle Glade Plain continues, so that, for a while at least, both the amounts of sand-tempered plain and the St. Johns wares are increasing simultaneously. This period ends with the appearance of European goods. A tentative date in line with other areas in southern Florida for sustained European contact is A.D. 1500.

Therefore, the next period, East Okeechobee IV, is marked by essentially the same ceramics as the previous period except that this period has the addition of European goods. The St. Johns series is dominant and the Riviera Site (8PB30) suggests that St. Johns Check-Stamped may actually be the most dominant ware. The tribe encountered in the East Okeechobee Area by Europeans at this time was called the Jeaga. It is possible that the Jeaga were under the political dominance of the Calusa, a tribe centered on the southwestern coast of Florida (Fontaneda in True, 1945). However, the large amounts of St. Johns pottery and other artifacts from the Indian River and St. Johns Areas in the East Okeechobee Area during this time suggest dominance by these northern areas instead. As mentioned before, Dickinson also observed that the Jeaga were forced to hand over his shipwrecked cargo to the Ais, their neighbors to the north. Thus, it would seem that if the Calusa did exert any control over the Jeaga, it was minimal or sporadic and was not nearly as strong as was that exerted by the Ais and perhaps by the Timucua farther to the north.

It has been estimated that there were about 20,000 Indians in south Florida when the Spanish arrived (Milanich and Fairbanks, 1980). By 1763, when the English gained control of Florida, that population had been reduced to several hundred. These last survivors were reported to have migrated to Cuba with the Spanish (Romans, 1962), however, it is likely that the so-called "Spanish Indians" (Sturtevant, 1953), who raided Indian Key in 1840, were the mixed-blood descendants of the Calusa and/or refugees from north Florida missions raided by the English in the early eighteenth century. The Spanish-Indians joined the Seminoles, who had fled en masse into south Florida in 1838 after the Battle of Okeechobee, although some Creek groups apparently had migrated to south Florida earlier in the century.

Historic Period (1750 AD to 1900 AD)

The earliest documentary evidence of Seminole settlement in south Florida is an account by John Lee Williams (1837) describing Snake Warrior's Island at the headwaters of Snake Creek. Recently, site 8BD1867 in Miramar in southern Broward County was identified as this site.

Seminole archaeology is a relatively new focus in South Florida, and recent work has contributed new data. Numerous Seminole sites have been identified in Palm Beach County, including those associated with Fort Jupiter and the Loxahatchee River (Carr *et al.*, 1994; Carr *et al.*, 1995; Pepe and Carr, 1996a and 1996b; Pepe *et al.*, 1998).

By the 1860s, several pioneer families had settled along the Indian River Lagoon/Lake Worth/Hutchinson Island coastal area. Fishing, citrus groves, and relatively primitive farming were some of the means of livelihood. In the 1890s railroad development, specifically that of the Florida East Coast Railway, began development in the region that continues to present-day.

Section 6.0

METHODOLOGY

Relevant archives and literature were reviewed prior to conducting fieldwork in the project parcel. This included, but was not limited to, studying previous archaeological reports on sites in the area, reviewing the Master Site File in Tallahassee to locate relevant archaeological sites in the area, and examining U.S. Geological Survey (USGS) maps as well as recent and vintage aerial photographs of the project parcels which could aid in revealing anthropogenic changes to the topography and floral communities.

6.1 RESEARCH DESIGN

The reconnaissance I archaeological survey of the Corbett Swap parcels was based on certain predictive archaeological site models. These models are based on topographic and vegetative signatures that are applicable in this particular area of Palm Beach and Martin counties. These models postulate that archaeological sites in the area are associated with upland hammock islands. The elevational information on the quadrangle maps for the area also was used. After reviewing the aerial photographs of the subject parcels, three archaeological targets were identified to be examined in the field.

6.2 FIELDWORK

A comprehensive pedestrian and windshield survey was conducted of the three parcels and alternative areas. The locations of all three of the archaeological targets were visited. Only low probability areas were observed for archaeological sites at these targets and throughout the parcels. No test holes were excavated.

6.3 INFORMANTS

No informants were interviewed for this assessment.

6.4 COLLECTIONS

No collections were made during this assessment.

Section 7.0

RESULTS AND CONCLUSIONS

This reconnaissance archaeological assessment of the Corbett land transfer parcels and the alternative plan parcels resulted in determining that no archaeological or historical sites occur on the parcels. All three parcels and alternatives were inspected and determined to be low probability areas for archaeological sites. None contained any evidence of any archaeological or historical sites, features, or artifacts. No structures occur on the parcel.

