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RECEIVED-FPSC
12 MAY 10 AM 11:17
COMMISSION CLERK

May 7, 2012

Director
Division of the Commission Clerk and Administrative Service
Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee, FL 32399-0850

Re: Docket number 110298-SU

Dear Sir or Madam,

Enclosed for filing please find enclosed one original Protest in the above numbered utility certification, together with two exhibits that are too large to be emailed. Exhibit 1 is the Miami Corporation Farmton Mitigation Bank Enabling Instrument. Exhibit 2 is the report of Marc von Canal regarding the Farmton Mitigation Bank.

Respectfully submitted,

Lesley Blackner
Attorney for ECARD

02999 MAY 10 12
FPSC-COMMISSION CLERK

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Application for certificate) DOCKET NO. 110298-SU
to provide wastewater service in) ORDER No. PSC-12-0204- PAA-Su
Volusia and Brevard Counties by)
Farmton Water Resources LLC.)

PROTEST OF THE FINAL ORDER GRANTING CERTIFICATE NO. 564-S

Edgewater Citizens Alliance for Responsible Development ("ECARD") and Volusia-Flagler Sierra Club protest the Notice of Proposed Agency Action Setting Initial Rates and Charges and Final Order Granting Certificate No. 564-S, dated April 16, 2012 which established a wastewater utility For Farmton Water Resources, LLC and says in support thereof:

1. ECARD is a non-profit corporation based in Edgewater, Florida. ECARD's mission is to protect the semi-rural ambiance of the region from over-development. ECARD engages in political activity, public hearings, public education, and door-to-door communication.

02999 MAY 10 ≥
FPSC-COMMISSION CLERK

2. Volusia-Flagler Sierra Club is a non-profit organization dedicated to conservation and protection of the natural environment.

3. Both ECARD and Volusia-Flagler Sierra Club have actively opposed the development of the Farmton Local Plan on the 57,000 acres owned by Miami Corporation in Volusia and Brevard Counties. One reason for its opposition is the fact that since 2000, over 24,000 acres of the Farmton tract has operated as the Farmton Mitigation Bank ("FMB"), the largest wetland mitigation bank in the United States, established under the terms of the June 7, 2000 agreement Miami Corporation entered into with the U.S. Army Corps of Engineers, the US Environmental Agency and the U.S. Fish and Wildlife Service. A copy of the Miami Corporation Farmton Mitigation Bank Enabling Instrument ("FMB Enabling Instrument") is attached hereto as Exhibit "1" and incorporated as if fully stated herein.

4. The FMB Enabling Instrument states the goal for the FMB, providing in relevant part:

The goal of the mitigation plan is to provide restoration, enhancement, and preservation of wetlands and uplands within each of the three bank sites. Specific objectives include re-establishing surface water flows and wetland hydroperiods, allowing the regeneration of converted and previously harvested wetlands and uplands, improving the quality of habitat, greatly reducing the amount of hunting, phasing out cattle grazing, and preservation of ecosystems."

In addition to the self-contained ecological value of the Farmton Mitigation Bank, the bank is a valuable component of the natural corridor system that is being established along the St. Johns River. It is significant to the regional ecosystem, not only because of its large size, but also because it is adjacent to other conservation lands, including the Buck Lake property owned by the St. Johns River Water Management District, and the Colbert-Cameron Mitigation Bank. The property also lies near the Lake Monroe Mitigation Bank and South Lake Harney Conservation Areas. It consists of a major network of wildlife corridors extending from the east side of the St. Johns River to Crane Swamp and Spruce Creek Swamp (the headwaters of Spruce Creek). Numerous Listed Species (endangered and threatened) have been identified within each of the Bank sites. Much of the value of the bank lies in this fact: without the bank, most of the land could be used in perpetuity for either forestry or development.

(Page 2-3 of the FMB Enabling Instrument.)

5. The FMB is comprised of three separate, but hydrologically connected tracts within the greater Farmton property. The South bank site is 4,391 acres almost completely located within Brevard County. The remainder is within Volusia County.
6. The authorization of a wastewater territory designation within the FMB is contrary to the public interest. The authorization was granted on the basis of incomplete and erroneous information presented by the applicant. Further, the FMB Enabling Instrument precludes sewage activities and/or activities from FMB territory. ECARD and Volusia-Flagler Sierra Club protest the placement of the south site of the FMB within the authorized wastewater territory.
7. The FMB is administered by the Farmton Mitigation Banking Interagency Review Team ("IRT"), which includes the US Environmental Protection Agency, the US Army Corps of Engineers, the US Fish and Wildlife Service and the National Marine Fisheries Service. These federal agencies were not provided any notice, much less timely notice, of the instant

application and proceedings. These agencies were not informed by applicant of its application for a wastewater utility to be placed over the FMB. This deliberate omission resulted in a certification process that failed to provide the Public Service Commission with adequate information regarding the service territory and the unlawful incompatibility of a wastewater utility on a federal/state mitigation bank.

8. As of January 2012, 34.11 state credits have been sold on land within the south bank site. Federal credits have also been sold on the south bank site, which includes several rare salt marsh communities and a marsh lake, among other environmentally significant features. (See attachment 2, January 25, 2012 FMB report prepared by Marc von Canal, M.S.) Those lands within the south site of the FMB for which credits have been sold are encumbered with recorded conservation easements. The conservation easement used for the FMB is included in the FMB Enabling Instrument attached hereto as Exhibit 1. The

Conservation Easement forbids incompatible uses, and provides in relevant part:

> 1 Purpose. The purpose of this Conservation Easement is to assure that the Property (with the exception of included wetlands and uplands which are to be enhanced, restored or managed as specified in the aforementioned MBI and Permit) will be retained forever in its existing natural condition and to prevent any use of the Property that will impair or interfere with the environmental value of the property.
>
> ...
>
> 3. Prohibited Uses. Any activity or use of the Property inconsistent with the purpose of this Conservation Easement is prohibited.

9. It is thus inaccurate for applicant to state "Related parties Miami Corporation and Swallowtail LLC own almost all of the land proposed for certification by Farmton Water Resources LLC ("FWR") with the exception of five (5) parcels." (Letter dated February 17, 2012 from F. Marshall Deterding to Ann Cole.) The south FMB site is encumbered by the 2000 FMB Enabling

Instrument and specific parcels within the site are further encumbered by recorded conservation easements. Applicant failed to meet "proof of ownership" requirement set forth in Rule 25-30.033(1)(j), F.A.C. The applicant for the instant certification failed to disclose the full nature of the ownership interests governing the FMB.

10. In its objection to the instant utility, Volusia County observed that much of proposed territory for service within Volusia County "does erroneously include thousands of acres of land that is subject to permanent preservation under the Farmton Local Plan's GreenKey land use designation. This acreage will never need wastewater service." (Volusia County's Objection dated November 28, 2011.) Unfortunately, Volusia County failed to inform the Public Service Commission that most of this conserved property constitutes the FMB and is subject to the 2000 FMB Enabling Instrument and federal law. The south site of the FMB within Brevard County, like the sites within Volusia County, will never need wastewater service. The Public Service Commission

was not informed by any of the participating parties that much of the proposed territory for service constitutes the largest wetland mitigation bank in the United States.

11. Because the south FMB site is within the proposed wastewater territory, it will be subject to unlawful pollution and degradation resulting from installation of wastewater infrastructure and sewage activity. Such pollution, degradation and harm are contrary to the 2000 FMB Enabling Instrument, section 367.011(3), Florida Statutes (2011) and federal law. The likely pollution and degradation includes:

> **Disruption of hydrologic connectivity of the mitigation bank lands, degradation of the regional watershed and sensitive habitats due to roadway expansions, water withdrawals, and installation of wastewater utilities.** This will likely occur through channelization or impoundment of surface water and the resulting alteration of hydroperiods and disruption of sheet flows by Williamson Blvd. and numerous other roadway expansions; the drawdown of groundwater associated with the new water supply wells in close proximity to sensitive wetlands on bank lands; and installation of new wastewater utilities in close proximity to sensitive wetlands. *The newly proposed wastewater utilities carry the additional risk of chlorinated wastewater discharges into highly organic*

receiving waters, which may result in the formation of formaldehyde in the sensitive waters at potentially toxic levels. The net result of the proposed activities, in addition to the localized disruption of hydroperiods and flows, is an overall degradation of the two affected watersheds (Halifax River and St. Johns River) in terms of natural and historical flows, downstream detritus transport, and water quality.

Von Canal report at page 2. (Emphasis added.)

12. This protest is also submitted on the ground that there is no immediate, imminent or even remote need for this utility. Applicant asserts that construction is imminent near the interchange of Interstate 95 and State Road 5A. State Road 5A, also known as Stuckway Road, extends under I-95 and takes travelers east from I-95 to US Highway 1. Yet State Road 5A is unpaved beyond a few hundred feet of the western exit from the interchange and has remained unpaved and unimproved since the mid-1960s, when it was constructed. This is the location where applicant claims construction demand is imminent. The Florida Department of Transportation five year plan (2012-2017) for Brevard County shows no funding available for planning, much

less building any road infrastructure to extend 5A west. There is no evidence of any intent by Brevard or Volusia counties to extend State Road 5A west beyond the interchange within the next five years. A paved road is necessary to accommodate the nearly 800,000 square feet of mixed use construction claimed by applicant. But it will not be built within the next five years. Applicant erred in its claim that construction is imminent and thus the wastewater utility is imminently required. This application is, as Volusia County noted in its objection, "extremely premature and inconsistent with the Farmton Local Plan and the five year review provisions of Section 367.111(1) Florida Statutes." (Objection by Volusia County filed November 28, 2011).

WHEREFORE, ECARD and Volusia-Flagler Sierra Club submit this protest of the granting of a wastewater utility authorization to Farmton Water Resources, LLC and request that this protest be made part of the permanent record of the instant proceeding.

Dated: May 7, 2012

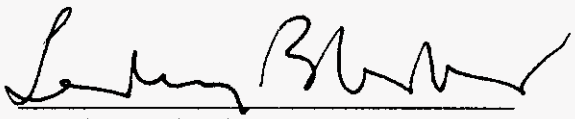
Respectfully submitted,

Lesley Blackner
340 Royal Poinciana Way
Suite 340
Palm Beach, FL 33480
Tel: 561-659-5754
Fax: 561-659-3184
Email: lblackner@aol.com

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that an original hereof has been served by US mail upon Director, Division of the Commission Clerk and Administrative Service, Florida Public Service Commission, 2540 Shumard Oak Blvd., Tallahassee, FL 32399-0850 and one copy upon F. Marshall Deterding, Rose Sundstrum & Bentley, 2548 Blairstone Pines Drive, Tallahassee, FL 32301 and Jamie Seaman & Derrill L McAteer, County of Volusia Legal Department, 123 West Indiana Avenue, Deland, FL 32720; Mr. Ron Miedema, USEPA, 400 North Congress Avenue, Suite 120, West Palm Beach, FL 33401; Erin Gawera & Dave Hankla, US Fish and Wildlife Service, 7915 Baymeadows Way, Suite

200, Jacksonville, FL 32256; Teresa Frame & Jon Griffin, US Army Corps of Engineers, P.O. Box 4970, Jacksonville, Florida 32232-0019: George Getsinger, NOAH-National Marine Fisheries Service, c/o GTM NERR Habitat Conservation Div., 9741 Ocean Shore Boulevard, St. Augustine, FL 2080-8618 this 7th day of May, 2012.



Lesley Blackner

been approved and may be used for reference in future. File is informational in nature and action does not result therefrom.

AUTHORITY FOR MAINTENANCE OF THE SYSTEM:

10 U.S.C. 8013, Secretary of the Air Force: powers and duties; delegation by and 8074, Commands: Territorial organization.

PURPOSE(S):

Used by Command Awards Branch for reference.

ROUTINE USES OF RECORDS MAINTAINED IN THE SYSTEM, INCLUDING CATEGORIES OF USERS AND THE PURPOSES OF SUCH USES:

In addition to those disclosures generally permitted under 5 U.S.C. 552a(b) of the Privacy Act, these records or information contained therein may specifically be disclosed outside the DoD as a routine use pursuant to 5 U.S.C. 552a(b)(3) as follows:

The 'Blanket Routine Uses' published at the beginning of the Air Force's compilation of record system notices apply to this system.

POLICIES AND PRACTICES FOR STORING, RETRIEVING, ACCESSING, RETAINING, AND DISPOSING OF RECORDS IN THE SYSTEM:

STORAGE:

Maintained in file folders.

RETRIEVABILITY:

Retrieved by name.

SAFEGUARDS:

Records are accessed by person(s) responsible for servicing the record system in performance of their official duties and by authorized personnel who are properly screened and cleared for need-to-know. Records are stored in locked rooms and cabinets.

RETENTION AND DISPOSAL:

Retained in office files until superseded, obsolete, no longer needed for reference, or on inactivation, then destroyed by tearing into pieces, shredding, pulping, macerating, or burning.

SYSTEM MANAGER(S) AND ADDRESS:

Director of Personnel, Headquarters Air Combat Command, 114 Douglas Street, Suite 214, Langley Air Force Base, VA 23665–2773.

NOTIFICATION PROCEDURE:

Individuals seeking to determine whether this system of records contains information on them should address inquiries to the Director of Personnel, Headquarters Air Combat Command, 114 Douglas Street, Suite 214, Langley Air Force Base, VA 23665–2773.

RECORD ACCESS PROCEDURES:

Individuals seeking to access records about themselves contained in this system should address requests to the Director of Personnel, Headquarters Air Combat Command, 114 Douglas Street, Suite 214, Langley Air Force Base, VA 23665–2773.

CONTESTING RECORD PROCEDURES:

The Air Force rules for accessing records and for contesting contents and appealing initial agency determinations are published in Air Force Instruction 37–132; 32 CFR part 806b, or may be obtained from the system manager.

RECORD SOURCE CATEGORIES:

Information obtained from previous employers and source documents such as reports.

EXEMPTIONS CLAIMED FOR THE SYSTEM:

None.

[FR Doc. 95–29004 Filed 11–27–95; 8:45 am]

BILLING CODE 5000–04–F

Department of the Army

Board of Visitors, United States Military Academy

AGENCY: United States Military Academy, West Point, New York.

ACTION: Notice of Open Meeting.

SUMMARY: In accordance with Section 10(a)(20) of the Federal Advisory Committee Act (P.L. 92–463), announcement is made of the following meeting.

Name of Committee: Board of Visitors, United States Military Academy.

Date of Meeting: 7 December 1995.

Place of Meeting: Russell Senate Office Building, Room 412, Washington, D.C.

Start Time of Meeting: 9:00 a.m.

Proposed Agenda: Preparation of Report to President; Commandant's Assessment of the Corps of Cadets, Report on Enhancing Teaching and Performance at USMA. All proceedings are open.

FOR FURTHER INFORMATION CONTACT: Lieutenant Colonel John J. Luther, United States Military Academy, West Point, NY 10996–5000, (914) 938–5870.

SUPPLEMENTARY INFORMATION: Please note that the Board of Visitors, United States Military Academy Meeting previously announced for 17 November at West Point, New York, was canceled due to the government shutdown.

Gregory D. Showalter,

Army Federal Register Liaison Officer.

[FR Doc. 95–28950 Filed 11–27–95; 8:45 am]

BILLING CODE 3710–08–M

DEPARTMENT OF DEFENSE

Department of the Army

Corps of Engineers

ENVIRONMENTAL PROTECTION AGENCY

DEPARTMENT OF AGRICULTURE

Natural Resources Conservation Service

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

Federal Guidance for the Establishment, Use and Operation of Mitigation Banks

AGENCIES: Corps of Engineers, Department of the Army, DOD; Environmental Protection Agency; Natural Resources Conservation Service, Agriculture; Fish and Wildlife Service, Interior; and National Marine Fisheries Service, National Oceanic and Atmospheric Administration, Commerce.

ACTION: Notice.

SUMMARY: The Army Corps of Engineers (Corps), Environmental Protection Agency (EPA), National Resources Conservation Service (NRCS), Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) are issuing final policy guidance regarding the establishment, use and operation of mitigation banks for the purpose of providing compensation for adverse impacts to wetlands and other aquatic resources. The purpose of this guidance is to clarify the manner in which mitigation banks may be used to satisfy mitigation requirements of the Clean Water Act (CWA) Section 404 permit program and the wetland conservation provisions of the Food Security Act (FSA) (i.e., "Swampbuster" provisions). Recognizing the potential benefits mitigation banking offers for streamlining the permit evaluation process and providing more effective mitigation for authorized impacts to wetlands, the agencies encourage the establishment and appropriate use of mitigation banks in the Section 404 and "Swampbuster" programs.

DATES: The effective date of this Memorandum to the Field is December 28, 1995.

FOR FURTHER INFORMATION CONTACT: Mr. Jack Chowning (Corps) at (202) 761–

1781; Mr. Thomas Kelsch (EPA) at (202) 260–8795; Ms. Sandra Byrd (NRCS) at (202) 690–3501; Mr. Mark Miller (FWS) at (703) 358–2183; Ms. Susan-Marie Stedman (NMFS) at (301) 713–2325.

SUPPLEMENTARY INFORMATION: Mitigating the environmental impacts of necessary development actions on the Nation's wetlands and other aquatic resources is a central premise of Federal wetlands programs. The CWA Section 404 permit program relies on the use of compensatory mitigation to offset unavoidable damage to wetlands and other aquatic resources through, for example, the restoration or creation of wetlands. Under the "Swampbuster" provisions of the FSA, farmers are required to provide mitigation to offset certain conversions of wetlands for agricultural purposes in order to maintain their program eligibility.

Mitigation banking has been defined as wetland restoration, creation, enhancement, and in exceptional circumstances, preservation undertaken expressly for the purpose of compensating for unavoidable wetland losses in advance of development actions, when such compensation cannot be achieved at the development site or would not be as environmentally beneficial. It typically involves the consolidation of small, fragmented wetland mitigation projects into one large contiguous site. Units of restored, created, enhanced or preserved wetlands are expressed as "credits" which may subsequently be withdrawn to offset "debits" incurred at a project development site.

Ideally, mitigation banks are constructed and functioning in advance of development impacts, and are seen as a way of reducing uncertainty in the CWA Section 404 permit program or the FSA "Swampbuster" program by having established compensatory mitigation credit available to an applicant. By consolidating compensation requirements, banks can more effectively replace lost wetland functions within a watershed, as well as provide economies of scale relating to the planning, implementation, monitoring and management of mitigation projects.

On August 23, 1993, the Clinton Administration released a comprehensive package of improvements to Federal wetlands programs which included support for the use of mitigation banks. At that same time, EPA and the Department of the Army issued interim guidance clarifying the role of mitigation banks in the Section 404 permit program and providing general guidelines for their establishment and use. In that document it was acknowledged that additional guidance would be developed, as necessary, following completion of the first phase of the Corps Institute for Water Resources national study on mitigation banking.

The Corps, EPA, NRCS, FWS and NMFS provided notice [60 FR 12286; March 6, 1995] of a proposed guidance on the policy of the Federal government regarding the establishment, use and operation of mitigation banks. The proposed guidance was based, in part, on the experiences to date with mitigation banking, as well as other environmental, economic and institutional issues identified through the Corps national study. Over 130 comments were received on the proposed guidance. The final guidance is based on full and thorough consideration of the public comments received.

A majority of the letters received supported the proposed guidance in general, but suggested modifications to one or more parts of the proposal. In response to these comments, several changes have been made to further clarify the provisions and make other modifications, as necessary, to ensure effective establishment and use of mitigation banks. One key issue on which the agencies received numerous comments focused on the timing of credit withdrawal. In order to provide additional clarification of the changes made to the final guidance in response to comments, the agencies wish to emphasize that it is our intent to ensure that decisions to allow credits to be withdrawn from a mitigation bank in advance of bank maturity be make on a case-by-case basis to best reflect the particular ecological and economic circumstances of each bank. The percentage of advance credits permitted for a particular bank may be higher or lower than the 15 percent example included in the proposed guidance. The final guidance is being revised to eliminate the reference to a specific percentage in order to provide needed flexibility. Copies of the comments and the agencies' response to significant comments are available for public review. Interested parties should contact the agency representatives for additional information.

This guidance does not change the substantive requirements of the Section 404 permit program or the FSA "Swampbuster" program. Rather, it interprets and provides internal guidance and procedures to the agency field personnel for the establishment, use and operation of mitigation banks consistent with existing regulations and policies of each program. The policies set out in this document are not final agency action, but are intended solely as guidance. The guidance is not intended, not can it be relied upon, to create any rights enforceable by any party in litigation with the United States. The guidance does not establish or affect legal rights or obligations, establish a binding norm on any party and it is not finally determinative of the issues addressed. Any regulatory decisions made by the agencies in any particular matter addressed by this guidance will be made by applying the governing law and regulations to the relevant facts. The purpose of the document is to provide policy and technical guidance to encourage the effective use of mitigation banks as a means of compensating for the authorized loss of wetlands and other aquatic resources.

John H. Zirschky,

Acting Assistant Secretary (Civil Works), Department of the Army.

Robert Perciasepe,

Assistant Administrator for Water, Environmental Protection Agency.

James R. Lyons,

Assistant Secretary, Natural Resources and Environment, Department of Agriculture.

George T. Frampton, Jr.,

Assistant Secretary for Fish and Wildlife and Parks, Department of the Interior.

Douglas K. Hall,

Assistant Secretary for Oceans and Atmosphere, Department of Commerce.

Memorandum to the Field

Subject: Federal Guidance for the Establishment, Use and Operation of Mitigation Banks

I. Introduction

A. Purpose and Scope of Guidance

This document provides policy guidance for the establishment, use and operation of mitigation banks for the purpose of providing compensatory mitigation for authorized adverse impacts to wetlands and other aquatic resources. This guidance is provided expressly to assist Federal personnel, bank sponsors, and others in meeting the requirements of Section 404 of the Clean Water Act (CWA), Section 10 of the Rivers and Harbors Act, the wetland conservation provisions of the Food Security Act (FS) (i.e., "Swampbuster"), and other applicable Federal statutes and regulations. The policies and procedures discussed herein are consistent with current requirements of the Section 10/404 regulatory program and "Swampbuster" provisions and are intended only to clarify the applicability of existing requirements to mitigation banking.

The policies and procedures discussed herein are applicable to the establishment, use and operation of public mitigation banks, as well as privately-sponsored mitigation banks, including third party banks (e.g. entrepreneurial banks).

B. Background

For purposes of this guidance, mitigation banking means the restoration, creation, enhancement and, in exceptional circumstances, preservation of wetlands and/or other aquatic resources expressly for the purpose of providing compensatory mitigation in advance of authorized impacts to similar resources.

The objective of a mitigation bank is to provide for the replacement of the chemical, physical and biological functions of wetlands and other aquatic resources which are lost as a result of authorized impacts. Using appropriate methods, the newly established functions are quantified as mitigation "credits" which are available for use by the bank sponsor or by other parties to compensate for adverse impacts (i.e., "debits"). Consistent with mitigation policies established under the Council on Environmental Quality Implementing Regulations (CEQ regulations) (40 CFR Part 1508.20), and the Section 404(b)(1) Guidelines (Guidelines) (40 CFR Part 230), the use of credits may only be authorized for purposes of complying with Section 10/404 when adverse impacts are unavoidable. In addition, for both the Section 10/404 and "Swampbuster" programs, credits may only be authorized when on-site compensation is either not practicable or use of a mitigation bank is environmentally preferable to on-site compensation. Prospective bank sponsors should not construe or anticipate participation in the establishment of a mitigation bank as ultimate authorization for specific projects, as excepting such projects from any applicable requirements, or as preauthorizing the use of credits from that bank for any particular project.

Mitigation banks provide greater flexibility to applicants needing to comply with mitigation requirements and can have several advantages over individual mitigation projects, some of which are listed below:

1. It may be more advantageous for maintaining the integrity of the aquatic ecosystem to consolidate compensatory mitigation into a single large parcel or contiguous parcels when ecologically appropriate;

2. Establishment of a mitigation bank can bring together financial resources, planning and scientific expertise not practicable to many project-specific compensatory mitigation proposals. This consolidation of resources can increase the potential for the establishment and long-term management of successful mitigation that maximizes opportunities for contributing to biodiversity and/or watershed function;

3. Use of mitigation banks may reduce permit processing times and provide more cost-effective compensatory mitigation opportunities for projects that qualify;

4. Compensatory mitigation is typically implemented and functioning in advance of project impacts, thereby reducing temporal losses of aquatic functions and uncertainty over whether the mitigation will be successful in offsetting project impacts;

5. Consolidation of compensatory mitigation within a mitigation bank increases the efficiency of limited agency resources in the review and compliance monitoring of mitigation projects, and thus improves the reliability of efforts to restore, create or enhance wetlands for mitigation purposes.

6. The existence of mitigation banks can contribute towards attainment of the goal for no overall net loss of the Nation's wetlands by providing opportunities to compensate for authorized impacts when mitigation might not otherwise be appropriate or practicable.

II. Policy Considerations

The following policy considerations provide general guidance for the establishment, use and operation of mitigation banks. It is the agencies' intent that this guidance be applied to mitigation bank proposals submitted for approval on or after the effective date of this guidance and to those in early stages of planning or development. It is not intended that this policy be retroactive for mitigation banks that have already received agency approval. While it is recognized that individual mitigation banking proposals may vary, it is the intent of this guidance that the fundamental precepts be applicable to future mitigation banks.

For the purposes of Section 10/104, and consistent with the CEQ regulations, the Guidelines, and the Memorandum of Agreement Between the Environmental Protection Agency (EPA) and the Department of the Army Concerning the Determination of Mitigation under the Clean Water Act Section 404(b)(1) Guidelines, mitigation means sequentially avoiding impacts, minimizing impacts, and compensating for remaining unavoidable impacts. Compensatory mitigation, under Section 10/404, is the restoration, creation, enhancement, or in exceptional circumstances, preservation of wetlands and/or other aquatic resources for the purpose of compensating for unavoidable adverse impacts. A site where wetlands and/or other aquatic resources are restored, created, enhanced, or in exceptional circumstances, preserved expressly for the purpose of providing compensatory mitigation in advance of authorized impacts to similar resources is a mitigation bank.

A. Authorities

This guidance is established in accordance with the following statutes, regulations, and policies. It is intended to clarify provisions within these existing authorities and does to establish any new requirements.

1. Clean Water Act Section 404 (33 U.S.C. 1344).

2. Rivers and Harbors Act of 1899 Section 10 (33 U.S.C. 403 *et seq.*)

3. Environmental Protection Agency, Section 404(b)(1) Guidelines (40 CFR Part 230). Guidelines for Specification of Disposal Sites for Dredged or Fill Material.

4. Department of the Army, Section 404 Permit Regulations (33 CFR Parts 320–330). Policies for evaluating permit applications to discharge dredged or fill material.

5. Memorandum of Agreement between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation under the Clean Water Act Section 404(b)(1) Guidelines (February 6, 1990).

6. Title XII Food Security Act of 1985 as amended by the Food, Agriculture, Conservation and Trade Act of 1990 (16 U.S.C. 3801 *et seq.*).

7. National Environmental Policy Act (42 U.S.C. 4321 *et seq.*), including the Council on Environmental Quality's implementing regulations (40 CFR Parts 1500–1508).

8. Fish and Wildlife Coordination Act (16 U.S.C. 661 *et seq.*).

9. Fish and Wildlife Service Mitigation Policy (46 FR pages 7644–7663, 1981).

10. Magnuson Fishery Conservation and Management Act (16 U.S.C. 1801 *et seq.*).

11. National Marine Fisheries Service Habitat Conservation Policy (48 FR pages 53142–53147, 1983).

The policies set out in this document are not final agency action, but are intended solely as guidance. The guidance is not intended, nor can it be relied upon, to create any rights

enforceable by any party in litigation with the United States. This guidance does not establish or affect legal rights or obligations, establish a binding norm on any party and it is not finally determinative of the issues addressed. Any regulatory decisions made by the agencies in any particular matter addressed by this guidance will be made by applying the governing law and regulations to the relevant facts.

B. Planning Considerations

1. Goal Setting

The overall goal of a mitigation bank is to provide economically efficient and flexible mitigation opportunities, while fully compensating for wetland and other aquatic resource losses in a manner that contributes to the long-term ecological functioning of the watershed within which the bank is to be located. The goal will include the need to replace essential aquatic functions which are anticipated to be lost through authorized activities within the bank's service area. In some cases, banks may also be used to address other resource objectives that have been identified in a watershed management plan or other resource assessment. It is desirable to set the particular objectives for a mitigation bank (i.e., the type and character of wetlands and/or aquatic resources to be established) in advance of site selection. The goal and objectives should be driven by the anticipated mitigation need; the site selected should support achieving the goal and objectives.

2. Site Selection

The agencies will give careful consideration to the ecological suitability of a site for achieving the goal and objectives of a bank, i.e., that it posses the physical, chemical and biological characteristics to support establishment of the desired aquatic resources and functions. Size and location of the site relative to other ecological features, hydrologic sources (including the availability of water rights), and compatibility with adjacent land uses and watershed management plans are important factors for consideration. It also is important that ecologically significant aquatic or upland resources (e.g., shallow sub-tidal habitat, mature forests), cultural sites, or habitat for Federally or State-listed threatened and endangered species are not compromised in the process of establishing a bank. Other significant factors for consideration include, but are not limited to, development trends (i.e., anticipated land use changes), habitat status and trends, local or regional goals for the restoration or protection of particular habitat types or functions (e.g., re-establishment of habitat corridors or habitat for species of concern), water quality and floodplain management goals, and the relative potential for chemical contamination of the wetlands and/or other aquatic resources.

Banks may be sited on public or private lands. Cooperative arrangements between public and private entities to use public lands for mitigation banks may be acceptable. In some circumstances, it may be appropriate to site banks on Federal, state, tribal or locally-owned resource management areas (e.g., wildlife management areas, national or state forests, public parks, recreation areas). The siting of banks on such lands may be acceptable if the internal policies of the public agency allow use of its land for such purposes, and the public agency grants approval. Mitigation credits generated by banks of this nature should be based solely on those values in the bank that are supplemental to the public program(s) already planned or in place, that is, baseline values represented by existing or already planned public programs, including preservation value, should not be counted toward bank credits.

Similarly, Federally-funded wetland conservation projects undertaken via separate authority and for other purposes, such as the Wetlands Reserve Program, Farmer's Home Administration fee title transfers or conservation easements, and Partners for Wildlife Program, cannot be used for the purpose of generating credits within a mitigation bank. However, mitigation credit may be given for activities undertaken in conjunction with, but supplemental to, such programs in order to maximize the overall ecological benefit of the conservation project.

3. Technical Feasibility

Mitigation banks should be planned and designed to be self-sustaining over time to the extent possible. The techniques for establishing wetlands and/or other aquatic resources must be carefully selected, since this science is constantly evolving. The restoration of historic or substantially-degraded wetlands and/or other aquatic resources (e.g., prior-converted cropland, farmed wetlands) utilizing proven techniques increases the likelihood of success and typically does not result in the loss of other valuable resources. Thus, restoration should be the first option considered when siting a bank. Because of the difficulty in establishing the correct hydrologic conditions associated with many creation projects and the tradeoff in wetland functions involved with certain enhancement activities, these methods should only be considered where there are adequate assurances to ensure success and that the project will result in an overall environmental benefit.

In general, banks which involve complex hydraulic engineering features and/or questionable water sources (e.g., pumped) are most costly to develop, operate and maintain, and have a higher risk of failure than banks designed to function with little or no human intervention. The former situations should only be considered where there are adequate assurances to ensure success. This guidance recognizes that in some circumstances wetlands must be actively managed to ensure their viability and sustainability. Furthermore, long-term maintenance requirements may be necessary and appropriate in some cases (e.g., to maintain fire-dependent plant communities in the absence of natural fire; to control invasive exotic plant species).

Proposed mitigation techniques should be well-understood and reliable. When uncertainties surrounding the technical feasibility of a proposed mitigation technique exist, appropriate arrangements (e.g., financial assurances, contingency plans, additional monitoring requirements) should be in place to increase the likelihood of success. Such arrangements may be phased-out or reduced once the attainment of prescribed performance standards is demonstrated.

4. Role of Preservation

Credit may be given when existing wetlands and/or other aquatic resources are preserved in conjunction with restoration, creation or enhancement activities, and when it is demonstrated that the preservation will augment the functions of the restored, created or enhanced aquatic resource. Such augmentation may be reflected in the total number of credits available from the bank.

In addition, the preservation of existing wetlands and/or other aquatic resources in perpetuity may be authorized as the sole basis for generating credits in mitigation banks only in exceptional circumstances, consistent with existing regulations, policies and guidance. Under such circumstances, preservation may be accomplished through the implementation of appropriate legal mechanisms (e.g., transfer of deed, deed restrictions, conservation easement) to protect wetlands and/or other aquatic resources, accompanied by

implementation of appropriate changes in land use or other physical changes as necessary (e.g., installation of restrictive fencing).

Determining whether preservation is appropriate as the sole basis for generating credits at a mitigation bank requires careful judgment regarding a number of factors. Consideration must be given to whether wetlands and/or other aquatic resources proposed for preservation (1) perform physical or biological functions, the preservation of which is important to the region in which the aquatic resources are located, and (2) are under demonstrable threat of loss or substantial degradation due to human activities that might not otherwise be expected to be restricted. The existence of a demonstrable threat will be based on clear evidence of destructive land use changes which are consistent with local and regional land use trends and are not the consequence of actions under the control of the bank sponsor. Wetlands and other aquatic resources restored under the Conservation Reserve Program or similar programs requiring only temporary conservation easements may be eligible for banking credit upon termination of the original easement if the wetlands are provided permanent protection and it would otherwise be expected that the resources would be converted upon termination of the easement. The number of mitigation credits available from a bank that is based solely on preservation should be based on the functions that would otherwise be lost or degraded if the aquatic resources were not preserved, and the timing of such loss or degradation. As such, compensation for aquatic resource impacts will typically require a greater number of acres from a preservation bank than from a bank which is based on restoration, creation or enhancement.

5. Inclusion of Upland Areas

Credit may be given for the inclusion of upland areas occurring within a bank only to the degree that such features increase the overall ecological functioning of the bank. If such features are included as part of a bank, it is important that they receive the same protected status as the rest of the bank and be subject to the same operational procedures and requirements. The presence of upland areas may increase the per-unit value of the aquatic habitat in the bank. Alternatively, limited credit may be given to upland areas protected within the bank to reflect the functions inherently provided by such areas (e.g., nutrient and sediment filtration of stormwater runoff, wildlife habitat diversity) which directly enhance or maintain the integrity of the aquatic ecosystem and that might otherwise be subject to threat of loss or degradation. An appropriate functional assessment methodology should be used to determine the manner and extent to which such features augment the functions of restored, created or enhanced wetlands and/or other aquatic resources.

6. Mitigation Banking and Watershed Planning

Mitigation banks should be planned and developed to address the specific resource needs of a particular watershed. Furthermore, decisions regarding the location, type of wetlands and/or other aquatic resources to be established, and proposed uses of a mitigation bank are most appropriately made within the context of a comprehensive watershed plan. Such watershed planning efforts often identify categories of activities having minimal adverse effects on the aquatic ecosystem and that, therefore, could be authorized under a general permit. In order to reduce the potential cumulative effects of such activities, it may be appropriate to offset these types of impacts through the use of a mitigation bank established in conjunction with a watershed plan.

C. Establishment of Mitigation Banks

1. Prospectus

Prospective bank sponsors should first submit a prospectus to the Army Corps of Engineers (Corps) or Natural Resources Conservation Service (NRCS)[1] to initiate the planning and review process by the appropriate agencies. Prior to submitting a prospectus, bank sponsors are encouraged to discuss their proposal with the appropriate agencies (e.g., pre-application coordination).

It is the intent of the agencies to provide practical comments to the bank sponsors regarding the general need for and technical feasibility of proposed banks. Therefore, bank sponsors are encouraged to include in the prospectus sufficient information concerning the objectives for the bank and how it will be established and operated to allow the agencies to provide such feedback. Formal agency involvement and review is initiated with submittal of a prospectus.

[1] The Corps will typically serve as the lead agency for the establishment of mitigation banks. Bank sponsors proposing establishment of mitigation banks solely for the purpose of complying with the "Swampbuster" provisions of FSA should submit their prospectus to the NRCS.

2. Mitigation Banking Instruments

Information provided in the prospectus will serve as the basis for establishing the mitigation banking instrument. All mitigation banks need to have a banking instrument as documentation of agency concurrence on the objectives and administration of the bank. The banking instrument should describe in detail the physical and legal characteristics of the bank, and how the bank will be established and operated. For regional banking programs sponsored by a single entity (e.g., a state transportation agency), it may be appropriate to establish an "umbrella" instrument for the establishment and operation of multiple bank sites. In such circumstances, the need for supplemental site-specific information (e.g., individual site plans) should be addressed in the banking instrument. The banking instrument will be signed by the bank sponsor and the concurring regulatory and resource agencies represented on the Mitigation Bank Review Team (section II.C.2). The following information should be addressed, as appropriate, within the banking instrument:

a. Bank goals and objectives;
b. Ownership of bank lands;
c. Bank size and classes of wetlands and/or other aquatic resources proposed for inclusion in the bank, including a site plan and specifications;
d. Description of baseline conditions at the bank site;
e. Geographic service area;
f. Wetland classes or other aquatic resource impacts suitable for compensation;
g. Methods for determining credits and debits;
h. accounting procedures;
i. Performance standards for determining credit availability and bank success;
j. Reporting protocols and monitoring plan;
k. Contingency and remedial actions and responsibilities;
l. Financial assurances;
m. Compensation ratios;
n. Provisions for long-term management and maintenance.

The terms and conditions of the banking instrument may be amended, in accordance with the procedures used to establish the instrument and subject to agreement by the signatories.

In cases where initial establishment of the mitigation bank involves a discharge into waters of the United States requiring Section 10/404 authorization, the banking instrument will be made part of a Department of the Army permit for that discharge. Submittal of an

individual permit application should be accompanied by a sufficiently-detailed prospectus to allow for concurrent processing of each. Preparation of a banking instrument, however, should not alter the normal permit evaluation process timeframes. A bank sponsor may proceed with activities for the construction of a bank subsequent to receiving the Department of the Army authorization. It should be noted, however, that a bank sponsor who proceeds in the absence of a banking instrument does so at his/her own risk.

In cases where the mitigation bank is established pursuant to the FSA, the banking instrument will be included in the plan developed or approved by NRCS and the Fish and Wildlife Service (FWS).

3. Agency Roles and Coordination

Collectively, the signatory agencies to the banking instrument will comprise the Mitigation Bank Review Team (MBRT). Representatives from the Corps, EPA, FWS, National Marine Fisheries Service (NMFS) and NRCS, as appropriate given the projected use for the bank, should typically comprise the MBRT. In addition, it is appropriate for representatives from state, tribal and local regulatory and resource agencies to participate where an agency has authorities and/or mandates directly affecting or affected by the establishment, use or operation of a bank. No agency is required to sign a banking instrument; however, in signing a banking instrument, an agency agrees to the terms of that instrument.

The Corps will serve as Chair of the MBRT, except in cases where the bank is proposed solely for the purpose of complying with the FSA, in which case NRCS will be the MBRT Chair. In addition, where a bank is proposed to satisfy the requirements of another Federal, state, tribal or local program, it may be appropriate for the administering agency to serve as co-Chair of the MBRT.

The primary role of the MBRT is to facilitate the establishment of mitigation banks through the development of mitigation banking instruments. Because of the different authorities and responsibilities of each agency represented on the MBRT, there is a benefit in achieving agreement on the banking instrument. For this reason, the MBRT will strive to obtain consensus on its actions. The Chair of the MBRT will have the responsibility for making final decisions regarding the terms and conditions of the banking instrument where consensus cannot otherwise be reached within a reasonable timeframe (e.g., 90 days from the date of submittal of a complete prospectus). The MBRT will review and seek consensus on the banking instrument and final plans for the restoration, creation, enhancement, and/or preservation of wetlands and other aquatic resources.

Consistent with its authorities under Section 10/404, the Corps is responsible for authorizing use of a particular mitigation bank on a project-specific basis and determining the number and availability of credits required to compensate for proposed impacts in accordance with the terms of the banking instrument. Decisions rendered by the Corps must fully consider review agency comments submitted as part of the permit evaluation process. Similarly, the NRCS, in consultation with the FWS, will make the final decision pertaining to the withdrawal of credits from banks as appropriate mitigation pursuant to FSA.

4. Role of the Bank Sponsor

The bank sponsor is responsible for the preparation of the banking instrument in consultation with the MBRT. The bank sponsor should, therefore, have sufficient opportunity to discuss the content of the banking instrument with the MBRT. The bank sponsor is also responsible for the overall operation and management of the bank in accordance with the terms of the banking instrument, including the preparation and distribution of monitoring reports and accounting statements/ledger, as necessary.

5. Public Review and Comment

The public should be notified of and have an opportunity to comment on all bank proposals. For banks which require authorization under an individual Section 10/404 permit or a state, tribal or local program that involves a similar public notice and comment process, this condition will typically be satisfied through such standard procedures. For other proposals, the Corps or NRCS, upon receipt of a complete banking prospectus, should provide notification of the availability of the prospectus for a minimum 21-day public comment period. Notification procedures will be similar to those used by the Corps in the standard permit review process. Copies of all public comments received will be distributed to the other members of the MBRT and the bank sponsor for full consideration in the development of the final banking instrument.

6. Dispute Resolution Procedure

The MBRT will work to reach consensus on its actions in accordance with this guidance. It is anticipated that all issues will be resolved by the MBRT in this manner.

a. Development of the Banking Instrument

During the development of the banking instrument, if any agency representative considers that a particular decision raises concern regarding the application of existing policy or procedures, an agency may request, through written notification, that the issue be reviewed by the Corps District Engineer, or NRCS State Conservationist, as appropriate. Said notification will describe the issue in sufficient detail and provide recommendations for resolution. Within 20 days, the District Engineer or State Conservationist (as appropriate) will consult with the notifying agency(ies) and will resolve the issue. The resolution will be forwarded to the other MBRT member agencies. The bank sponsor may also request the District Engineer or State Conservationist review actions taken to develop the banking instrument if the sponsor believes that inadequate progress has been made on the instrument by the MBRT.

b. Application of the Banking Instrument

As previously stated, the Corps and NRCS are responsible for making final decisions on a project-specific basis regarding the use of a mitigation bank for purposes of Section 10/404 and FSA, respectively. In the event an agency on the MBRT is concerned that a proposed use may be inconsistent with the terms of the banking instrument, that agency may raise the issue to the attention of the Corps or NRCS through the permit evaluaiton process. In order to facilitate timely and effective consideration of agency comments, the Corps or NRCS, as appropriate, will advise the MBRT agencies of a proposed use of a bank. The Corps will fully consider comments provided by the review agencies regarding mitigation as part of the permit evaluation process. The NCRS will consult with FWA is making its decisions pertaining to mitigation.

If, in the view of an agency on the MBRT, an issued permit or series of permits reflects a pattern of concern regarding the application of the terms of the banking instrument, that agency may initiate review of the concern by the full MBRT through written notification to the MBRT Chair. The MBRT Chair will convene a meeting of the MBRT, or initiate another appropriate forum for communication, typically within 20 days of receipt of notification, to resolve concerns. Any such effort to address concerns

regarding the application of a banking instrument will not delay any decision pending before the authorizing agency (e.g., Corps or NRCS).

D. Criteria for Use of a Mitigation Bank

1. Project Applicability

All activities regulated under Section 10/404 may be eligible to use a mitigation bank as compensation for unavoidable impacts to wetlands and/or other aquatic resources. Mitigation banks established for FSA purposes may be debited only in accordance with the mitigation and replacement provisions of 7 CFR Part 12.

Credits from mitigation banks may also be used to compensate for environmental impacts authorized under other programs (e.g., state or local wetland regulatory programs, NPDES program, Corps civil works projects, Superfund removal and remedial actions). In no case may the same credits be used to compensate for more than one activity; however, the same credits may be used to compensate for an activity which requires authorization udner more than one program.

2. Relationship to Mitigation Requirements

Under the existing requirements of Section 10/404, all appropriate and practicable steps must be undertaken by the applicant to first avoid and then minimize adverse impacts to aquatic resources, prior to authorization to use a particular mitigation bank. Remaining unavoidable impacts must be compensated to the extent appropriate and practicable. For both the Section 10/404 and "Swampbuster" programs, requirements for compensatory mitigation may be satisfied through the use of mitigation banks when either on-site compensation is not practicable or use of the mitigation bank is environmentally preferable to on-site compensation.

It is important to emphasize that applicants should not expect that establishment of, or purchasing credits from, a mitigation bank will necessarily lead to a determination of compliance with applicable mitigation requirements (i.e., Section 404(b)(1) Guidelines or FSA Manual), or as excepting projects from any applicable requirements.

3. Geographic Limits of Applicability

The service area of a mitigation bank is the area (e.g., watershed, county) wherein a bank can reasonably be expected to provide appropriate compensation for impacts to wetlands and/or other aquatic resources. This area should be designated in the banking instrument. Designation of the service area should be based on consideration of hydrologic and biotic criteria, and be stipulated in the banking instrument. Use of a mitigation bank to compensate for impacts beyond the designated service area may be authorized, on a case-by-case basis, where it is determined to be practicable and environmentally desirable.

The geographic extent of a service area should, to the extent environmentally desirable, be guided by the cataloging unit of the "Hydrologic Unit map of the United States" (USGS, 1980) and the ecoregion of the "Ecoregions of the United States" (James M. Omernik, EPA, 1986) or section of the "Descriptions of the Ecoregions of the United States" (Robert G. Bailey, USDA, 1980). It may be appropriate to use other classification systems developed at the state or regional level for the purpose of specifying bank service areas, when such systems compare favorably in their objectives and level of detail. In the interest of the integrating banks with other resource management objectives, bank service areas may encompass larger watershed areas if the designation of such areas is supported by local or regional management plans (e.g., Special Area Management Plans, Advance Identification), State Wetland Conservation Plans or other Federally sponsored or recognized resource management plans. Furthermore, designation of a more inclusive service area may be appropriate for mitigation banks whose primary purpose is to compensate for linear projects that typically involve numerous small impacts in several different watersheds.

4. Use of a Mitigation Bank vs. On-Site Mitigation

The agencies' preference for on-site mitigation, indicated in the 1990 Memorandum of Agreement on mitigation between the EPA and the Department of the Army, should not preclude the use of a mitigation bank when there is no practicable opportunity for on-site compensation, or when use of a bank is environmentally preferable to on-site compensation. On-site mitigation may be preferable where there is a practicable opportunity to compensate for important local functions including local flood control functions, habitat for a species or population with a very limited geographic range or narrow environmental requirements, or where local water quality concerns dominate.

In choosing between on-site mitigation and use of a mitigation bank, careful consideration should be given to the likelihood for successfully establishing the desired habitat type, the compatibility of the mitigation project with adjacent land uses, and the practicability of long-term monitoring and maintenance to determine whether the effort will be ecologically sustainable, as well as the relative cost of mitigation alternatives. In general, use of a mitigation bank to compensate for minor aquatic resource impacts (e.g., numerous, small impacts associated with linear projects; impacts authorized under nationwide permits) is preferable to on-site mitigation. With respect to larger aquatic resource impacts, use of a bank may be appropriate if it is capable of replacing essential physical and/or biological functions of the aquatic resources which are expected to be lost or degraded. Finally, there may be circumstances warranting a combination of on-site and off-site mitigation to compensate for losses.

5. In-kind vs. Out-of-kind Mitigation Determinations

In the interest of achieving functional replacement, in-kind compensation of aquatic resource impacts should generally be required. Out-of-kind compensation may be acceptable if it is determined to be practicable and environmentally preferable to in-kind compensation (e.g., of greater ecological value to a particular region). However, non-tidal wetlands should typically not be used to compensate for the loss or degradation of tidal wetlands. Decisions regarding out-of-kind mitigation are typically made on a case-by-case basis during the permit evaluation process. The banking instrument may identify circumstances in which it is environmentally desirable to allow out-of-kind compensation within the context of a particular mitigation bank (e.g., for banks restoring a complex of associated wetland types). Mitigation banks developed as part of an area-wide management plan to address a specific resource objective (e.g., restoration of a particularly vulnerable or valuable wetland habitat type) may be such an example.

6. Timing of Credit Withdrawal

The number of credits available for withdrawal (i.e., debiting) should generally be commensurate with the level of aquatic functions attained at a bank at the time of debiting. The level of function may be determined through the application of performance standards tailored to the specific restoration, creation or enhancement activity at the bank site or through the use of an appropriate functional assessment methodology.