It is the opinion of the consultant that there will be no adverse impact to any archaeological sites regarded as potentially eligible for listing on the National Register of Historic Places (NRHP) by the proposed transfer of the subject properties or the implementation of any of the alternatives. In the unlikely event that isolated archaeological artifacts, features, or sites are encountered, then relevant reviewing agencies and the consultant archaeologist should be contacted. If human remains are encountered, then the guidelines of State Statute 872.05, the Unmarked Human Remains Act will apply.

Section 8.0

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APPENDIX A



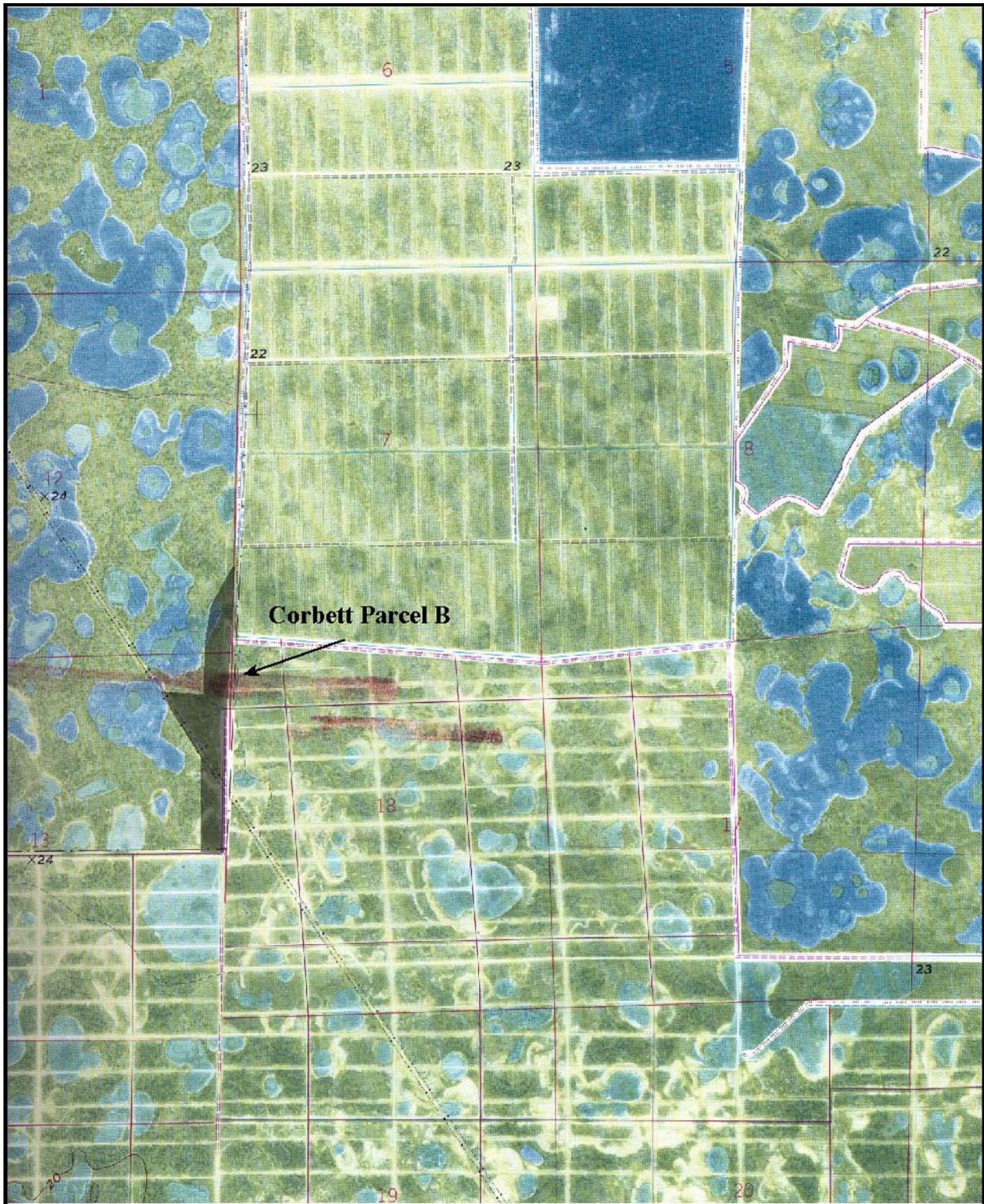
A-1 Map of Corbett Parcel A

0 1/2 1 mile



Source: USGS West of Road 1970 (revised 1984)