The success of a mitigation bank with regard to its capacity to establish a healthy and fully functional aquatic system relates directly to both the ecological and financial stability of the bank. Since financial considerations are particularly critical in early stages of bank development, it is generally appropriate, in cases where there is adequate financial assurance and where the likelihood of the success of the bank is high, to allow limited debiting of a percentage of the total credits projected for the bank at maturity. Such determinations should take into consideration the initial capital costs needed to establish the bank, and the likelihood of its success. However, it is the intent of this policy to ensure that those actions necessary for the long-term viability of a mitigation bank be accomplished prior to any debiting of the bank. In this regard, the following minimum requirements should be satisfied prior to debiting: (1) banking instrument and mitigation plans have been approved; (2) bank site has been secured; and (3) appropriate financial assurances have been established. In addition, initial physical and biological improvements should be completed no later than the first full growing season following initial debiting of a bank. The temporal loss of functions associated with the debiting of projected credits may justify the need for requiring higher compensation ratios in such cases. For mitigation banks which propose multiple-phased construction, similar conditions should be established for each phase.

Credits attributed to the preservation of existing aquatic resources may become available for debiting immediately upon implementation of appropriate legal protection accompanied by appropriate changes in land use or other physical changes, as necessary.

7. Crediting/Debiting/Accounting Procedures

Credits and debits are the terms used to designate the units of trade (i.e., currency) in mitigation banking. Credits represent the accrual or attainment of aquatic functions at a bank; debits represent the loss of aquatic functions at an impact or project site. Credits are debited from a bank when they are used to offset aquatic resource impacts (e.g. for the purpose of satisfying Section 10/404 permit or FSA requirements).

An appropriate functional assessment methodology (e.g., Habitat Evaluation Procedures, hydrogeomorphic approach to wetlands functional assessment, other regional assessment methodology) acceptable to all signatories should be used to assess wetland and/or other aquatic resource restoration, creation and enhancement activities within a mitigation bank, and to quantify the amount of available credits. The range of functions to be assessed will depend upon the assessment methodology identified in the banking instrument. The same methodology should be used to assess both credits and debits. If an appropriate functional assessment methodology is impractical to employ, acreage may be used as a surrogate for measuring function. Regardless of the method employed, the number of credits should reflect the difference between site conditions under the with- and without-bank scenarios.

The bank sponsor should be responsible for assessing the development of the bank and submitting appropriate documentation of such assessments to the authorizing agency(ies), who will distribute the documents to the other members of the MBRT for review. Members of the MBRT are encouraged to conduct regular (e.g., annual) on-site inspections, as appropriate, to monitor bank performance. Alternatively, functional assessments may be conducted by a team representing involved resources and regularly agencies and other appropriate parties. The number of available credits in a mitigation bank may need to be adjusted to reflect actual conditions.

The banking instrument should require that bank sponsors establish and maintain an accounting system (i.e., ledger) which documents the activity of all mitigation bank accounts. Each time an approved debit/credit transaction occurs at a given bank, the bank sponsor should submit a statement to the authorizing agency(ies). The bank sponsor should also generate an annual ledger report for all mitigation bank accounts to be submitted to the MBRT Chair for distribution to each member of the MBRT.

Credits may be sold to third parties. The cost of mitigation credits to a third party is determined by the bank sponsor.

Party Responsible for Bank Success

The bank sponsor is responsible for assuring the success of the debited restoration, creation, enhancement and preservation activities at the mitigation bank, and it is therefore extremely important that an enforceable mechanism be adopted establishing the responsibility of the bank sponsor to develop and operate the bank properly. Where authorization under Section 10/404 and/or FSA is necessary to establish the bank, the Department of the Army permit or NRCS plan should be conditioned to ensure that provisions of the banking instrument are enforceable by the appropriate agency(ies). In circumstances where establishment of a bank does not require such authorization, the details of the bank sponsor's responsibilities should be delineated by the relevant authorizing agency (e.g., the Corps in the case of Section 10/404 permits) in any permit in which the permittee's mitigation obligations are met through use of the bank. In addition, the bank sponsor should sign such permits for the limited purpose of meeting those mitigation responsibilities, thus confirming that those responsibilities are enforceable against the bank sponsor if necessary.

E. Long-Term Management, Monitoring and Remediation

1. Bank Operational Life

The operational life of a bank refers to the period during which the terms and conditions of the banking instrument are in effect. With the exception of arrangements for the long-term management and protection in perpetuity of the wetlands and/or other aquatic resources, the operational life of a mitigation bank terminates at the point when (1) Compensatory mitigation credits have been exhausted or banking activity is voluntarily terminated with written notice by the bank sponsor provided to the Corps or NRCS and other members of the MBRT, and (2) it has been determined that the debited bank is functionally mature and/or self-sustaining to the degree specified in the banking instrument.

2. Long-term Management and Protection

The wetlands and/or other aquatic resources in a mitigation bank should be protected in perpetuity with appropriate real estate arrangements (e.g., conservation easements, transfer of title to Federal or State resource agency or non-profit conservation organization). Such arrangements should effectively restrict harmful activities (i.e., incompatible uses [2]) that might otherwise jeopardize the purpose of the bank. In exceptional circumstances, real estate arrangements may be approved which dictate finite protection for a bank (e.g., for coastal protection projects which prolong the ecological viability of

[2] For example, certain silvicultural practices (e.g. clear cutting and/or harvests on short-term rotations) may be incompatible with the objectives of a mitigation bank. In contrast, silvicultural practices such as long-term rotations, selective cutting, maintenance of vegetation diversity, and undisturbed buffers are more likely to be considered a compatible use.

the aquatic system). However, in no case should finite protection extend for a lesser time than the duration of project impacts for which the bank is being used to provide compensation.

The bank sponsor is responsible for securing adequate funds for the operation and maintenance of the bank during its operational life, as well as for the long-term management of the wetlands and/or other aquatic resources, as necessary. The banking instrument should identify the entity responsible for the ownership and long-term management of the wetlands and/or other aquatic resources. Where needed, the acquisition and protection of water rights should be secured by the bank sponsor and documented in the banking instrument.

3. Monitoring Requirements

The bank sponsor is responsible for monitoring the mitigation bank in accordance with monitoring provisions identified in the banking instrument to determine the level of success and identify problems requiring remedial action. Monitoring provisions should be set forth in the banking instrument and based on scientifically sound performance standards prescribed for the bank. monitoring should be conducted at time intervals appropriate for the particular project type and until such time that the authorizing agency(ies), in consultation with the MBRT, are confident that success is being achieved (i.e., performance standards are attained). The period for monitoring will typically be five years; however, it may be necessary to extend this period for projects requiring more time to reach a stable condition (e.g., forested wetlands) or where remedial activities were undertaken. Annual monitoring reports should be submitted to the authorizing agency(ies), who is responsible for distribution to the other members of the MBRT, in accordance with the terms specified in the banking instrument.

4. Remedial Action

The banking instrument should stipulate the general procedures for identifying and implementing remedial measures at a bank, or any portion thereof. Remedial measures should be based on information contained in the monitoring reports (i.e., the attainment of prescribed performance standards), as well as agency site inspections. The need for remediation will be determined by the authorizing agency(ies) in consultation with the MBRT and bank sponsor.

5. Financial Assurances

The bank sponsor is responsible for securing sufficient funds or other financial assurances to cover contingency actions in the event of bank default or failure. Accordingly, banks posing a greater risk of failure and where credits have been debited, should have comparatively higher financial sureties in place, than those where the likelihood of success is more certain. In addition, the bank sponsor is responsible for securing adequate funding to monitor and maintain the bank throughout its operational life, as well as beyond the operational life if not self-sustaining. Total funding requirements should reflect realistic cost estimates for monitoring, long-term maintenance, contingency and remedial actions.

Financial assurances may be in the form of performance bonds, irrevocable trusts, escrow accounts, casualty insurance, letters of credit, legislatively-enacted dedicated funds for government operate banks or other approved instruments. Such assurances may be phased-out or reduced, once it has been demonstrated that the bank is functionally mature and/or self-sustaining (in accordance with performance standards).

F. Other Considerations

1. In-lieu-fee Mitigation Arrangements

For purposes of this guidance, in-lieu-fee, fee mitigation, or other similar arrangements, wherein funds are paid to a natural resource management entity for implementation of either specific or general wetland or other aquatic resource development projects, are not considered to meet the definition of mitigation banking because they do not typically provide compensatory mitigation in advance of project impacts. Moreover, such arrangements do not typically provide a clear timetable for the initiation of mitigation efforts. The Corps, in consultation with the other agencies, may find there are circumstances where such arrangements are appropriate so long as they meet the requirements that would otherwise apply to an offsite, prospective mitigation effort and provides adequate assurances of success and timely implementation. In such cases, a formal agreement between the sponsor and the agencies, similar to a banking instrument, is necessary to define the conditions under which its use is considered appropriate.

2. Special Considerations for "Swampbuster"

Current FSA legislation limits the extent to which mitigation banking can be used for FSA purposes. Therefore, if a mitigation bank is to be used for FSA purposes, it must meet the requirements of FSA.

III. Definitions

For the purposes of this guidance document the following terms are defined:

A. *Authorizing agency.* Any Federal, state, tribal or local agency that has authorized a particular use of a mitigation bank as compensation for an authorized activity; the authorizing agency will typically have the enforcement authority to ensure that the terms and conditions of the banking instrument are satisfied.

B. *Bank sponsor.* Any public or private entity responsible for establishing and, in most circumstances, operating a mitigation bank.

C. *Compensatory mitigation.* For purposes of Section 10/404, compensatory mitigation is the restoration, creation, enhancement, or in exceptional circumstances, preservation of wetlands and/or other aquatic resources for the purpose of compensating for unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

D. *Consensus.* The term consensus, as defined herein, is a process by which a group synthesizes its concerns and ideas to form a common collaborative agreement acceptable to all members. While the primary goal of consensus is to reach agreement on an issue by all parties, unanimity may not always be possible.

E. *Creation.* The establishment of a wetland or other aquatic resource where one did not formerly exist.

F. *Credit.* A unit of measure representing the accrual or attainment of aquatic functions at a mitigation bank; the measure of function is typically indexed to the number of wetland acres restored, created, enhanced or preserved.

G. *Debit.* A unit of measure representing the loss of aquatic functions at an impact or project site.

H. *Enhancement.* Activities conducted in existing wetlands or other aquatic resources which increase one or more aquatic functions.

I. *Mitigation.* For purposes of Section 10/404 and consistent with the Council on Environmental Quality regulations, the Section 404(b)(1) Guidelines and the Memorandum of Agreement Between

the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation under the Clean Water Act Section 404(b)(1) Guidelines, mitigation means sequentially avoiding impacts, minimizing impacts, and compensating for remaining unavoidable impacts.

J. *Mitigation bank.* A mitigation bank is a site where wetlands and/or other aquatic resources are restored, created, enhanced, or in exceptional circumstances, preserved expressly for the purpose of providing compensatory mitigation in advance of authorized impacts to similar resources. For purposes of Section 10/404, use of a mitigation bank may only be authorized when impacts are unavoidable.

K. *Mitigation Bank Review Team (MBRT).* An interagency group of Federal, state, tribal and/or local regulatory and resource agency representatives which are signatory to a banking instrument and oversee the establishment, use and operation of a mitigation bank.

L. *Practicable.* Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

M. *Preservation.* The protection of ecologically important wetlands or other aquatic resources in perpetuity through the implementation of appropriate legal and physical mechanisms. Preservation may include protection of upland areas adjacent to wetlands as necessary to ensure protection and/or enhancement of the aquatic ecosystem.

N. *Restoration.* Re-establishment of wetland and/or other aquatic resource characteristics and function(s) at a site where they have ceased to exist, or exist in a substantially degraded state.

O. *Service area.* The service area of a mitigation bank is the designated area (e.g., watershed, county) wherein a bank can reasonably be expected to provide appropriate compensation for impacts to wetlands and/or other aquatic resources.

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Robert P. Davison,

Acting Assistant Secretary for Fish and Wildlife and Parks, Department of the Interior.

Douglas K. Hall,

Assistant Secretary for Oceans and Atmosphere, Department of Commerce.

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DEPARTMENT OF ENERGY

Environmental Management Site-Specific Advisory Board, Hanford Site

AGENCY: Department of Energy.

ACTION: Notice of open meeting.

SUMMARY: Pursuant to the provisions of the Federal Advisory Committee Act (Public Law 92-463, 86 Stat. 770) notice is hereby given of the following Advisory Committee meeting: Environmental Management Site-Specific Advisory Board (EM SSAB), Hanford Site.

DATES:

Thursday, December 7, 1995: 9:00 a.m.-4:30 p.m.

Friday, December 8, 1995: 8:30 a.m.-3:00 p.m.

ADDRESSES: Columbia River Red Lion, Portland, Oregon.

FOR FURTHER INFORMATION CONTACT: Jon Yerxa, Public Participation Coordinator, Department of Energy Richland Operations Office, P.O. Box 550, Richland, WA, 99352.

SUPPLEMENTARY INFORMATION:

Purpose of the Board

The purpose of the Board is to make recommendations to DOE and its regulators in the areas of environmental restoration, waste management, and related activities.

Tentative Agenda

December Meeting Topics

The Hanford Advisory Board will receive information on and discuss issues related to: Update on Congressional Budget Action, the Waste Management Programmatic Environmental Impact Statement, Status of Tri-Party Agreement Milestone, M-33, and the Strategic Planning Process. The Committee will also receive updates from various Subcommittees, including reports on: the Plutonium Disposition Final Report, the Quarterly Progress Report from DOE, and EPA's Budget and Reorganization in Region 10.

Public Participation

The meeting is open to the public. Written statements may be filed with the Committee either before or after the meeting. Individuals who wish to make oral statements pertaining to agenda items should contact Jon Yerxa's office at the address or telephone number listed above. Requests must be received 5 days prior to the meeting and reasonable provision will be made to include the presentation in the agenda. The Designated Federal Official is empowered to conduct the meeting in a fashion that will facilitate the orderly conduct of business. Each individual wishing to make public comment will be provided a maximum of 5 minutes to present their comments. This notice is being published less than 15 days before the date of the meeting due to programmatic issues that had to be resolved prior to publication.

Minutes

The minutes of this meeting will be available for public review and copying at the Freedom of Information Public Reading Room, 1E-190, Forrestal Building, 1000 Independence Avenue, SW, Washington, DC 20585 between 9:00 a.m. and 4 p.m., Monday-Friday, except Federal holidays. Minutes will also be available by writing to Jon Yerxa, Department of Energy Richland Operations Office, P.O. Box 550, Richland, WA 99352, or by calling him at (509)-376-9628.

Issued at Washington, DC on November 21, 1995.

Gail Cephas,

Acting Advisory Committee Management Officer.

[FR Doc. 95-29023 Filed 11-27-95; 8:45 am]

BILLING CODE 6450-01-P

Environmental Management Site-Specific Advisory Board, Oak Ridge Reservation

AGENCY: Department of Energy.

ACTION: Notice of open meeting.

SUMMARY: Pursuant to the provisions of the Federal Advisory Committee Act (Public Law 92-463, 86 Stat. 770) notice is hereby given of the following Advisory Committee meeting:

MIAMI CORPORATION
FARMTON MITIGATION BANK

ENABLING INSTRUMENT
Revised 6/24/99
2nd Revision 12/29/99
3rd Revision 6/7/00

PURPOSE: To provide an instrument for the establishment and use of the Farmton Mitigation Bank (FMB)

AN AGREEMENT GOVERNING THE USE OF
THE FARMTON MITIGATION BANK BETWEEN:

MIAMI CORPORATION

THE U.S. DEPARTMENT OF THE ARMY

THE U.S. ENVIRONMENTAL PROTECTION AGENCY

AND

THE U.S. FISH AND WILDLIFE SERVICE

EFFECTIVE DATE: 6/7/00

PART I - PREAMBLE

A. MITIGATION BANKING REVIEW TEAM (MBRT) AND PURPOSE OF BANK

The purpose of this document is to provide an instrument for the establishment and use of the Farmton Mitigation Bank (FMB). It provides background information and a project description for creating a wetland mitigation bank within the Farmton Tree Farm (Figure 1), owned by the Miami Corporation. The Farmton Tree Farm consists of 57,000 acres, and the proposed Mitigation Bank would include nearly half of the total property (24,323 acres). This would make the Farmton Tree Farm the largest mitigation bank in the United States.

The Farmton Mitigation Bank will be segmented into three distinct, but hydrologically connected sites (Figure 2). The South Site (4,391 acres) is located along the southern sections of the Farmton property and is immediately north of the SJRWMD Buck Lake conservation lands. The West Site (3,595 acres) is adjacent to the St. Johns River, and contains Cow Creek and Deep Creek, which are tributaries of the St. Johns River. The North Site (16,493 acres) includes Crane Swamp and the headwaters of Spruce Creek, which combine to form the largest remaining hardwood swamp on the east coast of Florida.

Habitat restoration, enhancement and preservation provided by this Bank will be used as the basis for establishing credit units. As a result of these efforts, the project will be permanent and self-perpetuating. Upon signature and permit issuance by the appropriate agencies, this instrument will be used to offset project impacts within the geographic service area described herein (Figure 3).

Although implementation of the mitigation plan will commence upon permit issuance, credit withdrawal from each of the three bank sites will occur in phases due to the magnitude of the project. Conservation Easements covering lands within each phase will be recorded prior to the request for credit withdrawal from that phase. The first three phases for each bank site are identified in Figures 11A, 11B, & 11C.

The Federal Mitigation Banking Review Team (MBRT) is comprised of the Corps, the U.S. Environmental Protection Agency, and the U. S. Fish and Wildlife Service. The overall goal of the MBRT and Farmton Mitigation Bank (the Bank) as taken from the "Federal Guidance for the Establishment, Use and Operation of Mitigation Banks," 60 Fed. Reg. 58, 605-58, 614 (Nov. 28, 1995), is to provide economically efficient and flexible mitigation opportunities, while fully compensating for wetland and other aquatic resource losses in a manner that contributes to the long-term ecological functioning of the watershed within which the bank is located. The specific goal of the Bank is to provide compensatory mitigation in advance of unavoidable adverse impacts to similar aquatic resources, which may be authorized by the U. S. Army Corps of Engineers Regulatory Program. Such compensatory mitigation will be considered where, after accepted mitigation sequencing, standard mitigation practices have been determined to be impracticable or not ecologically beneficial.

TABLE OF CONTENTS

PART I - PREAMBLE 1

A. MITIGATION BANK REVIEW TEAM AND PURPOSE OF BANK 1
B. PROJECT DESCRIPTION 2
C. LOCATION, SIZE, OWNERSHIP, TYPE OF BANK & IDENTITY 3
D. BASELINE CONDITIONS 3
E. ESTABLISHMENT & USE OF CREDITS 4

PART II - ESTABLISHMENT OF THE BANK 12

A. MITIGATION PLAN SUMMARY 12
B. IMPLEMENTATION TIMETABLE 13
C. REAL ESTATE INTEREST BY SPONSOR 15
D. FINANCIAL ASSURANCES 15
E. AS-BUILT REPORTS 15

PART III - OPERATION OF THE BANK 16

A. SERVICE AREA 16
B. TYPES OF PROJECTS 16
C. ASSESSMENT METHODOLOGY 16
D. SUCCESS CRITERIA 16
E. PROCEDURES FOR RELEASE OF FINANCIAL ASSURANCE 17
F. SCHEDULE OF CREDIT AVAILABILITY 17
G. PROVISIONS FOR SITE AUDITS BY MBRT 18
H. CONDITIONS ON DEBITING 18
I. PROVISIONS COVERING USE OF LAND 19

PART IV - MONITORING AND MAINTENANCE 20

A. MONITORING 20
B. MAINTENANCE 20
C. REPORTS AND RECORD KEEPING 20
D. ACCOUNTING PROCEDURES 20
E. CONTINGENCY PLANS/REMEDIAL ACTIONS 20
F. LONG-TERM MANAGEMENT RESPONSIBILITIES 20

PART V - PROVISIONS PERTAINING TO VALIDITY, MODIFICATION, AND TERMINATION OF THE BANKING INSTRUMENT 21

A. VALIDITY - MODIFICATION 21
B. INDEMNIFICATION 21

PART VI - FUNCTIONAL ANALYSIS & MITIGATION PLAN ..... APPENDIX I
FORESTRY STEWARDSHIP PLAN ..... APPENDIX II
WILDLIFE MANAGEMENT PLAN ..... APPENDIX III

PART VII - EXHIBITS ..... APPENDIX IV

The MBRT for the Bank consists of the following individuals:

Mr. Mark Evans	USACOE
Mr. Don Palmer	USFWS
Mr. Haynes Johnson	USEPA
Mr. Todd Gipe	SJRWMD

Technical consultants for FMB include:

Mr. Steve Nielsen, Ph.D., Ms. Sharon Collins, Mr. Stuart Bradow, Mr. Jim Bassett - Environmental Management Systems, Inc.

Landowner's Representatives:

Ms. Barbra Goering	Miami Corporation
Mr. Earl Underhill	Miami Corporation
Mr. Glenn Storch, esq.	Storch, Hansen & Morris, P.A.

Permittee's Representatives:

Ms. Barbra Goering	Miami Corporation
Mr. Earl Underhill	Miami Corporation
Mr. Glenn Storch, esq.	Storch, Hansen & Morris, P.A.

B. PROJECT DESCRIPTION

From the late 1800's to around 1960, the land which comprises the Farmton Tree Farm was cleared and used for cattle grazing. Since the early 1950's the majority of lands suitable for planting have been planted with slash pine. These pine plantations are currently harvested at 20 - 40 year rotation intervals. As a stand of timber is cut, or as new land is cleared, the land is replanted with slash pine. Other timber considered as merchantable has been harvested within some of the temperate hardwood areas and these areas were replanted with slash pines. The logging of cypress and removal of pine from within forested wetlands has also been a part of the harvesting program. Excessive hunting, hydrologic alterations, and cattle grazing have also contributed to environmental impacts on the land.

The attached Functional Analysis (Appendix I) describes the existing conditions in detail.

The goal of the mitigation plan is to provide restoration, enhancement, and preservation of wetlands and uplands within each of the three bank sites. Specific objectives include re-establishing surface water flows and wetland hydroperiods, allowing the regeneration of converted and previously harvested wetlands and uplands, improving the quality of habitat, greatly reducing the amount of hunting, phasing out cattle grazing, and preservation of ecosystems. A summary of the proposed mitigation is found in Part II - A of this document. A detailed mitigation plan is included in the Functional Analysis (Appendix I).

In addition to the self-contained ecological value of the Farmton Mitigation Bank, the bank is a valuable component of the natural corridor system that is being established along the St. Johns River. It is significant to the regional ecosystem not only because of its large size, but also because it is adjacent to other conservation lands, including the Buck Lake property owned by the St. Johns River Water Management District, and the Colbert-Cameron Mitigation Bank. The property also lies near the Lake Monroe Mitigation Bank and South Lake Harney Conservation Areas. It consists of a major network of wildlife corridors extending from the east side of the St. Johns River to Crane Swamp and Spruce Creek Swamp (the headwaters of Spruce Creek). Numerous Listed Species (endangered and threatened) have been identified within each of the Bank sites. Much of the value of the bank lies in this fact: without the bank, most of the land could be used in perpetuity for either forestry or development.

The Functional Analysis (Appendix I) provides a detailed description of the anticipated ecological changes associated with project activities.

C. LOCATION, SIZE, OWNERSHIP, TYPE OF BANK AND IDENTITY

The proposed 24,323 acre Farmton Mitigation Bank is wholly owned by the Miami Corporation, and is located in southeast Volusia County and northern Brevard County, between SR 44 to the north, SR 46 to the south, SR 415 to the west and I-95 to the east (Figure 1). The North Site is located in Sections 10 - 15, 22-28, 34-36, Township 18S, Range 33E, Sections 18-20, 29-32, Township 18S, Range 34E, Sections 1, 12, Township 19S, Range 33E and Sections 5-8, 17-21, & 29, Township 19S, Range 34E. The West Site is located in Sections 16-21, 28-33, Township 19S, Range 33E. The South Site is located in Sections 6-8, 11-13, 24-27, of the Bernardo Sequi Grant, Indian River Park, P.B. 2, p.33, Brevard County (located in Township 20S, Range 34E, AI) and in Section 37, Township 20S, Range 33E, AI, Volusia County.

This bank is intended to serve the mitigation requirements for various development projects in the geographic service area surrounding the bank sites.

D. BASELINE CONDITIONS

There are over 17,000 acres of wetlands on the three bank sites (Figures 4A-4C), with the North Bank site containing the highest percentage of wetlands. The remaining lands consist primarily of pine flatwoods, with lesser amounts of hardwood and live oak hammocks, sand pine/scrub, and other minor communities. Virtually all of the bank area has been mapped as forestry stands, and over 60% of the total bank area is considered to be readily harvestable (slash pines and cypress stands), with another 35% harvestable depending on seasonal or climatic conditions.

The overall topography at the Farmton Tree Farm is extremely flat, and it is difficult to divide the site into well-defined drainage basins. After 1950, a network of well-maintained forestry roads and the FPL powerline easement were constructed at elevations above the existing grade, and these have altered the historic drainage patterns and hydrology of the site. The existing placement of culverts under the roads is insufficient to support the historic movement of surface water. During times of heavy rainfall, there are prolonged periods where in some areas surface water levels are almost 2'

higher on one side of the road as compared to the other side. The roads are frequently over-topped, and large washouts occur - sometimes cutting new waterway channels.

All bank sites currently have some cattle, although the stocking rate is very low. Hunting activities may have contributed to the loss of animal species diversity, as well as some degradation of vegetative habitat due to vehicular access. Fencing will be installed to prevent cattle from entering each conservation area.

The Functional Analysis (Appendix I) for the Farmton Mitigation Bank provides a detailed description of the existing baseline conditions on the site.

E. ESTABLISHMENT AND USE OF CREDITS

Because the Farmton Mitigation Bank is such a large area, and future demand for mitigation credits within the service area is unknown, Conservation Easements will be used to define bank phases, and these will be placed in increments based on the implementation of that phase and anticipated need for credits. With the exception of removal of bedding and removal of cattle, all mitigation tasks and programs will be implemented before placement of Conservation Easements.

It should be noted that this is expected to be a very long-term bank. Credits may be sold or used over a 100 year period or more. Some of the mitigation categories include success criteria to be demonstrated through monitoring, and the credits will not be requested until the monitoring program has shown that 100% success has been achieved.

When a phase is to be implemented (based on anticipated credit need), a GIS map with the phase boundaries identified will be forwarded to SJRWMD and the ACOE. Acreages for each mitigation category within the phase will be obtained by GIS, and indicated on the map. A table of credits to be released upon placement of the Conservation Easement, and upon meeting success criteria, will be included. The proposed first three phases in each bank are shown in Figures 11A, 11B, & 11C. Subsequent phases in each bank site average approximately 500 acres, and will be contiguous to the original phase (or previous phase) so that the area under Conservation Easement will continually increase in an incremental fashion.

The fact that Farmton Mitigation Bank is such a large bank, and is expected to operate over a very long time, places a level of uncertainty that all credits will eventually be sold. If the market demand for credits is inadequate for any reason, the Miami Corporation reserves the right to remove unused portions of the bank (those areas without Conservation Easements in place) from the bank.

A GIS map of each bank site, and a running total of credits and debits, will be maintained by Miami Corporation and reported following every transaction. Each permit application proposing to use the Farmton Mitigation Bank sites will contain the latest balance sheet on credits available, credits used up to that time, and the number of credits proposed to offset the project impacts. Simultaneously with issuance of the permits authorizing wetland impacts and the use of Farmton Mitigation Bank as mitigation, the SJRWMD and the ACOE will verify all changes to the credit balance and process the credit debit from the Farmton Mitigation Bank permit.

Since phases will be defined based on anticipated demand for credits, the acreage of each mitigation category in future phases will not be known until the phases have been identified as described above. A WRAP will be calculated over each of the three bank sites in their entirety. To calculate the available credits in any phase, the same overall WRAP will be used (per the October 1998 Manual) and credits adjusted based on acreage and buffer size. Using GIS, the acreage for each mitigation category within each phase can be readily calculated, and the appropriate WRAP delta score can then be multiplied times the acreage for each category.

There are 8 different wetland mitigation categories, not all of which occur in all bank sites. In the category descriptions listed below, "harvested" refers to areas that have been harvested within the last 3 years, or are currently under contract to be harvested during 1999. These categories are listed with FLUCFCS codes which may (but do not always) occur in each category shown in parentheses. The locations of the mitigation type categories are shown in Figures 9A-9C. The calculated WRAP scores and credits available for each category within each bank site are presented below in Tables 1 and 2.

Table 1. Wetland Rapid Assessment Procedure Calculations and Available Credits (Per ACOE 10/98 Manual)

W - 1. Harvested Wetland Hydrologic Enhancement (610, 620, 621, 624, 630, 641, 646)
Includes all hydrologically enhanced harvested wetlands.

TASK & SUCCESS CRITERIA	% CREDITS
Place Conservation Easement	15%
Removal of cattle, fencing	5%
Implement/complete hydrologic enhancement activities - complete installation of low-water crossings and culverts	10%
Hydrologic enhancement success criteria met - provide documentation of water elevation balance and no washouts via monitoring for second year	10%
Implement Forestry Stewardship Plan - document existing baseline conditions	15%
Implement Wildlife Management Plan - document that hunting leases and restrictions have changed to limit number of hunters	5%
Preservation/Enhancement areas show ≤ 5% exotic vegetation infestation	2%
Release of buffer credits when 2 project phases adjoin existing phase	8%
Year 3: Document hydrologic enhancement success criteria met, ie- water elevation balance and no washouts continue(5%), document continuing forestry stewardship conditions via aerial photos (5%). 10% total	10%
Year 4: Document hydrologic enhancement success criteria met, ie- water elevation balance and no washouts continue(5%), document continuing forestry stewardship conditions via aerial photos (5%). 10% total	10%
Year 5: Document hydrologic enhancement success criteria met, ie- water elevation balance and no washouts continue(5%), document continuing forestry stewardship conditions via aerial photos (5%). 10% total	10%

W - 2. Wetland Hydrologic Enhancement (610, 613, 617, 620, 621, 624, 630, 641, 646)
Includes all hydrologically enhanced non-harvested wetlands.

TASK & SUCCESSION CRITERIA	% CREDITS
Place Conservation Easement	15%
Removal of cattle, fencing	5%
Implement/complete hydrologic enhancement activities - complete installation of low-water crossings and culverts	10%
Hydrologic enhancement success criteria met - provide documentation of water elevation balance and no washouts via monitoring for second year	10%
Implement Forestry Stewardship Plan - document existing baseline conditions	15%
Implement Wildlife Management Plan - document that hunting leases and restrictions have changed to limit number of hunters	5%
Preservation/Enhancement areas show ≤ 5% exotic vegetation *infestation*	2%
Release of buffer credits when 2 project phases adjoin existing phase	8%
Year 3: Document hydrologic enhancement success criteria met, ie- water elevation balance and no washouts continue(5%), document continuing forestry stewardship conditions via aerial photos (5%). 10% total	10%
Year 4: Document hydrologic enhancement success criteria met, ie- water elevation balance and no washouts continue(5%), document continuing forestry stewardship conditions via aerial photos (5%). 10% total	10%
Year 5: Document hydrologic enhancement success criteria met, ie- water elevation balance and no washouts continue(5%), document continuing forestry stewardship conditions via aerial photos (5%). 10% total	10%

W - 3. Wetland Restoration (411)* - Removal of bedding in buffer areas.
*Technically, the tops of the beds are upland and bottoms are wetlands, but the consensus of the MBRT was to ignore this minor discrepancy.

TASK & SUCCESS CRITERIA	% CREDITS
Place Conservation Easement	15%
Removal of cattle, fencing	5%
Removal of bedding - document & demonstrate evidence of wetland hydrology within one year of bedding removal per ACOE 1987 manual	20%
Implement Forestry Stewardship Plan - document existing baseline conditions	15%
Implement Wildlife Management Plan - document that hunting leases and restrictions have changed to limit number of hunters	5%
Release of buffer credits when 2 project phases adjoin existing phase	8%
Preservation/Enhancement areas show ≤ 5% exotic vegetation infestation	2%
Years 2-4: Removal of bedding - demonstrate evidence of wetland hydrology Year 2 (10%) Year 3 (10%) Year 4 (10%) = 30% total	30%

W - 4. Harvested Cypress Wetland Enhancement (621)
Includes all harvested cypress wetlands which are ecologically enhanced.

TASK & SUCCESS CRITERIA	% CREDITS
Place Conservation Easement	15%
Removal of cattle, fencing	5%
Implement Forestry Stewardship Plan - document existing baseline conditions	15%
Implement Wildlife Management Plan - document that hunting leases and restrictions have changed to limit number of hunters	5%
Preservation/Enhancement areas show ≤ 5% exotic vegetation infestation	7%
Release of buffer credits when 2 project phases adjoin existing phase	8%
Year 2: Forestry Stewardship Plan - document existing conditions that natural regeneration is occurring via aerial photography	10%
Year 3: Forestry Stewardship Plan - document existing conditions that natural regeneration is occurring via aerial photography	10%
Year 4: Forestry Stewardship Plan - document existing conditions that natural regeneration is occurring via aerial photography	10%
Year 5: Forestry Stewardship Plan - document existing conditions that natural regeneration is occurring via aerial photography	15%

W - 5. Cypress Wetland Enhancement (621)

All cypress wetlands which are ecologically enhanced.

W-5 TASK & SUCCESS CRITERIA	% CREDITS
Place Conservation Easement	15%
Removal of cattle, fencing	5%
Implement Forestry Stewardship Plan - document existing baseline conditions	15%
Implement Wildlife Management Plan - document that hunting leases and restrictions have changed to limit number of hunters	5%
Preservation/Enhancement areas show ≤ 5% exotic vegetation infestation	7%
Release of buffer credits when 2 project phases adjoin existing phase	8%
Year 2: Forestry Stewardship Plan - document existing conditions that natural regeneration/no harvesting is occurring via aerial photography	10%
Year 3: Forestry Stewardship Plan - document existing conditions that natural regeneration/no harvesting is occurring via aerial photography	10%
Year 4: Forestry Stewardship Plan - document existing conditions that natural regeneration/no harvesting is occurring via aerial photography	10%
Year 5: Forestry Stewardship Plan - document existing conditions that natural regeneration is occurring via aerial photography	15%

W - 6. Harvested Hardwood Wetland Enhancement (624, 630, 646)

Harvested hardwood wetlands which are ecologically enhanced.

W-6 TASK & SUCCESS CRITERIA	% CREDITS
Place Conservation Easement	15%
Removal of cattle, fencing	5%
Implement Forestry Stewardship Plan - document existing baseline conditions	15%
Implement Wildlife Management Plan - document that hunting leases and restrictions have changed to limit number of hunters	5%
Preservation/Enhancement areas show ≤ 5% exotic vegetation infestation	7%
Release of buffer credits when 2 project phases adjoin existing phase	8%
Year 2: Forestry Stewardship Plan - document existing conditions that natural regeneration is occurring via aerial photography	10%
Year 3: Forestry Stewardship Plan - document existing conditions that natural regeneration is occurring via aerial photography	10%
Year 4: Forestry Stewardship Plan - document existing conditions that natural regeneration is occurring via aerial photography	10%
Year 5: Forestry Stewardship Plan - document existing conditions that natural regeneration is occurring via aerial photography	15%

W - 7. Hardwood Wetland Enhancement (610, 620, 624, 630, 641, 646)
Non-harvested hardwood wetlands which are ecologically enhanced.

TASK & SUCCESS CRITERIA	% CREDITS
Place Conservation Easement	15%
Removal of cattle, fencing	5%
Implement Forestry Stewardship Plan - document existing baseline conditions	15%
Implement Wildlife Management Plan	5%
Preservation/Enhancement areas show ≤ 5% exotic vegetation infestation	7%
Release of buffer credits when 2 project phases adjoin existing phase	8%
Year 2: Forestry Stewardship Plan - document existing conditions that natural regeneration/no harvesting is occurring via aerial photography	10%
Year 3: Forestry Stewardship Plan - document existing conditions that natural regeneration/no harvesting is occurring via aerial photography	10%
Year 4: Forestry Stewardship Plan - document existing conditions that natural regeneration/no harvesting is occurring via aerial photography	10%
Year 5: Forestry Stewardship Plan - document existing conditions that natural regeneration is occurring via aerial photography	15%

W - 8. Inland Salt Marsh Preservation (642) - Rare and Unique Habitat
Rare inland salt marshes (South Bank only)

TASK & SUCCESS CRITERIA	% CREDITS
Place Conservation Easement, removal of cattle, no forestry practices	100%

Using GIS, the acreage of each mitigation category for each bank site has been calculated, and the total credits available for each bank site are provided in the following section. The credits were obtained using the Wetland Rapid Assessment Procedures (WRAP) developed by the South Florida Water Management District (SFWMD). WRAP is used to rank the functional attributes of a habitat and to provide an evaluation of that habitat. The WRAP matrix variables include Wildlife Utilization, Vegetative Overstory and Groundcover Compositions, Adjacent Habitat, Field Indicators of Wetland Hydrology, and Water Quality. According to these methods, a total of **5,656.64 credit** units should be granted for this project. This amounts to a total of 4,233 credit units from the North Bank site, 554.04 credit units from the West Bank site, and 869.60 credit units from the South Bank site. Credits are derived according to the criteria listed below.

Table 2. Wetland Rapid Assessment Procedure Calculations and Available Credits (Per ACOE 10/98 Manual).

Mitigation Category	North Bank			West Bank			South Bank		
	Acres	Delta	Credits	Acres	Delta	Credits	Acres	Delta	Credits
W-1 Harvested Wetland Hydrologic Enhancement	505.69	0.47	237.67	255.67	0.47	120.16	220.86	0.49	108.22
W-2 Wetland Hydrologic Enhancement	11,465.35	0.30	3,439.61	1,268.29	0.24	304.39	2,191.18	0.27	591.62
W-3 Wetland Restoration	875.98	0.44	385.43	174.34	0.44	76.71	99.53	0.44	43.79
W-4 Harvested Cypress Wetland Enhancement	48.18	0.61	29.39	11.65	0.30	3.49	25.35	0.30	7.61
W-5 Cypress Wetland Enhancement	210.10	0.53	111.35	34.43	0.42	14.46	22.19	0.42	9.32
W-6 Harvested Hardwood Wetland Enhancement	10.18	0.61	6.21	--	--	--	1.23	0.30	0.40
W-7 Hardwood Wetland Enhancement	44.04	0.53	23.34	82.92	0.42	34.83	245.68	0.42	103.19
W-8 Rare Inland Salt Marshes Preservation	--	--	--	--	--	--	20.20	0.27	5.45
Totals	13,159.52	--	4,233.00	1,827.3	--	554.04	2,826.22	--	869.60
TOTAL MITIGATION BANK CREDITS	5,656.64								

Using the same methods as described above, the credits for the first phase in each bank site have been calculated and are presented in Table 3.

Table 3. Phase One

Mitigation Category	North Bank			West Bank			South Bank		
	Acres	Delta	Credit	Acres	Delta	Credit	Acres	Delta	Credit
W-1 Harvested Wetland Hydrologic Enhancement	--	--	--	--	--	--	--	--	--
W-2 Wetland Hydrologic Enhancement	508.04	0.30	152.41	227.39	0.24	54.57	395.86	0.27	106.88
W-3 Wetland Restoration	--	--	--	--	--	--	--	--	--
W-4 Harvested Cypress Wetland Enhancement	--	--	--	--	--	--	--	--	--
W-5 Cypress Wetland Enhancement	--	--	--	6.96	0.42	2.92	--	--	--
W-6 Harvested Hardwood Wetland Enhancement	--	--	--	--	--	--	--	--	--
W-7 Hardwood Wetland Enhancement	--	--	--	35.92	0.42	15.09	2.86	0.42	1.20
W-8 Rare Inland Salt Marshes Preservation	--	--	--	--	--	--	--	--	--
Totals	508.04	--	152.41	270.27	--	72.58	398.72	--	108.08

A total of **333.07** credit units should be granted for **Phase One**. This amounts to a total of 152.41 credit units from the North Bank site, 72.58 credit units from the West Bank site, and 108.08 credit units from the South Bank site.

Credits for Phases 2 and 3 can be readily calculated using GIS polygon acreages and applying approved deltas as above. Credit matrices and phase maps will be forwarded to all agencies prior to implementation of each subsequent phase.

PART II - ESTABLISHMENT OF THE BANK

A. MITIGATION PLAN SUMMARY

The project goal is to enhance, restore and protect wetlands and uplands, ultimately creating conditions similar to those that existed historically. Specific objectives include reestablishing the natural surface water flows and hydroperiod of the watershed, conservation, enhancement and preservation of habitat, forestry stewardship management including selective conversion of pine plantations to native habitat, implementing hunting restrictions, phasing out of cattle grazing and preservation of rare ecosystems and archaeological sites. To achieve these objectives, 4 specific mitigation programs will be implemented. These are:

- Hydrologic Enhancement
- Wildlife Management
- Forestry Stewardship
- Preservation

These mitigation programs are discussed in detail in the attached Functional Analysis, Appendix I, and are summarized below.

Hydrologic Enhancement

The elevated farm roads throughout the three bank sites contain inadequate culvert crossings and bridges to allow unimpeded surface water passage. Culverts, low-elevation water crossings (Figure 7D), and bridge extensions will be placed at strategic locations (Figures 7A-7C) to restore historic surface water flows. The restoration of historic sheet flow will provide enhancement to downstream wetlands by allowing a closer approximation to the natural hydroperiod. Increased water elevations in these wetlands for a longer duration will produce a correlated increase in aquatic species. There may also be a shift toward more obligate wetland vegetation, although this is expected to be almost immeasurable. By the same token, upstream wetlands have been forced to retain water longer than they historically had. These waterlogged wetlands will drain more quickly, as they did historically. The Hydrologic Enhancement program is described in greater detail in the Functional Analysis.

Wildlife Management

Wildlife management consists primarily of reducing the number of hunters to approximately 1/5 the historic level by entering into a User Pay Type I Wildlife Management Area lease with FFWCC.

The Farmton Mitigation Bank can contribute to the maintenance of a large and diverse gene pool among wildlife in both Volusia and Brevard Counties. The site is big enough that large mammalian species which require large territories will be able to survive in perpetuity. The integrated nature of the wetlands and uplands is especially beneficial to species which require mixed habitats for breeding or feeding. Although a greater number and diversity of animal species are expected to occur as a result of implementation of the Wildlife Management Plan, this is not proposed to be verified through monitoring, nor are credits proposed to be released as a result of any specific success

criteria. The Wildlife Management Plan is located in Appendix III.

Forestry Stewardship

The goals of the Forestry Stewardship program are:

1. Allow the preservation of existing wetlands, and regeneration of harvested wetlands
2. Increase the availability of wildlife food source habitats
3. Protect wetlands by an average 300' upland buffer
4. Increase age and species diversity in trees to improve habitat value
5. Allow the regeneration of upland and wetland hardwood areas
6. Limit clear-cutting as specified in the Forestry Plan

These goals will be achieved by the implementation of specific programs, as detailed in the Forestry Stewardship Plan, Appendix II.

Preservation

All of the mitigation methods listed above will be implemented following issuance of a permit. Conservation Easements will be first placed on the Phase One sites only, and subsequently in increments as each phase is implemented, and prior to any request for credits. The Grantee of the Conservation Easements will be the St. Johns River Water Management District.

As mentioned earlier in this document, there are numerous platted lots and roads which lie within the mitigation bank sites. Phase by phase, Miami Corporation will relinquish the opportunity to develop the county approved platted communities and roads by vacating the plats (as allowed by Volusia and Brevard Counties) prior to recording the Conservation Easements.

An area in the northeast corner of the North Bank site, known as Compartment D (Figure 10A), contains mineral rights owned by others. Negotiations are underway to acquire the mineral rights. Before placing any Conservation Easements on the area, the mineral rights will be acquired by the Miami Corporation.

B. IMPLEMENTATION TIMETABLE

The schedule of implementation for the proposed mitigation activities will commence upon issuance of the appropriate permits. Task implementation for Phase One will be completed within 5 years of permit issuance. The tasks to be implemented for Phase One include the installation of culverts and low-water crossings, implementation of the Wildlife Management Plan, and adoption of the Forestry Stewardship Plan. The implementation timetable is found in Table 4 below. Since all construction tasks (with 2 exceptions: see Table 4) will be completed within 5 years, this timetable will be applicable for Phase One and all subsequent phases.

Note that a User Pay Type I Wildlife Management Area lease has already been implemented in anticipation of issuance of a bank permit, so that it would be in place for the 1999/2000 hunting

season.

Table 4. Implementation timetable.

Tasks & Success Criteria	Implementation Date	Completion Date
Place Conservation Easement	Year One of Phase Implementation	Year One of Phase Implementation
Removal of cattle	Year One of Phase Implementation	Year Five of Phase Implementation
Removal of bedding	Within 2 Years After Harvesting	Within 5 Years After Harvesting
Implement hydrologic enhancement - complete installation of low-water crossings and culverts *	Within 1 Year After Permit Issuance	Within 5 Years After Permit Issuance
Hydrologic enhancement success criteria met - provide documentation of water elevation balance and no washouts via monitoring for one year	-	Within 6 Years After Permit Issuance
Implement Forestry Stewardship Plan - document existing baseline conditions	Within 1 Year After Permit Issuance	Year One of Phase Implementation
Implement Wildlife Management Plan - document that hunting leases and restrictions have changed to limit number of hunters	Within 1 Year After Permit Issuance	Year One of Phase Implementation
Preservation/Enhancement areas show ≤ 5% exotic vegetation infestation	-	Year Five of Phase Implementation
Release of buffer credits when 2 project phases adjoin existing phase	-	Upon Implementation of Adjacent Phases

* For Cow Creek Bridge replacement and Deep Creek piling removal, these tasks will be completed within 5 years of implementation of the phases in which they occur.

C. REAL ESTATE INTEREST BY SPONSOR

The entire property is owned by Miami Corporation and encompasses about 57,000 acres, approximately 24,323 acres of which has been sectioned out for use as a mitigation bank. Miami Corporation holds title to the property and will retain property ownership.

D. FINANCIAL ASSURANCES

One of the major contemporary land use management goals is that preservation lands should be managed in an environmentally sensitive manner, and yet generate enough income to be self-sustaining with respect to long-term management costs.

To achieve this goal, the Miami Corporation is dedicated to establishing the bank as a mixed-use conservation area by retaining enough low-impact forestry and hunting to provide management funding for the bank in perpetuity. The Miami Corporation will be the responsible entity for all management activities. Under the mitigation banking rule, a permittee who successfully completes phases of a mitigation bank can receive credit for the completed component(s) without the need for a bond or trust fund. To attain credits, Farmton will execute conservation easements and implement the hydrologic and vegetative manipulations. Upon successful completion of preservation, enhancement or restoration, credits attributable to those activities will be requested. Therefore, only earned credits will be released and the agencies will have the needed assurance that the mitigation is in place and functioning as planned.

E. AS-BUILT REPORTS

The status of restoration activities will be reported annually as detailed in the attached Functional Analysis.

PART III - OPERATION OF THE BANK

A. SERVICE AREA

The service area includes all or significant portions of the Upper (Lake Poinsett, Tosohatchee & Puzzle Lake Units), Middle (Econlockhatchee River, Deep Creek Unit, Lake Jessup & Lake Monroe Unit) and Lower St. Johns River Basins (Crescent Lake), Lake George Basin (Lake Woodruff & Lake George Units), and the Northern Coastal Basin (Halifax River Unit). Figure 3 shows the location of the bank and the geographic area it will serve.

B. TYPES OF PROJECTS

It is anticipated that most of the mitigation credits will be used to offset impacts associated with private and public projects within the geographic service area. Use of the Farmton Mitigation Bank will not affect the application of normal USACOE permitting criteria dealing with wetland impact avoidance and minimization.

C. ASSESSMENT METHODOLOGY

The purpose of this mitigation bank is to provide up-front mitigation credit to the Miami Corporation to be used to offset impacts to wetland systems from private and public development projects. Habitat restoration and enhancement will be provided by this bank, which will be converted to wetland impact credits. When Miami Corporation requires the withdrawal of credits from the bank to mitigate for wetland impacts, mitigation credits will be withdrawn in accordance with project needs. The WRAP was used to calculate credit yield for the bank as a whole, and will be used to determine the credit yield of each phase. Therefore, the number of credits required to compensate for a project's wetland impacts can be determined by applying WRAP to the wetlands proposed to be impacted.

D. SUCCESS CRITERIA

Overall, the Mitigation Banking Plan focuses on the preservation and enhancement of the natural function of the communities within the bank by accomplishing objectives such as hydrological enhancement, habitat enhancement, and preservation. Credits are proposed to be released through a combination of implementation of specific tasks or programs, and meeting specific success criteria (Table 1). All construction and mitigation activities will be provided by the Miami Corporation or its designated contractors.

Farmton Mitigation Bank is unlike any other mitigation banks that have been permitted in Florida, since credit sell-out is not expected to occur until 50-100 years after permit issuance. Most mitigation banks are designed for credit sell-out in 5 years, perhaps 10 years at the most, and their success criteria and monitoring plans are designed to support their intent. With the Farmton Mitigation Bank, there is the unprecedented opportunity to observe the regeneration of natural ecosystems, including wetland and upland hardwood forests, from slash pine plantations. No success criteria, and no additional credit release, are tied to this long-term process of ecosystem regeneration,

since it is understood that - given enough time - the process will occur. It is an ecological fact that when human-induced perturbations (mainly forestry, in this case) are removed, ecosystems revert to their original condition.

The tasks, programs, and success criteria tied to credit release are listed in Table 5. The Miami Corporation understands that unless implementation of the mitigation plan commences upon issuance of the permit, new background data and new calculations of credits would be required (probably done through a permit modification as each phase is implemented). As a result, most of the work and programs will be implemented as described in this mitigation plan within 5 years after issuance of the permit. Exceptions include: bedding removal (which will occur after one-time clearing of planted pines), cattle removal (which will occur within 5 years after placement of a conservation easement on a phase), Cow Creek bridge replacement and Deep Creek piling removal (which are tied to the phases in which they occur).

If credits are to be sold during the first year, the status of the mitigation program will be documented in interim reports to the regulatory agencies prior to placement of Conservation Easements. Achievement of these task implementation and success criteria will also be subsequently documented in the annual monitoring reports.

E. PROCEDURES FOR RELEASE OF FINANCIAL ASSURANCE

Procedures for release of financial assurance are not required, since the required work will be completed before credit release.

F. SCHEDULE OF CREDIT AVAILABILITY

The schedule of implementation for the proposed management activities will commence upon issuance of the appropriate permits. The first phase will be implemented simultaneously in each of the three bank sites. The timetable for the first phase is shown in the Table 5 below. The timetable for subsequent phases will depend on the rate at which credits are sold.

Table 5. Schedule of Credit Availability

Schedule of Credit Availability	Completion Date	Credit Release Date
Place Conservation Easement	Year One of Phase Implementation	Upon Completion
Removal of cattle	Year Five of Phase Implementation	Upon Completion
Removal of bedding	Within 5 Years After Harvesting	Upon Completion
Implement hydrologic enhancement - complete installation of low-water crossings and culverts	Within 5 Years After Permit Issuance	Upon Completion
Hydrologic enhancement success criteria met - provide documentation of water elevation balance and no washouts via monitoring for one year	Within 6 Years After Permit Issuance	3 Years After Completion
Implement Forestry Stewardship Plan - document existing baseline conditions	Year One of Phase Implementation	Upon Implementation
Implement Wildlife Management Plan - document that hunting leases and restrictions have changed to limit number of hunters	Year One of Phase Implementation	Upon Implementation
Preservation/Enhancement areas show ≤ 5% exotic vegetation infestation	Year Five of Phase Implementation	Year Five of Phase Implementation
Release of buffer credits when 2 project phases adjoin existing phase	Upon Implementation of Adjacent 2 Phases	Upon Placement of Conservation Easement of Adjoining 2 Phases

G. PROVISIONS FOR SITE AUDITS BY MBRT

Representatives from the MBRT will be allowed to access the bank site to verify existing conditions and to inspect authorized activities at any time deemed necessary.

H. CONDITIONS ON DEBITING

The Miami Corporation will be permitted to withdraw Farmton Mitigation Bank credits to offset wetland impacts from private and public development projects within the geographic service area described herein. The credits necessary to offset specific wetland impacts will be based upon the type and quality of wetlands being impacted by the associated projects. Sufficient credits will be debited to balance out or offset the value of wetlands being impacted, using the WRAP method. A running total of credit and debits will be kept by the Miami Corporation and reported with every monitoring event. Each permit application proposing to use the Farmton Mitigation Bank will contain the latest balance sheet on credits available, credits used up to that time and the number of

credits proposed to offset the project impacts. Simultaneous with issuance of the permit authorizing wetland impacts and the use of FMB as mitigation, the ACOE will verify all changes to the credit balance and process the modification to the FMB permit.

I. PROVISIONS COVERING USE OF LAND

The Mitigation Bank area has been set aside from all uses other than silvicultural operations, conservation and hunting, as described herein, and upon placement of a conservation easement, will be preserved in perpetuity. There is no material fact which would affect the contemplated use of the property.

PART IV - MONITORING AND MAINTENANCE

A. MONITORING

The monitoring program for Farmton Mitigation Bank is divided into two phases: short-term and long-term monitoring. These are described in the attached Functional Analysis.

B. MAINTENANCE

The Miami Corporation will be permitted to maintain property boundary fences and logging roads within the banks (see Road Map, Appendix IV). All new culverts and low-water crossings, as well as existing culverts, will be maintained on an as-needed basis. Fire breaks will be maintained within the Designated Forestry Areas. Because of the large size of the bank and the minimum amount of construction to be done, maintenance is expected to be minimal.

C. REPORTS AND RECORD KEEPING

Annual monitoring reports will be submitted and will consist of panoramic photographs, periodic water measurements at piezometer/staff gauges and aerial photographic monitoring results. Wildlife monitoring data, if collected by FFWCC, will be presented as it becomes available.

D. ACCOUNTING PROCEDURES

A running total of credit and debits will be kept by the Miami Corporation and reported with every monitoring event. Each permit application proposing to use the Farmton Mitigation Bank will contain the latest balance sheet on credits available, credits used up to that time and the number of credits proposed to offset the project impacts. Simultaneous with issuance of the permit authorizing wetland impacts and the use of the FMB as mitigation, the ACOE will verify all changes to the credit balance and process the modification to the FMB permit.

E. CONTINGENCY PLANS/REMEDIAL ACTIONS

In the event that some portion(s) of the mitigation area does not meet the applicable success criteria during the initial five-year monitoring phase, the Miami Corporation will revise the mitigation plan as necessary or accept a reduction in credits. It is the responsibility of the permittee to demonstrate that the credit area granted meets the above success criteria.

F. LONG-TERM MANAGEMENT RESPONSIBILITIES

All land management will be the responsibility of the Miami Corporation or their successors. The Mitigation Bank will be managed to minimize human impacts, and to verify that the mitigation plan is being correctly implemented. The Bank sites will be monitored to assure success of the project.

PART V - PROVISIONS PERTAINING TO VALIDITY, MODIFICATION, AND TERMINATION OF THE BANKING INSTRUMENT

A. VALIDITY - MODIFICATION

This MBI will become valid following: Issuance of the St. Johns River Water Management District and Department of Army permits and execution of this MBI by the members of the MBRT. Mitigation credit release will be conditioned upon execution of the approved Perpetual Management Trust Fund Agreement. This MBI may be amended, altered, released or revoked only by written agreement among the parties hereto or their heirs, assigns or successors-in-interest, which amendment shall be filed in the public records of Volusia and Brevard Counties, Florida.

The terms and conditions of the MBI remain in effect throughout the operational life of the Bank. As taken from the "Federal Guidance for the Establishment, Use and Operation of Mitigation Banks," 60 Fed. Reg. 58, 605-58, 614 (Nov. 28, 1995), with the exception of arrangements for long-term management and protection in perpetuity of the wetlands and/or other aquatic resources, this period terminates at the point when the following occur:

1) Compensatory mitigation credits have been exhausted or banking activity is voluntarily terminated with written notice by the bank sponsor provided to the Corps.....and other members of the MBRT, and

2) It has been determined that the debited bank is functionally mature and/or self-sustaining to the degree specified in the banking instrument.

B. INDEMNIFICATION

The Sponsor hereby agrees to indemnify the United States, its agencies, employees, representatives, agents, including the members of the MBRT, and to hold it free from liability for any claims of personal injury or property damage or loss attributable to activities by or on behalf of the Bank or occurring on the Property.

IN THE TESTIMONY WHEREOF the U. S. Department of the Army, have set their hands and official seal this 13 day of Oct, 2000.

U. S. Department of the Army
Jacksonville District

for C. P. Bruch LTC, EN

James G. May
Colonel, U.S. Army
District Engineer

IN THE TESTIMONY WHEREOF the U. S. Environmental Protection Agency have set their hands and official seal this 13 day of July, 2000.

U. S. Environmental Protection Agency

Signature

Chief, Wetlands Section

Title

IN THE TESTIMONY WHEREOF the Miami Corporation, have hereunto set their hands and official seal this 2nd day of February, 2000, the U. S. Department of the Army, have set their hands and official seal this _____ day of _____, 2000, the U. S. Fish and Wildlife Service have set their hands and official seal this _____ day of _____, 2000, and the U. S. Environmental Protection Agency have set their hands and official seal this _____ day of _____, 2000.

Miami Corporation, a Delaware corporation

_____ By: Charles E. Schroeck

xWitness Attest:

_____ Charles E. Schroeder

Witness Assistant Secretary Title President

U. S. Department of the Army

_____ _____

Witness

_____ _____

Witness Title

U. S. Fish & Wildlife Service

_____ _____

Signature Title

U. S. Environmental Protection Agency

_____ _____

Signature Title

IN THE TESTIMONY WHEREOF the Miami Corporation, have hereunto set their hands and official seal this 2nd day of February, 2000.

Miami Corporation, a Delaware corporation

By Charles E Schroeder
Signature

Charles E. Schroeder
Title President

Witness

Attest:
Assistant Secretary

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION/

WATER MANAGEMENT DISTRICTS/

U.S. ARMY CORPS OF ENGINEERS

JOINT APPLICATION FOR:

ENVIRONMENTAL RESOURCE PERMIT/

AUTHORIZATION TO USE
STATE OWNED SUBMERGED LANDS/

FEDERAL DREDGE AND FILL PERMIT

FARMTON MITIGATION BANK

ST. JOHNS RIVER
WATER MANAGEMENT DISTRICT

St. Johns River WATER MANAGEMENT DISTRICT	ENVIRONMENTAL RESOURCE PERMIT APPLICATION P.O. Box 1429 Palatka, Florida 32078	

FOR AGENCY USE ONLY

ACOE Application # _____ DEP/WMD Application # _____
Date Received _____ Date Received _____
Proposed Project Latitude _____° _____ ' _____ " Fee Received $ _____
Proposed Project Longitude _____° _____ ' _____ " Fee Receipt # _____

SECTION A

PART 1:
Are any of the activities described in this application proposed to occur in, on, or over wetlands or other surface waters? ■yes
Is this application being filed by or on behalf of an entity eligible for a fee reduction ■no

PART 2:

A. Type of Environmental Resource Permit Requested (check at least one)

- ☐ **Noticed General - include information requested in Section B.**
- ☐ **Standard General (single family dwelling)-include information requested in Sections C and D.**
- ☐ **Standard General (all other projects) - include information requested in Sections C and E.**
- ☐ **Standard General (minor systems) - include information requested in Sections C and H.**
- ☐ **Standard General (borrow pits) - include information requested in Sections C and I.**
- ☐ **Individual (single family dwelling) - include information requested in Sections C and D.**
- ☐ **Individual (all other projects) - include information requested in Sections C and E.**
- ☐ **Individual (borrow pits) - include information requested in Sections C and I.**
- ☐ **Conceptual - include information requested in Sections C and E.**
- ■ **Mitigation Bank (construction) - include information requested in Section C and F.**
  (If the proposed mitigation bank involves the construction of a surface water management system requiring another permit listed above, check the appropriate box and submit the information requested by the applicable section.)
- ☐ **Mitigation Bank (conceptual) - include information requested in Section C and F.**

B. Type of activity for which you are applying (check at least one)

- ■ **Construction or operation of a new system, including dredging or filling in, on or over wetlands and other surface waters. (If reapplying for an expired, denied or withdrawn permit/ application, please provide previous permit #_____.)**
- ☐ **Alteration or operation of an existing system which was not previously permitted by SJRWMD or DEP.**
- ☐ **Modification of a system previously permitted by SJRWMD or DEP. Provide previous permit #_____ and check applicable modification type.**
  ☐ **Alteration of a system** ☐ **Extension of permit duration** ☐ **Abandonment of a system**
  ☐ **Construction of additional phases of a system** ☐ **Removal of a system**

C. Are you requesting authorization to use State Owned Submerged Lands. yes■ no
If yes, include the information requested in Section G.

D. For activities in, on or over wetlands or other surface waters, check type of federal dredge and fill permit requested:
■ **Individual** ☐ **Programmatic General** ☐ **General** ☐ **Nationwide** ☐ **Not Applicable**

E. Are you claiming to qualify for an exemption? ☐yes ■ no
If yes, provide rule number if known_____.

	ENVIRONMENTAL RESOURCE PERMIT APPLICATION *ST. JOHNS RIVER WATER MANAGEMENT DISTRICT* P.O. Box 1429 Palatka, Florida 32078	

SECTION C

ENVIRONMENTAL RESOURCE PERMIT NOTICE OF RECEIPT OF APPLICATION

This information is required in addition to that required in other sections of the application. Please submit five copies of this notice of receipt of application and all attachments. **PLEASE SUBMIT ALL INFORMATION ON 8 1/2" BY 11" PAPER.**

Project Name: FARMTON MITIGATION BANK
County: VOLUSIA AND BREVARD COUNTIES
Owner: MIAMI CORPORATION
Applicant: MIAMI CORPORATION
Applicant Address: 1625 Maytown Road Osteen, Florida 32764 407 - 322 - 5693

1. Indicate the project boundaries on a USGS quadrangle map, reduced or enlarged as necessary to legibly show the entire project. If not shown on the quadrangle map, provide a location map, that shows a north arrow, a graphic scale, Section(s), Township(s), and Range(s), and detail sufficient to allow a person unfamiliar with the site to find it.

   See Attached Location Map, Figure 1.

2. Provide the names of all wetland or other surface waters that would be dredged, filled, impounded, diverted, drained or would receive discharge (either directly or indirectly), or would otherwise be impacted by the proposed activity, and specify if they are in an Outstanding Florida Water or Aquatic Preserve:

   Spruce Creek headwaters, Crane Swamp, St. Johns River, Cow Creek, Deep Creek, & Buck Lake.

3. Attach a depiction (plan and section views), which clearly shows the works or other facilities proposed to be constructed. The depiction must use a scale sufficient to show the location and type of works.

   See attached plan and cross view drawings, Figures 7A - E.

4. Briefly describe the proposed project (such as "construct a deck with boatshelter", "replace two existing culverts", "construct surface water management system to serve 150 acre residential development"):

   This project is for the establishment and use of the Farmton Mitigation Bank .

5. Specify the acreage of wetlands or other surface waters, if any, that are proposed to be disturbed, filled, excavated, or otherwise impacted by the proposed activity:

   See Attached Mitigation Plan.

6. Provide a brief statement describing any proposed mitigation for impacts to wetlands and other surface waters:

   Mitigation bank activities are presented in the attached Mitigation Plan.

FARMTON MITIGATION BANK

	ENVIRONMENTAL RESOURCE PERMIT APPLICATION *ST. JOHNS RIVER WATER MANAGEMENT DISTRICT*	

SECTION F

INFORMATION FOR INDIVIDUAL (INCLUDING CONCEPTUAL) ENVIRONMENTAL RESOURCE PERMITS FOR MITIGATION BANKS

The information requested below is for a mitigation bank project (construction permit or conceptual approval). Certain categories of information requested may not be applicable to all applications. In addition, the level of detail required will vary depending on the nature and location of the site and the activity proposed. If the proposed mitigation bank involves the construction of a surface water management system provide the information requested by the applicable section as well as that requested below.

A. General Site Conditions

1. A map, at regional scale, of the mitigation bank in relation to the regional watershed and proposed mitigation service area.

   See Figures 1 & 3, attached.

2. A vicinity map showing the mitigation bank in relation to adjacent lands and off-site areas of ecological or hydrologic significance which could affect the long term viability or ecological value of the bank.

   See Figure 1, attached.

3. A recent aerial photo of the mitigation bank (no photocopies) identifying boundaries of the project area.

   See attached aerial photographs, Appendix II.

4. A highway map showing points of access to the mitigation bank for site inspection.

   See Figure 1, attached.

5. A legal description of the proposed mitigation bank.

   See attached Mitigation Plan and documentation.

6. A description and assessment of current site conditions including:
   a. a soils map of the mitigation bank site;
   b. a topographic map of the mitigation bank site and adjacent hydrologic contributing and receiving areas;
   c. a hydrologic features map of the mitigation bank and adjacent hydrologic contributing and receiving areas;
   d. current hydrologic conditions in the mitigation bank site;
   e. a vegetation map of the mitigation bank site;
   f. ecological benefits currently provided to the regional watershed by the mitigation bank site;
   g. adjacent lands, including existing land uses and conditions, projected land uses according to comprehensive plans adopted pursuant to Chapter 163, F.S., by local governments having

jurisdiction, and any special designations or classifications associated with adjacent lands or waters;

h. a disclosure statement of any material fact which may affect the contemplated use of the property;

I. a Phase I environmental audit of the property (not required for conceptual approval).

See attached Mitigation Plan.

B. Mitigation Bank Information

1. A description of the ecological significance of the proposed mitigation bank to the regional watershed in which it is located.

   See attached Mitigation Plan.

2. A mitigation plan describing the actions proposed to establish, construct, operate, manage and maintain the mitigation bank including:

   a. construction-level drawings detailing proposed topographic alterations and all structural components associated with proposed activities
   b. proposed construction activities, including a detailed schedule for implementation
   c. the proposed vegetation planting scheme and detailed schedule for implementation measures to be implemented during and after construction to avoid adverse impacts related to proposed activities;
   d. a detailed long term management plan comprising all aspects of operation and maintenance, including water management practices, vegetation establishment, exotic and nuisance species control, fire management, and control of access;
   e. a proposed monitoring plan to demonstrate mitigation success.

   See attached Mitigation Plan.

3. An assessment of improvement or changes in ecological value anticipated as a result of proposed mitigation actions including:

   a. a description of anticipated site conditions in the mitigation bank after the mitigation plan is successfully implemented;
   b. a comparison of current fish and wildlife habitat to expected habitat after the mitigation plan is successfully implemented; and
   c. a description of the expected ecological benefits to the regional watershed

   See attached Mitigation Plan.

4. Evidence of sufficient legal or equitable interest in the property which is to become the mitigation bank to meet the requirements of the Basis of Review (not required for conceptual approval).

   See attached documentation.

5. Draft documentation of financial responsibility meeting the requirements of the Basis of Review (not required for conceptual approval).

   See attached documentation.

6. Any engineering calculations and/or computer modeling (such as hydrograph or staging) needed to assess the effects of the project on the hydrologic characteristics of the mitigation bank site and upstream and downstream areas.

   See Figures 7A-E & 8A-C, attached.

PART 3: A. OWNER(S) OF LAND	B. APPLICANT (IF OTHER THAN OWNER)
NAME Miami Corporation	NAME same
COMPANY AND TITLE Miami Corporation	COMPANY AND TITLE
ADDRESS 1625 Maytown Road	ADDRESS
CITY, STATE, ZIP Osteen, Florida 32764	CITY, STATE, ZIP
TELEPHONE (407) 322 - 5693 FAX (407) 330 - 0806	TELEPHONE ( ) FAX ( )
C. AGENT AUTHORIZED TO SECURE PERMIT (IF AN AGENT IS USED)	D. CONSULTANT (IF DIFFERENT FROM AGENT)
NAME Attn: Dr. Steve Nielsen	NAME
COMPANY AND TITLE Environmental Management Systems, Inc.	COMPANY AND TITLE
ADDRESS 393 Whooping Loop, Suite 1483	ADDRESS
CITY, STATE, ZIP Altamonte Springs, Florida 32701	CITY, STATE, ZIP
TELEPHONE (407) 260-0883 FAX (407) 331-4176	TELEPHONE FAX

PART 4: PROJECT INFORMATION

A. Name of project, including phase if applicable: Farmton Mitigation Bank : North, West & South Bank Site Segments
B. Is this application for part of a multi-phase project? yes
C. Total applicant-owned area contiguous to the project: 57,000 acres
D. Total project area for which a permit is sought: 24,323 acres: 16,337.15 acres North Bank Site, 3,595.06 West, 4,390.84 acres South
E. Total impervious area for which a permit is sought: 0.00 acres
F. Total area (metric equivalent for federally funded projects) of work in, on, or over *wetlands or other surface waters:* See Figures 4A -4C
G. Total number of new boat slips proposed: n/a

PART 5: PROJECT LOCATION (use additional sheets, if needed)

County(ies) Volusia & Brevard Counties
Section, Township, Range See attached Mitigation Plan
Land Grant name, if applicable
Tax Parcel Identification Number
Street address, road, or other location Maytown, Florida
City, Zip Code, If applicable

PART 6: DESCRIBE IN GENERAL TERMS THE PROPOSED PROJECT, SYSTEM, OR ACTIVITY.

See Attached Mitigation Plan

PART 7:

A. If there have been any pre-application meetings for the proposed project, with regulatory staff, please list the date(s), location(s), and names of key staff and project representatives.

Date(s)	Location(s)	Name	Purpose
11/14/96	At SJRWMD office	Mr. Glenn Lowe	Preliminary pre-application meeting
12/10/96	At USACOE office	Mr. Mark Evans (USACOE)	Pre-application meeting
09/30/97	At project site	Mr. Tod Gipe /Mr. Lee Kissick	Preliminary field investigation
12/05/97	At SJRWMD office	Mr. Tod Gipe	Preliminary pre-application meeting
04/09/98	At USACOE office	Mr. Mark Evans, Tod Gipe, Don Palmer	MBRT meeting in Jacksonville
05/21/98	At project site	Mr. Donald Palmer (USFWS)	Preliminary field investigation
10/20/98	At project site	Mr. Steve Miller (SJRWMD)	Preliminary field investigation

B. Please identify by number any MSSW/WRM (dredge & fill)/ERP/ACOE permits or applications pending, issued or denied and any related enforcement actions at the proposed project site. N/A

C. Note: The following information is required for projects proposed to occur in, on or over wetlands that need a federal dredge and fill permit and/or authorization to use state owned submerged lands. Please provide the names, addresses and zip codes of property owners whose property directly adjoins the project (excluding applicant) and/or is located within a 500 foot radius of the project boundary (for proprietary authorizations, if any). Please provide a drawing identifying each owner and adjoining property lines. (Use additional sheets, if needed).

See Attached List

PART 8:

A. By signing this application form, I am applying, or I am applying on behalf of the owner or applicant, for the permit and/or proprietary authorizations identified above, according to the supporting data and other incidental information filed with this application. I am familiar with the information contained in this application, and represent that such information is true complete and accurate. I understand that knowingly making any false statement or representation in the application is a violation of Section 373.430, F.S. and 18 U.S.C. Section 1001. I understand this is an application and not a permit and work prior to approval is a violation. I understand that this application and any permit or proprietary authorization issued pursuant thereto, does not relieve me of any obligation for obtaining any other required federal, state, water management district or local permit prior to commencement of construction.

Dr. Steve Nielsen	Environmental Management Systems, Inc.
Typed/Printed Name of Owner, Applicant or Agent	Corporate Title, if applicable
Steve Nielsen	12/23/98
Signature of Owner, Applicant or Agent	Date

B. AN AGENT MAY SIGN ABOVE ONLY IF THE FOLLOWING IS COMPLETED:

I hereby designate and authorize the agent listed above to act on my behalf, or on behalf of my corporation, as the agent in the processing of this application for the permit and/or proprietary authorization indicated above; and to furnish, on request, supplemental information in support of the application. In addition, I authorize the above-listed agent to bind me, or my corporation, to perform any requirement which may be necessary to procure the permit or authorization indicated above. I agree, or I agree on behalf of my corporation, to operate and maintain the permitted system unless the permitting agency authorizes transfer of the permit to a responsible operation entity.

Charles E. Schroeder, President	Miami Corporation
Typed/Printed Name of Owner or Applicant	Corporate Title, if applicable
pp Charles E. Schroeder	January 6, 1999
Signature of Owner or Applicant	Date

C. PERSON AUTHORIZING ACCESS TO THE PROPERTY MUST COMPLETE THE FOLLOWING:

I either own the property described in this application or I have legal authority to allow access to the property, and I consent, after receiving prior notification, to any site visit on the property by agents or personnel from the Department of Environmental Protection, the St. Johns River Water Management District and the U.S. Army Corps of Engineers necessary for the review and inspection of the proposed project specified in this application. I authorize these agents or personnel to enter the property as many times as may be necessary to make such review and inspection. Further, I agree to provide entry to the project site for such agents or personnel to monitor authorized work if a permit is granted.

Charles E. Schroeder, President — Miami Corporation

Typed/Printed Name — Corporate Title, if applicable

Charles E. Schroeder — January 6, 1999

Signature — Date

D. I certify that the engineering features of this surface water management system have been designed by me or under my responsible charge and in my professional opinion conform with sound engineering principles and all applicable rules and specifications. I further agree that I or my engineering firm will furnish the applicant/ permittee with a set of guidelines and schedules for maintenance and operation of the surface water management system.

By: _____ _____

Signature of Engineer of Record — Name *(please type)* FL P.E. No.

• AFFIX SEAL •

_____

Company Name

Date:

_____

Company Address

Phone: ( ) _____

_____

City, State, Zip

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FUNCTIONAL ANALYSIS

FARMTON MITIGATION BANK

Submitted to:

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Jacksonville District Corps of Engineers
P.O.Box 4970
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TABLE OF CONTENTS

Part I - Project Overview 1

A. Introduction 1
B. Summary of Existing Conditions 2
C. Summary of Proposed Mitigation 3
D. Summary of Ecological Benefits of Bank 3

Part II - Ecological Significance 5

A. Current Value 5
B. Description of Existing Vegetative Communities 5
C. Current Site Hydrology 11
D. Wildlife Value 12
E. Current Forestry Conditions 13
F. Development Potential 13

Part III - Ecological Restoration 15

A. General 15
B. Hydrologic Enhancement 15
C. Wildlife Management 17
D. Forestry Stewardship 17
E. Preservation 27
F. Management 18
G. Project Schedule 19

Part IV - Anticipated Changes in Ecological Value 20

Part V - Offsetting Unavoidable Impacts 25

Part VI - Archaeological Protection 25

Part VII - Baseline Monitoring Information 26

A. Monitoring 26
B. Maintenance 28

Part VIII - Success Criteria 29

FARMTON MITIGATION BANK

FUNCTIONAL ANALYSIS

PART I - PROJECT OVERVIEW

A. INTRODUCTION

The Miami Corporation has submitted an application for a Mitigation Bank permit to the U.S. Army Corps of Engineers (ACOE) within the Farmton Tree Farm, wholly owned by the Miami Corporation, and hereafter referred to as the Farmton Mitigation Bank (FMB). The Farmton Tree Farm consists of 57,000 acres, and the proposed mitigation bank (Figure 1) would include nearly half of the total property (24,323 acres). As part of the application for that permit, Miami Corporation is required to develop a plan describing the proposed mitigation activities on the site. This document outlines the mitigation plan for the property, with a description of the present site conditions, and the expected changes to the site brought about by implementation of the mitigation plan.

The Farmton Mitigation Bank will be segmented into three distinct, but hydrologically connected sites (Figure 2). The South Site (4,391 acres) is located along the southern sections of the Farmton property and is immediately north of the SJRWMD Buck Lake conservation lands. The West Site (3,595 acres) is adjacent to the St. Johns River, and contains Cow Creek and Deep Creek, which are tributaries of the St. Johns River. The North Site (16,493 acres) includes Crane Swamp and the headwaters of Spruce Creek, which combine to form the largest remaining hardwood swamp on the east coast of Florida.

The Farmton Mitigation Bank site (Figure 1) is located in southeast Volusia County and northern Brevard County between SR 44 to the north, SR 46 to the south, SR 415 to the west and I-95 to the east. The North Site is located in Sections 10-15, 22-28, 34-36, Township18S, Range 33E, Sections 18-20, 29-32, Township18S, Range 34E, Sections 1, 12, Township19S, Range 33E and Sections 5-8, 17-21, & 29, Township 19S, Range 34E. The West Site is located in Sections 16-21, 28-33, Township 19S, Range 33E. The South Site is located in Sections 6-8, 11-13, 24-27 of the Bernardo Sequi Grant, Indian River Park, P.B. 2, Page 33, Brevard County, Florida (located in Township 20S Range 34E, AI) and Section 37, Township 21S, Range 33E, AI, Volusia County.

Although implementation of the mitigation plan will commence upon permit issuance, credit withdrawal from each of the three bank sites will occur in phases due to the magnitude of the project. Conservation Easements covering lands within each phase will be recorded prior to the request for credit withdrawal from that phase. The first three phases for each bank site are identified in Figures 11A-C.

The purpose of this mitigation bank is to provide up-front mitigation credit to the Miami Corporation to be used to offset impacts to wetland systems from private and public development projects.

When the withdrawal of credits from the bank is required to mitigate for wetland impacts from development construction, mitigation credits will be withdrawn in accordance with project needs. Credit withdrawal will proceed in a schedule of phased release within each bank upon completion of specific restoration, protection, and enhancement activities. Upon permit issuance by the appropriate agencies, the credits generated will be used to offset project impacts within the geographic service area described herein.

B. SUMMARY OF EXISTING CONDITIONS

From the late 1800's to around 1960, the land which comprises the Farmton Tree Farm was cleared and used for cattle grazing. Since the early 1950's the majority of lands suitable for planting have been planted with slash pine. These pine plantations are currently harvested at 20 - 40 year rotation intervals. As a stand of timber is cut, or as new land is cleared, the land is replanted with slash pine. Other timber considered as merchantable has been harvested within some of the temperate hardwood areas and these areas were replanted with slash pines. The logging of cypress and removal of pine from within forested wetlands has also been a part of the harvesting program. The result of the long-standing forestry program is that some of the pine plantations, along with some cypress wetlands and upland temperate hammocks within the three bank sites have been recently harvested or thinned.

There are over 17,000 acres of wetlands on the three bank sites (Figures 4A-4C), with the North Bank containing the highest percentage of wetlands. The remaining lands consist primarily of pine flatwoods, with lesser amounts of hardwood and live oak hammocks, sand pine/scrub, and other minor communities. Virtually all of the bank area has been mapped as forestry stands, and over 60% of the total bank area is considered to be readily harvestable (slash pines and cypress stands), with another 35% harvestable depending on seasonal or climatic conditions.

The overall topography at the Farmton Tree Farm is extremely flat, and it is difficult to divide the site into well-defined drainage basins. After 1950, a network of well-maintained forestry roads and the FPL powerline easement were constructed at elevations above the existing grade, and these have altered the historic drainage patterns and hydrology of the site. The existing placement of culverts under the roads is insufficient to support the historic movement of surface water. During times of heavy rainfall, there are prolonged periods where in some areas surface water levels are almost 2' higher on one side of the road as compared to the other side. The roads are frequently over-topped, and large washouts occur - sometimes cutting new waterway channels (Photos 5 & 6).

The Florida Fish and Wildlife Conservation Commission (FFWCC) has for decades leased approximately 52,000 acres of land in Farmton for public hunting purposes. It is estimated that during some periods of the hunting season, as many as 2,500 hunters may be on the land. Since only about 35,000 acres are readily accessible, this results in a density of about one hunter per 14 acres. FFWCC has also estimated that there are about 500 deer on the property (about one deer per 120 acres of suitable habitat). FFWCC believes that the deer population at Farmton is below carrying capacity. This is due to the low wildlife carrying capacity inherent in pine plantations, as well as historic hunting pressure. Hunting activities may have contributed to the loss of animal species diversity, as well as some degradation of vegetative habitat due to vehicular access (Photo 7). There

are semi-permanent hunting camp sites scattered throughout Farmton, some of which have been there for decades.

All bank sites currently have some cattle, although the stocking rate is very low. As a result, minimal damage to the ecosystems has been observed. Cattle are often seen along the banks of Cow Creek in the West Bank site, in the uplands near the powerline easement in the North Bank site, and in the cleared pine flatwoods areas in the South bank site.

C. SUMMARY OF PROPOSED MITIGATION

The goal of the mitigation plan is to provide restoration, enhancement, and preservation of wetlands and uplands within each of the three bank sites. Specific objectives include re-establishing surface water flows and wetland hydroperiods, allowing the regeneration of converted and previously harvested wetlands and uplands, improving the quality of habitat, greatly reducing the amount of hunting, phasing out cattle grazing, and preservation of ecosystems.

Surface water flows have been affected by existing logging roads, built to access the pine stands. Many of the wetlands have been forced to retain water longer than they have historically. Surface water flows will be re-established by adding culverts and low-water crossings under the existing logging roads. The water in the 9000-acre Crane Swamp area will be allowed to move westward into Spruce Creek Swamp (Figure 6A), which should make a significant contribution to the restoration of historic flows in Spruce Creek. Many other wetlands have been forced to retain water longer than they have historically, and these will be restored to their historic hydrology (Figures 6B & 6C). Locations of culverts and low water crossings to be added are shown in Figures 7A-7C.

One of the primary objectives of the mitigation plan is habitat enhancement and protection. Habitat enhancement will occur by the cessation of clearing, planting, and harvesting of upland and wetland hardwood forests. Enhancement and protection will also occur from no harvesting in wetlands and uplands that would otherwise be harvested, bedded and replanted in pine. Hardwood forests which have been previously planted in pine will be cut once, then allowed to regenerate naturally. Without further harvesting, hardwood seedlings will eventually prevail and the areas will return to their original ecosystems.

A Forestry Stewardship Plan has been developed (Appendix II) which calls for limited forestry activities within designated areas of the bank sites.

Wildlife management will occur through forestry management and reduction of hunting and the Wildlife Management Plan (WMP) is attached in Appendix III. The hunting lease agreement for the Miami Corporation property is also found in Appendix III with the WMP.

D. SUMMARY OF ECOLOGICAL BENEFITS OF BANK

The importance of this proposed bank is that it will preserve in perpetuity a very large amount of

habitat - large enough for species which require large territories, such as bear, deer, bobcat, and possibly the Florida panther, to maintain genetically stable populations. Enhancement and preservation of such a large amount of environmentally sensitive lands within the surrounding landscape will allow the proliferation of a wide variety of flora and fauna, including many endangered and threatened species. It will also preserve and protect large watersheds which are major contributors to Spruce Creek and the St. Johns River. Areas with high ecological value will not be subject to residential, commercial or agricultural development, but will be retained. Much of the value of the bank lies in this fact: without the bank, most of the land could be used in perpetuity for either forestry or development. Sufficient legal interest and financial responsibility exist to ensure perpetual protection.

In addition to the self-contained ecological value of the Farmton Mitigation Bank, the bank is a valuable component of the natural wildlife corridor system that is being established along the St. Johns River. It is significant to the regional ecosystem not only because of its large size, but also because it is adjacent to or near other conservation lands, including the Buck Lake property owned by the St. Johns River Water Management District and the Colbert-Cameron Mitigation Bank. The property also lies near the Lake Monroe Mitigation Bank and the South Lake Harney Conservation Areas. It consists of a major network of wildlife corridors extending from the east side of the St. Johns River to Crane Swamp and Spruce Creek Swamp (the headwaters of Spruce Creek). Numerous Listed Species (endangered and threatened) have been identified within each of the Bank sites.

Land development is rapidly approaching the Farmton property. However, the adjacent lands will not adversely affect perpetual viability of the bank sites, since these lands are either under governmental conservation or uses not in conflict with the proposed Farmton Bank sites.

Hydrologic restoration within the North Bank will allow a closer approximation to the natural hydroperiods of the Spruce Creek headwaters and Crane Swamp. Water which has been impounded in Crane Swamp will be allowed to flow into Spruce Creek Swamp (Figure 6A) at its historic rate. Although the volume of water entering Spruce Creek is expected to be only slightly greater, the flow rate following rainfall events should be greater, so that flushing will be improved. Increased water elevations in these wetlands for a longer duration will produce a correlated increase in aquatic species. There may also be a shift toward more obligate wetland vegetation, although this is expected to be almost immeasurable. By the same token, upstream wetlands have been forced to retain water longer than they historically had. These waterlogged wetlands will drain more quickly, as they did historically. Similar benefits are expected from the West Bank, which discharges directly into the St. Johns River (Figure 6B), and the South Bank, which discharges into Buck Lake (Figure 6C).

The Forestry Stewardship plan will allow the regeneration of diverse forest ecosystems, which will in turn provide a significant increase in wildlife food sources. This, combined with a 5-fold reduction in hunting pressure, will improve habitat value of both game and non-game species. Allowing tree species to reach old age will allow some endangered and threatened species which rely on old trees (red-cockaded woodpeckers and some wetland dependent birds) to re-colonize the area.

PART II - ECOLOGICAL SIGNIFICANCE

A. CURRENT VALUE

The ecological value of the Farmton Mitigation Bank to the regional watershed is extremely significant. The entire mitigation bank site is a valuable component of the natural corridor system that is being established along the St. Johns River. The West Bank site contains two tributaries to the St. Johns River which originate on the Farmton property. The North Bank site contains the headwaters of Spruce Creek, as well as Crane Swamp, which is the largest remaining freshwater swamp in eastern Florida. The staff of the Florida Fish and Wildlife Conservation Commission (FFWCC) has identified this property as a proposed Strategic Habitat Conservation Area for both the bald eagle and the Florida sandhill crane, wetland-dependent species that have been observed on-site. Data provided in "Closing the Gaps in Florida's Wildlife Habitat Conservation System" indicates that the area serves as black bear habitat, and black bears have been noted on the property on many occasions. The South Bank site includes a portion of Buck Lake and is adjacent to the SJRWMD's Buck Lake Preservation Area and the Colbert-Cameron Mitigation Bank. It includes lacustrine and scrub-shrub wetlands with high habitat value.

Ecological benefits currently provided by the mitigation bank are moderate to high, due to the large amount of undeveloped wetlands present. The wetland ecosystems have been somewhat impacted by harvesting and hydrological impacts associated with forestry, but still provide significant value to wetland-dependent wildlife species. The upland ecosystems have been impacted by forestry and hunting activities. Those upland ecosystems which provide the most food and habitat for wildlife (e.g., hardwood and oak hammocks) have been largely replaced with planted pine. The species and age diversity of trees are minimal, as is typical of pine plantations. The carrying capacity of pine plantations for game species is the lowest of any forest type according to published literature.

The three bank sites comprise significant areas of wetland and upland habitats for south Volusia and north Brevard Counties. The heterogeneity of the ecosystems on the property provides high spatial diversity of habitat types. The large size and relative isolation of the wetlands and uplands is especially beneficial to Listed Species. Habitat types range from cypress strands, through wet flatwoods to oak scrub. This broad spectrum of plant communities provides for a variety of wildlife populations, including many that are listed by the U.S. Fish and Wildlife Service.

B. DESCRIPTION OF EXISTING VEGETATIVE COMMUNITIES

1. General

Wetlands make up most of the land on the three bank sites. The North Bank site is dominated by the cypress and hardwood wetlands which form the Spruce Creek headwaters and Crane Swamp. The West Bank site includes mixed forested wetlands and cypress sloughs associated with Cow Creek and Deep Creek. The South Bank site includes extensive wet prairies, cypress sloughs and rare non-tidal salt marshes, all surrounding the northern portion of Buck Lake.

The bank areas contain a diversity of upland habitats, including pine flatwoods, temperate hardwood hammocks, oak hammocks and scrub communities. The most prevalent upland communities are the pine plantations which are dominated by slash pine in varying stages of growth. In addition to these pine areas, relic temperate hardwoods, oak hammocks, and a few sand pine/xeric oak sites are found within the bank sites.

Many of the natural plant communities listed above were considered to be suitable for pine plantations, and were cleared and replanted with pine. The vegetation (FLUCFCS) maps (Figures 4A-4C) show the boundaries of the original ecosystems. The GIS basemap was prepared using SJRWMD GIS files, and was refined using infrared aerial photos taken in 1984 and 1997. Easily identifiable features were verified using submeter DGPS. As a result, the maps are highly accurate. Since those maps were prepared (early 1998), some additional harvesting has occurred. Areas harvested during the past 3 years, or under contract to be cut in 1999, are shown in the "harvested" categories in the mitigation plan maps (Figures 9A-9C). The vegetative descriptions below refer to pre-harvest conditions.

2. North Bank Site

Wetlands

Wetlands in the North Bank site are dominated by extensive cypress swamps associated with Crane Swamp and Spruce Creek Swamp (see Figure 4A). These wetlands are comprised of mature cypress trees, with lesser densities of black gum, bay trees, maple, sweetgum, and scattered pockets of slash pine and oaks. Ground cover consists of a variety of herbaceous species typically found within cypress swamps, including St. Johns wort, beak rushes, sawgrass, hat pins and sedges. Many other species, such as red cedar, cabbage palm, southern magnolia and ashes are also found within (on hummocks) or adjacent to the cypress swamps. Open sawgrass marshes, substantial communities of swamp bay and black gum, and islands of slash pine and bay species are also found nested within the cypress swamps. Subcanopy and ground cover in areas of mixed hardwood and hydric pine flatwoods consist of species such as dahoon holly, gallberry, myrtle-leaf holly, wax myrtle, wild coffee, bog buttons, broomsedge, scattered wiregrass, fetterbush, yellow-eyed grass, and St. Johns wort. A single gum swamp is found near the north border. It is dominated by mature black gums and vegetated further with loblolly bays, maples and a variety of wetland ferns. In the North Bank site there are approximately 8,557 acres of cypress, 1,267 acres of freshwater marshes, 857 acres of mixed forested wetlands, 761 acres of cypress/pine, 362 acres of wetland coniferous forest and 156 acres of wetland hardwood forest.

Uplands

The majority of the uplands in the North Bank are pine plantations (Figure 4A). Planted slash pines dominate the canopy with an understory of saw palmetto, gallberry, wiregrass, wax myrtle, pennyroyal, shiny blueberry, dwarf huckleberry, broomsedge and other typical pine flatwood species. Some oak hammocks are located within the site, a few of which were previously cleared for conversion to pine plantations. The largest of the relic oak hammock areas is located in the western portion of the site and has been cleared, limiting vegetation to ground cover growth with some shrub

species. Additional uplands include a sand pine/xeric oak community (also previously cleared for planting), and a few hardwood/conifer mixed forested areas. A Florida Power and Light easement is included in the bank lands, but no credit is requested for this land. The upland acreage totals approximately 3,933 acres of pine flatwoods, 27 acres of live oak hammocks, 27 acres of sand pine/xeric oak community, 10 acres of hardwood/conifer mixed, and 10 acres of temperate hardwoods.

3. West Bank Site

Wetlands

The West Bank site (Figure 4B) is composed of numerous mixed forested wetlands associated with Cow Creek, Deep Creek, and the St. Johns River (Photos 9 & 10). Mature maples, sweetgums, oaks, cabbage palms, cypress, slash pines, and bays line the perimeters of both creeks. Subcanopy often consists of young canopy species, and groundcover includes a variety of wetland ferns and grasses, as well as most of the species listed for the North Bank site. Several cypress communities are interspersed throughout this site, but are not dominant. Mixed forested wetland areas make up 1193 acres of this bank site, with 109 acres of freshwater marshes, 332 acres of cypress, and 6 acres of wetland scrub/shrub communities.

Uplands

There are a higher percentage of uplands than on the North Bank site, and most of these are relic temperate hammocks (now planted in pine). Many of the planted slash pine areas were formerly temperate oak hammocks. Approximately half of the remaining non-cleared oak hammock areas are located along the banks of the Cow and Deep Creeks. In the relic oak hammocks, some oak regeneration is occurring among the planted pines. The remaining non-harvested temperate hardwood hammocks are dominated by live oak, with a mix of cabbage palm, southern magnolia, yaupon holly, red maple, saw palmetto, and wild coffee. Within the relic temperate hardwood areas (now planted in slash pine) there is an understory of live oak, cabbage palm, a variety of ferns, broomsedge, saw palmetto, upland grasses and pignut hickory. Pine flatwoods make up the remaining uplands within the bank site and consist primarily of planted pine forests. The pine flatwoods in this site have an understory dominated by saw palmettos, gallberry and grasses. There are 1312 acres of pine flatwoods, 390 acres of temperate hardwoods and 241 acres of relic upland hardwoods.

4. South Bank Site

Wetlands

Much of the South Bank site (Figure 4C) is dominated by freshwater sawgrass and scrub/shrub marshes. These fresh water marshes surround Buck Lake (Photos 11 &12) and also occur throughout the bank site. The marshes are dominated by large expanses of sawgrass, and scrub/shrub areas consisting of St. Johns wort, pickerelweed, yellow-eyed grass, cordgrass, beakrush, spikerush, bog-buttons, spider lilies, white-top sedges, and a mosaic of other wetland sedges, grasses and rushes.

A number of rare inland salt marsh communities (Photos 13 & 14) are found in the ecotonal areas adjacent to the sawgrass and scrub/shrub marshes. These community types are the result of an upwelling of salt water from subsurface geological salt deposits. The 21 acres of salt marshes have experienced minimal forestry disturbances, since slash pines will not grow within them, but they are a favorite spot for hunters to test 4-wheel drive vehicles. The vegetation consists of saltwort, seashore paspalum, black rush, cordgrass, sea myrtle, flat sedge, seashore dropseed, glasswort, baldrush, marsh-mallow, saltmarsh false-foxglove, water hyssop and sea-purslane.

Natural and relic mixed hardwood wetlands are also found in the South Bank site. Although these areas are wetlands, slash pines will grow very well within them. Because leaf litter from the broadleaf wetland species result in relatively fertile soil, these areas are desirable for pine plantations. The remaining non-harvested hardwood wetlands are dominated by a mix of water oaks, laurel oaks, dahoon holly, red maple, bays, cabbage palms, with a few slash pines. Areas which were recently cleared for conversion to pine plantation are currently vegetated with herbaceous wetland species, young natural canopy species, and planted pine. There are approximately 760 acres of wetland forested mixed, 900 acres of freshwater marshes, 485 acres of wetland shrub, 135 acres of cypress, 148 acres of cypress/cabbage palm areas, 216 acres of lakes (Buck Lake), and 63 acres of wetland coniferous forests.

Uplands

In the South Bank site the upland areas are dominated by lands which were historically pine flatwoods. The pine flatwoods are mostly planted slash pine with an understory of saw palmetto, broomsedge, scattered gallberry and upland grasses. Three live oak hammocks are situated in the north-central area of the bank site. The live oak communities in this bank site consist of live and laurel oaks, cabbage palms, a mixture of ferns, including shoestring fern, saw palmetto, red cedar, grape vine, greenbriar, poison ivy, wax myrtle and yaupon holly. There are approximately 1,650 acres of pine flatwoods, and 15 acres of live oak hammocks within the South Bank site.

5. Habitat Descriptions

A brief description of habitats found on the Farmton Mitigation Bank pursuant to the classification by the 1985 FDOT land use publication is provided below:

411 Pine Flatwoods - These areas are dominated by slash pine and saw palmetto. There are considerable stands of this plant community within the three bank sites, and they are generally found in the least hydric soils. Other plant species, such as wild persimmon, wiregrass and live oak seedlings can be found in these areas, along with an understory which may consist of a mixture wax myrtle, saw palmetto, broomsedge, gallberry, yellow-eyed grass, beak rush, hatpins, St. Johns wort, cinnamon fern and coinwort. The soils are generally gray and sandy, underlain by a spodic horizon

421 Xeric Oak - Sand live oaks are the dominant trees in this dry upland community. Numerous sand live oak seedlings are currently recolonizing these North Bank site areas, some previously cleared of oak. Saw palmettos are the dominant understory species, and some sand pine and a few longleaf pine seedlings are present. Gallberry and winged sumac are common in these well-drained

areas, as is prickly pear and other xeric, groundcover species. The soil is deep white sand that percolates very rapidly. The potential for gopher tortoises is extremely high in these areas.

425 Temperate Hardwood Forest - Most of this community is located in the South and West Bank sites with relatively little in the North Bank. This forest cover type consists of a wide variety of oaks, red bay, sweetbay, magnolia, sweetgum, hickories, cabbage palm, hollies and cedar. The dominant vegetation within is the live oaks, laurel oaks, saw palmetto, and cabbage palms.

425R *Relic* Temperate Hardwood Forest - This community is only located in the West Bank site and vegetation consisted of the same vegetation noted above except that the forest has been cleared. These areas are recolonizing with species typical of temperate hardwood forests or have been replanted with slash pine. In the areas replanted with slash pine the understory consists of live and laurel oak seedlings, cabbage palm seedlings, saw palmetto, wiregrass and broomsedge.

427 Live Oak Hammock - The live oak hammocks onsite are located in the North and South Bank sites. The hammocks consist of pure or predominant live oak with an understory of saw palmetto, wiregrass, yaupon holly and some laurel oak.

434 Hardwood/Conifer Mixed - A transitional area between the scrub and forested wetlands, this area contains a nearly even mixture of slash pines, sand live oaks and laurel oaks. The understory is dominated by saw palmetto, wax myrtles and gallberry. The hardwood/conifer mixed area is probably distinguished from the pine/mesic oak community due to the slightly higher elevation of this area.