Section 24, T. 41, R. 40



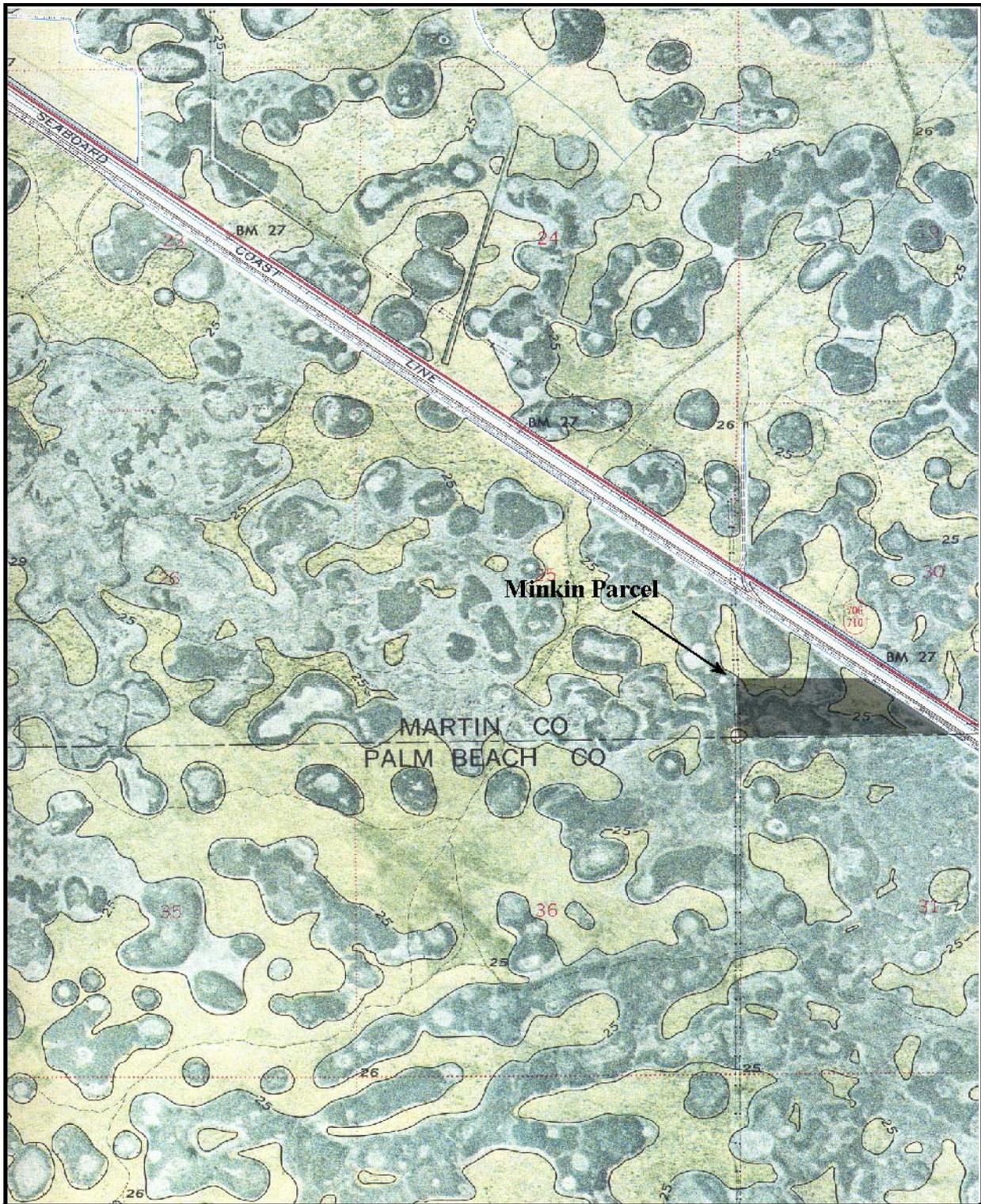
A-2 Map of Corbett Parcel B

0 1/2 1 mile



Sections 12, 13, T. 42, R. 40

Source: USGS West of Delta 1971 (revised 1984)