510/520 Water - Streams, Waterways & Lakes - This designation represents Buck Lake and associated waterways and ponds in the South Bank site and a tributary of the St. John River in the West Bank site.

610 Wetland Hardwood Forest - This forest community is dominated by wetland hardwood species. The forests are only located in the North Bank site and are vegetated with a mixture of red maple, bays, sweet gum, slash pine, cabbage palm, black gum, ash, maidencane, swamp fern, cinnamon fern, cordgrass, saw grass, and other grasses.

613 Gum Swamp - This forested community is located near the northern boundary of the North Bank site. Vegetation almost exclusively consists of black gum followed by some cypress, sweetgum, hickory, swamp fern, saw grass, and various sedges.

617 Mixed Wetland Hardwoods - This area contains a mixture of black gum, bay, slash pine, water oak and cabbage palm. The shrub layer and groundcover are varied, containing scattered saw palmetto, wax myrtles, cinnamon and swamp ferns, and grape vines. These areas are generally found in association with wetland hardwood forest and the freshwater marshes on the site.

620 Wetland Coniferous Forest - These wetland coniferous forests are found in the interior sloughs of predominantly the North Bank site, but found in all three bank sites. Vegetation consists of a mixture of cypress, bay and slash pine. The understory and remaining trees include red maple, St.

Johns wort and sawgrass.

621 Cypress - These are extensive cypress sloughs and domes that have a canopy characterized by a near monoculture of cypress, with a few slash pine and bays near the perimeter. The shrub layer is sparse, consisting of few wax myrtles and dahoon hollies. Ground cover is sawgrass, sedges, and St. Johns wort. Portions of the cypress systems have been previously harvested and in these areas cypress have recolonized and contain a wide variety of grasses, sedges and rushes. The logged areas are found adjacent to the undisturbed cypress strands. The soils are hydric and there is good evidence of regular inundation.

624 Cypress/Pine-Cabbage Palm - The cypress/pine-cabbage palm communities are incorporated within the extensive cypress sloughs and form boundaries between the more hydric pine flatwoods and the cypress in the North Bank site. This community is dominated by cypress with slash pine and cabbage palm mixed in. The understory is dominated by bay, gallberry, wax myrtle, and St. Johns wort.

630 Wetland Forested Mixed - This cover type also comprises a large percentage of the forested wetlands on the site. Cypress, bay, slash pine, pond pine, red cedar, cabbage palm, sweet gum, red maple, carolina ash, dahoon holly, laurel and water oak make up the diverse canopy. Saw palmetto, cinnamon and swamp ferns, sawgrass, grape vines, wax myrtle buttonbush and maidencane comprise the lower strata. These areas have well-developed hydric soils, with significant organic composition in lower areas.

641 Freshwater Marshes - Many and extensive stretches of freshwater marshes exist on the three bank sites. These areas are dominated by sawgrass and in much lesser densities chain fern, button bush, St. Johns wort, cypress seedlings, pickerel weed, maidencane, blue maidencane, arrowhead, water hyssop, and various other grasses and sedges. A few black gums can generally be found scattered within these systems. The soils are depressional muck.

642 Salt Marsh - The vegetation in these isolated islands of saltmarsh includes saltgrass, seashore paspalum, black rush, cordgrass, cabbage palm, flat sedge, wiregrass, seashore dropseed, glasswort, baldrush, marsh-mallow, saltmarsh false-foxglove, water hyssop, sea-purslane.

643 Wet Prairie - In this community the dominant species is grassy vegetation and includes St. Johns-wort, maidencane, blue maidencane, yellow-eyed grass, saltbush, spike rushes and small sedges. The soil varies from sandy on the perimeter to a shallow muck layer in the interior of the wetlands.

646 Wetland Shrub - This type of community consists of willow and wax myrtle. Historically, these areas were large, open, wet prairies that have changed vegetative structure.

700 Outparcel - There is an outparcel located in the South Bank site. This outparcel will be excluded from the Farmton Mitigation Bank project.

832 Power Line Easement - A raised FP&L power line roadbed easement extends from near the

northwestern Farmton property corner to the southeastern property corner. A section of the easement is included within the North Bank site. The easement is partially elevated and somewhat vegetated with a mixture of grasses, wax myrtle, aster and dog fennel. It is subject to flooding during storm events.

C. CURRENT SITE HYDROLOGY

1. General

General hydrological maps for the bank sites are shown in Figures 6A-6C. The Farmton Mitigation Bank sites are located within the middle and the northern section of the Upper St. Johns River Basins. The property is so large and flat that surface water flow direction is often determined by individual rainstorm events. It is not uncommon for surface water flows to reverse in direction in response to such events. The SJRWMD drainage basin boundaries are shown superimposed on the property in Figure 7. The basin boundaries do not correlate with actual onsite data and observations, so their accuracy and meaning is questionable. For example, one basin boundary cuts across the center of Crane Swamp, where the flow is typically northward.

Each of the three bank sites has different hydrological characteristics. The North Bank site is dominated by Crane Swamp, which flows westward - impeded by road B-8 - into Spruce Creek Swamp. The water then flows primarily into Spruce Creek, and to a lesser extent, into Cow Creek and the St. Johns River. The West Bank site drains via Cow Creek and Deep Creek into the St. Johns River. The South Bank site drains into Buck Lake toward the south.

2. North Bank Site

Surface water flows within the North Bank site are shown in Figure 6A. The primary watershed breaks occur along the elevated north/south road beds of roads B-8, located in the center of the site, and B-5 located on the eastern boundary. Flow in the northeast corner is to the southwest under B-5, where a combination of small bridges and metal culverts carry the runoff under the road. The east central section flows south and east under B-5. West of road B-5 flow continues to the west toward B-8. The western runoff in the North Bank flows through a series of 18" to 42" metal culverts under road B-8. These culverts have been placed at strategic locations during the history of the property in areas that continually wash out during intense rainfall events. Staff gauge data show that Road B-8 continues to cause a significant blockage of the surface water flows from east to west. High flows stage to an elevation where they overtop the road causing erosion and transport of sediment into the adjacent wetlands (Photo 5). The most significant restriction in the North Bank occurs at road B-8 at the Crane Swamp and Spruce Creek Swamp connection. The existing culverts are of insufficient size to accommodate historic flows, and much of the natural connection at this point has been severed. The southern section of Crane Swamp flows south into the drainage along Maytown Road. On the western boundary of the Bank, the elevated maintenance road on the power line easement partially blocks runoff to the west, limiting sheet flows to the watershed areas of Cow Creek and Sandy Drain.

3. West Bank Site

The West Bank site (Figure 6B) is a north-to-south watershed for Deep Creek in the western section, Cow Creek in the central section, and a cypress slough on the eastern boundary. Runoff also enters from the north under the abandoned railroad grade. In the western section, the remains of the old bridge where road B-9 crossed Deep Creek has trapped debris and vegetation until the flow at this point is significantly restricted. North and south of road B-9 much of Deep Creek has been channelized. The channel returns to its natural state at its confluence with Cow Creek. A narrow bridge carries road B-91 into the central section over Cow Creek. The existing bridge opening is narrow, and the effects of scour have required periodic maintenance of the crossing. Major washouts have occurred as the flow diverted around the bridge, and new creek bypasses have formed (Photo 6). Other metal culverts carry the flow southwest under road B-91 and B-12. These east/west roads and the undersized culverts block and restrict the flow toward the southwest. During heavy rainfall events, the flow exceeds the capacity of the culverts and overtops the roads causing washouts to form, and rendering the roads impassible.

4. South Bank Site

Surface water flow in the South Bank (Figure 6C) is north to southwest toward Buck Lake in the southwest corner. Surface water flow in the northwest corner along road B-101 meets channelized flow on the western boundary to enter the wetlands north of Buck Lake. Central flow is along road B-10, through a metal culvert under road B-102 and then under B-10 into the wetlands on the east side of Buck Lake. Surface water also flows in the opposite direction, to the northeast from the wetlands adjacent to Buck Lake under road B-10, to the wetlands located within the southern loop of the road. Road B-10 is the primary obstruction to surface water flows originating in the north and east, then flowing southwest. Numerous roadway washouts have occurred on roads B-101, B-102, and B-10 within the South Bank site. Heavy rainfall events and subsequent surface water buildup on the upstream sides of these east/west roads often wash out the low areas of the road, transporting sediment into the adjacent wetlands.

D. WILDLIFE VALUE

Prior to submittal of this permit application, wildlife investigations were conducted on the project site by EMS. Surveying efforts involved field observations and concentrated on determining the presence of suitable habitat for Listed Species, and the likelihood of occurrence of Listed Species. Because of the large size of the bank sites and difficulty of access to many areas, it was not practical to conduct a detailed survey. Species investigated included black bear, red-cockaded woodpeckers, bald eagles, sandhill cranes, wood storks, fox squirrels, and other species. Bird rookeries and other communal nesting areas were also investigated. Several Listed plant and animal species were identified during these field observations as well as during vegetational mapping field studies, confirming that the three bank sites are utilized by a variety of Listed Species. The following species were observed or have the potential to occur within the bank sites:

Table 1. Protected wildlife species with the potential to occur on the Farmton project site, Volusia and Brevard Counties, Florida.

Species Name	Common Name	FGFWFC	USFWS	FNAI	FCREPA	Habitat
Rana capito	Gopher frog	SSC		S3	T	Xeric uplands and pine flatwoods; breeds in ephemeral ponds and cypress heads
Alligator mississippiensis	American alligator	SSC	T(S/A)	S4		Various aquatic habitats
Drymarchon corais couperi	Eastern indigo snake	T	T	S3	SSC	Wide variety of habitats; winters in tortoise burrows in higher areas
Gopherus polyphemus	Gopher tortoise	SSC		S3	T	Sandhills, scrub, hammocks, dry prairies, flatwoods, mixed forests and ruderal
Pituophis melanoleucus mugitus	Florida pine snake	SSC		S3	SU	Sandhills, scrubby flatwoods, xeric hammocks and ruderal habitats
Ajaia ajaja	Roseate spoonbill	SSC		S2S3	R	Marshes, swamps, ponds, rivers and lagoons
Aphelocoma coerulescens	Florida scrub jay	T	T	S3	T	Scrub and scrubby flatwoods
Aramus guarana	Limpkin	SSC		S3	SSC	Swamps, forested floodplains, mangrove swamps and marshes
Dendroica kirtlandii	Kirtland's warbler	E	E	S1	E	Migrant, utilizing various terrestrial and palustrine habitats
Egretta caerulea	Little blue heron	SSC		S4	SSC	Marshes, ponds, lakes, meadows, streams and mangroves
Egretta thula	Snowy egret	SSC		S4	SSC	Marshes, lakes, ponds and shallow, coastal habitats
Egretta tricolor	Tricolored heron	SSC		S4	SSC	Marshes, ponds and rivers
Eudocimus albus	White ibis	SSC		S4	SSC	Marshes, mangroves, lakes and estuaries
Falco peregrinus tundrius	Arctic peregrine falcon	E		S2	E	Wide variety of open habitats
Falco sparverius paulus	Southeastern American kestrel	T		S3?	T	Open, or partly open habitats with scattered trees
Grus canadensis pratensis	Florida sandhill crane	T		S2S3	T	Shallow wetlands, freshwater marshes and wet prairies
Haliaeetus leucocephalus	Bald eagle	T	T	S2S3	T	Coasts, rivers and large lakes in open areas
Mycteria americana	Wood stork	E	E	S2	E	Marshes, swamps, streams and mangroves
Picoides borealis	Red-cockaded woodpecker	T	E	S2	E	Open, mature pine woodlands
Polyborus plancus audubonii	Audubon's crested caracara	T	T	S2	T	Open country, groves, pastureland and cultivated areas
Speotyto cunicularia floridana	Florida burrowing owl	SSC		S3	SSC	Sandhills, dry prairies and ruderal habitats
Sterna antillarum	Least tern	T		S3	T	Open, flat beaches, river and lake margins
Vermivora bachmanii	Bachman's warbler	E	E	SH	E	Lowland forests; breeds in hardwood swamps
Podomys floridanus	Florida mouse	SSC		S3	T	Scrub, flatwoods, longleaf pine-turkey oak sandhills, and hammocks
Sciurus niger shermani	Sherman's fox squirrel	SSC		S2	T	Longleaf pine-turkey oak sandhills, mesic flatwoods, dome swamps and baygalls
Trichechus manatus latirostris	Florida manatee	E	E	S2?	E	Spring-runs, alluvial streams, and coastal estuaries
Ursus americanus floridanus	Florida black bear	T		S2	T	Variety of forested landscapes

Notes:

USFWS=U.S. Fish & Wildlife Service

E=Endangered; T=Threatened; C=Candidate for Listing; (S/A)=Similarity of Appearance; (E/P)=Experimental Population

FGFWFC=Florida Game & Fresh Water Fish Commission

E=Endangered; T=Threatened; SSC=Species of Special Concern

FNAI=Florida Natural Areas Inventory

S1=Critically Imperiled Due to Extreme Rarity; S2=Imperiled Due to Rarity; S3=Very Rare and Local; S4=Apparently Secure; SH=Historical Occurrence; ?=Tentative Ranking

FCREPA=Florida Committee on Rare and Endangered Plants and Animals

E=Endangered; T=Threatened; SSC=Species of Special Concern; R=Rare; SU=Status Undetermined

Source: *Environmental Management Systems, Inc., Endangered Species Database, 1997.*

Table 2. Protected plant species with the potential to occur on the Farmton project site, Volusia and Brevard Counties, Florida.

Species Name	Common Name	FDA	USFWS	FNAI	Habitat
Adiantum tenerum	Maidenhair fern	E		S3	Limestone sinks and rocky woodlands
Asclepias curtissii	Curtiss' milkweed	E		S3	Sandhills and scrub
Bonamia grandiflora	Florida bonamia	E	T	S3	Sand pine scrub
Calamintha ashei	Ashe's savory	T		S3	Dry pinelands and sand pine scrub
Calamovilfa curtissii	Curtiss' reedgrass	T		S2	Pine flatwoods
Calopogon barbatus	Bearded grass pink	T			Wet pine flatwoods, bogs
Calopogon multiflorus	Many-flowered grass pink	E			Pine flatwoods, esp. recently burned
Campyloneurum phyllitidis	Strap fern	T			Hammocks; epiphytic
Conradina grandiflora	Large-flowered rosemary	E		S3	Pinelands
Ctenitis submarginalis	Comb fern	E			Wet hammocks
Deeringothamnus rugelii	Rugel's pawpaw	E	E	S1	Wet pine flatwoods
Encyclia tampensis	Butterfly orchid	C			Swamps and hammocks
Epidendrum conopseum	Greenfly orchid	C			Moist hammocks, swamps; epiphytic
Eulophia alta	Wild coco	T			Swamps, marshes and wet, pine flatwoods.
Garberia heterophylla	Garberia	T			Sand pine and oak scrub
Harrisella filiformis	Orchid	T			Swamps, old citrus groves; epiphytic
Hartwrightia floridana	Florida hartwrightia	T		S2	Acid, seepage areas
Helianthus carnosus	Lakeside sunflower	E		S1S2	Wet flatwoods
Hexalectris spicata	Crested coralroot	E			Hammocks
Illicium parviflorum	Yellow star anise	E		S1	Wet woods and swamps
Lantana depressa	Verbena	E		S1	Rocky pinelands, coastal strands and dunes
Leches cernua	Nodding pinweed	T		S3	Scrub
Leches divaricata	Pine pinweed	E		S2	Pinelands
Lilium catesbaei	Catesby's lily	T		S3	Moist pine flatwoods and savannahs
Listera australis	Southern twayblade	T			Hammocks
Lobelia cardinalis	Cardinal flower	T			Streams, riverbanks and spring runs
Lycopodium cernuum	Nodding clubmoss	CE			Wet pinelands
Matelea floridana	Florida milkweed	E		S2	Upland hardwood and mixed forests
Monotropsis reynoldsiae	Pigmy-pipes; sweet pinesap	E		S1	Deciduous woods; parasitic on *Cornus florida*
Nemastylis floridana	Celestial lily	E		S2	Swamps, marshes and wet pine flatwoods
Nephrolepis biserrata	Giant sword fern	T			Swamps and wet hammocks
Notina atopocarpa	Florida beargrass	T		S3	Dry pinelands and shell middens
Ophioglossum palmatum	Hand adder's tongue fern	E		S2	Hammocks; epiphytic on Sabal palmetto
Osmunda cinnamomea	Cinnamon fern	CE			Wet woods and swamps
Osmunda regalis	Royal fern	CE			Wet woods and swamps
Pecluma dispersa	Polypody fern	E			Hammocks
Pecluma plumula	Polypody fern	E			Hammocks; epiphytic
Pecluma ptilodon	Polypody fern	E			Hammocks
Peperomia humilis	Pepper	E		S2	Limestone grottos
Peperomia obtusifolia	Florida peperomia	E		S2	Hammocks, swamps; epiphytic or on rocks
Pinguicula caerulea	Blue butterwort	T			Wet, acid pinelands
Platanthera blephariglottis	Large white fringed orchid	T			Marshes, and wet, open, grassy areas
Platanthera cristata	Golden fringed orchid	T			Marshes and wet, pine flatwoods
Platanthera flava	Gypsy-spikes	T			Cypress and hardwood swamps
Platanthera nivea	Snowy orchid; bog torch	T			Wet pine flatwoods
Pogonia ophioglossoides	Rose pogonia	T			Marshes and wet, pine flatwoods
Rhapidophyllum hystrix	Needle palm	CE			Wet to mesic woods and hammocks
Sarracenia minor	Hooded pitcherplant	T			Wet, open, acid pinelands and bogs
Schwalbea americana	American chaffseed	E	E	S1	Dry, oak woods and pinelands
Spiranthes brevilabris	Florida ladies' tresses	E			Pine flatwoods
Spiranthes laciniata	Lace-lip ladies' tresses	T			Marshes and cypress swamps
Spiranthes longilabris	Long-lip ladies' tresses	T			Marshes and wet pine flatwoods
Spiranthes ovalis	Oval ladies' tresses	E			Wooded hills and streambanks
Spiranthes polyantha	Green ladies' tresse	E		S1S2	Hammocks
Spiranthes tuberosa	Little ladies' tresses	T			Pine flatwoods
Stenorhynchos lanceolatus	Scarlet ladies' tresses	T			Woods, pastures and disturbed areas
Stylisma abdita	Scrub stylisma	E		S2S3	Dry pinelands and scrub
Tillandsia utriculata	Giant wild pine	E			Hammocks and cypress swamps; epiphytic
Verbena tampensis	Tampa vervain	E			Moist pinelands
Warea carteri	Carter's mustard	E	E	S1S2	Sandhills and sand pine scrub
Zamia pumila	Florida coontie	CE			Hammocks, pinelands and Indian middens
Zephyranthes simpsonii	Simpson's zephyr lily	T		S2S3	Wet pine flatwoods and meadows

Notes:

USFWS=U.S. Fish & Wildlife Service

E=Endangered; T=Threatened; C=Candidate for Listing

FDA=Florida Department of Agriculture

E=Endangered; T=Threatened; CE=Commercially Exploited

FNAI=Florida Natural Areas Inventory

S1=Critically Imperiled Due to Extreme Rarity; S2=Imperiled Due to Rarity; S3=Very Rare and Local; S4=Apparently Secure; ?=Tentative Ranking;

Source: Environmental Management Systems, Inc., Endangered Species Database, 1997.

According to "Closing the Gaps in Florida's Wildlife Habitat Conservation System" (FFWCC, 1994) Farmton is part of a black bear corridor extending along the St. Johns River and into forested areas in Volusia, Brevard, Flagler and St. Johns counties. This corridor is actually linked to the Ocala National Forest. In addition, portions of the property represent a Strategic Habitat Conservation Area for fox squirrels, American swallow-tailed kites, snowy egrets, great egrets, wood storks, little blue herons and southern bald eagles. Black bear tracks were observed by BMS within each of the three bank sites and bears have been frequently observed by Miami Corporation employees. Fox squirrels, wood storks, bald eagles, sandhill cranes, and indigo snakes are among the Listed Species observed. Other species recorded in the area include wild turkey, limpkin, mottled duck, scrub holly, fall-flowering ixia, Curtiss' sandgrass, nodding pinweed, large-flowered rosemary, and Rugel's pawpaw.

In addition to the Listed Species described above, many rare species have been observed in the mitigation bank sites. During the early spring, vast numbers of neotropical migratory birds stop to feed and rest in the wetland areas. A wide variety of wetland-dependent birds, such as egrets, limpkins, and herons, have been observed throughout the sites. Local knowledge indicates that an egret rookery has existed in the North Bank site, but it was never observed.

The Wildlife Management Plan (Appendix III) further describes existing conditions such as hunting estimates and deer populations.

E. CURRENT FORESTRY CONDITIONS

Pine plantations within the mitigation bank sites total approximately 8,400 acres. The ages of the individual stands vary from one year to approximately 35 years old. The timber stands are located mostly in historic pine flatwoods areas, but are also in habitats which were historically upland mixed hardwood forests, oak hammocks, and mixed forested wetlands.

Existing forestry techniques and conditions are further described in the Forestry Stewardship Plan (Appendix II).

F. DEVELOPMENT POTENTIAL

The Farmton Mitigation Bank sites have an excellent potential for future development, since they lie midway between the urban areas of Orlando, Daytona Beach, and Cocoa (Figure 1). It would be feasible for residents to commute to work in any of these three areas. Interstate-95 lies immediately east of Farmton, and would allow rapid access to Daytona Beach and Cocoa. The newly constructed Greeneway (SR 417) connecting Sanford to Orlando would allow easy access to the Orlando area, and would avoid the heavy Interstate-4 traffic.

Numerous platted subdivisions and platted roads are present throughout the Farmton property and many of these areas are within the three bank sites (Figures 10A-10C). Within the three bank sites an estimated 8,000 acres of uplands could be readily converted to residential or uses other than forestry.

At one time, members of the Volusia County Council were interested in building a 4-lane road through Farmton to connect Howland Boulevard in Deltona to SR 442 in Edgewater. The suggestion had been made that the road should cross through the middle of Spruce Creek Swamp and Crane Swamp. In order to avoid this disruptive influence on these major wetland systems, the Miami Corporation gave the County an option to obtain a donated 200'-wide easement, but defined the location of the easement so that the road would pass through Farmton with the least possible environmental impact (Figure 4A). The corridor easement (155 acres) is excluded from the North Bank credit calculations.

An area in the northeast corner of the North Bank (Compartment D) currently has mineral rights owned by others (Figure 10A). Negotiations are underway to acquire the mineral rights. Before placing any Conservation Easements on the area, the mineral rights will be acquired by the mitigation bank owners.

The City of Edgewater has recently annexed westward to the boundary of the North Bank site, and is in a position to offer utilities. SR 442, which is the northern boundary of the North Bank site, is scheduled to be widened to 5 lanes between Farmton and US 1. The intersection of SR 442 and I-95 is about 1 ½ mile east of the NE corner of the North Bank site, and commercial development is certain to increase in that vicinity in the future.

PART III - ECOLOGICAL RESTORATION

A. GENERAL

The project goal is to enhance, restore and protect wetlands and uplands, ultimately creating conditions similar to those that existed historically. Specific objectives include reestablishing the natural surface water flows and hydroperiod of the watershed, conservation, enhancement, and preservation of habitat, forestry stewardship management including selective conversion of pine plantations to native habitat, implementing hunting restrictions, phasing out of cattle grazing and preservation of rare ecosystems and archaeological sites. To achieve these objectives, 4 specific mitigation programs will be implemented. These are:

- Hydrologic Enhancement
- Wildlife Management
- Forestry Stewardship
- Preservation

B. HYDROLOGIC ENHANCEMENT

1. General

The elevated farm roads throughout the three bank sites contain inadequate culvert crossings and bridges to allow unimpeded surface water passage. Culverts, low-elevation water crossings (Figures 7D&E), and bridge extensions will be placed at strategic locations (Figures 7A-7C) to restore historic surface water flows. The restoration of historic sheet flow will provide enhancement to downstream wetlands by allowing a closer approximation to the natural hydroperiod. Increased water elevations in these wetlands for a longer duration will produce a correlated increase in aquatic species. There may also be a shift toward more obligate wetland vegetation, although this is expected to be almost immeasurable. By the same token, upstream wetlands have been forced to retain water longer than they historically had. These waterlogged wetlands will drain more quickly, as they did historically.

Staff gauges were installed in July of 1997 on either side and adjacent to the elevated roads throughout the bank sites (Figures 7A-7C). Gauges were monitored and data collected beginning in July 1997 and ending in August 1998 (Appendix IV). Note that the readings are from the top down, so that the higher numbers are lower elevations.

Topographic and hydrologic information was gathered through the review of historic aerials, USGS Quadrangle Maps, USDA- SCS Soil Survey Maps, interviews with site personnel, and numerous field investigations. Site investigations have been made following many rainfall events, and much information has been gathered through direct observations of the drainage patterns on site, and through local knowledge based on years of observation by Mr. Earl Underhill, forester for the Miami Corporation. From this information, the areas which will be affected by the proposed hydrological enhancements have been delineated and are denoted as mitigation categories having "hydrologic enhancement" in Figures 9A-9C.

2. North Bank Site

Staff gauge readings on both sides of road B-8 have shown that the road blocks a significant amount of surface water flows to the west, where flows historically entered the Spruce Creek Swamp. The data confirm that the existing metal culverts are incapable of passing heavy rainfall event runoff. These culverts will be supplemented with a series of new corrugated metal culverts, allowing historic flows to again cross road B-8. New culverts will be set at elevations to maintain adequate hydrology to the east of road B-8 in the dry season. Additionally, a series of low-elevation roadway sections will be constructed where Crane Swamp connects to Spruce Creek Swamp. These roadway sections will be constructed to match existing grade on either side of the road, and will act as broad crested weirs capable of passing base and peak flows. The weirs will be constructed of stone to provide heavy vehicle support and stability when submerged during the wet season. Roadway stabilization at these critical locations will also prevent future erosion and sediment transport into adjacent wetland areas.

The anticipated locations of culverts and low-elevation roadway sections are shown in Figure 7A. These will be constructed, and the water levels on each side of the road monitored. If water levels do not equilibrate to within 1" on each side of the road, additional culverts and low-elevation roadway sections will be constructed until that goal is achieved.

The result will be the elimination of road B-8's effect on the site's hydrology, returning original sheet flows to the wetland systems, and providing for an unimpeded connection of Crane and Spruce Creek Swamps. Staff gauge readings also indicate some blockage of traditional flows at the power line easement on the western edge of the North Bank site. Two additional culverts are proposed where monitoring has indicated additional conveyances are required. These culverts will help restore natural sheet flows to the wetlands adjacent to Cow Creek (Figure 7A).

3. West Bank Site

Proposed hydrologic enhancements to the West Bank site are shown in Figure 9B. Prior to requesting credits for hydrologic enhancement, the following work will be completed: The remains of the B-9 bridge over Deep Creek (Photo 13) and the accumulated debris within the channel will be removed. The flow restricting vegetation that has grown in will be allowed to dissipate with the restored flow velocities. The bridge on road B-91 over Cow Creek (Photo 14) will be lengthened to 75 feet, to more closely match the historic channel opening. No channel modifications are proposed. However, the increased bridge span will allow Cow Creek to reestablish the channel cross section through natural erosion processes. Historic flows will be returned to the wetlands to the southwest where they have been somewhat depleted due to restrictions at the existing bridge. An additional 24" metal culvert will be installed under road B-1W near the intersection with B-13 where runoff often bypasses the existing single 30" culvert and overtops the road. This will eliminate the restriction and restore historic sheet flows into the eastern section of the site. Finally, additional 24" culverts will be added at both existing culvert locations on road B-12 where staff gauge readings have indicated the need for additional hydraulic capacity. These culverts will provide hydrologic enhancement to the south area of the West Bank site.

4. South Bank Site

Figure 7C shows the proposed hydrologic enhancements to the South Bank site. Road B-10 has caused the most significant blockage of sheet flows within the South Bank site. An additional metal culvert will be added under Road B-10 adjacent to each of the three major eastern slough culverts to provide additional conveyance capacity, restore historic sheet flows, and enhance the hydrology of the transitional area northeast of Buck Lake. These culverts will also accommodate the flows from Buck Lake, northeast to the wetland area located inside the southern loop of road B-10. The added hydraulic capacity will accommodate surface water flows and allow the permanent stabilization of the roadway, preventing erosion and sediment deposition. Similarly, two additional 24" culverts will be added at the southeastern arm of the slough under B-10. Flow restrictions will be eliminated toward the transitional area on the eastern side of Buck Lake.

C. WILDLIFE MANAGEMENT

Wildlife management consists primarily of reducing the number of hunters to approximately 1/5 of the historic level by entering into a User Pay Type I Wildlife Management Area lease with FFWCC. The Farmton Mitigation Bank can contribute to the maintenance of a large and diverse gene pool among wildlife in both Volusia and Brevard Counties. The site is big enough that large mammalian species which require large territories will be able to survive in perpetuity. The integrated nature of the wetlands and uplands is especially beneficial to species which require mixed habitats for breeding or feeding. Although a greater number and diversity of animal species are expected to occur as a result of implementation of the Wildlife Management Plan this is not proposed to be verified through monitoring nor are credits proposed to be released as a result of any success criteria. Details of the plan are addressed in the Wildlife Management Plan, Appendix III.

D. FORESTRY STEWARDSHIP

The goals of the Forestry Stewardship program are:

1. Allow the preservation of existing wetlands, and regeneration of harvested wetlands
2. Increase the availability of wildlife food source habitats
3. Protect wetlands by an average 300' upland buffer
4. Increase age and species diversity in trees to improve habitat value
5. Allow the regeneration of upland and wetland hardwood areas
6. Limit clear-cutting to Designated Forestry Areas (Figures 8A-8C)

Methods to achieve these goals are detailed in the attached Forestry Stewardship Plan, Appendix II.

E. PRESERVATION

All of the mitigation methods listed above will be implemented following issuance of a permit.

Conservation Easements will be first placed on the Phase One sites only, and subsequently in increments as each phase is implemented, and prior to any request for credits.

As mentioned earlier in this document, there are numerous platted lots and roads which lie within the mitigation bank sites. Phase by phase, Miami Corporation will relinquish the opportunity to develop the county approved platted communities and roads by vacating the plats (as allowed by Volusia and Brevard Counties) prior to recording the conservation easement.

F. MANAGEMENT

All land management will be the responsibility of the Miami Corporation or their successors. The Mitigation Banks will be managed to minimize human impacts, and to verify that the mitigation plan is being correctly implemented. The bank sites will be monitored to assure success of the project.

As part of the Forestry Stewardship Plan (Appendix II), management will include controlled burns, under brushing, thinning, or other methods to reduce undesirable competing species. When the pines have been thinned several times, and hardwoods have become dominant, it will no longer be feasible to selectively remove pines. The result will be close to a natural mix of pines and hardwoods. It is anticipated that the mitigation areas will require very little long-term management, once ecological succession has developed sufficiently.

Wildlife management will be done by the Florida Fish and Wildlife Conservation Commission (FFWCC) under the terms of a User Pay Type I Wildlife Management Area lease. If at some future time FFWCC should decide not to continue this program, the Miami Corporation will develop and implement a similar program. The elements of the Type I Management program are discussed in Section III-C and in the Wildlife Management Plan found in Appendix III.

There are long-term property management costs, including insurance, property management and maintenance (primarily fences and gates), repairs to equipment, road maintenance, culvert and weir maintenance, salaries and wages of Miami Corporation maintenance staff, and depreciation of equipment, which are not self-funding. The Miami Corporation has calculated these costs at $272,432 per year for the entire 57,000 acre Farmton property. This amounts to $4.78/acre/year. It should be noted that the bank sites contain a higher percentage of wetlands than the overall property, so if $4.78/acre is assumed as the annual long-term maintenance cost, it should more than cover the per acre cost for the bank sites. To ensure that long-term maintenance funding is available in perpetuity, a Land Management Trust Fund will be established. Prior to establishing each phase of the bank by placement of a conservation easement, sufficient funds will be placed in the Trust Fund to generate annual interest equal to $4.78/acre/year for the area covered by the conservation easement. In fact, it is likely that income from the sale of trees within the Designated Forestry Areas will be sufficient to fund the Land Management Trust Fund.

Preliminary field studies have indicated that there may be archaeological material present. If archaeological resources are found within the bank sites, provisions will be made to ensure that such sites receive protection according to the Division of Historical Resources recommendations.

G. PROJECT SCHEDULE

The schedule of implementation for the proposed mitigation activities will commence upon issuance of the appropriate permits. Task implementation for Phase One will be completed within 5 years of permit issuance. The tasks to be implemented for Phase One include the installation of culverts and low-water crossings, implementation of the Wildlife Management Plan and adoption of the Forestry Stewardship Plan. These tasks are found in the Bank Enabling Instrument (BEI), Table 4. Since all construction tasks (with 2 exceptions: see Table 4, BEI) will be completed within 5 years, this timetable will be applicable for Phase One and all subsequent phases. Note that a Type I Wildlife Management lease has already been implemented in anticipation of issuance of a bank permit, so that it would be in place for the 1999/2000 hunting season.

PART IV - ANTICIPATED CHANGES IN ECOLOGICAL VALUE

The greatest proposed value lies in the preservation in perpetuity of such a large amount of land. With the exception of the Ocala National Forest (which is actually a planted pine plantation), the Farmton Mitigation Bank will be the largest preservation area within the St. Johns River Water Management District. As a result of implementing the mitigation plan, the most notable physical changes will come from the re-establishment of a closer approximation of the natural hydroperiods within wetlands, and the regeneration of natural hardwood ecosystems from pine plantations. Water from rain events has been artificially retained (by elevated logging roads) over thousands of acres for longer periods of time than was historically the case. By the same alterations, other areas have been deprived of water, since the source was blocked. The proposed plan will place the bank areas back into "hydrological balance." Simultaneously, the Forestry Stewardship Plan will allow hardwood and mixed hardwood wetlands and uplands, which have been cleared and planted in pine, to return to their natural condition.

Functionality of habitat will be improved with the restoration of hardwood areas, as well as through the Wildlife Management Plan, which calls for a reduction in hunting pressures. There are three traditional emphases in habitat management: (1) maximizing production of game species, (2) maximizing wildlife diversity (both game and non-game species), and (3) preserving interior or area-sensitive species. All of these goals will be achieved over time through this mitigation plan.

Much of the value of this bank lies in the fact that ecologically damaging activities which could be done will not be done. The potential for development has already been discussed in Section II-E. Without the establishment of the bank, large areas of land within the three bank sites could be used for residential and commercial development in the future. In addition, a recent forestry survey indicated that within the three bank sites, 95 % of all the forested wetlands and 100% of all uplands could be harvested, bedded and replanted with slash pine. The remaining "food source" ecosystems (oak hammocks, mixed hardwood wetlands, etc.) could be cleared to remove all native trees, bedded and replanted with slash pines. Plant succession, which is the ecological process that shapes wildlife habitat, would not be allowed to proceed to equilibrium. The importance of plant succession is that (1) natural diversity develops, and (2) as it proceeds, forest canopy trees increase in height, diameter, and volume, but decrease in density. There is a direct relationship between abundance and diversity of bird species and age of forests. Older forests often support large numbers of primary and secondary cavity-nesting species and canopy-based rookeries which contribute to high species diversity. William Bartram, an ecologist who traveled through Florida in the mid-1700's, observed that ancient cypress trees developed large umbrella-like canopies (unlike younger trees, which have conical canopies), and only these trees were used as rookery areas by certain wetland-dependent birds.

Without preservation of the bank sites, agricultural practices could also change to cattle grazing or sod farming through the conversion of cleared pine plantations to improved pastures (as was the case in Farmton during the early 1900's). Changing the land use from timber production to these and other options, such as citrus groves, has been suggested. Such activities would result in the loss of virtually all environmental benefits of the land. Bank establishment would eliminate these possibilities.

Numerous wildlife species are expected to benefit from preservation and enhancement activities associated with the bank implementation. A brief description of individual species and habitat of each is presented below:

Endangered Species

Bald eagle (*Haliaeetus leucocephalus*) - The bald eagle is a species of primary concern in this state, due to its status as a national symbol, and its sensitivity to environmental disturbances. Eagles can be seen flying over many habitat types, but they require water bodies for feeding, and large trees near feeding areas for nesting. There are active eagle nests nearby and within the bank sites.

Wood stork (*Mycteria americana*) -This species is the most endangered wading bird in Florida. It requires feeding areas in the form of pools or ditches in which fish congregate and they nest in forested swamps and mangroves. Hydroperiod restoration of the wetlands will almost certainly result in greater numbers of fish over two inches in length, which is the preferred size of prey animals for wood storks. Wood storks have been seen on the site, but no breeding colonies have been reported in the near vicinity of the project.

Red-cockaded woodpecker (*Picoides borealis*) - The colonial red-cockaded woodpecker (RCW) is a habitat specialist, requiring stands of over-mature longleaf pine that have contracted the red-heart disease for cavity building. These stands need to be open, with a sparse subcanopy to allow easy flight, and ample foraging habitat of younger pines surrounding the cavity trees. Following the maturation of the proposed longleaf pine uplands, suitable RCW habitat may occur on the site. No RCW's have been seen on the site. However, through preservation and management, it is possible that within a few decades the site will have sufficient habitat to be used by this species.

Bachman's warbler (*Vermivora bachmanii*) - One of the rarest of America's birds, possibly even extinct, the Bachman's warbler breeds in deciduous swamps in isolated localities in southern states, north of Florida, and winters in the West Indies. It passes through this state as a migrant, and as such, likely uses a variety of forested habitats as stopover points during its migrations. Due to the extreme rarity of this bird (last confirmed sighting in the U.S. was in the mid-1980's), it has been assigned a low likelihood of occurrence on this project site.

Kirtland's warbler (*Dendroica kirtlandii*) - This warbler is an extreme habitat specialist and has one of the most restricted breeding ranges of any North American bird. It only breeds in approximately 500 mi^2 of the open jack pine (*Pinus banksiana*) plains of central Michigan. The bird winters in the Bahamas, so it only passes through Florida during the spring and fall migrations. While in this state, it will utilize a variety of upland and wetland habitats as stopover locations during migration.

Threatened Species

American alligator *(Alligator mississippiensis)* - After being legally protected for several years, the alligator has made a population comeback, and are now fairly common in areas that will support them. Alligators can be found in most types of wetlands that have standing water and ample food supplies. Habitat improvements that will benefit the alligator include the enhancement of the wetlands. Several have been observed on site.

Eastern indigo snake (*Drymarchon corais couperi*) - The indigo snake is a habitat generalist, using a variety of habitats from mangrove swamps to xeric uplands. During winter months, however, it can typically be found in uplands utilizing the burrows of gopher tortoises (*Gopherus polyphemus*) as shelter. These snakes require large tracts of natural, undisturbed habitat, so it is likely that they will be found in the FMB.

Arctic peregrine falcon (*Falco peregrinus tundrius*) - Florida is an important wintering spot for this subspecies of peregrine, and it can be found here from September through May. These falcons feed primarily on wetland birds along the coastal regions of the state, and near inland lakes, rivers and herbaceous wetlands. They have been known to utilize agricultural areas to a minor degree, as well. Almost the entire site can thus be considered suitable habitat for this species. The primary improvement in habitat for the falcons will be the increase in food supply, brought about by the increased hydroperiod of the wetlands and the preservation of the uplands.

Audubon's crested caracara (*Polyborus plancus audubonii*) - This species of raptor is most common in this state in the agricultural fields north and west of Lake Okeechobee. The preferred habitat for the caracara is open, palmetto prairies and agriculture fields. They nest in adult cabbage palms (*Sabal palmetto*). No caracaras have been observed.

Candidate Species (C2)

Gopher frog (*Rana capito*) - The gopher frog is a gopher tortoise burrow commensal organism, utilizing the burrows for shelter, and breeding in nearby wetlands. Prime gopher frog habitat includes xeric uplands, especially longleaf pine-turkey oak associations, with nearby (within one mile), seasonally flooded marshes or ponds.

Gopher tortoise (*Gopherus polyphemus*) - This species is a key component in the determination of habitat suitability for endangered species because of the large number of other animals that will use tortoise burrows for one or more of their life requisites. While it is common to find tortoise burrows in most types of upland communities, the preferred habitats of the gopher tortoise are xeric uplands and high pine flatwoods. Only two burrows have been observed within the project boundaries during the field evaluations for this site. Suitable habitat exists in the oak areas. Preservation of tortoise habitat continues to be the best method of assuring the continued existence of this species and its commensals.

Florida pine snake (*Pituophis melanoleucus mugitus*) - This snake is another tortoise burrow

commensal organism, utilizing both tortoise burrows and the tunnels of pocket gophers (*Geomys pinetis*). Preferred habitat of the pine snake is xeric uplands, and to a lesser extent, flatwoods and other mesic uplands. The same habitat preservation and manipulations that will improve the habitat value for the gopher tortoises will also benefit this species.

Southeastern American kestrel (*Falco sparverius paulus*) - This is the resident subspecies of the kestrel, to be distinguished from its larger cousin, *Falco sparverius sparverius*, which is a winter visitor to Florida. The Southeastern kestrel requires three components for optimal habitat: large, open fields for foraging, snags for nesting, and snags, fence lines or telephone poles as perching sites from which to hunt. The preservation and restoration of habitat will have a positive impact upon this species due to the increase in the available food supply.

Florida mouse (*Podomys floridanus*) - This mouse is one of the two mammal species that are endemic to Florida. It typically lives within gopher tortoise burrows in fire-maintained, xeric uplands. Due to the natural flexibility of habitat requirements of most animal species, this one in particular, this mouse has a good possibility of occurring on the site if the site is managed for gopher tortoise habitat. Preservation and burning should improve the on-site habitat for this species.

Sherman's fox squirrel (*Sciurus niger shermani*) - The Sherman's is the largest of the three fox squirrel subspecies that occur in Florida. While its population is declining, this squirrel is still fairly common. Optimum habitat for this subspecies is composed of longleaf pine-turkey oak sandhills, although they will also be found in more mesic forested areas.

Florida black bear (*Ursus americanus floridanus*) - Although the distribution of the black bear is patchy throughout Florida, it is believed to encompass the western and central portions of Volusia County. Preferred habitat of the black bear is dense forest, both upland and wetland, but it is often encountered in other areas during its seasonal movements. Palmetto fruit is an important component of the bear's diet. The availability of dense forests and low degree of development in and around the FMB implies a high likelihood of bear occurrence in this region. Local residents have reported the presence of bears in this area and bear scat as been identified on the project site. Several bear tracks have also been observed. An additional improvement in the value of the FMB from the perspective of black bears will be the reduction of human presence and hunting on the site.

Additional State-Listed Species

Roseate spoonbill (*Ajaia ajaja*) - Nearly extirpated in the middle of this century, the spoonbill is making an encouraging comeback. The only recorded nesting colonies of the spoonbill are in Florida Bay, Tampa Bay and on Merritt Island, but spoonbills can also be found inland, along rivers, lakes and freshwater marshes. There is a possibility of encountering spoonbills within the project.

Limpkin (*Aramus guarana*) - The limpkin is a reclusive bird that inhabits forested swamps, mangrove swamps and marshes. Increasing the hydroperiod of the wetlands will increase the

food supply for this species by increasing the local populations of apple snails and other prey species.

Little blue heron (*Egretta caerulea*), Snowy egret (*Egretta thula*), Tricolored heron (*Egretta tricolor*), and White ibis (*Eudocimus albus*) - These wading birds all have similar life histories, and inhabit marshes, lakes, rivers, ponds and coastal systems. All three species have been observed from time to time on the FMB, and are present in large numbers on the St. Johns River and Crane Swamp.

Florida sandhill crane (*Grus canadensis pratensis*) - The Florida sandhill crane is a non-migratory subspecies of *Grus canadensis*, and has been seen on the FMB. Sandhill cranes nest in shallow marshes and wet prairies, and forage for prey in the marshes and open fields.

PART V - OFFSETTING UNAVOIDABLE IMPACTS

Prior to the selection of Farmton Tree Farm as a Mitigation Bank, the Miami Corporation investigated the potential wetland impacts which could be assigned to development in the geographic service area. Anticipated projects range from proposed FDOT road improvements to private development activities.

The FMB represents a consolidation of traditional mitigation techniques into three, larger and more manageable projects. This size advantage of each, coupled with diversity of habitat and enhancement potential at the FMB, provides a greater level of assurance that unavoidable wetland impacts will be offset. This is especially true in regard to any Listed Species, which are far better served by the restoration and preservation of the FMB site than by the existence of strips of wetlands adjacent to busy highways or isolated mitigation pockets. The Miami Corporation will use the WRAP (per the October 1998 Manual) method on future environmental impacts to assure that environmental balance is achieved.

PART VI - ARCHAEOLOGICAL PROTECTION

The establishment of the FMB will require a limited amount of earthwork associated with the installation of low water crossings and culverts. In the event that artifacts are discovered, the Miami Corporation will report the findings to the Florida Division of Historical Resources for their recommendations.

PART VII - BASELINE MONITORING INFORMATION

A. MONITORING

The monitoring program for Farmton Mitigation Bank is divided into two phases: short-term monitoring and long-term monitoring. These are described below:

1. Short-term Monitoring Program

The short-term monitoring program will be done annually for the first 5 years. Reports will be submitted in December of each year. The following elements will be documented in each annual report:

- location & size of culverts and low-water crossings
- piezometer and staff gauge readings
- weekly rainfall data (at Farmton forestry office)
- GIS map of all clear cuts within bank sites
- GIS map of all bedded areas removed
- evidence of cattle removal and construction of fences
- location of plats and road right-of-ways vacated
- age, weight, and sex of deer taken (as provided by the FFWCC)
- infrared aerial photos (1"=1320') in year 1, year 3, and year 5
- photos of work done

Details of the short-term monitoring program are described below. The first monitoring report will establish the format for all future reports.

a. Hydrologic monitoring

Recording piezometers will be installed at major ecotones in each of the 3 bank sites. The piezometers will be installed within one year after permit issuance, and will be field located by GPS. For wide ecotones, the intent is to place one piezometer at the center of the ecotone, and one each above and below the ecotone. For narrow ecotones, two piezometers will be used - one each in the upper and lower zones of the ecotone. The intent is to be able to detect changes in hydrology which may cause a shift in the location of the ecotones. The approximate locations of the piezometers are as follows:

North Bank (wide ecotones)
- eastern side of Crane Swamp near B-5 (3)
- eastern side of Spruce Creek Swamp (3)

West Bank (narrow ecotones)
- Cow Creek upstream of B-91 (2)
- North Lake Harney Slough upstream of B-12 (2)

South Bank (varied ecotones)

- Buck Lake Slough upstream of B-10 (3)
- Buck Lake Slough south of B-101, west of FP&L easement (2)

In addition, rainfall data will be collected weekly at the Farmton operations center.

b. Vegetative monitoring

It should be noted that upon issuance of the permits, the Forestry Stewardship Plan will go into effect over the entire acreage of each of the 3 bank sites, yet only the first phase (500 acres ±) will be implemented in each bank site. Therefore, it would not be fair and reasonable to conduct a detailed vegetative monitoring program throughout the bank. However, some form of monitoring outside of the active phases is necessary, since changes will be occurring due to changes in the forestry practices. Toward that end, IR aerial photography will be used to detect broad-based longterm shifts in vegetative composition. The infrared aerial photos will include a clear mylar overlay of the FLUCFCS map.

In the active phases, for polygons W-4 and W-5, two 150' transects each will be established. Vegetative monitoring will be done according to the methods of Oosting (1966). The baseline monitoring will identify the location of transects. Standard photodocumentation will also be provided.

c. Other documentation

Hunting - This section will include data on the number of hunters licensed each year, as well as the number and species of game killed (if available from FFWCC records).

Cattle - The removal of cattle and construction of fences will be documented.

Plats and ROWs - The dates and locations of any plats and ROWs vacated will be documented.

Photos and narrative descriptions - Photos and narrative descriptions of all work accomplished each year will be included..

2. Long-term Monitoring Program

The first long-term monitoring report will be submitted 5 years after permit issuance. After that, long-term monitoring reports will be submitted every 5 years as long as the bank is in operation. Although credit release is not tied to forest regeneration, one of the efforts of the long-term monitoring program is to detect changes in canopy through infrared aerial photo interpretation. Sufficient background data is available from historic and present infrared aerial photos that canopy signatures can be easily distinguished. The following elements will be documented in each report:

- GIS map of all clear cuts, thinning and other forestry activities within bank sites
- GIS map of all bedded areas removed
- infrared aerial photos (1"=1320') with FLUCFCS overlay

The infrared aerial photos will include a clear mylar overlay of the original-ecosystem FLUCFCS map (the "target" for forest regeneration). Any changes observed as a result of forest regeneration will be described in the report.

B. MAINTENANCE

The Miami Corporation will be permitted to maintain property boundary fences and logging roads within the banks (see Road Map, Appendix IV). All new culverts and low-water crossings, as well as existing culverts, will be maintained on an as-needed basis. Fire breaks will be maintained within the Designated Forestry Areas. Because of the large size of the bank and the minimum amount of construction to be done, maintenance is expected to be minimal.

PART VIII - SUCCESS CRITERIA

Farmton Mitigation Bank is unlike any other mitigation banks that have been permitted in Florida, since credit sell-out is not expected to occur until 50-100 years after permit issuance. Most mitigation banks are designed for credit sell-out in 5 years, perhaps 10 years at the most, and their success criteria and monitoring plans are designed to support their intent. With the Farmton Mitigation Bank, there is the unprecedented opportunity to observe the regeneration of natural ecosystems, including wetland and upland hardwood forests, from slash pine plantations. No success criteria, and no additional credit release, are tied to this long-term process of ecosystem regeneration, since it is understood that - given enough time - the process will occur. It is an ecological fact that when human-induced perturbations (mainly forestry, in this case) are removed, ecosystems revert to their original condition. The time frame is expected to be 50-100 years, which is the expected longevity of the bank.

The specific tasks, programs, and success criteria are listed in Tables 4 & 5 contained within the Bank Enabling Instrument (BEI). The Miami Corporation understands that unless implementation of the mitigation plan is commenced upon issuance of the permit, new background data and new calculations of credits would be required (probably done through a permit modification as each phase is implemented). As a result, all work and all programs will be implemented as described in this mitigation plan within 5 years after issuance of the permit. Exceptions include: bedding removal (which will occur after one-time clearing of planted pines), cattle removal (which will occur within 5 years after placement of a Conservation Easement on a phase), Cow Creek Bridge replacement and Deep Creek piling removal (which are tied to the phases in which they occur).

If credits are to be sold during the first year, the status of the mitigation program will be documented in interim reports to the regulatory agencies prior to placement of Conservation Easements. Achievement of these task implementation and success criteria will also be subsequently documented in the annual monitoring reports.

FORESTRY STEWARDSHIP PLAN

for

FARMTON MITIGATION BANK

Revised June 24, 1999

2nd Revision December 20, 1999
3rd Revision January 12, 2000

A. BACKGROUND

From the late 1800's to around 1960, the land which comprises the Farmton Tree Farm was cleared and used for cattle grazing. Historical records indicate that it may have been regularly burned and used for cattle grazing by the native Americans long before then. Since the early 1950's the majority of lands suitable for planting have been planted with slash pine (Photos 1&2). The pine plantations are harvested at 20 - 40 year rotation intervals. As a stand of timber is cut, or as new land is cleared, the land is replanted with slash pine. Other timber considered as merchantable has been harvested within some of the temperate hardwood areas and these areas were replanted with slash pines. The logging of cypress and removal of pine from within forested wetlands has also been a part of the harvesting program. The result of the long-standing forestry program is that some of the pine plantations, along with some cypress wetlands and upland temperate hammocks within the three bank sites have been recently harvested or thinned.

There are over 17,000 acres of wetlands on the three bank sites (Figures 4A-4C), with the North Bank containing the highest percentage of wetlands. The remaining lands consist primarily of pine flatwoods, with lesser amounts of hardwood and live oak hammocks (Photos 3&4), sand pine/scrub, and other minor communities. Virtually all of the bank area has been mapped as forestry stands, and over 60% of the total bank area is considered to be readily harvestable (slash pines and cypress stands), with another 35% harvestable depending on seasonal or climatic conditions.

A Forestry Stewardship Plan has been developed which calls for limited forestry activities within designated areas of the bank sites. According to the plan, only the planted pine flatwoods shown as Designated Forestry Areas (DFAs) in Figures 8A-8C will be subject to continued large (150 acres)

clear cuts. **Important Note: The Designated Forestry Areas are outside of the bank for purposes of the federal permit, but inside the bank for the state permit.** Surrounding the DFAs are upland buffers, which serve as the average 300' buffers for wetlands adjacent to the DFAs. Pine areas within the upland buffers will be managed to achieve uneven age distribution (see Sections 4.b and 5.b). Elsewhere within the bank are areas that either are or were upland or wetland hardwood forests, or oak hammocks. Most of these areas have been cleared and are in the process of being converted to pine plantations. These will be managed by means of selective harvesting of pines to encourage them to revert to their original condition as quickly as possible. Within cypress-dominated wetlands, no further harvesting will occur.

The Forestry Stewardship plan will allow the regeneration of diverse forest ecosystems, which will in turn provide a significant increase in wildlife food sources. This is expected to increase the density and diversity of both game and non-game species (although no monitoring or credit release is proposed for actual species increases). Allowing tree species to reach old age also has the potential to allow some endangered and threatened species which rely on large old trees (red-cockaded woodpeckers and some wetland dependent birds) for nesting to re-colonize the area.

All of the existing farm roads within the bank sites will be maintained as they have been prior to issuance of the bank permit. Within pine plantations which occur in the banks, additional access roads may be constructed, and these will be permitted as required by SJRWMD.

B. EXISTING CONDITIONS

Pine plantations within the mitigation bank sites total approximately 7,020 acres. Of these, 3,329 acres occur within the DFAs, and 3,690 are within upland buffers (of which 1,170 ac. have been bedded). The ages of the individual stands vary from one year to approximately 35 years old. The timber stands in the DFAs are located in historic pine flatwoods areas, but outside of the DFAs planted pines are also found in habitats which were historically upland mixed hardwood forests, oak hammocks, and mixed forested wetlands.

Forestry techniques follow a 20-40 year cutting rotation, and where a stand of timber is cut, the land is seeded or planted with slash pine. Pines considered merchantable within non-pine flatwood areas have been harvested, and these areas subsequently cleared and replanted with slash pine. As a result, few old, large pines and oaks remain on the three mitigation bank sites. The logging of cypress and pine from within forested wetlands has been a routine part of the forestry program. The mitigation categories shown in Figures 9A-9C denote where clear cuts have occurred within the past 3 years, or are currently under contract to cut.

Bank Site	Total Acres	Acres of Logged Timber (1995-1998)	Acres of Timber Under Contract to be Logged (1999)
North Bank site	16,337	1,050	118
West Bank site	3,595	764	334
South Bank site	4,391	275	1,659
Totals	24,323	2,089	2,111

Note that the 1,659 acres under contract as of August 1998 to be harvested in 1999 in the South Bank site are a result of the major forest fires which burned much of Central Florida in June and July of 1998.

C. FORESTRY STEWARDSHIP PLAN

The goals of the Forestry Stewardship program are:

1. Allow the preservation of existing wetlands, and regeneration of harvested wetlands
2. Increase the availability of food source habitats
3. Protect wetlands by a 300' upland buffer
4. Increase age and species diversity using uneven-age management techniques
5. Allow the regeneration of upland and wetland hardwood areas
6. Limit clear-cutting to Designated Forestry Areas (Figures 8A-8C) and pine flatwoods

These goals will be achieved by the implementation of specific programs, as detailed below.

1. Establishment of Designated Forestry Areas (state permit only)

Certain areas within the mitigation bank sites consist primarily of large blocks of pine plantations which were historically pine flatwoods. These areas contain minimal wetland acreage, and are planned for continuing forestry operations using environmentally sensitive techniques. In order to delineate these "Designated Forestry Areas" (DFAs), the 300' upland buffers around major wetlands were laid out using straight lines as much as possible (Figures 8A-8C). In the field, the boundaries between buffers and DFAs will be delineated, as needed, (based upon GIS coordinates from the mitigation maps) by permanent markers, fire breaks, or other suitable methods prior to any harvesting activities.

This will make it possible for foresters in the future to easily identify the boundaries of the areas available for harvest. Within the DFAs, the trees will be harvested using clearcuts of no greater than 150 acres, and no clear cuts will be adjacent to areas cut within the previous 3 years (the exception to this program will be in the event of uncontrolled forest fires, such as occurred in 1998, where burned trees will be harvested before disease sets in). The intent is to obtain a mixture of uneven-aged stands up to 20-60 years of age. Excessively dense saw palmetto understories will be chopped after harvesting. In each stand, wildlife trees with large diameters, hollow cavities, and nest supporting branch structures will begin to develop within the 25' wetland buffers, as well as within the 300' surrounding wetland buffers. At age 15, trees will be assessed for first thinning. Stands will be thinned to 40-80 sq. ft. of basal area as soon as the trees are merchantable. Thinning will occur every 5-10 years, or as needed, to maintain a basal area between 50 and 110 sq. ft. per acre.

2. Establishment of Upland Buffers Adjacent to Wetlands

An upland buffer averaging 300' wide will be established around major wetlands. In some cases the buffers are much wider than 300' in order to contain the natural and relic upland hardwoods. As a result, they are correspondingly less wide in other areas, but in no case are they less than 100' wide.

One exception to the 300' buffer system is for wetlands which lie within the Designated Forestry Areas (described below). These isolated wetlands will have a 25' buffer. In order to achieve uneven-age distribution in the DFA's, the 25' buffers will be managed by thinning and chopping, followed by harvesting on a 60-year rotation. No more than 50% of any 25' buffer will be harvested within a 15-year period. Therefore, if half of a 25' buffer is to be harvested, the remaining half will be at least 15 years old.

One buffer area of special interest is the xeric oak area located in the North Bank site which has been harvested of oaks and replanted with longleaf pine seedlings. This area will be allowed to regenerate as it has been planted, with periodic thinning to achieve uneven-age distribution.

3. Prescribed Burns

a. Designated Forestry Areas

No prescribed burns are proposed within the Designated Forestry Areas (DFAs). These areas are outside of the credited portion of the bank for the federal permit, and proposed credit ratios have been accordingly reduced for purposes of the state permit. In any case, the Farmton property is so large that natural fires caused by lightning strikes are a regular occurrence, and the fires often burn themselves out before they can be controlled.

b. Buffer Areas

Areas within the Buffer Areas which are classified as pine flatwoods (FLUCFCS 411) will be subject to prescribed burns. The goal of the prescribed burn program is understory reduction, which has a number of widely recognized benefits ranging from increasing the density and diversity of groundcover species which serve as food sources for wildlife, to reducing the likelihood of catastrophic wildfires.

As each phase of the bank is implemented, the prescribed burn program will begin. When weather is suitable and burn permits can be obtained, controlled burns in stands of approximately 50 to 150 acres will be done during normal working hours. Wide disked fire lines will be established and

maintained in order to contain the burns. The lines will be maintained using a flat plowing disk harrow.

The goal will be to burn the stands on a 2 to 5 year rotational basis, using a system of two growing season burns followed by one dormant season burn. Initial burns will be done in the winter if either of the following two conditions are present: (1) Desirable slash pine seedlings and saplings are present, or (2) Fuel loads are high enough that growing season burns may damage desirable slash pines.

4. Thinning and Chopping

a. Designated Forestry Areas

At age 15, trees will be assessed for first thinning. Stands will be thinned to 40-80 sq. ft. of basal area as soon as the trees are merchantable. Thinning will occur every 5-10 years, or as needed, to maintain a basal area between 50 and 110 sq. ft. per acre. Excessively dense saw palmetto understories will be chopped after clearcut harvesting.

b. Buffer Areas

For purposes of forestry management, the ecosystems within the buffer areas can be divided into 3 types of areas: pine flatwoods, systems which include upland hardwoods, and systems which include wetland hardwoods. Management procedures for these areas are discussed below. Note that management procedures for upland hardwoods and wetland hardwoods are similar, so these areas are discussed together.

Pine flatwoods (411)

Virtually all of the areas that were historically pine flatwoods have been managed as part of the overall Farmton forestry program, and have been clearcut and seeded or planted at some time. Most of these areas which lie within the bank (but outside the DFAs) are located within the 300' upland buffer zones (the yellow areas in Figures 8A - 8C). A few occur as isolated "islands" elsewhere within the bank. All pine flatwood areas will be managed as follows:

At age 15, trees will be assessed for first thinning. Stands will be thinned to 40-80 sq. ft of basal area per acre as soon as the trees are merchantable. Following that, thinning will occur every 5-10 years, or as needed, to maintain a residual basal area between 50 and 80 sq. ft. per acre.

Hardwood enhancement areas (wetland and upland - 421, 425, 425R, 427, 434, 624, 630)

Many of these areas still have large oaks and other hardwood species, along with naturally occurring and planted pines. Other areas have been clearcut and planted or seeded in pine, but hardwood species remain in the groundcover or subcanopy. As these pines mature, they will be selectively cut, but no further planting will occur. Eventually the hardwoods will become dominant, and selective harvesting will cease, since it will no longer be economically feasible. Contracts for selective harvesting in these areas will contain a penalty clause for damaging hardwoods (see sample forestry contract, Appendix IV).

5. Harvesting Rotations and Uneven-age Management

a. Designated Forestry Areas

All areas shown as pine flatwoods in Figures 4A-4C within the DFAs will be thinned and chopped according to Section 4 above, and harvested on a 20-60 year rotational basis. Pines will be re-established either by seeding or planting. Clearcuts will be limited to 150 acres, and no clearcuts will be adjacent to areas cut within the previous 3 years.

b. Buffer Areas

No uneven-age management techniques for southern slash pine forests have been developed, and very little information has been published on the subject. The best approach currently seems to be management to achieve small stands of uneven age. The goal is to arrive at a mosaic of stands with trees ranging in age from 0 - 80 years. This approach requires periodic thinning to maintain basal areas appropriate for the age of the stands (40 - 80 sq. ft. for first thinning, 50 - 80 sq. ft. for subsequent thinnings).

All areas shown as pine flatwoods in Figures 4A-4C will be thinned and chopped according to Section 4 above, and harvested on a 15-80 year rotational basis. The first thinning (age 15 approx.) constitutes the first harvest rotation. Subsequent thinning will be done as necessary to maintain the basal area goals. Pines may be re-established by seeding or planting if natural regeneration appears to be inadequate to prevent dominance of saw palmettos, but they will not be planted in rows. The goal is to establish an uneven age mosaic of stands, and in order to achieve that goal, the size of

stands will vary from area to area. In other words, larger areas can have larger stands, but smaller areas must have smaller stands.

The exception to this management program will be in the event of uncontrolled high temperature forest fires, where burned trees will be harvested before insects or disease sets in. For example, a large percentage of the South Bank site was burned by very hot fire during the widespread fires which occurred throughout central Florida in the summer of 1998. Areas that previously were planted in pine either have been or will be re-seeded or re-planted in pine (not in rows) to prevent development of saw palmetto prairies. Obviously the result will be large stands of even age. To arrive at uneven aged stands, some stands will be harvested at around 20 years, while other adjacent stands will be left progressively longer - some for as long as 80 years.

In some areas (shown hatched in Figures 9A-9C) bedding, consisting of alternating low berms and swales, has been constructed to allow pines to grow at higher elevations than natural grade. In those areas where bedding has occurred, the beds will be leveled to grade after being clearcut. This will restore historic surface water hydrology and soil types. Because of the earthwork involved, pines will be seeded or planted to allow canopy to become re-established as soon as possible and help to prevent the influx of exotic or nuisance species. No further bedding will be done within the Buffer Areas.

6. Elimination of Harvesting in Wetlands

As part of the previous forestry program, numerous wetlands of all types have been harvested of trees in all of the bank sites. Cypress wetlands have been clear cut, and mixed hardwood wetlands

and hydric hammocks have been clear cut and re-planted in pines. As of the time of the development of this mitigation plan, cutting in wetland areas has either been completed, or is under contract to be completed by the end of year 2000, and has been identified as harvested in the accompanying maps.

If the permit application is approved and the mitigation plan is implemented, no further cutting will occur in cypress swamps (FLUCFCS 621). Limited selective cutting will, however, continue for a period of time in the hardwood wetlands. As pines are cut, fewer and fewer pines will remain, and at some point in time it will no longer be economically or technically feasible to remove them. Since no further pines will be seeded or planted in these areas, this will accelerate the re-growth of hardwood trees, and these areas will revert to their original condition. These wetlands will ultimately be preserved and managed in their natural state, with as little human intervention as possible.

WILDLIFE MANAGEMENT PLAN

for

FARMTON MITIGATION BANK

Revised December 30, 1999
2nd Revision January 12, 2000

WILDLIFE MANAGEMENT PLAN

EXECUTIVE SUMMARY

The Wildlife Management Plan (WMP) consists primarily of reducing and controlling the number of hunters over the entire 57,000 acre Farmton property, not just the bank sites. The WMP will be placed into effect within the first year after issuance of the bank permits, and will reduce the number of hunters to approximately 1/5 the present level. The mechanism for managing hunters will be through a Type I Wildlife Management Plan, implemented and managed by the Florida Fish and Wildlife Conservation Commission. They will be responsible for all record-keeping associated with licensing of hunters, game killed, etc., as well as policing the property during hunting season to control vandalism and poaching. In addition to the hunting program, cattle will be removed and fenced out no later than within 5 years of implementation of each phase. In most instances, cattle will be removed immediately upon implementation of a phase.

The annual monitoring report will include data on the number of hunters licensed each year, as well as the number of game killed (if available from the Florida Fish and Wildlife Conservation Commission). The report will also document the removal of cattle and construction of fences.

BACKGROUND

The Florida Fish and Wildlife Conservation Commission (FFWCC) has for decades leased approximately 52,000 acres of land in Farmton for public hunting purposes. It is estimated that during some periods of the hunting season, as many as 2,500 hunters may be on the land. Since only about 35,000 acres are readily accessible, this results in a density of about one hunter per 14 acres.

Because Farmton has been leased to FFWCC for public hunting for many years, some records exist of the take of game species. The primary game species is white-tail deer, but other species such as turkey, wild hog, quail, and bobcat have been taken. Estimates of the deer population at Farmton by FFWCC average around 500 (about one deer per 120 acres of suitable habitat). In the southeastern U.S., the prime white-tail deer habitat is bottomland hardwood forest, which can support a deer density of up to one deer for every 10 - 15 acres. The FFWCC believes that the deer population at Farmton is below carrying capacity. This is due to the low wildlife carrying capacity inherent in pine plantations, and as well as historic hunting pressure. Hunting activities may have contributed to the loss of animal species diversity, as well as some degradation of vegetative habitat due to vehicular access (Photo 7). There are semi-permanent hunting camp sites scattered throughout Farmton, some of which have been there for decades.

All bank sites currently have some cattle, although the stocking rate is very low. As a result, only minimal damage to the ecosystems has been observed. Cattle are often seen along the banks of Cow Creek in the West Bank site, in the uplands near the powerline easement in the North Bank site, and in the cleared pine flatwoods areas in the South bank site.

GOALS

The primary objective of the Wildlife Management Plan is wildlife enhancement and protection. This will be accomplished in three ways: (1) Beginning at the time of issuance of the bank permit, there will be a reduction in the number of hunters permitted and managed by FFWCC to one fifth the present amount on the entire Farmton property. (2) Cattle will be phased out of each bank site, as described below. (3) The Farmton Mitigation Banking Plan assumes that wildlife enhancement will occur through restoration and enhancement of hardwood uplands and wetlands within the bank sites. This will be accomplished through the Forestry Stewardship Plan (Appendix II), and will not be discussed further in this document. By increasing the amount and diversity of food source plants, it is expected that the wildlife carrying capacity of the bank sites will increase significantly with time. However, no success criteria and no goals have been stated herein as part of the mitigation plan. We have adopted the approach that "if we build it, they will come".

METHODS

A. Hunting Plan

Hunting within the mitigation bank sites will be reduced to a fraction of what it has been for the previous several decades. Historically, for FFWCC to manage the overall property as a Wildlife Management Area, it was required to be completely open to members of the public who held active hunting licenses. As a result, approximately 2,500 hunters annually used the site. Recent legislation allows a new type of wildlife management lease by FFWCC in certain areas. These are to be

referred to as "User Pay Type I Wildlife Management Areas", and are based upon a 5-year lease which can be terminated annually by either party. Under this type of lease, FFWCC will be responsible for wildlife management, but the Miami Corporation can establish the number of hunters and other conditions. The optimum number of hunters has been discussed with FFWCC, and will be set at 875 hunters. This means that, realistically speaking, a maximum of 500 hunters at any time would be likely to be on the overall Farmton property, mostly outside the bank areas, since the bank sites are more difficult to access. Of equal importance is the fact that the statewide hunting licenses cannot be used at Farmton. Instead, specific hunting licenses for Farmton will be required. This drastic reduction in hunting should not only increase the game species count, but will result in greatly decreased damage to the ecosystems from hunters' vehicles. A summary of the specifics of the hunting plan developed by FFWCC is as follows:

1. Daily and possession limits are as follows: deer (daily limit 2, possession limit 4), wild hogs (no limits), turkey (daily limit 1, season limit 2), gray squirrel, quail, rabbit (daily limit 12, possession limit 24 each), bobcat, mink, otter (possession limit 1), raccoon, opossum, armadillo, beaver, coyote, skunk, nutria (no limits).

2. It is unlawful to set fires, or cut or destroy any tree, shrub, or protected plant.

3. Taking of foxes or fox squirrels is prohibited.

4. No person shall release any wildlife on the wildlife management area.

5. It is illegal to bait wildlife, use live decoys, traps, snares, nets, drugs, lights, or recorded game calls.

6. It is illegal to kill swimming deer.

7. Possession of dogs is prohibited in areas posted as "closed".

8. Vehicles may be operated only on established roads.

9. Airboats and tracked vehicles are prohibited.

10. Hunters shall check all deer, turkey, and hogs at a check station prior to leaving the area. A wildlife officer may search any camp, vehicle, or boat when he or she reasonably believes a violation has been committed.

The Type 1 WMA hunting lease with FFWCC provides that the Commission shall perform law enforcement services on the WMA, including patrolling the WMA, and shall protect and defend the WMA from vandalism, fires, litter, unauthorized use, and habitat destruction, and shall enforce all federal and state laws and rules relating to the management, protection, and taking of wild animal life and freshwater aquatic life. The Commission may, at their option, conduct biological surveys or engage in other biological assessments on the WMA. Usually these consist of analysis of age, weight, and sex data from check point records. The FFWCC may propose changes to the 10 point hunting plan based on the results of these surveys. The changes would reflect changes in the amount

and type of eligible species due to implementation of the Wildlife Management Plan (decreased hunting pressure) or Forestry Stewardship Plan (habitat restoration).

B. Phased Cattle Removal

Removal of cattle will begin upon implementation of each phase, and cattle will be completely removed within 5 years of phase implementation.

C. Habitat Restoration and Enhancement

One of the major goals of the Forestry Stewardship Plan is to encourage the restoration of upland and wetland habitats which historically included significant hardwood components. This will be done by selectively removing previously planted slash pines. Another goal is to develop a type of uneven-age management by using small clear-cuts with sequential harvesting to establish a mosaic of stands of different ages. Refer to the Forestry Stewardship Plan, Appendix II, for detailed information on habitat restoration and enhancement.

SUCCESS CRITERIA

It is not the intent of the Farmton Mitigation Banking Plan or this Wildlife Management Plan to demonstrate or measure in any way an increase in number, age, or species diversity as a result of implementing the three methods described above. Instead, it is assumed that if recognized adverse conditions are improved or eliminated, positive results will occur. Therefore, the success of this

program lies with the implementation itself, rather than in quantification of any observed changes.

EXPECTED BENEFITS

Having noted above that no wildlife-related success criteria are proposed to be measured, the expected benefits of the Wildlife Management Plan are discussed below.

The Farmton Mitigation Bank can contribute to the maintenance of a large and diverse gene pool among wildlife in both Volusia and Brevard Counties. The site is big enough that large mammalian species which require large territories will be able to survive in perpetuity. The integrated nature of the wetlands and uplands is especially beneficial to species which require mixed habitats for breeding or feeding. A greater number and diversity of animal species are expected to utilize the extensive wetland sloughs and upland buffer zones as functions are restored and allowed to remain in a natural condition. The equalization of water elevations should stabilize and increase wading bird populations and heighten breeding opportunities for fish and amphibians. Specific techniques used to optimize wildlife populations will be aimed at significantly reducing the amount of hunting, eliminating cattle from within the bank sites, and increasing the availability of food source habitat.

Increasing and improving food source habitats will be a process that will take decades to achieve. The FFWCC and other organizations have noted that pine plantations are among the poorest type of wildlife habitat for most species. The primary food source for many species consists of either nuts (mainly acorns), berries, or leaves of broad-leaved plant species, which are largely absent from pine plantations. Many areas within the bank which originally contained such food sources have been

cleared and converted to pine plantations. The Forestry Stewardship program (described in Appendix II) is designed to allow the regeneration of food source habitats. As suggested by USFWS, a thinning and seed cut program for pine plantation areas within the bank will allow hardwoods to regenerate in areas which were formerly hardwood dominated or mixed pine-hardwood. Field studies indicate that supplemental planting of hardwoods or other desirable species should not be necessary, since young specimens of many of the original species are still growing as groundcover or subcanopy.

CONSERVATION EASEMENT

THIS CONSERVATION EASEMENT is made this _____ day of _____, 2000, by **MIAMI CORPORATION, a Delaware corporation** having an address at 410 North Michigan Avenue, Chicago, IL 60611-4252 ("Grantor"), in favor of the ST. JOHNS RIVER WATER MANAGEMENT DISTRICT, a public body existing under Chapter 373, Florida Statutes, having a mailing address at Post Office Box 1429, Palatka, FL 32178-1429 (Grantee").

WITNESSETH:

WHEREAS, Grantor solely owns in fee simple certain real property in Volusia and Brevard Counties, Florida, more particularly described in Exhibit "A" attached hereto and incorporated by this reference (the "Property"); and

WHEREAS, Grantor grants this conservation easement as a condition of permit #_____ _____ issued by Grantee and Federal Mitigation Banking Instrument ("MBI") issued _____, 2000, to Grantor by Mitigation Banking Review Team ("MBRT") members, the U.S. Army Corps of Engineers ("Corps"), the U.S. Environmental Protection Agency ("EPA"), and the U.S. Fish and Wildlife Service ("FWS") and in consideration of issuance by St. Johns River Water Management District ("SJRWMD") of Permit #_____ to implement a mitigation bank; and

WHEREAS, Grantor desires to preserve the Property in its natural condition in perpetuity with the exception of included wetlands and uplands which are to be enhanced, restored or managed as specified in the aforementioned MBI and Permit.

NOW, THEREFORE, in consideration of the above and the mutual covenants, terms, conditions and restrictions contained herein, and pursuant to the provisions of Section 704.06,

Florida Statutes, Grantor hereby voluntarily grants and conveys to Grantee a conservation easement in perpetuity over the Property of the nature and character and to the extent hereinafter set forth (the "Conservation Easement"). Grantor fully warrants title to said Property, and will warrant and defend the same against the lawful claims of all persons whomsoever.

1. Purpose. The purpose of this Conservation Easement is to assure that the Property (with the exception of included wetlands and uplands which are to be enhanced, restored or managed as specified in the aforementioned MBI and Permit) will be retained forever in its existing natural condition and to prevent any use of the Property that will impair or interfere with the environmental value of the Property.

2. Specific activities authorized pursuant to said mitigation bank permit include:

a. Restoration, enhancement and management of wetlands and uplands as specified mitigation in said MBI and SJRWMD permit;

b. Passive recreational use by Grantor or its successors or assigns.

3. Prohibited Uses. Any activity on or use of the Property inconsistent with the purpose of this Conservation Easement is prohibited. Without limiting the generality of the foregoing, the following activities and uses are expressly prohibited:

a. Construction or placing of buildings, roads, signs, billboards or other advertising, utilities, or other structures on or above the ground.

b. Dumping or placing soil or other substance or material as landfill or dumping or placing of trash, waste, or unsightly or offensive materials.

c. Removal or destroying trees, shrubs, or other vegetation; with the exception of nuisance and exotic plant species as may be required by Grantee and as provided herein.

d. Excavation, dredging, or removing loam, peat, gravel, soil, rock or other material substances in such a manner as to affect the surface.

e. Surface use, except for purposes that permit the land or water area to remain predominantly in its natural condition.

f. Activities detrimental to drainage, flood control, water conservation, erosion control, soil conservation, or fish and wildlife habitat preservation;

g. Acts or uses detrimental to such retention of land or water areas;

h. Acts or uses detrimental to the preservation of the structural integrity or physical appearance of sites or properties of historical, architectural, archaeological, or cultural significance.

4. The following activities are specifically excepted from the above-described prohibitions:

a. Harvesting of trees as specified in the Forestry Plan, as specified in said MBI and SJRWMD permit;

b. Removal of trees, thinning, or underbrushing for purposes of land management as specified in said MBI and SJRWMD permit;

c. Maintenance of existing dirt roads, bridges, swales, culverts, ditches and low water crossings and construction of access roads, bridges, culverts and low water crossings as specified in said permit for land management purposes as specified in said permit.

5. Reserved Rights. Grantor reserves unto itself, and its successors and assigns, all rights accruing from its ownership of the Property, including the right to engage in or permit or

invite others to engage in all uses of the property, that are not inconsistent with the purpose of this Conservation Easement and the mitigation bank instrument.

6. Rights of Grantee. To accomplish the purposes stated herein, Grantor conveys the following rights to Grantee:

(a) To enter upon and inspect the Property in a reasonable manner and at reasonable times to determine if Grantor or its successors and assigns are complying with the covenants and prohibitions contained in this Conservation Easement.

(b) To proceed at law or in equity to enforce the provisions of this Conservation Easement and the covenants set forth herein, to prevent the occurrence of any of the prohibited activities set forth herein, and require the restoration of areas or features of the Property that may be damaged by any activity inconsistent with this Conservation Easement.

7. Grantee's Discretion. Grantee may enforce the terms of this Conservation Easement at it discretion, but if Grantor breaches any term of this Conservation Easement and Grantee does not exercise its rights under this Conservation Easement, Grantee's forbearance shall not be construed to be a waiver by Grantee of such term, or of any subsequent breach of the same, or any other term of this Conservation Easement, or of any of the Grantee's rights under this Conservation Easement. No delay or omission by Grantee in the exercise of any right or remedy upon any breach by Grantor shall impair such right or remedy or be construed as a waiver. Grantee shall not be obligated to Grantor, or to any other person or entity, to enforce the provisions of this Conservation Easement.

8. Grantee's Liability. Grantor will assume all liability for any injury or damage to

the person or property of third parties which may occur on the Property arising from Grantor's ownership of the property. Neither Grantors, nor any person or entity claiming by or through Grantors, shall hold Grantee liable for any damage or injury to person or personal property which may occur on the Property.

9. Acts Beyond Grantor's Control. Nothing contained in this Conservation Easement shall be construed to entitle Grantee to bring any action against Grantor for any injury to or change in the Property resulting from natural causes beyond Grantor's control, including, without limitation, fire, flood, storm and earth movement, or from any necessary action taken by Grantor under emergency conditions to prevent, abate or mitigate significant injury to the Property or to persons resulting from such causes.

10. Recordation. Grantor shall record this Conservation easement in timely fashion in the Official Records of Volusia and Brevard Counties, Florida, and shall rerecord it at anytime Grantee may require to preserve its rights. Grantor shall pay all recording costs and taxes necessary to record this Conservation Easement in the public records. Grantor will hold Grantee harmless from any recording costs or taxes necessary to record this Conservation Easement in the public records.

11. Successors. The covenants, terms, conditions and restrictions of this Conservation easement shall be binding upon, and inure to the benefit of the parties hereto and their respective personal representatives, heirs, successors and assigns and shall continue as a servitude running in perpetuity with the Property.

12. Rights of MBRT. The members of the MBRT shall have independent and discretionary rights to enforce the terms and conditions hereof. Enforcement may be through

appropriate administrative processes or in a Florida or Federal court of competent jurisdiction. Enforcement rights of the MBRT members shall not be diminished or in any way affected by arbitration activities, determinations, or agreements of the Grantor and the Grantee.

13. Modification. This Conservation Easement may be amended, altered, released or revoked only by written agreement among the parties hereto and the Corps or their heirs, assigns, or successors-in-interest, which shall be filed in the public record in Volusia and Brevard Counties.

IN WITNESS WHEREOF, Grantor has executed this Conservation Easement on the day and year first above written.

Signed, sealed and delivered in the presence of:

GRANTOR:

Miami Corporation, a Delaware corporation

_____

By:_____
As:

_____
Print Name

_____

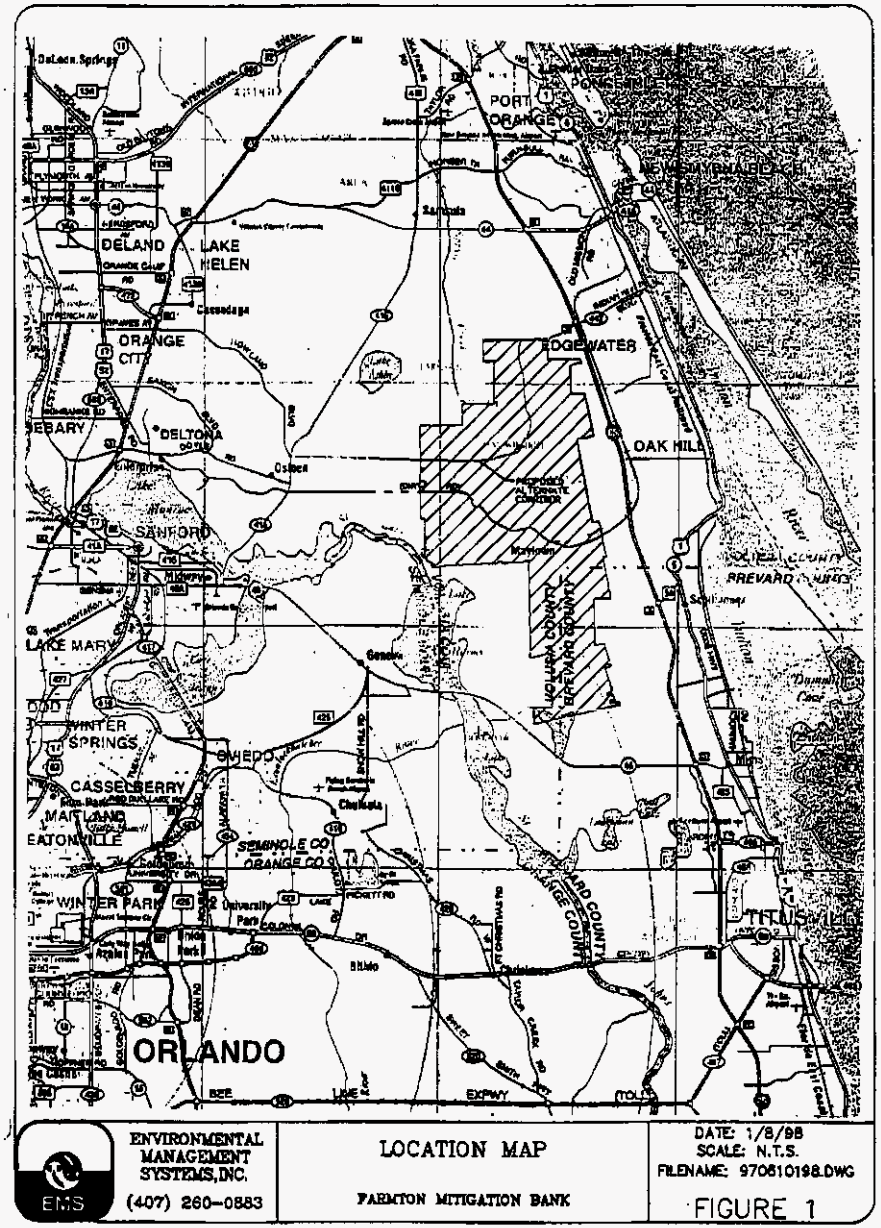
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Print Name

STATE OF FLORIDA
COUNTY OF VOLUSIA

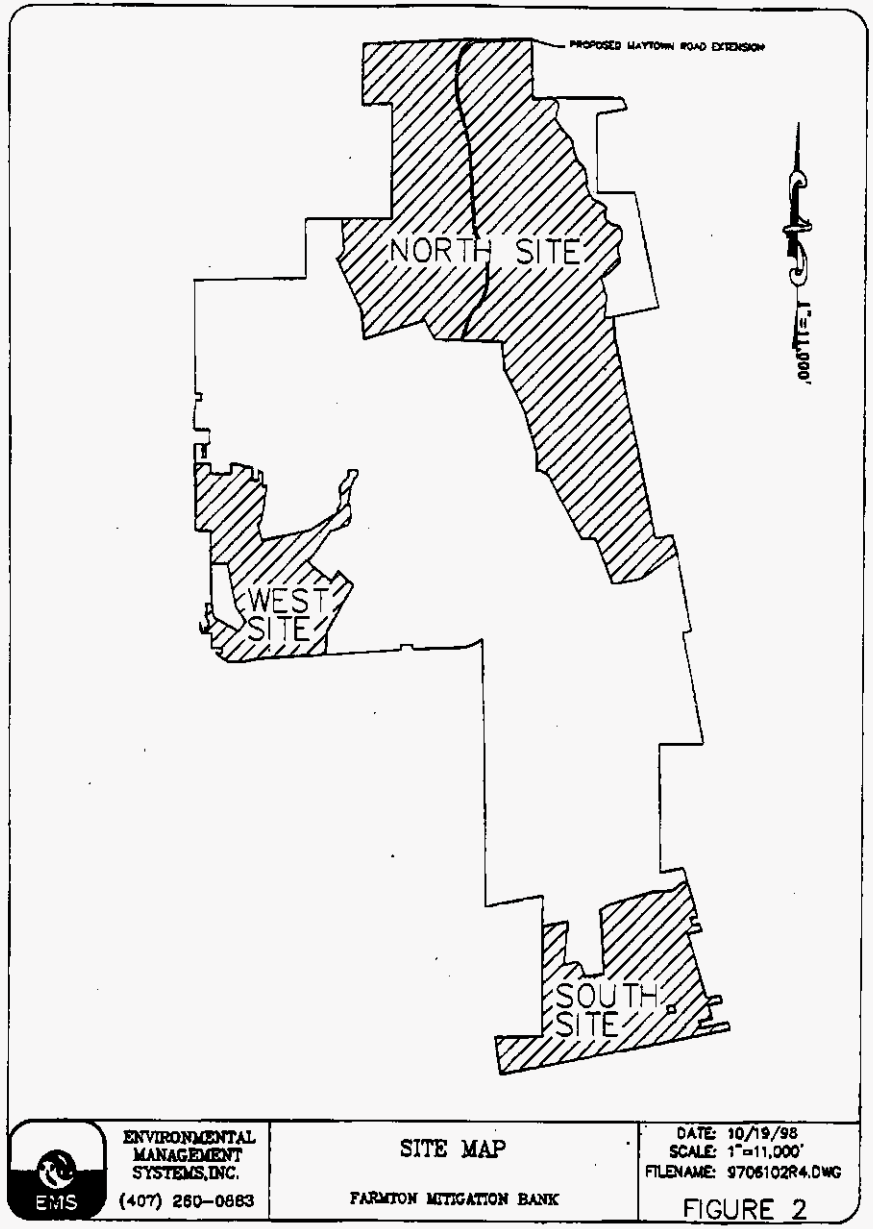
I HEREBY CERTIFY that on this day, before me, an officer duly authorized in the State and County aforesaid to take acknowledgments, personally appeared _____, as _____ of Miami Corporation, a Delaware corporation, well known to me to be the _____ of the corporation named as grantor in the foregoing instrument, and that he severally acknowledged executing the same in the presence of two subscribing witnesses freely and voluntarily under authority duly vested in him by said corporation and that the seal affixed thereto is the true corporate seal of said corporation.

WITNESS my hand and official seal in the County and State last aforesaid this ____ day of _____, 2000.

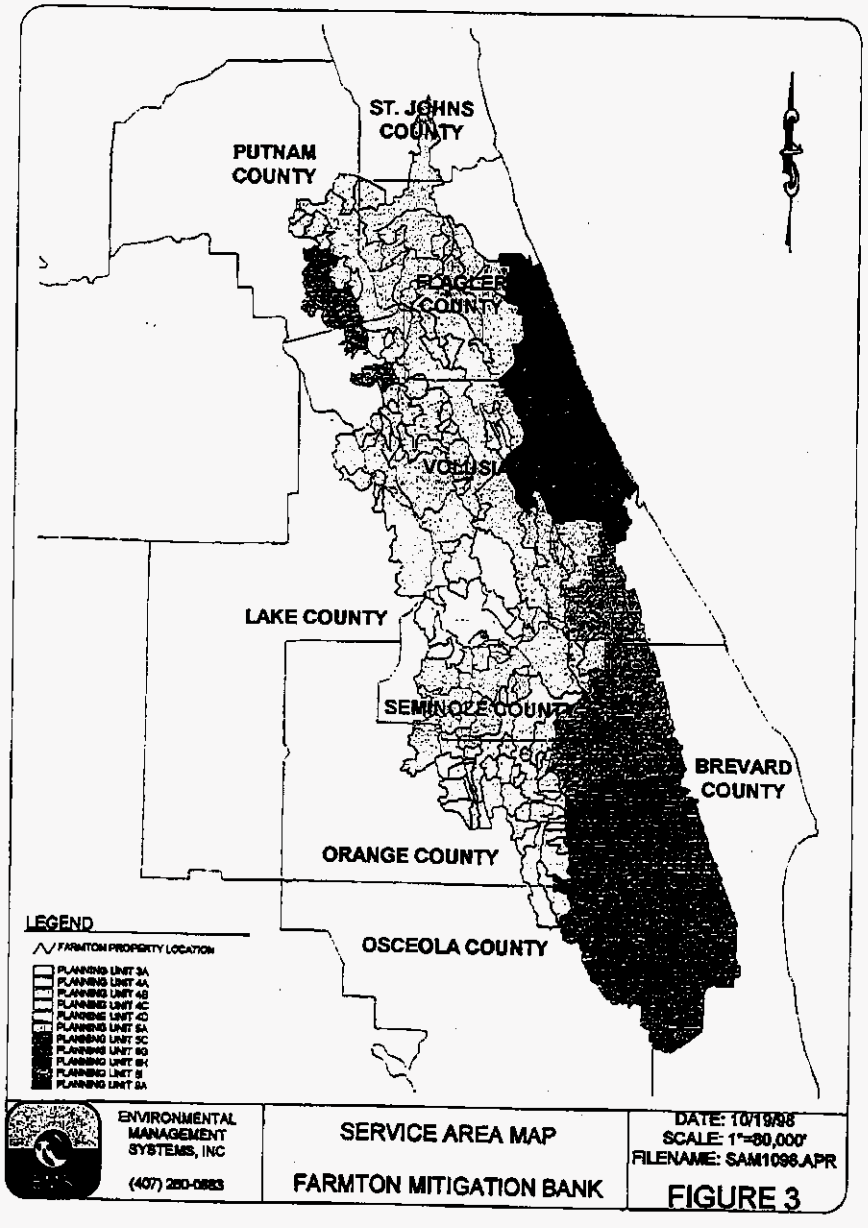
_____



ENVIRONMENTAL MANAGEMENT SYSTEMS, INC. (407) 260-0883	LOCATION MAP FARMTON MITIGATION BANK	DATE: 1/8/98 SCALE: N.T.S. FILENAME: 970610198.DWG FIGURE 1



ENVIRONMENTAL MANAGEMENT SYSTEMS, INC. (407) 260-0883	SITE MAP FARMTON MITIGATION BANK	DATE: 10/19/98 SCALE: 1"=11,000' FILENAME: 9706102R4.DWG FIGURE 2


ST. JOHNS COUNTY
PUTNAM COUNTY
FLAGLER COUNTY
VOLUSIA
LAKE COUNTY
SEMINOLE COUNTY
BREVARD COUNTY
ORANGE COUNTY
OSCEOLA COUNTY
LEGEND
FARMTON PROPERTY LOCATION
PLANNING UNIT 3A
PLANNING UNIT 4A
PLANNING UNIT 4B
PLANNING UNIT 4C
PLANNING UNIT 4D
PLANNING UNIT 5A
PLANNING UNIT 5C
PLANNING UNIT 6G
PLANNING UNIT 6H
PLANNING UNIT 8
PLANNING UNIT 8A
ENVIRONMENTAL MANAGEMENT SYSTEMS, INC
(407) 260-0883
SERVICE AREA MAP
FARMTON MITIGATION BANK
DATE: 10/19/98
SCALE: 1"=80,000'
FILENAME: SAM1098.APR
FIGURE 3



LEGEND

411 PINE FLATWOODS (3932.60 AC)
421 XERIC OAK (26.62 AC)
425 TEMPERATE HARDWOODS (9.56 AC)
427 LIVE OAK (26.79 AC)
434 HARDWOOD/CONIFER MIXED (9.76 AC)
610 WETLAND HARDWOOD FOREST (155.65 AC)
613 GUM SWAMP (49.46 AC)
617 MIXED WETLAND HARDWOOD (38.54 AC)
620 WETLAND CONIFEROUS FOREST (361.98 AC)
621 CYPRESS (6557.29 AC)
624 CYPRESS/PINE/CABBAGE PALM (761.19 AC)
630 WETLAND FORESTED MIXED (856.53 AC)
641 FRESHWATER MARSH (1266.73 AC)
646 WETLAND SCRUB (236.17 AC)
832 POWER EASEMENT (46.06 AC)
PROPOSED MAYTOWN EXTENSION (155.31 AC)

TOTAL ACREAGE = 16,492.46 AC

7/8/99

ENVIRONMENTAL MANAGEMENT SYSTEMS, INC
407/260-0883

FLUCFCS MAP
NORTH BANK SITE
FARMTON MITIGATION BANK

DATE: 10/19/98
SCALE: 1"=4,000'
FILENAME: NORTH-BANK.APR

FIGURE 4A



LEGEND

411	PINE FLATWOODS (1311.97 AC)
425	TEMPERATE HARDWOODS (388.52 AC)
425R	RELIC TEMPERATE HARDWOODS (240.61 AC)
510/520	WATER (11.63 AC)
620	WETLAND CONIFEROUS FOREST (1.37 AC)
621	CYPRESS (332.06 AC)
630	WETLAND FORESTED MIXED (1102.76 AC)
641	FRESHWATER MARSH (109.30 AC)
646	WETLAND SCRUB (6.85 AC)

TOTAL ACREAGE = 3,695.06 AC

6/14/99

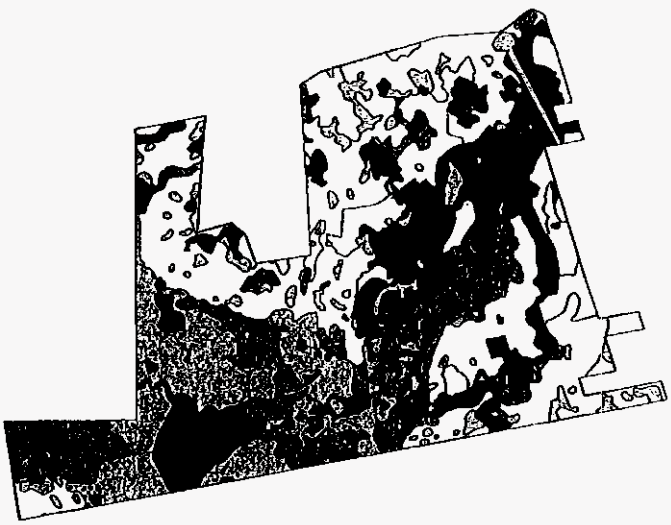
ENVIRONMENTAL MANAGEMENT SYSTEMS, INC

407/260-0883

FLUCFCS MAP
WEST BANK SITE
FARMTON MITIGATION BANK

DATE: 10/19/98
SCALE: 1"=4000'
FILENAME: WEST-BANK.APR

FIGURE 4B



LEGEND

411	PINE FLATWOODS (1649.59 AC)
427	LIVE OAK (14.66 AC)
510/520	WATER (215.90 AC)
620	WETLAND CONIFEROUS FORESTS (83.26 AC)
621	CYPRESS (135.26 AC)
624	CYPRESS/PINE/CABBAGE PALM (148.07 AC)
630	WETLAND FORESTED MIXED (759.76 AC)
641	FRESHWATER MARSH (886.98 AC)
642	SALT MARSH (20.20 AC)
646	WETLAND SCRUB (465.26 AC)
700	OUTPARCEL (10.07 AC)

TOTAL BANK ACREAGE (4400.91 AC)