A-3 Map of the Minkin Parcel

0 1/2 1 mile



Source: USGS Big Mound North 1970

Section 30, T. 40, R. 40



A-4 Aerial Photograph Showing Corbett Parcel A

— = Project parcel boundaries

0 75 150 feet



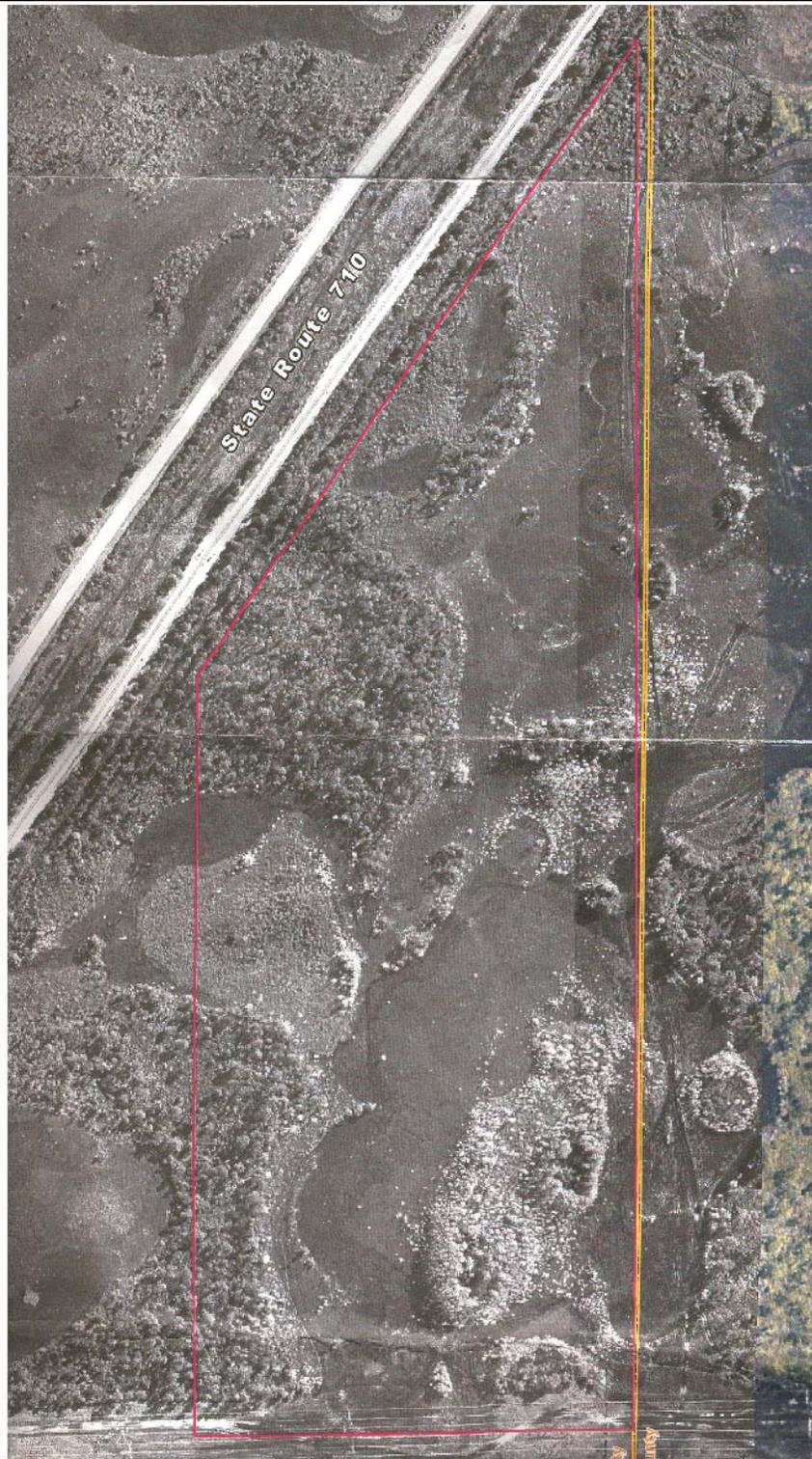


A-5 Aerial Photograph Showing Corbett Parcel B

— = Project parcel boundaries

0 150 300 feet





A-6 Aerial Photograph Showing the Minkin Parcel

— = Project parcel boundaries

0 100 200 feet





A-7 View North at Corbett Parcel A



A-8 View West at Corbett Parcel B



A-9 View West at the Minkin Parcel



A-10 View South at the Minkin Parcel