6/4/99

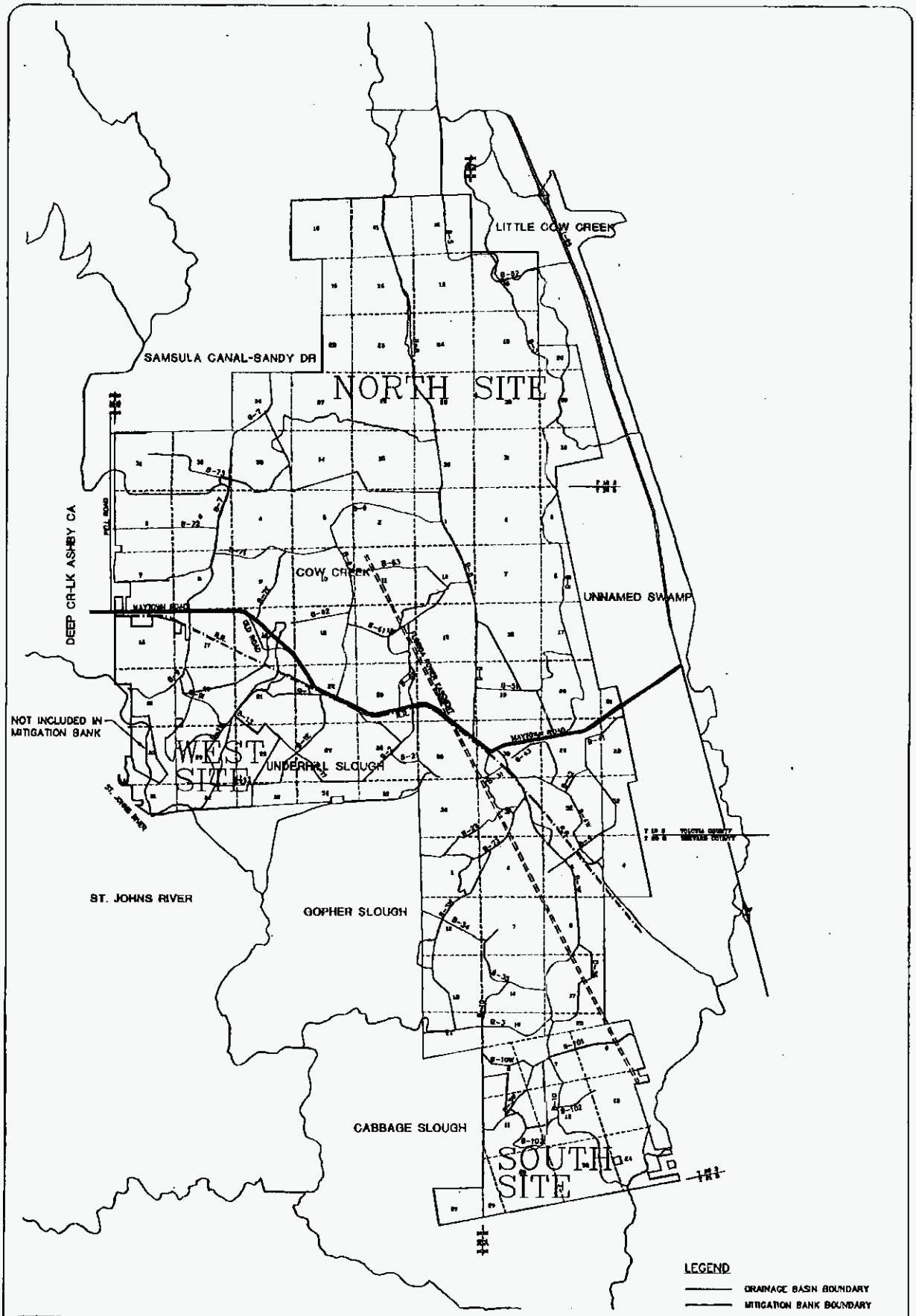
ENVIRONMENTAL MANAGEMENT SYSTEMS, INC

407/260-0883

FLUCFCS MAP
SOUTH BANK SITE
FARMTON MITIGATION BANK

DATE: 10/19/98
SCALE: 1" = 4,000'
FILENAME: SOUTH-BANK.APR

FIGURE 4C



ENVIRONMENTAL MANAGEMENT SYSTEMS, INC.
(407) 260-0883

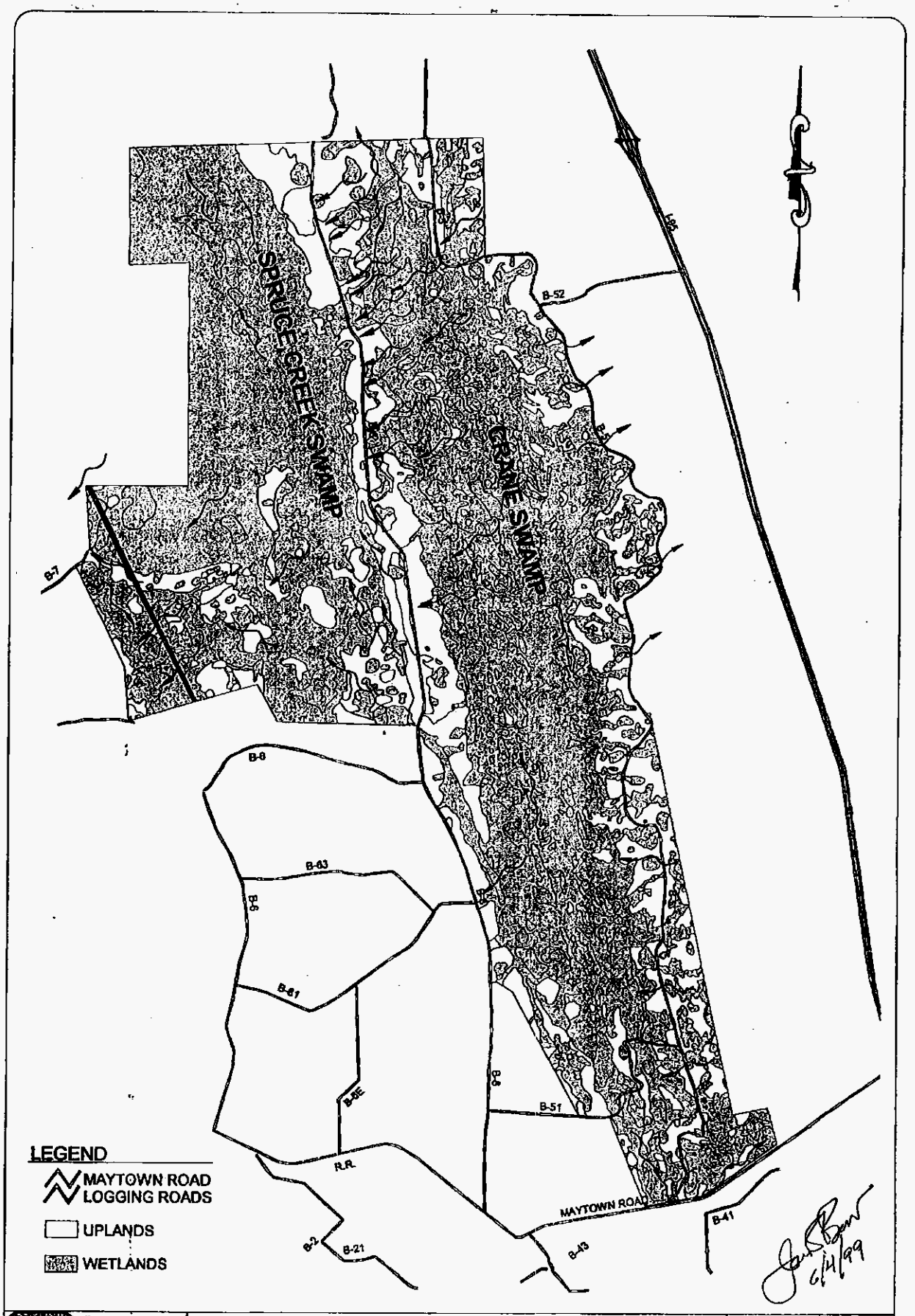
DRAINAGE BASIN MAP*

PARMTON MITIGATION BANK SITE

* FROM SJRWMD.

DATE: 10/19/98
SCALE: 1"=8000'
FILENAME: 970610798.DWG

FIGURE 5

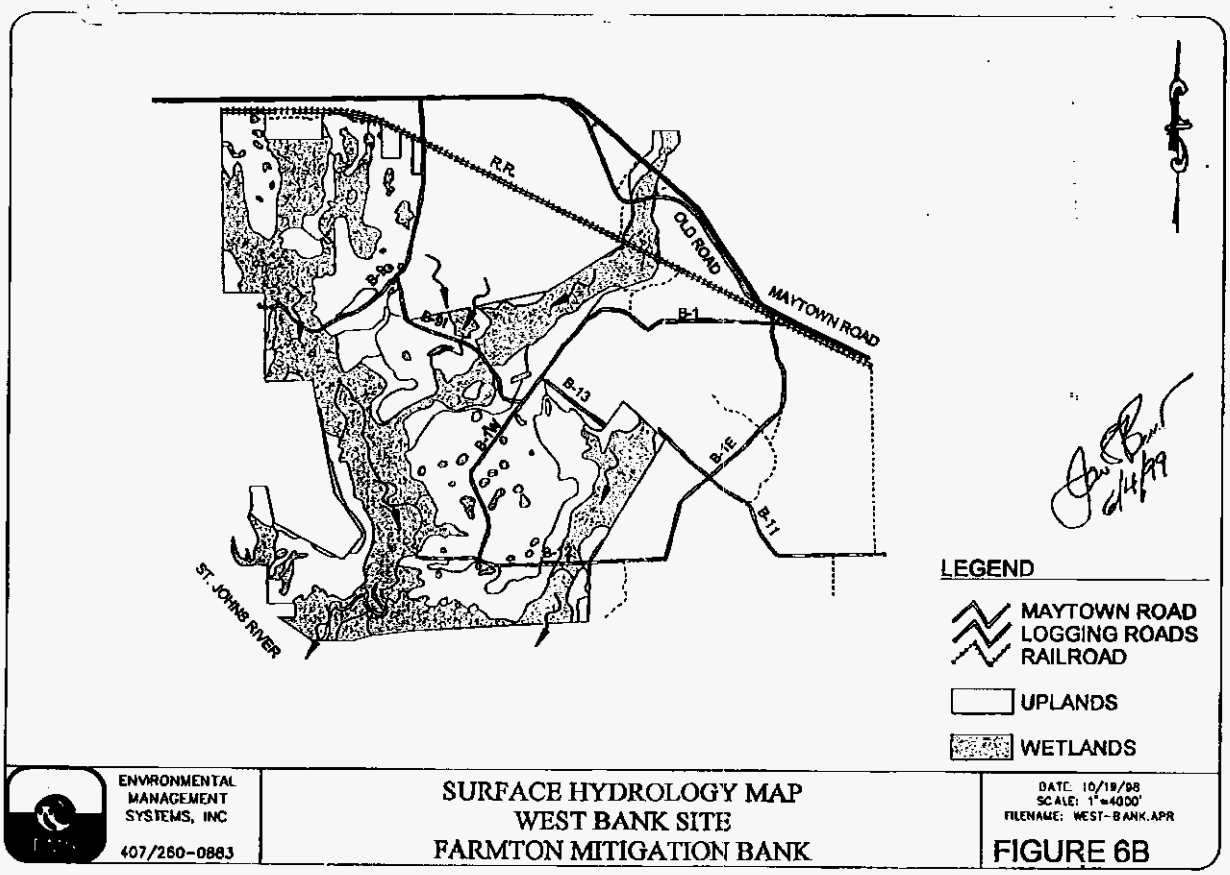


ENVIRONMENTAL MANAGEMENT SYSTEMS, INC
407/260-0883

SURFACE HYDROLOGY
NORTH BANK SITE
FARMTON MITIGATION BANK

DATE: 10/19/98
SCALE: 1"=4,000'
FILENAME: NORTH-BANK APR

FIGURE 6A

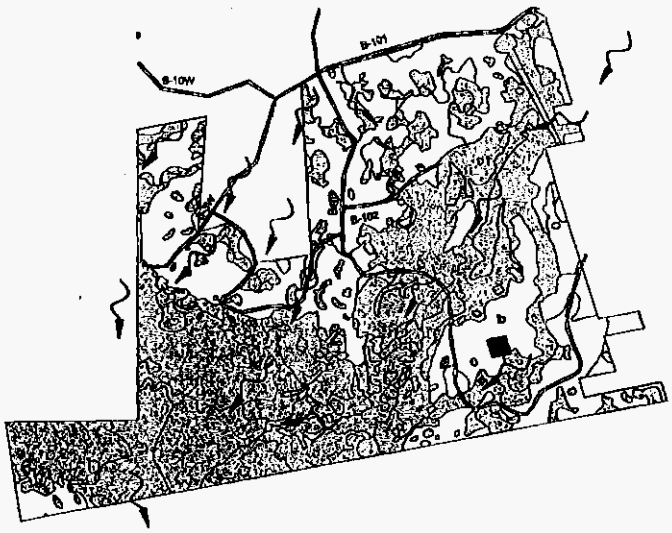


ENVIRONMENTAL MANAGEMENT SYSTEMS, INC
407/260-0883

SURFACE HYDROLOGY MAP
WEST BANK SITE
FARMTON MITIGATION BANK

DATE: 10/19/98
SCALE: 1"=4000'
FILENAME: WEST-BANK.APR

FIGURE 6B



LEGEND

MAYTOWN ROAD
LOGGING ROADS
RAILROAD

UPLANDS

WETLANDS

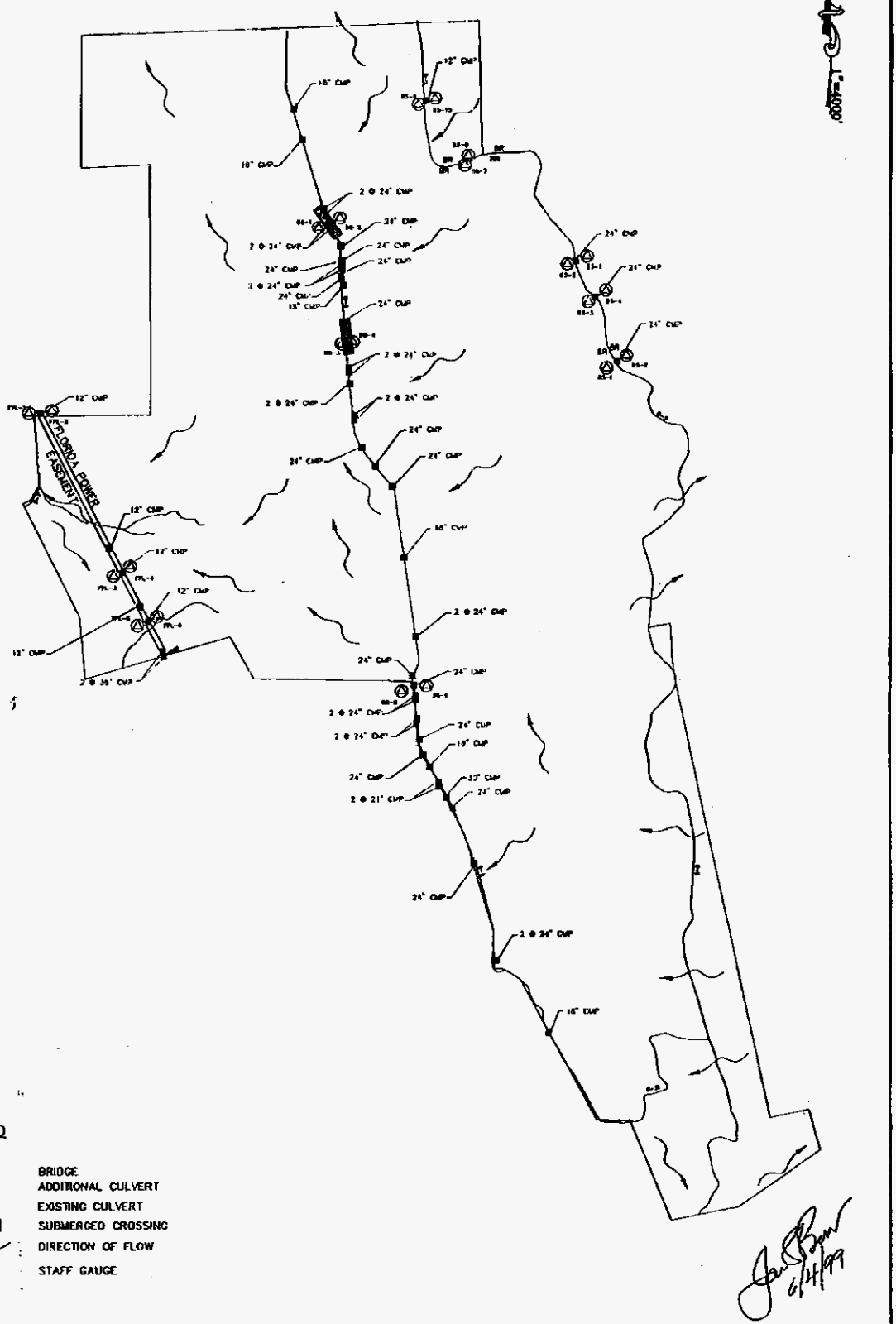
6/4/99

ENVIRONMENTAL MANAGEMENT SYSTEMS, INC
407/260-0883

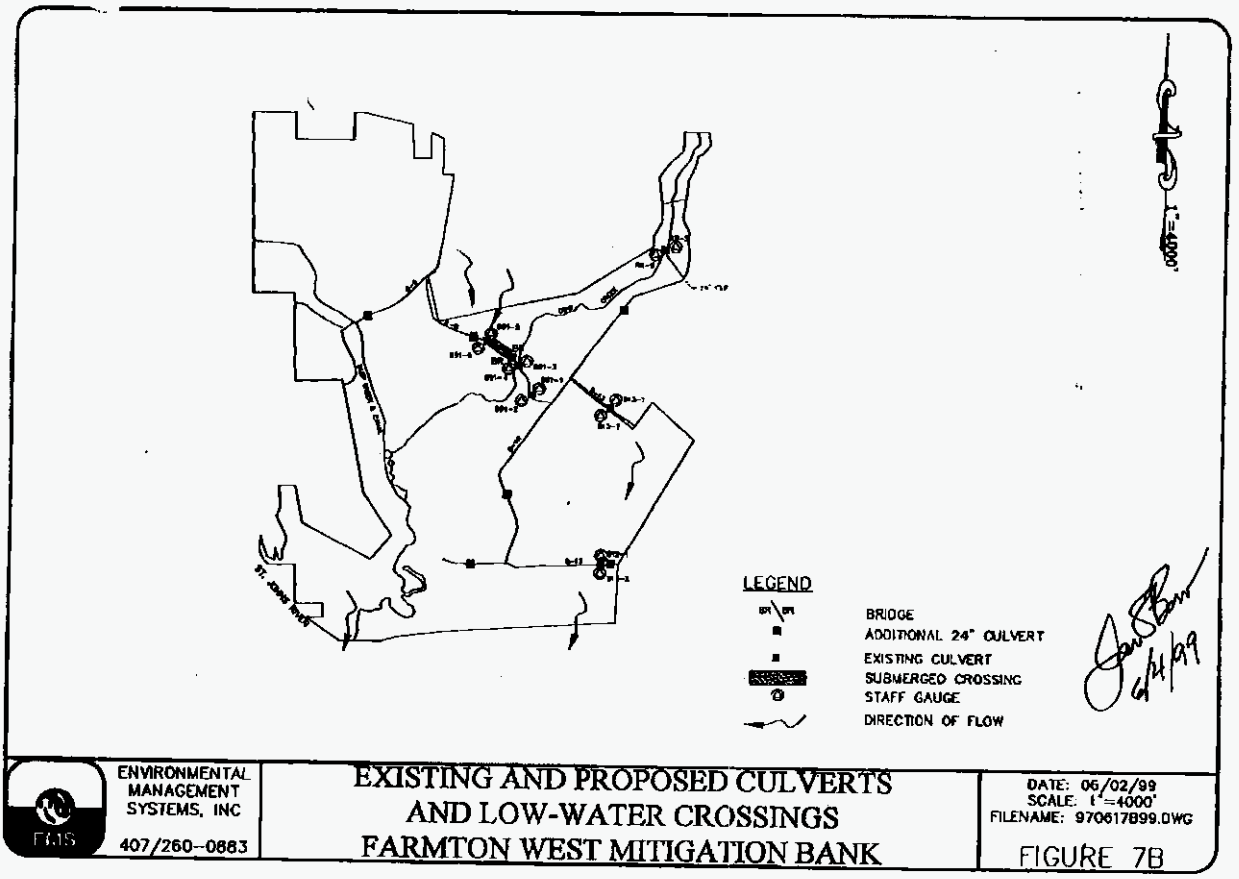
SURFACE HYDROLOGY MAP
SOUTH BANK SITE
FARMTON MITIGATION BANK

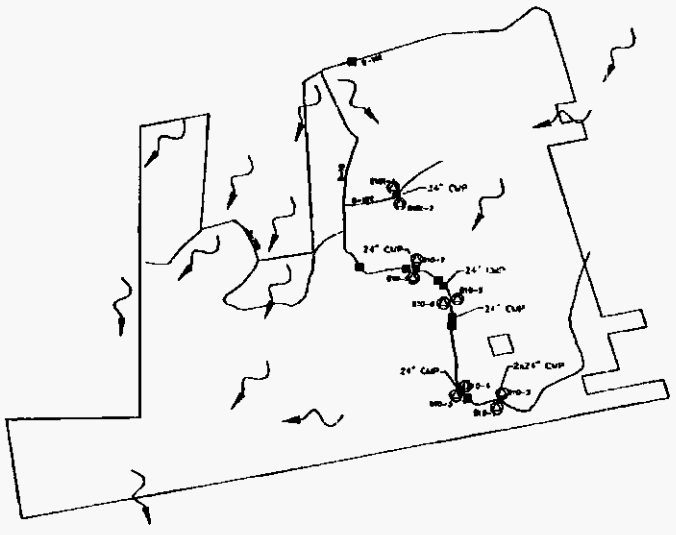
DATE: 10/19/98
SCALE: 1" = 4,000'
FILENAME: SOUTH-BANK.APR

FIGURE 6C



ENVIRONMENTAL MANAGEMENT SYSTEMS, INC 407/260-0883	EXISTING AND PROPOSED CULVERTS AND LOW-WATER CROSSING FARMTON NORTH MITIGATION BANK	DATE: 06/02/99 SCALE: 1"=4000' FILENAME: 970617A99.DWG FIGURE 7A


1"=4000'
LEGEND
BRIDGE
ADDITIONAL 24" CULVERT
EXISTING CULVERT
SUBMERGED CROSSING
STAFF GAUGE
DIRECTION OF FLOW
6/4/99
ENVIRONMENTAL MANAGEMENT SYSTEMS, INC
407/260-0883
EXISTING AND PROPOSED CULVERTS AND LOW-WATER CROSSINGS FARMTON WEST MITIGATION BANK
DATE: 06/02/99
SCALE: 1"=4000'
FILENAME: 970617B99.DWG
FIGURE 7B



LEGEND

- STAFF GAUGE
- DIRECTION OF FLOW
- ADDITIONAL 24" CULVERT
- EXISTING CULVERT

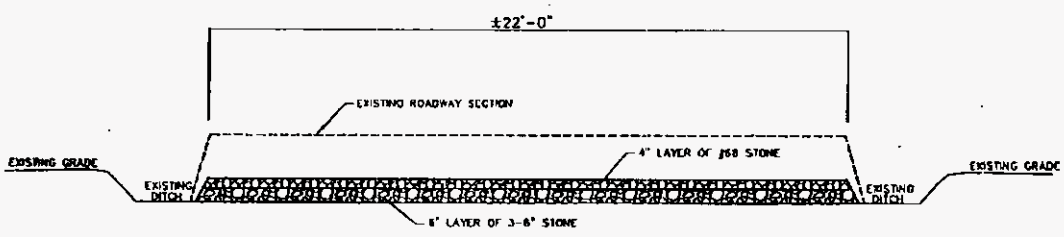
1"=4000'

6/4/99

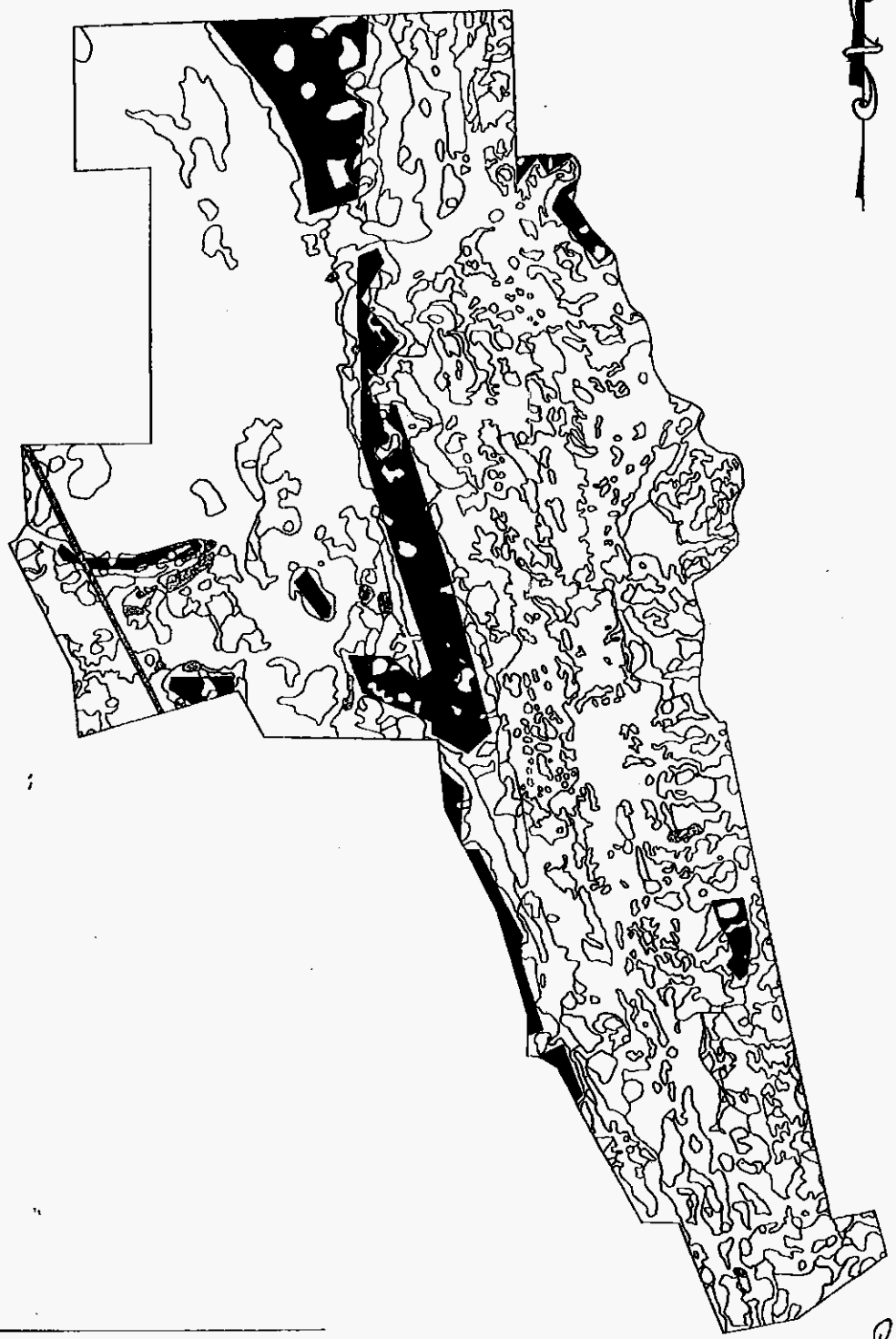
ENVIRONMENTAL MANAGEMENT SYSTEMS, INC 407/260-0883	EXISTING AND PROPOSED CULVERTS AND LOW-WATER CROSSINGS FARMTON SOUTH MITIGATION BANK	DATE: 06/02/99 SCALE: 1"=4000' FILENAME: 970617C99.DWG

FIGURE 7C

TYPICAL SECTION



ENVIRONMENTAL MANAGEMENT SYSTEMS,INC. (407) 260-0883	TYPICAL SECTION LOW WATER CROSSING/ ROADWAY SECTION (APPROX. 100' LONG) FARMTON MITIGATION BANK SITE	DATE: 10/19/98 SCALE: 1"=10' FILENAME: 9706110D98.DWG FIGURE 7D



LEGEND

- DESIGNATED FORESTRY AREA (1346.53 AC)
- PINE FLATWOODS BUFFER AREA (1616.20 AC)
- PINE FLATWOODS BEDDED BUFFER AREA (896.07 AC)
- HARDWOOD UPLAND BUFFER AREA (76.49 AC)

6/14/99

ENVIRONMENTAL MANAGEMENT SYSTEMS, INC
407/260-0883

FORESTRY MAP
NORTH BANK SITE
FARMTON MITIGATION BANK

DATE: 06/02/99
SCALE: 1"=4,000'
FILENAME: NORTH-BANK.APR

FIGURE 8A



LEGEND

- DESIGNATED FORESTRY AREA (645.47 AC)
- PINE FLATWOODS BUFFER AREA (292.16 AC)
- PINE FLATWOODS BEDDED BUFFER AREA (174.34 AC)
- HARVESTED HARDWOOD UPLAND BUFFER AREA (356.94 AC)
- HARDWOOD UPLAND BUFFER AREA (73.19 AC)

ENVIRONMENTAL MANAGEMENT SYSTEMS, INC
407/260-0883

FORESTRY MAP
WEST BANK SITE
FARMTON MITIGATION BANK

DATE: 10/22/98
SCALE: 1"=4000'
FILENAME: WEST-BANK.APR

FIGURE, 8B



LEGEND

- DESIGNATED FORESTRY AREA (1136.97 AC)
- PINE FLATWOODS BUFFER AREA (413.09 AC)
- PINE FLATWOODS BEDDED BUFFER AREA (99.53 AC)
- HARDWOOD UPLAND RESTORATION BUFFER AREA (14.86 AC)

ENVIRONMENTAL MANAGEMENT SYSTEMS, INC
407/260-0883

FORESTRY MAP
SOUTH BANK SITE
FARMTON MITIGATION BANK

DATE: 10/22/98
SCALE: 1" = 4,000'
FILENAME: SOUTH-BANK.APR

FIGURE 8C



LEGEND

- HARVESTED WETLAND HYDROLOGIC ENHANCEMENT (505.69 AC)
- WETLAND HYDROLOGIC ENHANCEMENT (11485.35 AC)
- WETLAND RESTORATION (875.98 AC)
- HARVESTED CYPRESS WETLAND ENHANCEMENT (48.18 AC)
- CYPRESS WETLAND ENHANCEMENT (210.10 AC)
- HARVESTED HARDWOOD WETLAND ENHANCEMENT (10.18 AC)
- HARDWOOD WETLAND ENHANCEMENT (44.04 AC)
- HARDWOOD UPLAND ENHANCEMENT (72.93 AC)
- PLANTED PINE UPLAND RESTORATION (1784.87 AC)
- DESIGNATED FORESTRY AREA ENHANCEMENT (1271.75 AC)

7/12/99

ENVIRONMENTAL MANAGEMENT SYSTEMS, INC.
(407) 260-0883

MITIGATION MAP
NORTH BANK SITE
FARMTON MITIGATION BANK

DATE: 10/22/98
SCALE: 1"=4,000'
FILENAME: NORTHARC.APR

FIGURE 9A



LEGEND

- W1 HARVESTED WETLAND HYDROLOGIC ENHANCEMENT (269.67 AC)
- W2 WETLAND HYDROLOGIC ENHANCEMENT (1366.39 AC)
- WR WETLAND RESTORATION (174.34 AC)
- WH HARVESTED CYPRESS WETLAND ENHANCEMENT (11.85 AC)
- W5 CYPRESS WETLAND ENHANCEMENT (34.43 AC)
- W7 HARDWOOD WETLAND ENHANCEMENT (82.92 AC)
- HARVESTED UPLAND HARDWOOD RESTORATION (564.94 AC)
- HARDWOOD UPLAND ENHANCEMENT (75.16 AC)
- PLANTED PINE UPLAND RESTORATION (292.15 AC)
- DESIGNATED FORESTRY AREA ENHANCEMENT (845.47 AC)

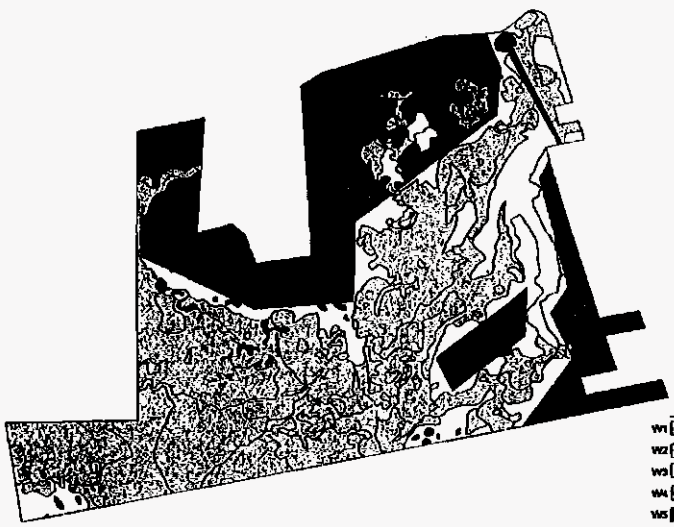
6/14/99

ENVIRONMENTAL MANAGEMENT SYSTEMS, INC
407/260-0883

MITIGATION MAP
WEST BANK SITE
FARMTON MITIGATION BANK

DATE: 06/02/99
SCALE: 1"=4000'
FILENAME = WEST-BANK.APR

FIGURE 9B



LEGEND

- W1 HARVESTED WETLAND HYDROLOGIC ENHANCEMENT (220.58 AC)
- W2 WETLAND HYDROLOGIC ENHANCEMENT (2161.16 AC)
- W3 WETLAND RESTORATION (98.83 AC)
- W4 HARVESTED CYPRESS WETLAND ENHANCEMENT (25.35 AC)
- W5 CYPRESS WETLAND ENHANCEMENT (22.19 AC)
- W6 HARVESTED HARDWOOD WETLAND ENHANCEMENT (1.25 AC)
- W7 HARDWOOD WETLAND ENHANCEMENT (246.68 AC)
- W8 INLAND SALT MARSH PRESERVATION (30.20 AC)
- HARDWOOD UPLAND ENHANCEMENT (14.56 AC)
- PLANTED PINE UPLAND RESTORATION (418.69 AC)
- DESIGNATED FORESTRY AREA ENHANCEMENT (1136.97 AC)

ENVIRONMENTAL MANAGEMENT SYSTEMS, INC

407/260-0883

MITIGATION MAP
SOUTH BANK SITE
FARMTON MITIGATION BANK

DATE: 10/22/98
SCALE: 1" = 4,000'
FILENAME: SOUTH-BANK.APR

FIGURE 9C

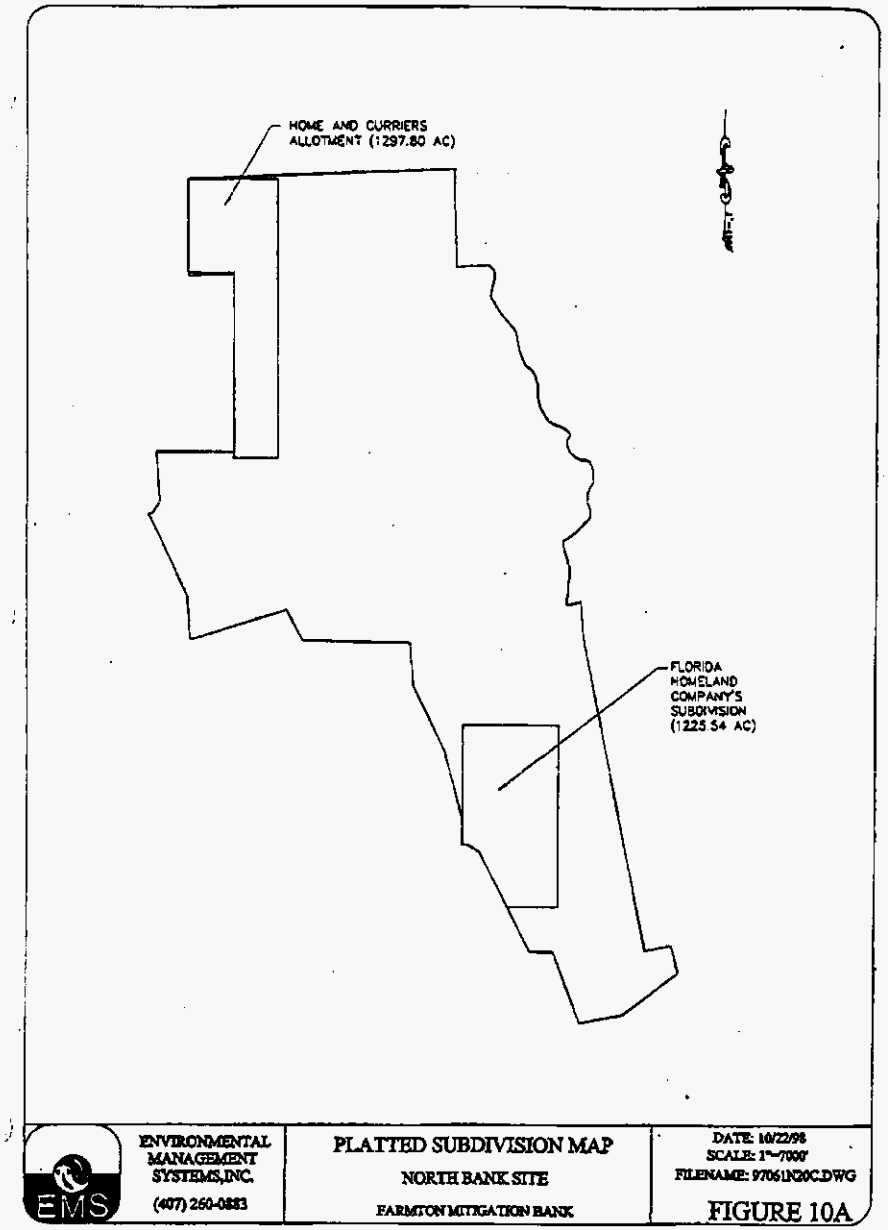
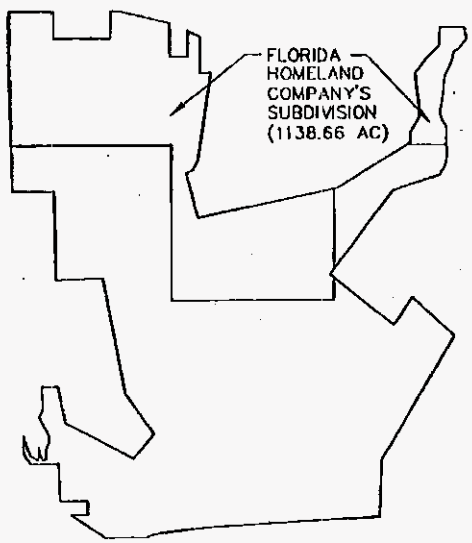

HOME AND CURRIERS
ALLOTMENT (1297.80 AC)
FLORIDA
HOMELAND
COMPANY'S
SUBDIVISION
(1225.54 AC)
ENVIRONMENTAL
MANAGEMENT
SYSTEMS,INC.
(407) 260-0883
EMS
PLATTED SUBDIVISION MAP
NORTH BANK SITE
FARMTON MITIGATION BANK
DATE: 10/22/98
SCALE: 1"=7000'
FILENAME: 97061N20C.DWG

FIGURE 10A

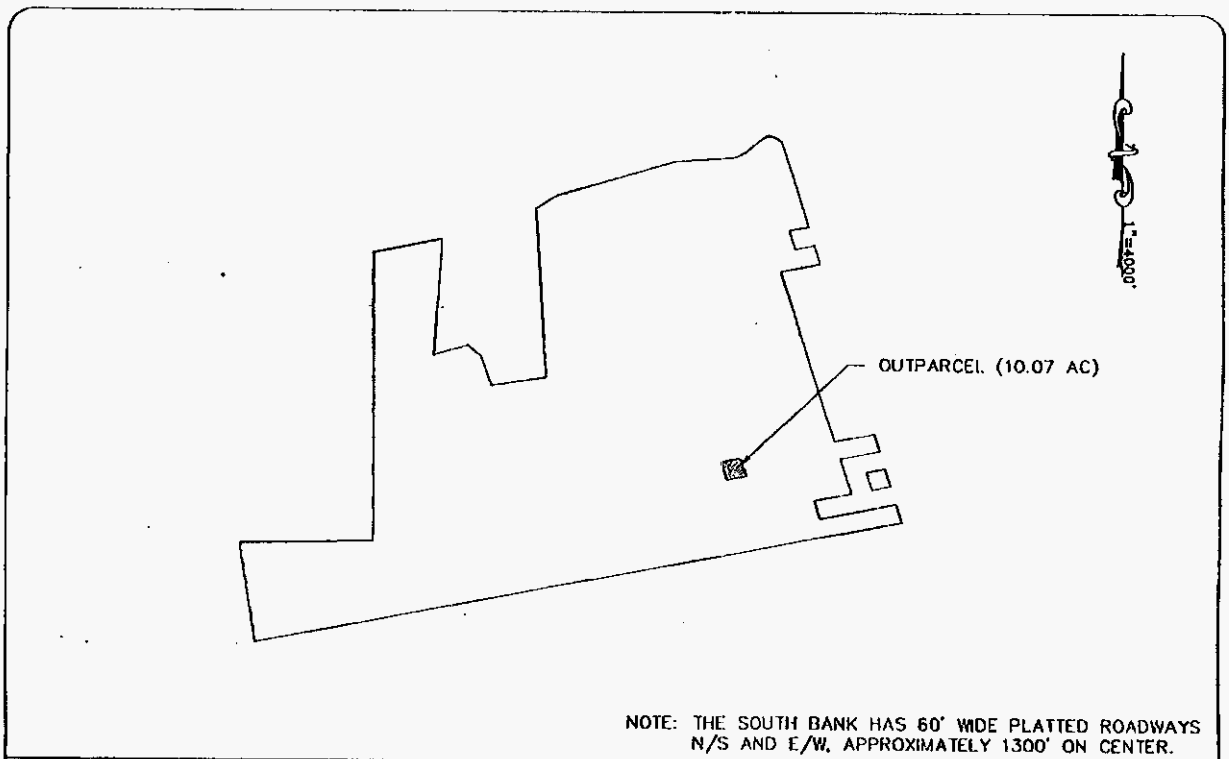


ENVIRONMENTAL MANAGEMENT SYSTEMS, INC.
(407) 260-0883

PLATTED SUBDIVISION MAP
WEST BANK SITE
FARMTON MITIGATION BANK

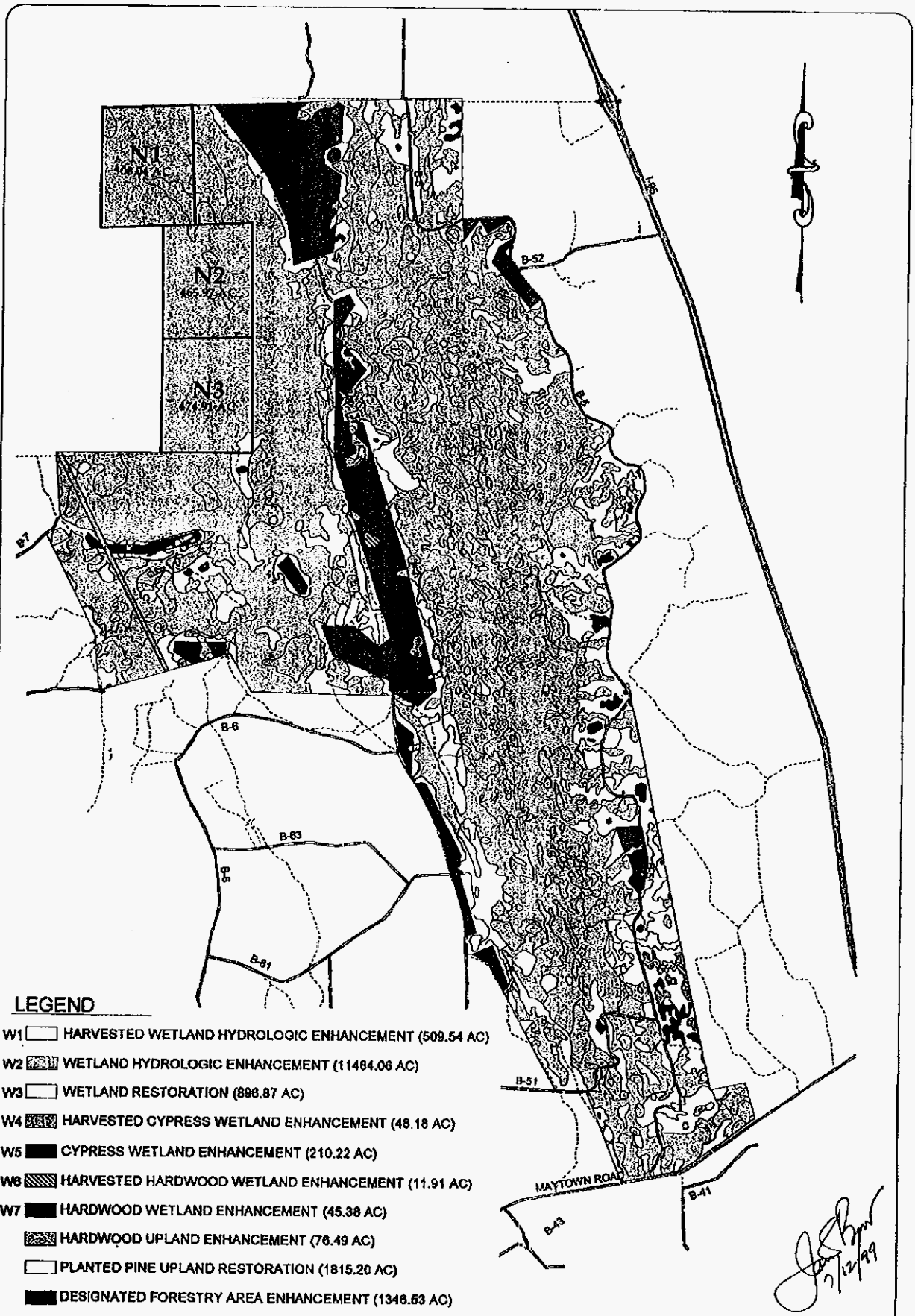
DATE: 10/22/98
SCALE: 1"=4000'
FILENAME: 97061W20C.DWG

FIGURE 10B



NOTE: THE SOUTH BANK HAS 60' WIDE PLATTED ROADWAYS N/S AND E/W, APPROXIMATELY 1300' ON CENTER.

ENVIRONMENTAL MANAGEMENT SYSTEMS, INC. (407) 260-0883	PLATTED SUBDIVISION MAP SOUTH BANK SITE FARMTON MITIGATION BANK	DATE: 10/22/98 SCALE: 1"=4000' FILENAME: 97061S200.DWG FIGURE 10C

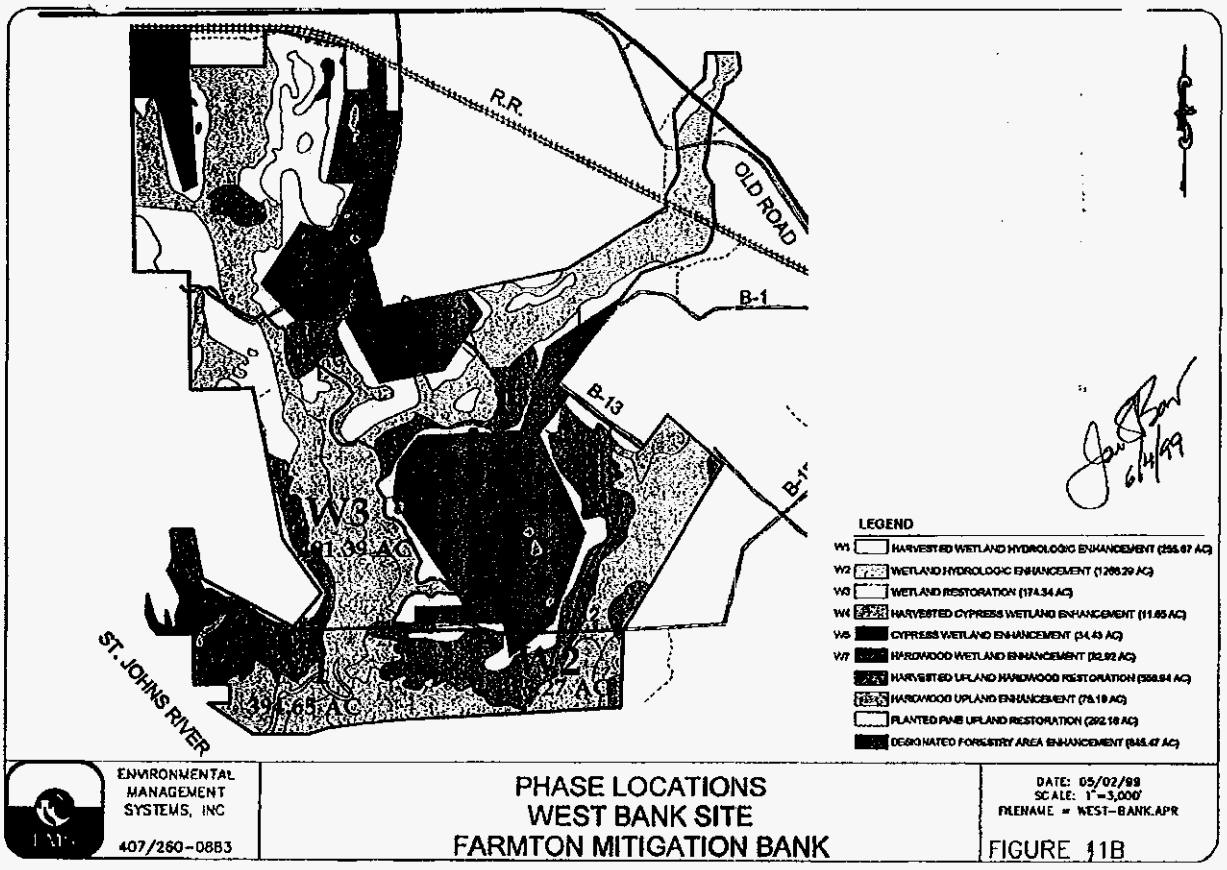


ENVIRONMENTAL MANAGEMENT SYSTEMS, INC
407/260-0883

PHASE LOCATIONS
NORTH BANK SITE
FARMTON MITIGATION BANK

DATE: 08/25/99
SCALE: 1"=4,000'
FILENAME: NORTH-BANK.APR

FIGURE 11A

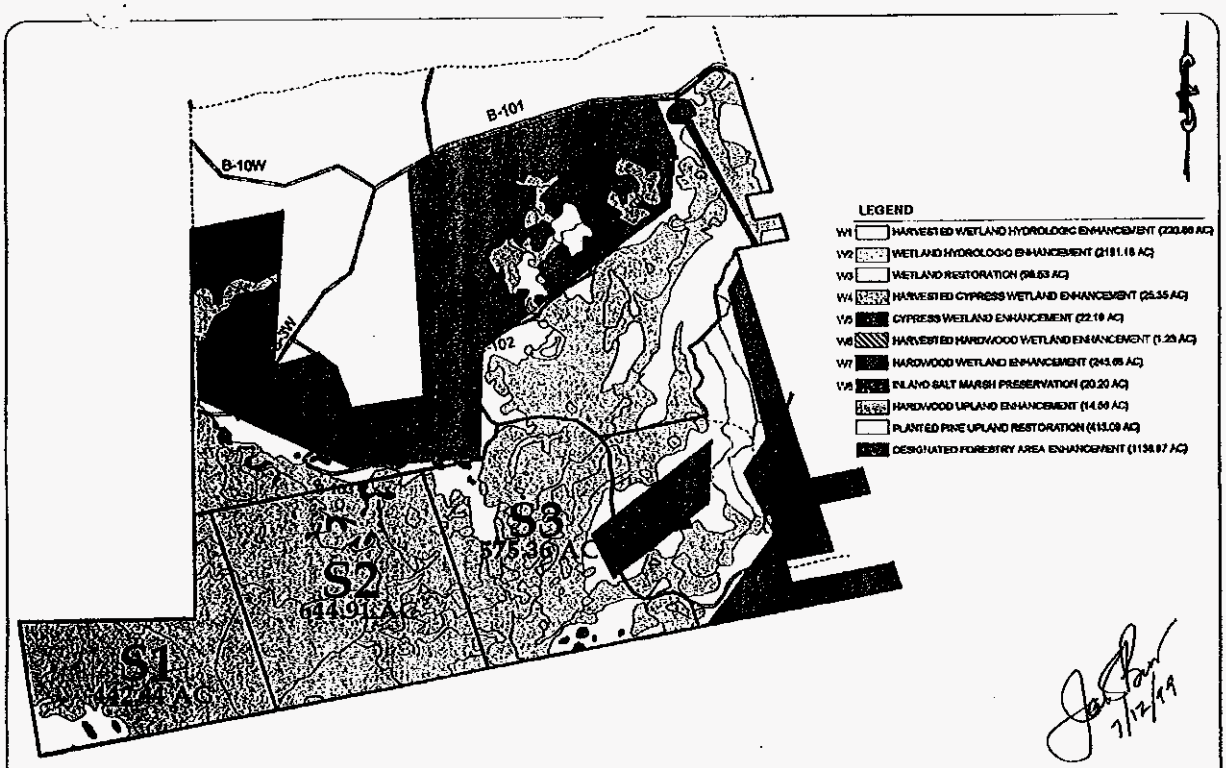


ENVIRONMENTAL MANAGEMENT SYSTEMS, INC
407/260-0883

PHASE LOCATIONS
WEST BANK SITE
FARMTON MITIGATION BANK

DATE: 05/02/99
SCALE: 1"=3,000'
FILENAME = WEST-BANK.APR

FIGURE 11B

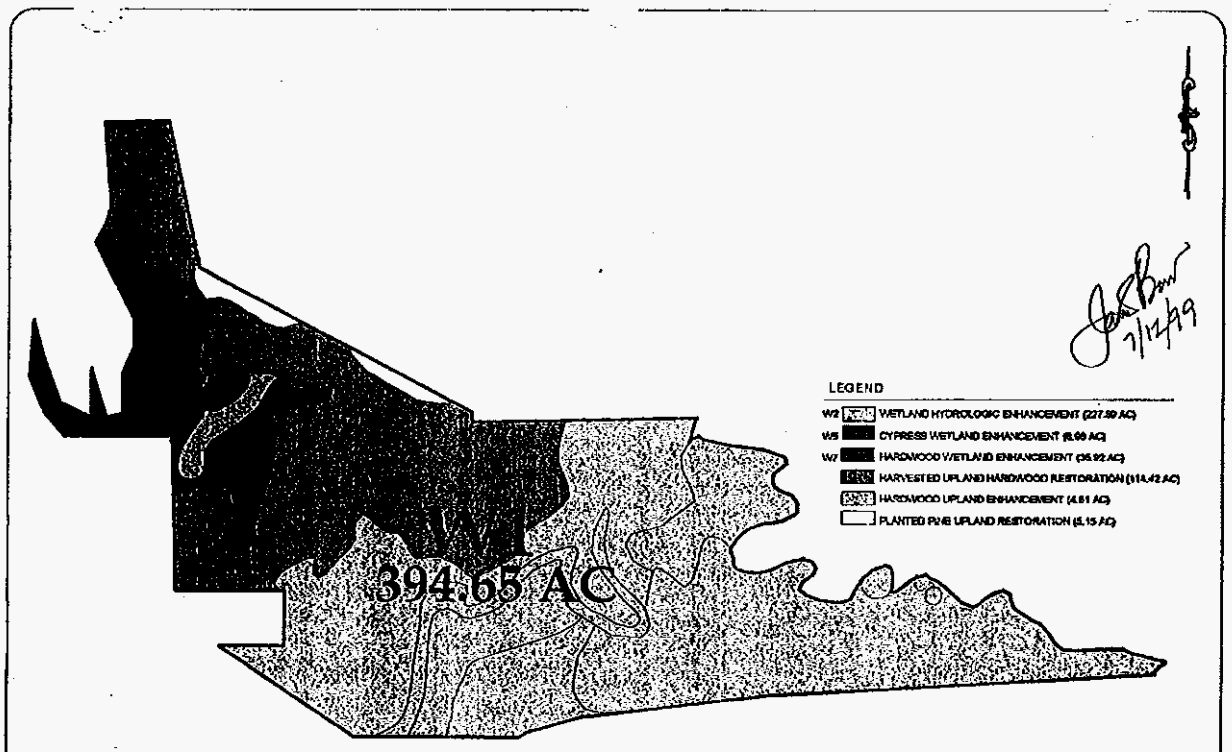


ENVIRONMENTAL MANAGEMENT SYSTEMS, INC
407/260-0883

PHASE LOCATIONS
SOUTH BANK SITE
FARMTON MITIGATION BANK

DATE: 06/25/99 (KK)
SCALE: 1"=3,000'
FILENAME: SOUTH-BANK.APR

FIGURE 11C

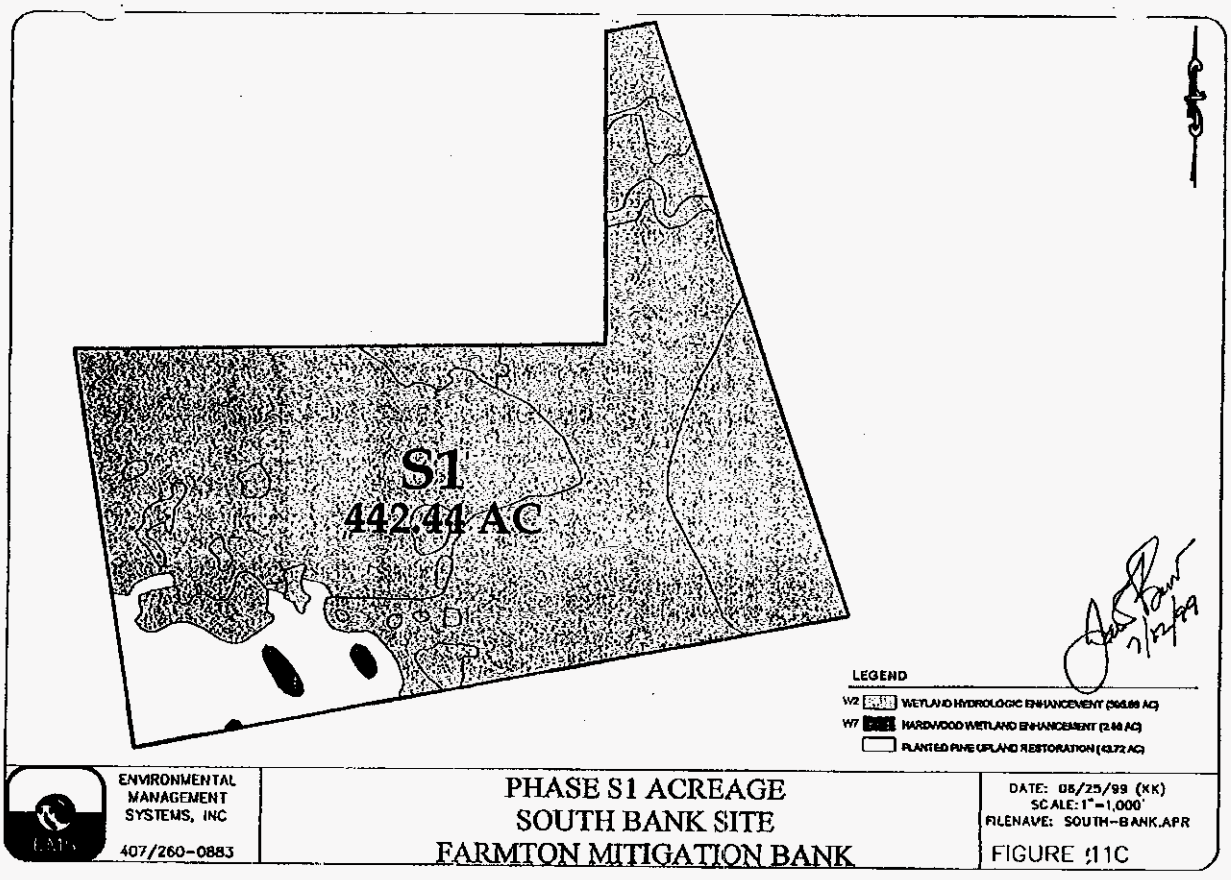


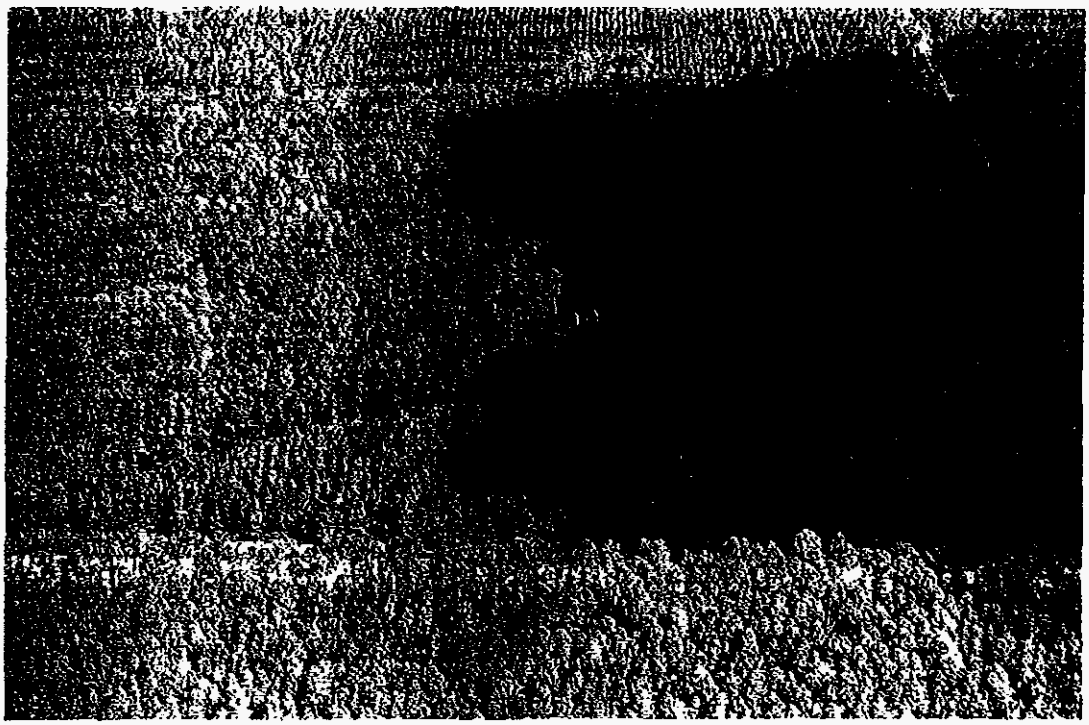
ENVIRONMENTAL MANAGEMENT SYSTEMS, INC
407/260-0883

PHASE W1 ACREAGE
WEST BANK SITE
FARMTON MITIGATION BANK

DATE: 06/25/99
SCALE: 1"=1,000'
FILENAME = WEST-BANK.APR

FIGURE 11B

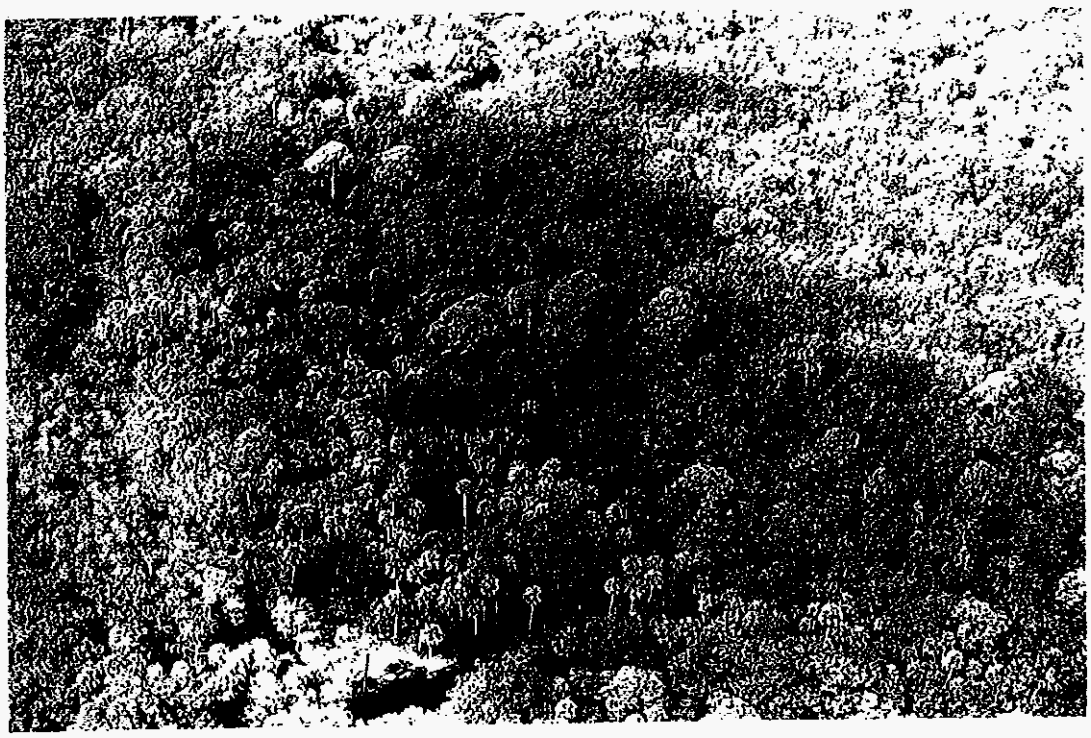

S1
442.44 AC
LEGEND
W2 WETLAND HYDROLOGIC ENHANCEMENT (366.69 AC)
W7 HARDWOOD WETLAND ENHANCEMENT (2.44 AC)
PLANTED PINE UPLAND RESTORATION (43.72 AC)
ENVIRONMENTAL MANAGEMENT SYSTEMS, INC
407/260-0883
PHASE S1 ACREAGE
SOUTH BANK SITE
FARMTON MITIGATION BANK
DATE: 05/25/99 (KK)
SCALE: 1"=1,000'
FILENAME: SOUTH-BANK.APR
FIGURE 11C



1. Typical planted pine.



2. Typical planted pine & logging road.



3. Hardwood Hammock.



4. Hardwood Hammock.



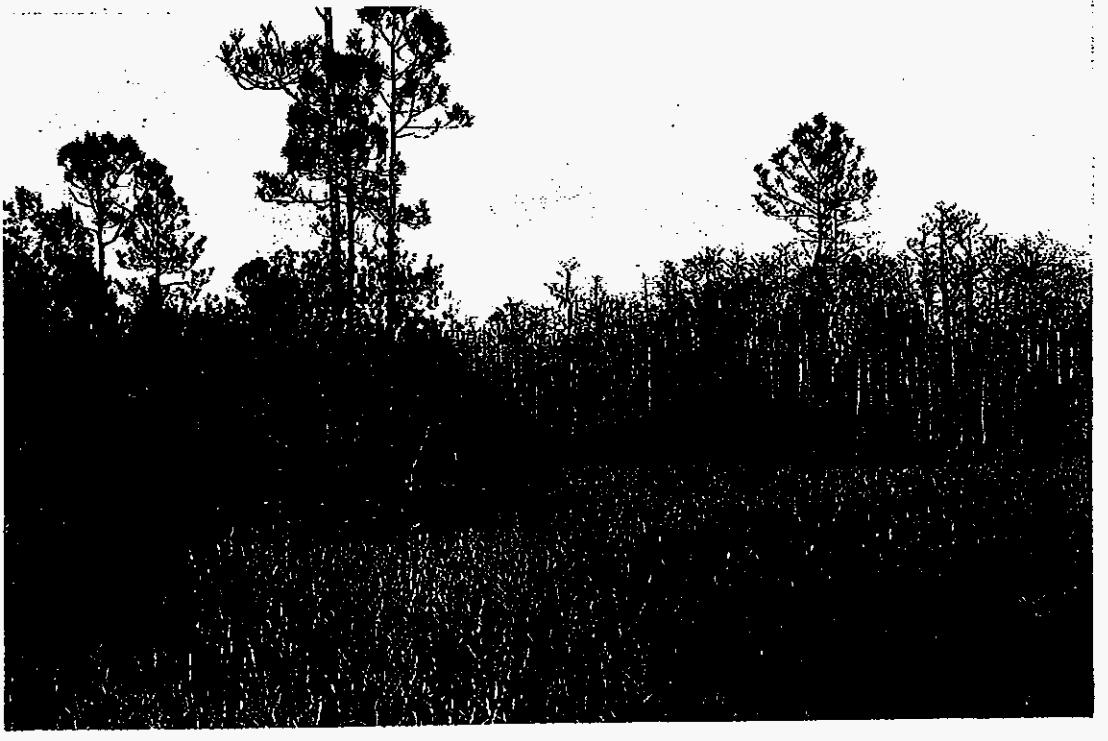
5. Washout with major sediment transport.



6. Washout cutting new channel.



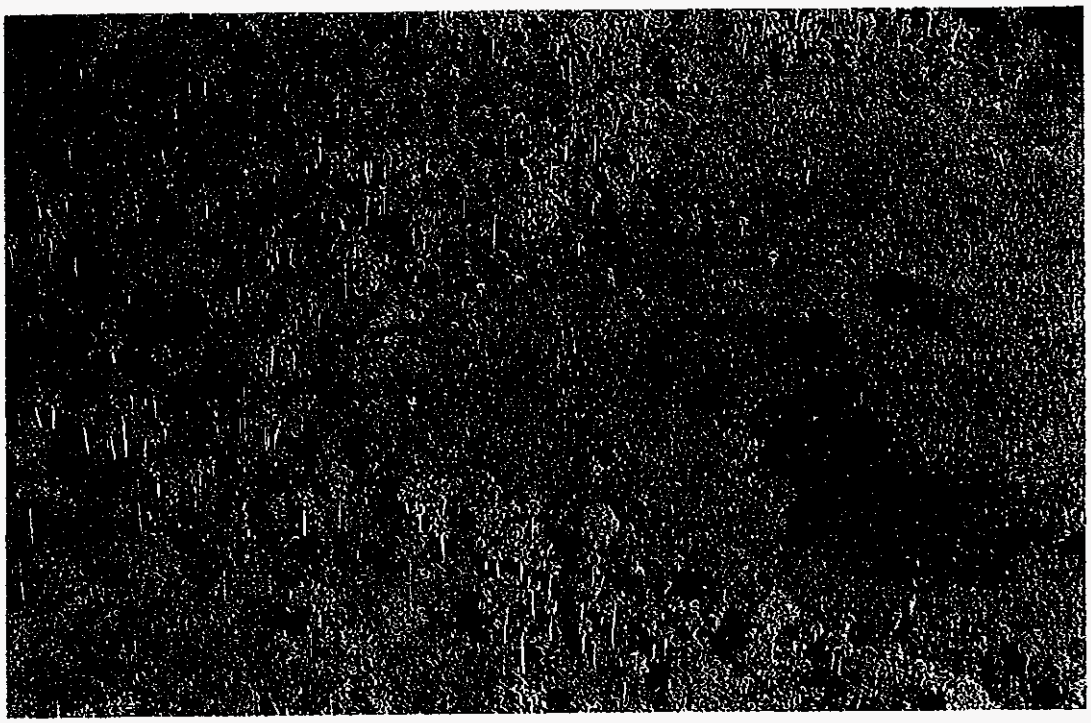
7. Typical Hunting Impact.



8. North Bank Wetlands.



9. West Bank site at St. John River.



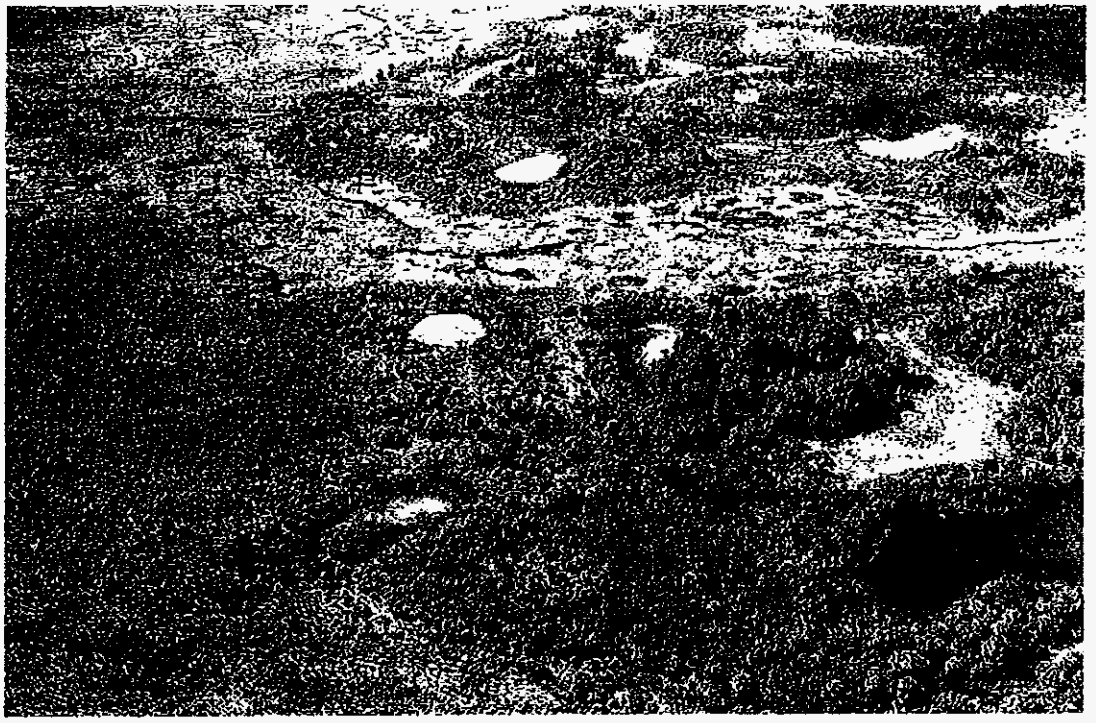
10. West Bank site near Cow Creek.



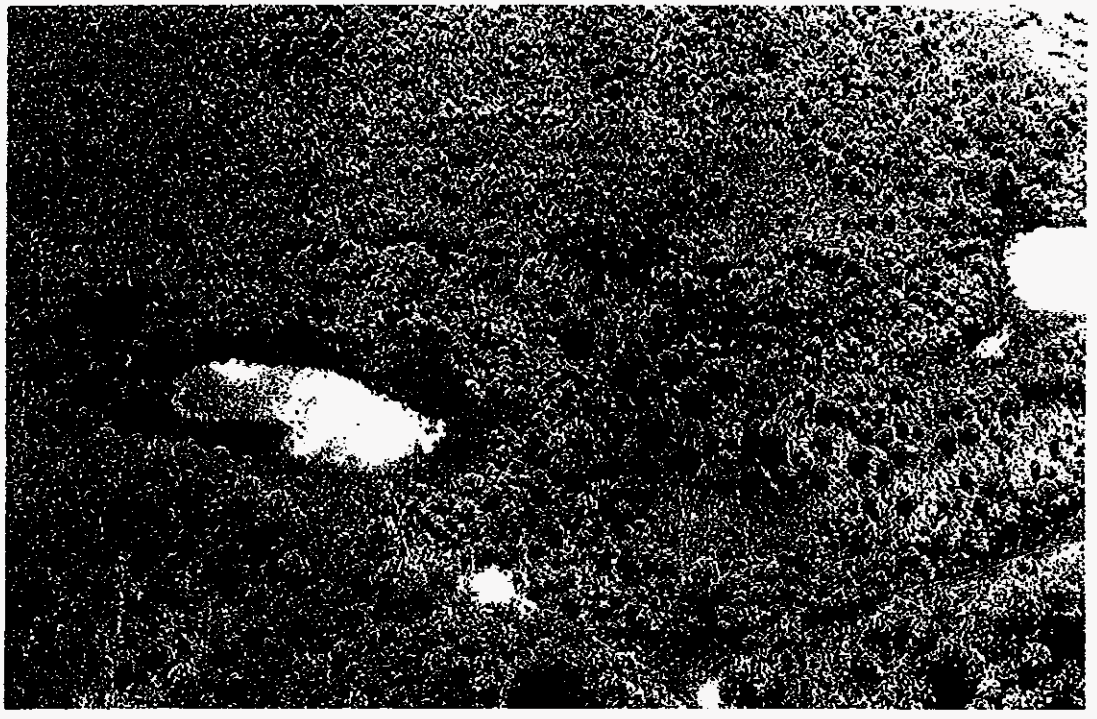
11. South Bank site looking toward Buck Lake.



12. South Bank site, edge of Buck Lake.



13. Inland salt marsh, South Bank site.



14. Inland salt marsh, South Bank site.



15. Debris trapped by remains of bridge over Deep Creek.



16. Bridge over Cow Creek.

SAMPLE FORESTRY CONTRACT

FOR UPLAND BUFFERS

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
SPECIFICATIONS
BID NO. 98S06
TIMBER HARVEST (APPROXIMATELY 80 ACRES) OF SECTIONS 32 AND 43, TOWNSHIP 11S, RANGE 26E, OF CARAVELLE RANCH IN PUTNAM COUNTY, PALATKA, FLORIDA

NON-MANDATORY PRE-BID CONFERENCE - A NON-MANDATORY Pre-Bid Conference is scheduled for **10:00 a.m., Friday, October 31, 1997,** at the Caravelle Ranch gate entrance located off Highway 19 South between the Cross Florida Barge Canal and the Ocklawaha River in Putnam County, Palatka, Florida (refer to Attachment A map). The conference is intended to provide bidders the opportunity to receive clarification of any requirement of this Invitation For Bid. All interested bidders are encouraged to attend. All interested bidders that plan to attend the non-mandatory pre-bid conference are asked to contact Betty Green at (904) 329-4141. If, due to disability, you require a special accommodation to participate, contact Wendy Sweat at the address listed on page 1 or either of the telephone numbers in Item 1, General Conditions, at least three (3) business days before the date and time specified.

It is recommended, but not required, that all bidders examine carefully the site for the harvesting project and for verifying the timber volumes. Bidders are responsible for being aware of the conditions under which the work is to be performed; failure to do so will not relieve a successful bidder of his obligation to furnish all material, equipment and labor necessary to complete the harvesting work for the consideration set forth in his Bid. It will be assumed that the Bidder has investigated and is fully informed of the conditions and materials to be encountered (i.e. location of the site; quality and quantity of work to be performed, materials to be furnished, the nature of the ground and surface; location of buried utilities and any other conditions surrounding and affecting the work, and obstructions; the nature of any existing construction, and all other physical characteristics of the job).

Access to verify the volumes can be gained from the main entrance gate to Caravelle Ranch located off Highway 19 South, Putnam County, Palatka, Florida, as identified on the attached map. A blue combination lock will be placed on the main gate (the combination will be 1000).

INFORMATION

INTRODUCTION AND PURPOSE: The Governing Board wishes to receive bids for the sale and harvest of approximately 80 acres of marked timber. It will be the SUCCESSFUL BIDDER's responsibility to perform timber harvesting of Caravelle Ranch as specified in the bid documents. Award of bids will be made on an all or none basis for the sale and harvest of timber and will be in effect for the length of this contract.

Areas of natural (not planted), old field pine are present along the margin of the Ocklawaha River swamp at Caravelle Ranch. Trees in these areas are now crowded and are at risk for insects or disease. Thinning will maintain vigor of the remaining trees, generate income, and improve wild turkey and quail habitat which is a high management priority.

The trees to be harvested have been marked by two (2) spots of blue paint, one at approximately eye level and one at the stump. Longleaf pine is marked with red paint; these trees will not be cut. Unmarked trees will not be cut. Blue marked trees will be cut and removed. The District will receive the following benefits:

1. The stocking of trees will return to a more natural level.

2. Significant revenue from the sale.

The DISTRICT will provide access to the lands on which the work under this bid is to be done.

REQUIREMENTS

PERIOD OF CONTRACT: The contract for harvesting shall begin on the day the fully executed Work Order to proceed is received by the SUCCESSFUL BIDDER, after the Governing Board's approval on December 10, 1997, and shall be completed within 180 days from the receipt of fully executed Work Order.

Each bidder agrees that the time of completion is of the essence and, each bidder further agrees that if awarded the bid, he shall proceed with the specified work in accordance with the approved schedule and within the time period specified. In the event of failure to complete the work within the time specified, the timber will revert to the District, unless the project manager chooses to extend the contract due to extenuating circumstances.

WORK ORDERS: The DISTRICT shall issue written authorization in the form of a Work Order before work is to begin. The Work Order shall describe the location and description of the work and the specified time for completion of that Work Order. The SUCCESSFUL BIDDER shall begin the Work as described in the bid documents, upon receipt of written Work Order.

PROJECT MANAGER'S STATUS AND DECISIONS: The DISTRICT shall designate a Project Manager for the purpose of directing the SUCCESSFUL BIDDER and maintaining coordination and review of the work. The Project Manager shall have sole and complete responsibility to transmit instructions, receive information, interpret and communicate DISTRICT policies and decisions with respect to all matters pertaining to SUCCESSFUL BIDDER's services.

The Project Manager may make on-site inspections at any time. The Project Manager, with the Executive Director's approval, shall have authority to reject all work and materials which do not conform to the contract, and to recommend the application of forces to any portion of the work, the Project Manager to recommend the force increased or diminished; and, to recommend solutions to questions which arise in the execution of the work. Project Manager has authority to stop work whenever such stoppage may be necessary to insure the proper execution of the work to be performed.

BIDDER QUALIFICATIONS: The Contract shall only be awarded to the highest responsive and responsible Bidder who is qualified by experience for doing the specified work. All bidders shall submit the following information with the Bid Form at the time of the bid. Those bidders not meeting these mandatory requirements will not be given further bid consideration and rejected as non-responsive.

Two (2) timber harvests which demonstrate a minimum of two (2) years experience on similar work under the name of the company bidding or the project manager assigned to project. This record shall include, but not be limited to:

1) a list and brief description of completed timber harvestings;
2) locations;
3) date of completion; and
4) contact person and phone number.

CONTRACTOR'S INSURANCE: The CONTRACTOR shall not commence work under this Contract until he has provided certificates to the DISTRICT for amounts of insurance as follows:

(1) Workers' Compensation Insurance: Florida Statutory Requirements

(2) General Liability: (occurrence form) $1,000,000 combined single limits for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other with a general aggregate limit is used, either the general aggregate limit shall apply separately to this project/location or the general aggregate shall be twice the required occurrence limit.

(3) Automobile Liability: $500,000 combined single limits per accident for bodily injury and property damage.

(4) DEDUCTIBLES AND SELF-INSURED RETENTIONS: Any deductibles or self-insured retentions must be declared to and approved by the District.

(5) ACCEPTABILITY OF INSURERS: Insurance is to be placed with insurers with a Best's rating of no less than B+10.

The St. Johns River Water Management DISTRICT shall be shown as an additional insured party under the above policies which allow this endorsement.

The proof of insurance supplied prior to execution of this contract shall have the words "endeavor to" and "but failure to mail such notice shall impose no obligation or liability of any kind upon the company, its agents or representatives" stricken, from their cancellation clause in the certificate of insurance.

All insurance shall be maintained in force until completion of the contract, and shall include an endorsement requiring ten (10) days prior written notice to the DISTRICT before any change or cancellation is made effective.

The District will require that General liability insurance be written on an "occurrence" basis. Claims made coverage will be accepted only on an "exception" basis after verifying that "occurrence" coverage is not available.

INDEMNITY AND HOLD HARMLESS: SUCCESSFUL BIDDER shall indemnify and hold harmless, release and forever discharge the DISTRICT, its public officers, employees, agents, representatives, successors and assigns of all liabilities, claims, actions damages, costs or expenses, and attorneys' fees which the SUCCESSFUL BIDDER may have against the DISTRICT arising out of or in any way connected with this Agreement and resulting from damages to property, personal injury, or loss of life. The SUCCESSFUL BIDDER understands that this indemnification includes any claims based on partial or sole negligence, action or inaction of the SUCCESSFUL BIDDER, its employees, subbidders, subcontractors, representatives, successors and assigns, and includes any claims based on partial or sole negligence, action or inaction of the DISTRICT, its public officers, employees, agents, representatives, successors and assigns.

If the SUCCESSFUL BIDDER fails to comply with any of the terms, conditions, provisions, or stipulations of this agreement, according to the true intent and meaning thereof, then the DISTRICT may avail itself of any or all remedies provided in this contract and shall have the right and power to proceed in accordance with the provisions thereof.

PAYMENT TO THE DISTRICT: Payment shall be made by the SUCCESSFUL BIDDER to the District in two (2) installments as follows:

A. The SUCCESSFUL BIDDER shall be notified by certified mail of the Governing Board's approval to accept the bid. A surety bond in the amount of ten percent (10%) of the total bid price shall be paid to the District within five (5) working days of notification. This surety bond shall be in the form of a cashier's check and shall guarantee that the SUCCESSFUL BIDDER shall satisfy the obligations of this contract.
B. Upon receipt of the fully executed Work Order, the SUCCESSFUL BIDDER shall submit payment of one half (1/2) of the accepted bid price to the District within five (5) working days of receipt of fully executed Work Order.
C. Full and final payment of the accepted bid price shall be paid to the District within 90 days after receipt of the fully executed Work Order OR prior to completing 50% of the harvest, whichever is first.

NOTICE OF INTENT TO AWARD: The SUCCESSFUL BIDDER shall, within ten (10) calendar days of the date of Notice of Intent to Award, execute and deliver to the DISTRICT satisfactory evidence of all required insurance coverage. All insurance and bonds must be received by the District prior to commencement of work.

PROPERTY DAMAGE: SUCCESSFUL BIDDER shall continuously maintain adequate protection of all its work from damage and shall protect DISTRICT's property from damage or loss arising in connection with this contract. SUCCESSFUL BIDDER shall repair or replace any damage or loss unless the loss is directly due to errors in the contract or caused by DISTRICT'S agents or employees. SUCCESSFUL BIDDER shall adequately protect and maintain all passage ways, guard fences, lights, and other facilities for protection and required by public authority or local conditions.

INSPECTION OF WORK: Representatives of DISTRICT may visit and inspect the work at all times during its progress, and SUCCESSFUL BIDDER shall provide safe facilities for the inspection.

RELEASE: Acceptance of the SUCCESSFUL BIDDER's final payment shall be considered as a release in full of all claims against the DISTRICT or any of its members, agents, and employees, arising out of, or by reason of, the work done and materials furnished under this Agreement.

SPECIFICATIONS:

1. The trees to be harvested within are marked with two (2) spots of blue paint, one at approximately "eye" level and one at the stump. Longleaf pine is marked with red paint and these trees will not be cut. Unmarked trees will not be cut.

2. No eagles nests have been identified within the harvest area; however, should one be discovered, the District will identify the primary management zone (PMZ) of each active nest. Trees marked for harvest within the PMZ of any eagles nest may only be harvested during the period from May 15 through September 30, of any calendar year. During the period of October 1 through May 14 of any year of the contract, no activity is permitted within the PMZ.

3. A preharvesting conference between the District's Project Manager and the highest bidder or his representative shall be scheduled on site at least three (3) days prior to beginning the harvesting operations. This conference is to provide each party the opportunity to discuss the details of the contract, logging plans, haul roads, and other matters. **All haul routes must have prior approval of the District's Project Manager or his designee. Use of any route without approval is not allowed.**

4. There will be six (6) loading ramps used. Their location is shown on the attached map. No other ramps will be cleared without permission of the Project Manager. Tops and debris at each ramp shall be plied approximately 75 to 100 feet from the edge of the timber.

5. **Roads must remain passable for local traffic.** Any road, trail, or firebreak used by the SUCCESSFUL BIDDER in connection with this sale that is damaged beyond ordinary wear by the SUCCESSFUL BIDDER, shall be promptly repaired at the expense of the SUCCESSFUL BIDDER, to its original condition. Encroachment into the wetland area by logging equipment ramps and debris is prohibited. All timber shall be hauled out the main Caravelle Ranch entrance. The District reserves the right to close timber sale operations in inclement weather if logging damage to roads or the sale area is deemed to be too severe by the Project Manaer.

6. Leave trees which are cut or otherwise damaged by the SUCCESSFUL BIDDER shall be paid for by the SUCCESSFUL BIDDER at triple stumpage, based on a stump cruise by the DISTRICT.

7. Stumps shall be no higher than six (6) inches above ground except where authorized by Project Manager. No stump shall be cut so low as to eliminate paint mark if such mark has been applied.

8. Title to all designated trees left standing and all portions of trees felled but not removed prior to the expiration of this contract, or any extension thereof, shall remain with the District. All the dead stumpwood and lightwood in the contract area is exempt from this sale.

9. No tops, limbs, or butts shall be left within three (3') feet of living trees. All "lodged" trees shall be freed and removed the same day such "lodging" occurs.

10. All power and telephone lines, ditches, fences, and gates or similar structures located within or immediately outside the exterior boundaries of the sale area shall be protected from damage by logging operations, and if damaged, shall be repaired immediately by and at the expense of the SUCCESSFUL BIDDER. Prior to repairs, the Project Manager shall be notified.

11. Due care shall be exercised against starting and spreading fires during the cutting operations by SUCCESSFUL BIDDER. Damages resulting from such fires proximately caused by SUCCESSFUL BIDDER'S harvesting operation, shall be the remedied at the expense of the SUCCESSFUL BIDDER.

12. The SUCCESSFUL BIDDER shall clear from within the limits of the site area all objectionable debris in order to properly conduct the work operations. The work area shall be kept free from unnecessary accumulation of rubbish, tools, and equipment. The discharge of any fuels, oils, petroleum products or other harmful materials which may result from the servicing of heavy equipment, either on the sale site or any other District owned property shall be prohibited. Should any harmful materials be discharged at the site, the Project Manager shall be immediately notified. Any expense related to the cleanup of any discharge of fuels, oils, petroleum products, or other harmful materials caused by the SUCCESSFUL BIDDER, shall be the responsibility of the SUCCESSFUL BIDDER.

13. Gates shall be kept closed as cattle are on some portions of the property and not on others.

14. Logging shall stop during the November 8-16th Deer season and the March 21-29 Spring Turkey season.

16. A cruise of the timber for sale indicates the following volumes are present:

Total Marked Timber Volume on approximately 80 acres:

Pine Pulpwood	465 cords
Pine Chip-n-saw	114 cords
Pine Sawtimber	92 cords
Total	**671 cords**

17. Please note that neither the contractor conducting the cruise nor the St. Johns River Water Management District guarantees the accuracy of these volumes. They are included for the convenience of the bidders only, and all bidders should satisfy themselves as to the volume of timber included in the sale. A blue combination lock will be placed on the main entrance gate to Caravelle Ranch to allow access for interested bidders. The combination will be 1000.

18. The areas to be thinned are identified on the attached map (Attachment A).

DISTRICT RIGHTS: The DISTRICT reserves the right to waive informalities in any bid, to reject any and all bids in whole or in part, with or without cause, and/or accept bids or portions thereof that in its judgment will be in the best interest of the DISTRICT.

EVALUATION FOR AWARD OF BID: All bidders shall submit with their bid, the original and one (1) copy of the bid and all documentation submitted. Each copy is to include all required documentation.

RECOMMENDATION OF AWARD: Staff shall make its recommendation for award to the Governing Board at its regularly scheduled meeting to be held on Wednesday, December 10, 1997, in Palatka, Florida.

AWARD OF BID: The bid shall be awarded to the highest responsive and responsible bidder whose bid meets all specifications in the Invitation to Bid as specified in the bid package.

5/31/88

FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES

DIVISION OF FORESTRY

STATE LAND TIMBER SALE AGREEMENT

THIS AGREEMENT, made this 5th day of September, 19 89, between the STATE OF FLORIDA, DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES, DIVISION OF FORESTRY, a State Agency, of Tallahassee, Florida, hereinafter called the SELLER, and Louisiana-Pacific Corporation (Company Name)

Post Office Box 1267 (Company Address)

Crestview (City), Florida (State), 32536 (Zip),

hereinafter called the PURCHASER.

ARTICLE I

Preamble

For and in consideration of the promises and agreements hereinafter contained, SELLER agrees to sell and permit PURCHASER to cut and PURCHASER agrees to purchase, cut, and remove such cut timber specified in this Agreement, subject to the Agreement provisions hereof.

ARTICLE II

Description

A. This sale shall be known as Cardinal Sawtimber 89 Sale.

B. This sale area of 264 acres more or less, within Blackwater River State Forest is located in (include Section(s), Township(s), Range(s), County, and State): Section 28, Township 5 North, Range 24 West; Okaloosa County; Florida

C. The boundaries of the sale area, and any subdivisions thereof, are as shown on the attached sale area map, which is made a part hereof.

ARTICLE III

Timber Included

This Agreement includes only that timber within the sale area as described in Article II B and C, designated in the following manner by a representative of SELLER: All trees marked with Yellow paint at approximately head and ground level within the area shown on the attached map.

ARTICLE IV

Conditions of Sale

A. PURCHASER agrees to cut and remove timber included in this Agreement in strict accordance with all conditions and requirements contained herein. If this Agreement contradicts the timber sale prospectus, the Agreement governs.

B. PURCHASER hereby agrees to pay SELLER for all timber to be cut as follows:

The Sum Of: Seventy one thousand, five hundred seventy seven and no/100----

(DOLLARS) $71,577.00

Entire Sale Paid in Full 9-5-89

If this timber sale contains more than one Unit, payment for a minimum of one Unit is due at the Agreement signing. Payment for the next Unit is due after the time allotted for the previously paid for Unit has elapsed. PURCHASER agrees not to cut timber in any Unit of this timber sale until payment for that Unit has been made to the SELLER.

C. PURCHASER has furnished a Surety Bond issued by St. Paul Fire and Marine Insurance Company, to serve as Performance Bond, in the amount of Seven thousand one hundred and fifty-eight and no/100********** Dollars ($ 7,158.00******), receipt of which is hereby acknowledged. Said bond or check shall be returned to PURCHASER at the termination of this Agreement, provided all of its terms have been complied with to the satisfaction of SELLER. This surety bond or cashier's check furnished by PURCHASER shall provide protection to SELLER and to all laborers and material men who furnish labor and materials to PURCHASER for work performed under the terms of this Agreement, in accordance with Section 255.05, Florida Statutes.

If a surety bond is provided by PURCHASER it shall include a provision whereby the surety company waives notice of any alteration or extension of time made by SELLER. The bond will remain in force beyond the initial period of the agreement in accordance with any extension granted by the SELLER for cause.

D. The terms of this Agreement and the terms for which the parties hereto are bound shall be for twelve (12) months, beginning September 15, 1989 and ending September 14, 1990. Extensions will be considered only when Acts of God or other extreme contingencies

beyond the control of PURCHASER, prevent this time schedule from being followed. Requests for extensions must be made by PURCHASER, in writing, at least fifteen (15) days prior to the Agreement termination, with the reasons for request stated therein.

E. PURCHASER or his representative agrees to have a conference with Forester in charge or his representative before cutting begins, in order to discuss logging plans, roads to be used for hauling, etc.

F. Stumps shall be no higher than six (6) inches above the ground except where otherwise authorized by the Forester in charge. No stump will be cut so low as to eliminate the paint mark if such mark has been applied in accordance with Article III.

G. Title to all designated trees left standing and all portions of trees felled but not utilized prior to the expiration of this Agreement, or any extensions thereof, shall remain with SELLER.

H. All other timber in the Agreement area under valid claims of another agreement or not designated in accordance with Article III is excluded from this sale. All the dead stumpwood and lightwood in the Agreement area is also excluded from this sale.

I. The designated timber to be cut and utilized shall equal or exceed the following minimum dimensions:

Sawtimber shall be at least 9.6" DBH and have at least one marchantable 16' cut to an eight inch top diameter. Pulpwood shall be at least 5.6" DBH and have at least two marchantable 5.25' cuts to a four inch top diameter.

J. No tops, limbs, or butts shall be left within three (3) feet of living trees. All "lodged" trees shall be freed and removed the same day such "lodging" occurs.

K. Due care shall be exercised against starting and spreading fires during the cutting operations by PURCHASER and/or his employees. PURCHASER shall be held liable for all damages caused by such fires.

L. All utility lines, ditches, and fences located within or immediately outside the exterior boundaries of the sale shall be protected from damage by logging operations, and if damaged, shall be repaired immediately by and at the expense of PURCHASER. The Forester in charge may, when in his judgement it is necessary to avoid risk or damage from logging operations, require PURCHASER to move fences from one location to another without compensation.

M. The Forester in charge or his representative shall designate the location of all loading ramps. Loading of log trucks is not permitted on paved or graded roads. SELLER reserves the right to designate location of skid trails.

N. Skidding trees down roads, trails and firelines is prohibited. Also, these areas will be kept free of logs, tops, brush and debris resulting from PURCHASER'S operations hereunder, and any road, trail or firebreak used by PURCHASER in connection with this sale that is damaged beyond ordinary wear and tear, by PURCHASER'S and/or his employees' use, shall be repaired promptly by him, at his expense, to its original condition. SELLER retains the right to close down timber sale operations in inclement weather if logging damage to roads or the sale area is deemed by the Forester in charge to be too severe.

O. PURCHASER shall guard the gates used by him in his operations hereunder, in any fences enclosing pasture lands, at all times when such gates are open and used by PURCHASER, to prevent any cattle, horses, or other animals from passing through them, and shall close such gates after using them.

P. When the PURCHASER deems it necessary to mark any trees in this sale for product designation or any other purpose, he will not use the same color of paint as that used by the SELLER.

Q. Undesignated live trees which are cut or otherwise injured by PURCHASER'S operations shall be paid for by PURCHASER at double stumpage, based on a stump cruise by SELLER; provided that such payment shall not release PURCHASER from liability for any damage accruing to the SELLER, other than for value of said trees. Double stumpage is based on the selling price for this timber sale, and the resulting price being paid for each product class, as determined by SELLER, unless otherwise noted in the timber sale prospectus.

R. The amounts specified in the paragraph immediately preceding shall be regarded as liquidated damages, and may be waived at the discretion of the Forester in charge in accidental or exceptional cases which involve small amounts of material.

S. Any timber cut and not moved from the sale area at the expiration or termination of this Agreement will be paid for by PURCHASER at the rate of Not Applicable per tree for pulpwood and Not Applicable per tree for sawtimber.

T. The decision of SELLER shall be final in the interpretation of the

regulations and provisions governing the sale, cutting and removal of timber covered by this Agreement.

U. All operations on the sale area may be suspended by the Forester in charge after written notice has been served on PURCHASER if the conditions and requirements contained in this Agreement are disregarded. Failure to comply with any of said conditions and requirements shall be sufficient cause for termination of this Agreement and the cancellation of all agreements for other uses of State Forests or Lands.

V. This Agreement will not be assigned in whole or in part without the approval of SELLER.

W. The conditions of sale are completely set forth in this Agreement and none of its terms can be varied or modified except in writing by the Forester in charge or his successor or superior officer, and in accordance with the regulations of SELLER. No other Forester has been or will be given authority for this purpose.

X. All monies deposited under this Agreement shall, upon failure of PURCHASER to fulfill all conditions and requirements herein set forth or made a part hereof, be retained by SELLER to be applied to the satisfaction of PURCHASER'S obligation hereunder.

Y. Title to all timber included in this Agreement shall remain with SELLER until it has been paid for.

Z. The right of ingress, egress and regress is hereby granted to PURCHASER for the duration of this Agreement.

AA. PURCHASER shall be responsible for seeing that the logging area, particularly around the loading ramps, shall be free from any litter, such as oil cans, drums, paper and other refuse. If such refuse is not disposed of during the process of the logging operation, it will be the responsibility of said PURCHASER to see that the area is cleaned up upon completion of logging.

BB. PURCHASER agrees to assume full responsibility and be liable for all damages to persons or property incurred in or resulting from the harvesting of timber; and PURCHASER agrees further, by acceptance of the award of this Agreement, to release, acquit, indemnify, save and hold harmless SELLER and the State of Florida, their officers, agents and representatives from any and all claims, loss, damage, injury and liability, whether for personal injury or otherwise, resulting from, arising out of, or in any way connected with the work to be performed under this Agreement.

~ Volusia County ~

During the term of this Contract, PURCHASER shall neither set nor permit any fires to be set upon the land above described, and shall without expenses to the COUNTY, assist the COUNTY in suppressing any fires on or threatening said land.

PURCHASER agrees to conduct logging operations in such a manner as to reasonably protect the small timber, marked trees, and seedlings. If any timber and trees other than that conveyed by this contract are felled or unnecessarily damaged by PURCHASER, the PURCHASER shall pay to COUNTY for such timber and trees at a rate of double their value. The determination as to whether or not a tree has been unnecessarily damaged and the value of such a tree shall be made by COUNTY'S FORESTER. If, in the opinion of the COUNTY'S FORESTER, an excessive number of trees other than those conveyed by this contract are felled or unnecessarily damaged, the COUNTY'S FORESTER shall order all logging operations halted, and no additional logging or hauling of timber shall be permitted until the cause for the excessive damage is remedied to the satisfaction of the COUNTY'S FORESTER.

This Contract shall be binding upon and shall inure to the benefit of the heirs, successors, legal representatives and assigns of the parties hereto.

CC. PURCHASER, in signing this Agreement, attests that he has satisfied himself that the volume of timber advertised and upon which he has bid, is present and available.

DD. This Agreement is subject to the following additional conditions of sale: _____

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed this 15th day of September, 19 89.

Approved as to form and legality

By: Leslie McLeod Jr
Senior Attorney

Witnesses:

Jane McPherson

Stephen D Hancock

STATE OF FLORIDA, DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES, DIVISION OF FORESTRY

By: Doyle Conner
Commissioner of Agriculture

September 15, 1989
Date

PURCHASER: LOUISIANA-PACIFIC CORPORATION

[illegible]

By: Ronald L Ford
Signature Title

Jane Mendivil

August 28, 1989
Date

DRAFT

CONSERVATION EASEMENT

COMPREHENSIVE ZONING MAP FOR VOLUSIA/BREVARD COUNTIES

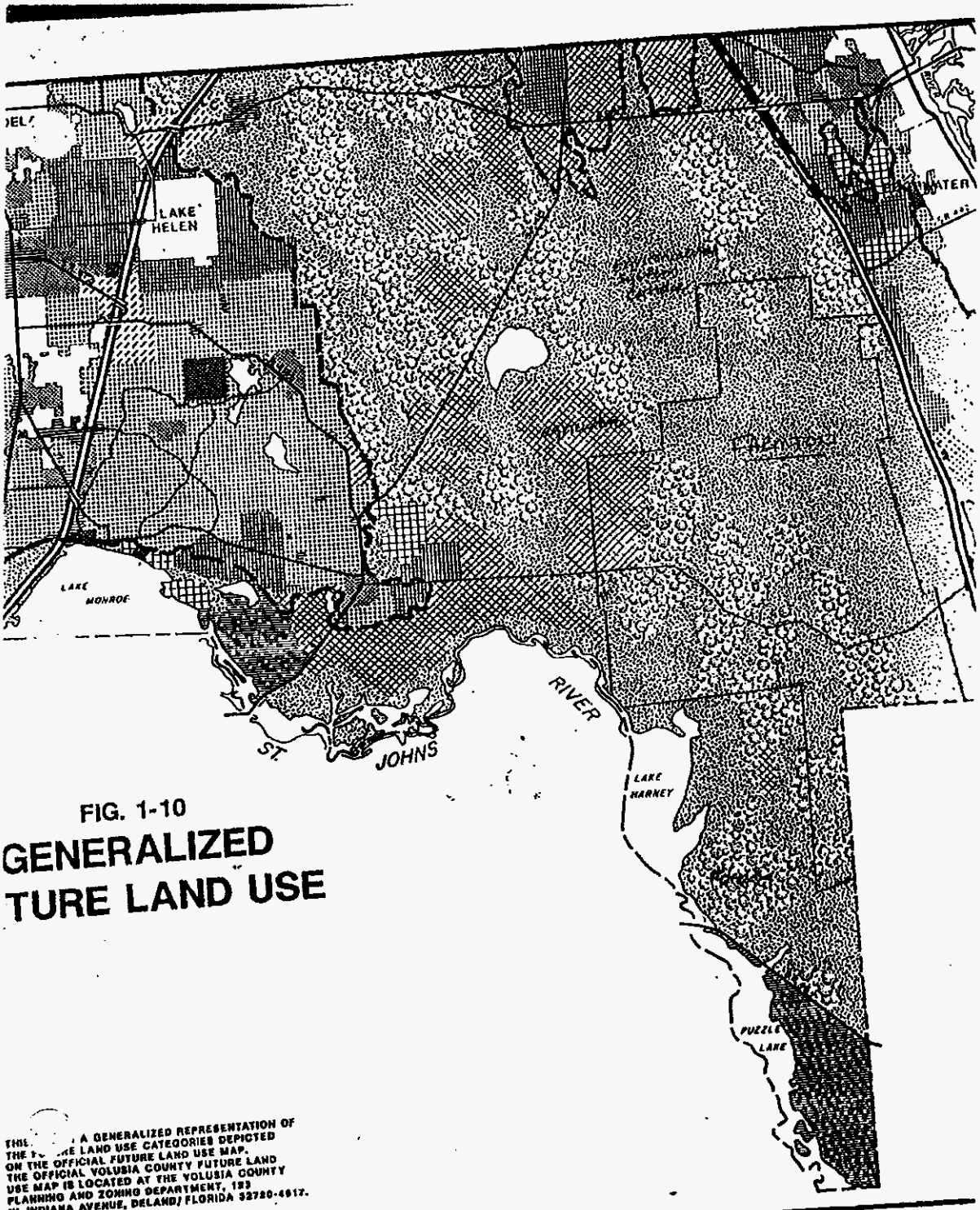


FIG. 1-10

GENERALIZED TURE LAND USE

THIS ... A GENERALIZED REPRESENTATION OF THE F... LAND USE CATEGORIES DEPICTED ON THE OFFICIAL FUTURE LAND USE MAP. THE OFFICIAL VOLUSIA COUNTY FUTURE LAND USE MAP IS LOCATED AT THE VOLUSIA COUNTY PLANNING AND ZONING DEPARTMENT, 123 W. INDIANA AVENUE, DELAND, FLORIDA 32720-4617.

FIG. 1-10

GENERALIZED FUTURE LAND USE



CONSERVATION

NATURAL RESOURCE MANAGEMENT AREA OVERLAY DISTRICT

ENVIRONMENTAL SYSTEM CORRIDOR

FORESTRY RESOURCE

LOW IMPACT URBAN

AGRICULTURE RESOURCE

RURAL

RECREATION

PUBLIC / SEMI-PUBLIC

URBAN LOW INTENSITY

URBAN MEDIUM INTENSITY

URBAN HIGH INTENSITY

COMMERCIAL

INDUSTRIAL

MIXED USE

ACTIVITY CENTER

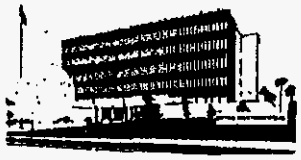
PLANNED COMMUNITY

PORT ORANGE ANNEXATION AGREEMENT (LAND USE DESIGNATIONS TO BE DETERMINED THROUGH AGREEMENT)

Land Use Map may be interpreted only as provided in the Comprehensive Plan text. That text provides necessary definitions and standards for allowable land uses, densities or intensities of use for each map category, and for interpretation and application of the Plan as a whole. That text must be consulted in its entirety in interpreting any one plan map category, and no provision shall be used in isolation from the remainder.

Nothing on this the official Future Land Use Map shall guarantee the achievement of development potential under any future land use category shown on any property. The right to develop property for a particular density or intensity is not provided by this map. Such right can only be obtained through the issuance of applicable development orders including but not limited to zoning.

This The official map cannot be correctly interpreted independent of the Volusia County Comprehensive Plan, Ordinance No. 90-10, as the same may be amended from time to time. The locations and boundary lines shown on the official map are intended to be general and not fixed locations and boundaries. The map by itself shall not be used to determine when development should or should not occur because future development must be related to the Plan's goals, objectives, policies, and recommendations, as well as conditions of the specific property being considered for development.



BREVARD County
BOARD OF COUNTY COMMISSIONERS

MPREHENSIVE PLANNING DIVISION, 2575 North Courtenay Parkway, Merritt Island, Florida 32953

July 5, 1988

Mr. Earl M. Underhill
Director, Tree Farm Operations
Miami Corporation
Farmton Tree Farm
1625 Maytown Road
Osteen, FL 32764

Dear Mr. Underhill:

This is in response to your letter, dated May 26th, to Peggy Busacca which provided comments on the Brevard County Comprehensive Plan. It was requested that the Future Land Use Map designate the Farmton Tree Farm as an agricultural use rather than a conservation use. Please note that staff has supported this change and the maps currently identify these lands as an area for agricultural use.

Please do not hesitate to contact me at 407-453-9517 should you wish to discuss this matter further. Your interest in the Comprehensive Plan is greatly appreciated.

Sincerely,

Jennifer Goulet

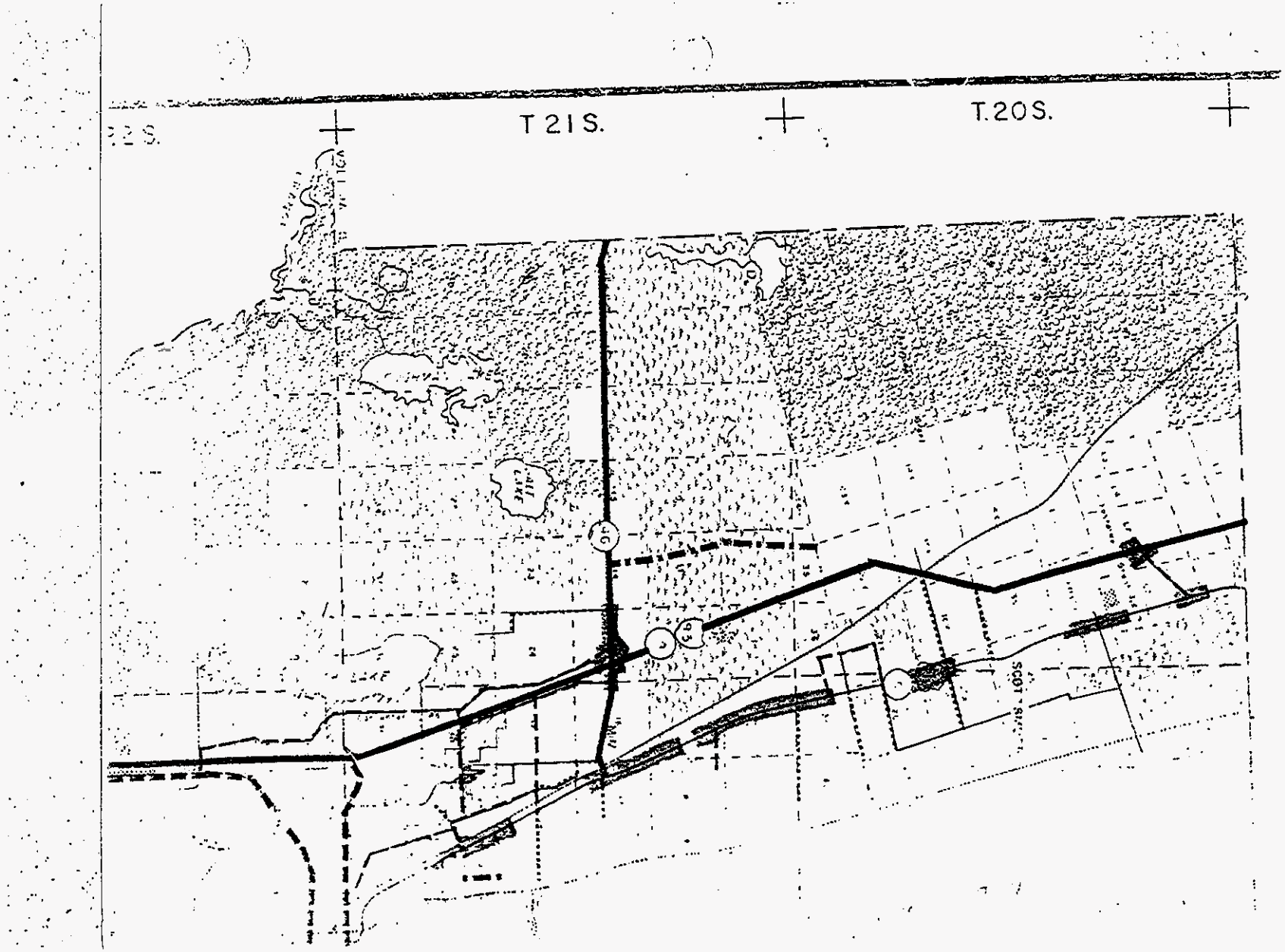
Jennifer Goulet, Senior Planner
Comprehensive Planning Division

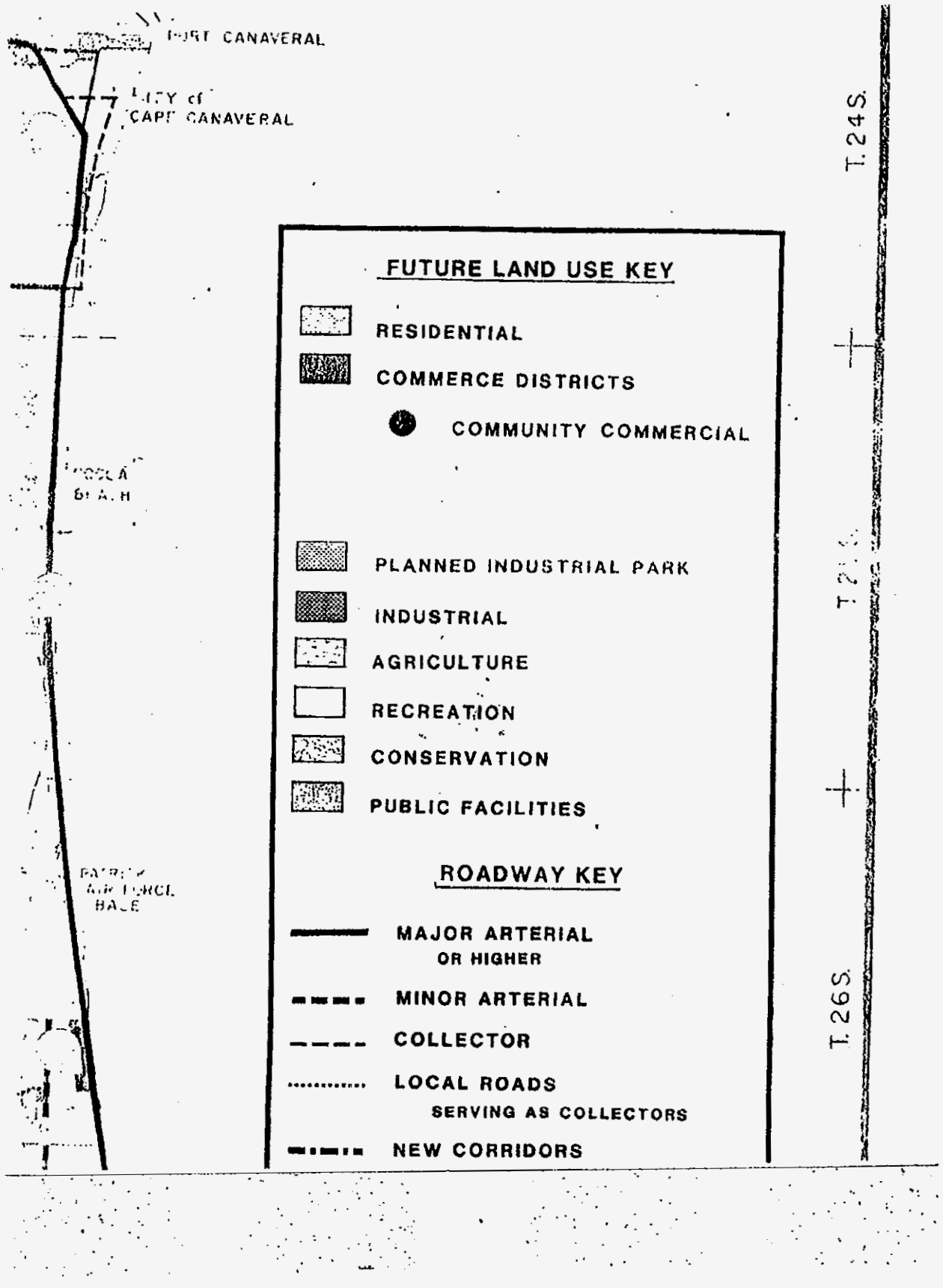
JG/hd

cc: TSO

CHARLES J. ROBERTS, District 1 | ROGER W. DOBSON, District 2 | ANDREA DERATANY, District 3, Chairman | SUE SCHMITT, District 4, Vice-Chairman | THAD ALTMAN, District 5 | W. E. CURPHEY, County Attorney | R. C. WINSTEAD, JR., Clerk

GREGORY L. KELLER, County Administrator


T 21 S.
T.20S.
SCOTT SIX


PORT CANAVERAL
CITY of CAPE CANAVERAL
T.24S.
T.25S.
T.26S.
FUTURE LAND USE KEY
RESIDENTIAL
COMMERCE DISTRICTS
COMMUNITY COMMERCIAL
PLANNED INDUSTRIAL PARK
INDUSTRIAL
AGRICULTURE
RECREATION
CONSERVATION
PUBLIC FACILITIES
ROADWAY KEY
MAJOR ARTERIAL OR HIGHER
MINOR ARTERIAL
COLLECTOR
LOCAL ROADS SERVING AS COLLECTORS
NEW CORRIDORS

LEGAL DESCRIPTION

LOCATIONS OF PROPOSED NORTH, WEST AND SOUTH BANK SITES
FARMTON MITIGATION BANK

The North Site is located in:

Sections 10 - 15, 22-28, 34-36, Township18S, Range 33E,
Sections 18-20, 29-32, Township18S, Range 34E,
Sections 1, 12, Township19S, Range 33E and
Sections 5-8, 17-21, 29 Township 19S, Range 34E.

The West Site is located in:

Sections 16-21, 28-33, Township 19S, Range 33E.

The South Site is located in:

Sections 6-8, 11-13, 24-27, of the Bernardo Sequi Grant, Indian River Park, P.B. 2, p.33, Brevard County (located in Township 20S, Range 34E, AI) and in
Section 37, Township 20S, Range 33E, AI, Volusia County.

Book 155 page 475
recorded July 15, 1925 Deed

DEED:

THIS INDENTURE Made this 1st day of April A D 1925 BETWEEN BREVARD PROPERTIES, Inc., a Corporation existing under the laws of the State of Florida, having its principal place of business in the County of Dade and State of Florida and lawfully authorized to transact business in the State of Florida, party of the first part and Miami Corporation, a corporation existing under the laws of the State of Delaware, having its principal place of business in the County of Cook and State of Illinois, and lawfully authorized to transact business in the State of Florida, party of the second part.

WITNESSETH That the said party of the first part, for and in consideration of the sum of Ten Dollars to it in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged, has granted, bargained and sold to the said party of the second part its successors and assigns forever, the following described land, situate, lying and being in the County of Volusia and State of Florida, to-wit:

IN TOWNSHIP EIGHTEEN (18) South, Range Thirty-two (32) East.

All of Section Twenty-five (25) Northeast quarter and East half of Southeast quarter of Section Twenty-six (26), Lots One (1) to Sixteen (16) inclusive of Block One (1); Lots One (1) to Sixteen (16) inclusive of Block Two (2) Lots One (1) to Sixteen (16) inclusive of Block Three (3); Lots One (1) Two (2) Three (3) Six (6) Seven (7) Twelve (12) Thirteen (13) Fourteen (14) Fifteen (15) Sixteen (16) of Block Four (4) according to the subdivision of Section Thirty-six (36).

IN TOWNSHIP NINETEEN (19) South, Range Thirty-two (32) East.

Lots Two (2) to Thirteen (13) inclusive and Lots Fifteen (15) and Sixteen (16) of Block One (1); Lots One (1) to Sixteen (16) inclusive of Block Two (2), Lots Two (2) to Thirteen (13) inclusive of Block Three (3), Lots One (1) Two (2) Three (3) Four (4) Six (6) Eight (8) Ten (10) Eleven (11) Fifteen (15) of Block Four (4) according to the subdivision of Section One (1).

Lots Four (4) to Eight (8) inclusive and Lots Eleven (11) Thirteen (13) Fourteen (14) of Block One (1)

Lots One (1) to Sixteen (16) inclusive of Block Two (2), Lots Two (2) to Nine (9) inclusive, North half of Lots Eleven (11) and Thirteen (13) all Lots Fourteen (14), Fifteen (15) and Sixteen (16) of Block Three (3),

Lots Four (4) Seven (7) Eight (8) Ten (10) Eleven (11) Twelve (12) of Block Four (4) according to the subdivision of Section Twelve (12). Lots Four (4) to Fourteen (14) inclusive of Block One (1) Lots Two (2) to Eight (8) inclusive and Lots Thirteen (13) to Sixteen (16) inclusive of Block Four (4) according to the subdivision of Section Thirteen (13).

IN TOWNSHIP EIGHTEEN (18) South Range Thirty-three (33) East.

All of Section Eleven (11) All of Section Twelve (12) All of Section Thirteen (13) All of Section Fourteen (14) all of Section Twenty-three (23) All of Section Twenty-four (24) East half of Northeast quarter, Northwest quarter of Northeast quarter, East half of Southeast quarter, Southwest quarter of Southeast quarter, East half of Northwest quarter and Southwest quarter of Section Twenty-five (25); All of Section Twenty-six (26), All of Section Twenty-seven (27) All of Section Twenty-eight (28), Government Lots One (1) Two (2) Three (3) Four (4) Five (5) Six (6) and Seven (7) of Section Thirty (30.)

Lots One (1) to Sixteen (16) inclusive of Block One (1), Lots One (1) to Fourteen (14) inclusive and Lot Sixteen (16) of Block Two (2), Lots One (1) to Seven (7) inclusive, Lot Nine (9) and Lots Eleven (11) to Sixteen (16) inclusive of Block Three (3) Lots One (1) to Sixteen (16) inclusive of Block Four (4) according to the subdivision of Section Thirty-one (31), All of Section Thirty-two (32), All of Section Thirty-three (33),

Northeast quarter, Northwest quarter of Southeast quarter and West half of Section Thirty Four (34), All of Section Thirty-five (35), all of Section Thirty-six (36).

In Township Nineteen (19) South, Range Thirty-three (33) East.

All of Section One (1), All of Section Two (2) All of Section Three (3) West half of Northeast quarter, Southeast quarter and West half of Section Four (4), All except Lot Ten (10) of Block Three (3) of Section Five (5).

Lots One (1) to Fifteen (15) inclusive of Block One (1), Lots One (1) to Six (6) inclusive, Lots Eight (8) to Eleven (11) inclusive, Lots Fifteen (15) and Sixteen (16) of Block Two (2)

Lots One (1) to Nine (9) inclusive, Lots Fourteen (14) to Sixteen (16) inclusive of Block Three (3); Lots Two (2) to Sixteen (16) inclusive in Block Four (4) according to the subdivision of Section Six (6); Lots One (1) to Five inclusive, Lots Seven (7) Ten (10), Fourteen (14) and Fifteen (15) of Block One (1), Lots One (1) to Ten (10) inclusive and Lots Twelve (12) to Sixteen (16) inclusive of Block Two (2), Lots Four (4) Nine (9) Ten (10) Twelve (12) Thirteen (13) Fourteen (14) Fifteen (15) Sixteen (16) of Block Three (3); Lots Two (2), Three (3) Five (5) Eight (8) Eleven (11) Twelve (12) Thirteen (13) Fourteen (14) of Block Four (4) according to the subdivision of Section Seven (7), Lots One (1) to Sixteen (16) inclusive of Block One (1) Lots One (1) Two (2) Four (4) Five (5) Six (6) Seven (7) Eight (8) of Block Two (2) Lots Ten (10) Eleven (11) Fifteen (15) Sixteen (16) of Block Three (3), Lots One (1) Two (2) Three (3) Four (4) Nine (9) Ten (10) Thirteen (13) Fifteen (15) of Block Four (4) according to the subdivision of Section Eight (8). Lots One (1) to Sixteen (16) inclusive of Block One (1) Lots One to Sixteen (16) inclusive of Block Two (2) Lots One (1) Two (2) Four (4) Five (5) Six (6), Seven (7) Eight (8) Nine (9) Fifteen (15) Sixteen (16) of Block Three, Lots One (1) to Sixteen (16) inclusive of Block Four (4) according to the subdivision of Section Nine (9), West half of Northwest quarter and West half of SouthWest Quarter of Section Ten (10), All of Section Eleven (11) All of Section Twelve (12), All of Section Thirteen (13) Northeast quarter, West half, East half of the Southeast quarter and Northwest quarter of Southeast quarter of Section Fourteen (14); all of Section Fifteen (15), Lots Nine (9) to Sixteen (16) inclusive of Block One (1) Lots One (1) to Six (6) inclusive and Lots Nine (9) to Twelve inclusive of Block Two (2), Lots Five (5) to Sixteen (16) inclusive of Block Three (3), Lots One (1) to Sixteen (16) inclusive of Block Four (4) according to the subdivision of Section Sixteen (16); Lots Two (2) Three (3) Four (4) Five (5) Seven (7) Eight (8) Ten (10) Eleven (11) Twelve (12) Thirteen (13) Fifteen (15) Sixteen (16) of Block One (1); Lots One (1) To Four (4) inclusive, Lot Eight (8) and Lots Thirteen (13) to Sixteen (16) inclusive of Block Two (2), Lots One (1) to Fifteen (15) inclusive of Block Three (3), Lots One (1) to Five (5) inclusive, Lots Seven (7) to Fifteen (15) inclusive, of Block Four (4) according to the subdivision of Section Seventeen (17)

(12)

Lots One (1) to Sixteen (16) inclusive of Block Three (3), Lots One (1) and Lots Three (3) to Sixteen (16) inclusive of Block Four (4) according to the subdivision of the South half of Section Eighteen (18). Northeast quarter, West half of Southeast quarter, North half of Northwest quarter, Southeast quarter of Northwest quarter and East half of Southwest quarter of Section Nineteen (19), Lots Three (3) to Sixteen (16) inclusive of Block One (1) Lots One (1) Two (2) Three (3) Five (5) Six (6) Eight (8) Nine (9) to Sixteen (16) inclusive of Block Two (2), Lots One (1) to Nine (9) inclusive, Lots Eleven (11) to Sixteen (16) inclusive of Block Three (3), Lots One (1) to Sixteen (16) inclusive of Block Four (4) according to the subdivision of Section Twenty (20), Lots One (1) to Eight (8) inclusive of Block One (1), Lots One (1) to Sixteen (16) inclusive of Block Two (2), Lots One (1) to Sixteen (16) inclusive of Block Three (3), Lots One (1) to Sixteen (16) inclusive

of Block Four (4), according to the subdivision of Section Twenty-one (21), Lots one (1) to Nine (9) inclusive, East half of Lot Ten (10) and all Lots Twelve (12) to Sixteen (16) inclusive of Block One (1), Lots One (1) to Sixteen (16) inclusive of Block Two (2), Lots One (1) to Sixteen (16)inclusive of Block Three (3), Lots One (1) to Six (6) inclusive, Lots Eight (8) to Sixteen (16) inclusive of Block Four (4) according to the subdivision of Section Twenty-two (22).

East half of Northeast quarter, Northwest quarter of Northeast quarter and Southeast quarter, West half of Northwest quarter, Southwest quarter and Northeast quarter of Northwest quarter, except the East twelve (12) chains of the South Ten (10) Chains of the said Northeast quarter of Northwest quarter of Section Twenty-three (23). All of Section Twenty-Four (24), East half, Southeast quarter of Northwest quarter, West half of Northwest quarter and Southwest quarter of Section twenty-five, All of Section Twenty-six (26), Lots One (1) to Six (6) Inclusive, Lots Nine (9) to Sixteen (16) inclusive of Block One (1); Lots One (1) Lots Three (3) to Sixteen (16) inclusive of Block Two (2), Lots One (1) to Sixteen (16) inclusive of Block Three (3), Lots Five (5) to Sixteen (16) inclusive of Block Four (4) according to the subdivision of Section Twenty-seven (27), All of Section Twenty-eight (28) All of Section Twenty-nine (29), East half, East half of Northwest quarter, and Southwest quarter of Section Thirty (30), Northeast quarter, Northeast quarter of Northwest quarter, lying North of the right of way of the Florida East Coast Railway Company of Section Thirty-one (31), All of the North half lying North of the Right of way of the Florida East Coast Railway Company of Section Thirty-two (32), All of the North half lying North of the Right of Way of the Florida East Coast Railway Company of Section Thirty-three (33), All that part of the East half of Northeast quarter, Northwest quarter of Northeast quarter, and Northwest quarter, lying North of the Right of Way of the Florida, East Coast Railway Company of Section Thirty-four (34). All North of the Right of Way of the Florida East Coast Railway Company of Section Thirty-five (35), West half of Southwest quarter of Section Thirty six (36).

IN TOWNSHIP TWENTY (20) SOUTH, RANGE THIRTY-Three (33) East.

All of Section One (1), All of Section Twelve (12), All of Section Thirteen (13), All of Fractional Section Twenty-four (24)

IN TOWNSHIP EIGHTEEN (18) SOUTH RANGE THIRTY-FOUR (34) EAST

West half of Southwest quarter of Section Thirty-one (31).

IN TOWNSHIP NINETEEN (19) South, Range Thirty-Four (34) East

All of Fractional Section Five (5), All of Section Six (6), Lots One (1) to Thirty-Two (32) inclusive of Block One (1) Lots One (1) to Nine (9) inclusive, Lots Eleven (11) and Lots Thirteen (13) to Thirty-two (32) inclusive of Block Two (2), Lots One (1) Two (2) andLots Four (4) to Thirty-two (32) inclusive of Block Three (3), Lots One (1) to Thirty-Two (32) inclusive of Block Four (4) according to the subdivision of Section Seven (7). All of Fractional Section Eight (8), All of Fractional Section Seventeen (17), Lots One (1) to Twenty-one (21) inclusive and Lots Twenty-three ( ) to Thirty-two (32) inclusive of Block One (1) Lots One (1) to Thirty-two (32) inclusive of Block Two (2), Lots One (1) to Thirty-two (32) inclusive of Block Three (3), Lots One (1) to Seventeen (17) inclusive and Lots Nineteen (19) to Thirty-two (32) inclusive of Block Four (4) according to the subdivision of Section Eighteen (18), All of Section Nineteen (19), All of Fractional Section Twenty (20) All of Fractional Section twenty-one (21), All of Fractional Section Twenty-eight (28), All of Section Twenty-nine (29), Northeast quarter, North half of Southeast quarter, Southeast quarter of Southeast quarter, Southeast quarter of Southwest quarter (except the East Seventy two (72) feet of the Southeast quarter of Southwest quarter and that part of Southeast quarter

...est quarter lying Northeast of the right of way of the Florida East Coast Railway ...my), Southwest quarter of Southwest quarter, North half of Northwest quarter, East half of Southeast quarter of Northwest quarter (except a triangular strip of land sold the Florida East Coast Railway Company in the East half of Southeast quarter of Northwest quarter, located in the Nye of said railroad, and containing twenty-three one-hundredths of an acre) Southwest quarter of Northwest quarter (except that part of the South half of Southwest quarter of Northwest quarter, lying North and East of the Right of Way of the Florida East Coast Railway Company of Section Thirty (30). All of Section Thirty-one (31), Lots One (1) to Eighteen (18) inclusive and Lots Twenty (20) to Thirty-two (32) inclusive of Block One (1), Lots One (1) to Thirty-two (32) inclusive of Block Two (2), Lots One (1) to Seven (7) inclusive and Lots Nine (9) to Thirty-two (32) inclusive of Block Three (3), Lots One (1) to Thirty-two (32) inclusive of Block Four (4) according to the subdivision of Section Thirty-two (32), All of Fractional Section Thirty-three (33), Also the following described lots of Blocks in Farmton (formerly Celery City) being a subdivision of the North half of Section Eighteen (18) Township Nineteen (19) South Range Thirty-three (33) East, according to plat recorded in Map Book 5, page 4 of the Public Records of Volusia County, Florida.

All of Blocks One (1) Two (2) Three (3) Four (4), Lots One (1) to Seventeen (17) inclusive and Lots Twenty-one (21) to Forty (40) inclusive of Block Five(5) Lots One (1) to Thirteen ... inclusive and Lots Twenty-one (21) to Twenty-three (23) inclusive and Lots Twenty-five ... to Forty (40) inclusive of Block Six (6), Lots One (1) to Five (5) inclusive, Lots Seven (7) Nine (9) Lots Sixteen (16) to Nineteen (19) inclusive and Lots Twenty-one (21) to Thirty-seven (37) inclusive of Block Seven(7), Lots One (1) to Eight (8) inclusive and Lots Ten (10) to Forty (40) inclusive of Block Eight (8), Lots Four (4) Five (5) and Ten (10) to forty (40) inclusive of Block Nine (9), All Block Ten (10) Lots Four (4) to Nine (9) inclusive of Block Eleven (11) Lots Two (2) Seven (7) Eight (8) Eleven (11) Twelve (12) Thirteen (13) Fifteen (15) to Twenty (20) inclusive of Block Twelve (12); All of Block Thirteen (13) except one lot facing fifty (50) feet on Pine Street and One Hundred (100) feet on 7th Street Lots One (1) Two (2) Six (6) to Nine (9) inclusive and Lots Twelve (12) Thirteen (13) Fifteen (15) Sixteen (16) and Seventeen (17) of Block Fourteen (14), Lots Four (4) to Seven (7) inclusive, Lots Nine (9) to Thirteen (13) inclusive and Lots Seventeen (17) to Twenty (20) inclusive of Block Fifteen (15), Lots Three (3) Four (4) Six (6) Eight (8) to Thirteen (13) inclusive, Lots Fifteen (15), Sixteen (16) Eighteen (18), Nineteen (19) and Twenty (20) of Block Sixteen (16), Lots One (1) to Nine (9) inclusive and Lots Eleven (11) to Twenty (20) inclusive of Block Seventeen (17), All of Blocks Eighteen (18) to Twenty-four (24) inclusive Lots One (1) to Seven (7) and Nine (9) to Twenty (20) inclusive of Block Twenty-five (25) Lots One (1) to Three (3) inclusive, Lots Five (5) to Fourteen (14) inclusive and Lots Sixteen ... to Twenty (20) inclusive of Block Twenty-six (26), Lots One (1) to Four (4) inclusive Lots Six (6) to Fourteen (14) inclusive and Lots Sixteen (16) to Twenty (20) inclusive of Block Twenty-seven (27). All of Block Twenty-eight (28), Lots Two (2), Three (3), Four (4) Seven (7) to Fourteen (14) inclusive and Lots Sixteen (16) to Twenty (20) inclusive of Block Twenty-nine (29). Lots One (1) to Five (5) inclusive, Lots Seven (7) to Twelve (12) inclusive of Block Thirty (30), All of Blocks Thirty-one (31) to Sixty (60) inclusive, Lot lying between Orange Avenue and the Right of Way of the Florida East Coast Railway and North of Blocks Two (2), Three (3) Four (4) and Five (5), Lot lying between Orange Avenue and the Right-of-way of the Florida East Coast Railway and North of Blocks Eight (8) Nine (9) and Ten (10).

All that lot North of the right of way of the Florida East Coast Railway and East of ... Street, All that Lot North of the Right of Way of the Florida East Coast Railway and between 6th and 7th Streets. All that lot North of the Right of Way of the Florida East Coast Railway and West of 7th Street.

Excepting from above one lot owned by Gabriel Miladinoff, described as follows: Beginning at a point one hundred thirteen (113) feet North of the center line of the Florida East Coast Railway and East Sixty (60) feet of the East yard fence of Palmetto Inn, running thence North One Hundred (100) feet to a stake, thence East Sixty (60) feet to a stake, thence South One Hundred (100) feet to a stake, thence West Fifty (50) feet to the place of beginning, also excepting four (4) lots situated East of the lot owned by Gabriel Miladinoff, North of the Florida East Coast Railway, each of said lots being twenty-five (25) feet by One Hundred (100) feet, owned by Negola Antanoff and Apostal Philips. Also all those certain parcels of land lying and being in the County of Brevard and State of Florida, more particularly described as follows:

In Township Twenty (20) South, Range Thirty-four (34) East

All of Fractional Section Four (4), All of Section Five (5) except the Southeast quarter of Northeast quarter of Northwest quarter and Northwest quarter of Southwest quarter of Northwest quarter. All of Section Six (6), All of Section Eight (8), All of Section Seventeen (17) All of Section Eighteen (18), all of Fractional Section Twenty (20). Excepting and reserving from above described lands all railroad Right of Ways of the Florida East Coast Railway Company as now surveyed and located on said described lands.

All of the above described lands containing in the aggregate Forty-five Thousand One Hundred Thirteen and eighty-six one-hundredths (45,113.86) acres more or less according to the Government Survey.

Also excepting and reserving from the above described lands all timber leases thereon said timber leases all expiring on October 31st A D 1925.

Subject to a mortgage from Brevard Properties, Inc., to M W Cumner and Sons Company, dated March 26, 1925 acknowledged April 1, 1925 securing the payment of One Hundred Eighty thousand Four Hundred Fifty-five and 44/100ths dollars, which the party of the second part hereby assumes and agrees to pay.

And the said party of the first part does hereby fully warrant the title to said lands and will defend the same against the lawful claims of all persons whomsoever.

In Witness Whereof, the said party of the first part has caused these presents to be signed in its name by its proper officers and its corporate seal to be affixed, attested by its Secretary, the day and year above written.

Brevard Properties, Inc.,

Signed, Sealed and delivered in the presence of us: (Corp. Seal) BY S P Lamon, President. Attest: M W Lamon, Secretary.
Bart A Riley
William A Phillips

STATE OF FLORIDA
COUNTY OF DADE

I Hereby Certify That on this 1st day of April A D 1925 before me personally appeared S P Lamon and M W Lamon, President and Secretary, respectively of Brevard Properties, Incorporated, a corporation under the laws of the State of Florida to me known to be the persons who signed the foregoing instrument as such officers, and severally acknowledged the execution thereof to be their free act and deed as such officers, for the uses and purposes therein mentioned, and that they affixed thereto the official seal of said corporation and that the said instrument is the act and deed of said corporation.

Witness my signature and official seal at Miami in the County of Dade and State of Florida the day and year last aforesaid.

G G Simpson
Notary Public, State of Fla at Large
My Commission expires April 7, 1926

(Seal)

$210.00 in revenue stamps affixed and cancelled.

Recorded the 17th day of July A D 1925, 8 A M

[illegible] Clerk By [illegible] D.C.

Book 94-C

DEED
BOOK 421 PAGE 32

Warranty Deed

This Indenture, Made this 13th day of June A. D. 19 56

BETWEEN William G. Kilbee and Katherine Kilbee, his wife, and Laura Kilbe the widow of E. H. Kilbee, and William G. Kilbee, as Testamentary Trustee under the Last Will and Testament of E. H. Kilbee, deceased

of the County of Seminole in the State of Florida, part ies of the first part, and MIAMI CORPORATION, a Delaware corporation, authorized to do business in the State of Florida, whose address is 410 N. Michigan Ave., Chicago, of the County of in the State of Illinois, part ies of the second part,

Witnesseth, That the said part ies of the first part, for and in consideration of the sum of Ten Dollars and other good and valuable considerations ~~Dollars~~ to them in hand paid by the said part y of the second part, the receipt whereof is hereby acknowledged, ha ve granted, bargained and sold to the said part y of the second part its successors and assigns forever, the following described land, situate, lying and being in the County of ~~Seminole~~ Brevard, State of Florida, to-wit:

All of Sections 6, 7, 8, 10, 11, 12, 26 and 27, said lands being shown by plat of Indian River Park, recorded in Plat Book 2, page 33, of the public records of Brevard County, Florida, subject to the restrictions and limitations of record common to the neighborhood, and subject to any easements for public utilities, which may be of record, if any.
The above lands being in Township 20 South, Range 34 East, and Township 21 South, Range 35 East.

And the said part ies of the first part do hereby fully warrant the title to said land, and will defend the same against the lawful claims of all persons whomsoever.

In Witness Whereof, The said part ies of the first part hereunto set their hand s and seal s the day and year first above written.

Laura Kilbee (SEAL)
widow of E.H.Kilbee, deceased

Signed, sealed and delivered in the presence of us:

William G Kilbee (SEAL)

Katherine Kilbee (SEAL)

William G Kilbee (SEAL)
As Testamentary Trustee under the Last W
and Testament of E. H. Kilbee, deceased.

Bk 94 C Enc I Plat 3

5123 DEED BOOK 553 PAGE 59

WARRANTY DEED STATUTORY

This Indenture, *Made this* 21st *day of* March *, A. D. 19* 56 *.*
between M. H. DAWSON and ALICE N. DAWSON, his wife,

of the County of Volusia *, in the State of* Florida,
parties of the first part, and MIAMI CORPORATION, a Delaware corporation authorized to do business in the State of Florida,
whose permanent address is Room 1119, Security Building, Miami,
of the County of Dade *, in the State of* Florida,
party of the second part, **WITNESSETH** *That the undersigned, for and in consideration of the sum of ten dollars and other valuable considerations, to the undersigned in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged, the undersigned grants, bargains and sells to the said party of the second part,* its successors *heirs and assigns forever, the following described land, situate, lying and being in the County of* Volusia *State of* Florida, *to-wit:*

Begin at the NW corner of Section 17; thence South on the West line of said Section 1407.6 feet to a point; thence North 79 deg. 47' East 2794.3 feet to a point; thence North 912 feet to the North line of said Section 17; thence West 2751 feet more or less to point of beginning; All of Section 18; All of Section 19; All that part of Section 20 lying South of a line beginning at the NW corner of the Sibbald Grant and running thence West parallel to the North line of said Section 20 to the West line of said Section 20; also all that part of Section 20 lying West of the West line of the Sibbald Grant. It is not intended by this deed to convey any portion of this Section 20 lying in the Sibbald Grant, nor is it the intention of this deed to convey any portion of said Section 20 lying North of a line beginning at the Northwest corner of the Sibbald Grant and running thence West parallel to the North line of said Section 20 to the West line of said Section 20; All fractional Section 29 lying West of the Sibbald Grant; All of Section 30; All of Section 31 except the W 1/2 of the SW 1/4; All of fractional Section 32 (being all of Section 32 except that portion in the Sibbald Grant and that portion in the John Lowe Grant); All of said properties being located in Township 18 South, Range 34 East.

This conveyance is subject to taxes for 1956, which have been prorated by the parties to this deed as of the date hereof, and subsequent years.

Subject also to existing reservations and prior conveyances of record of rights in and to oil, gas and other minerals and subsurface rights in and under the said lands.

The grantors give to the grantee, its successors and assigns, a license and privilege of using the present roadway of the grantors over and across lands presently in the ownership of the grantors in Sections 7 and 8, Township 18 South, Range 34 East, for a period of five years; said road may be used by the grantee, its successors and assigns, for all purposes excepting only logging operations. Nothing herein contained shall be construed as any obligation on either party to this deed to maintain the said road.

under set hand and seal the day and year first above written.
Signed, sealed and delivered in presence of us

Dorothy D. Carey — M. H. Dawson (LS)
T. Hawley Sorley — Alice N. Dawson (LS)
(LS)
(LS)

State of FLORIDA *County of* BREVARD *ss:*

I Hereby Certify *That on this* 21st *day of* March *, A. D. 1956 ,*
before me, an officer authorized to take acknowledgments, personally appeared
M. H. DAWSON and ALICE N. DAWSON, his wife,
to me well known and known to me to be the individuals described in and who executed the foregoing conveyance and severally acknowledged the execution thereof to be their *free act and deed for the uses and purposes therein mentioned; and the said* Alice N. Dawson *the wife of the said* M. H. Dawson *on a separate and private examination taken and made by and before me, and separately and apart from her said husband, did acknowledge that she made herself a party to the said deed of conveyance for the purpose of renouncing, relinquishing and conveying all her right, title and interest, whether of dower or of separate property, statutory or equitable, in and to the lands therein described; and that she executed said deed freely and voluntarily and without any constraint, fear, apprehension or compulsion of or from her said husband.* **Witness** *my signature and official seal at* Cocoa *in said County and State last aforesaid on the day and year last aforesaid.*

DEED BOOK 560 PAGE 24 Book 94-C

11884

Warranty Deed

This Indenture, Made this 13th day of June A. D. 19 56
BETWEEN William G. Kilbee and Katherine Kilbee, his wife, and Laura Kilbee, the widow of E. H. Kilbee, and William G. Kilbee, as Testamentary Trustee under the Last Will and Testament of E. H. Kilbee, deceased

of the County of Seminole in the State of Florida, part ies of the first part,
and MIAMI CORPORATION, a Delaware corporation, authorized to do business in the State of Florida, whose address is 410 N. Michigan Ave., Chicago,
of the County of in the State of Illinois, part ies of the second part,

Witnesseth, That the said part ies of the first part, for and in consideration of the sum of Ten dollars and other good and valuable considerations ~~DOLLARS~~
to them in hand paid by the said part y of the second part, the receipt whereof is hereby acknowledged, ha ve granted, bargained and sold to the said part y of the second part its successors and assigns forever, the following described land, situate, lying and being in the County of ~~Volusia~~ Volusia, State of Florida, to-wit:

All that portion of "B" Segui Grant in Section 37, Township 21 South, Range 33 East, Volusia County, Florida, subject to the restrictions and limitations of record common to the neighborhood, and subject to any easements for public utilities, which may be of record, if any.

D

And the said part ies of the first part do hereby fully warrant the title to said land, and will defend the same against the lawful claims of all persons whomsoever.

In Witness Whereof, The said part ies of the first part hereunto set their hand s and seal s the day and year first above written.

Signed, sealed and delivered in the presence of us:

Laura Kilbee (SEAL)
widow of E. H. Kilbee, deceased.

William G. Kilbee (SEAL)

Katherine Kilbee (SEAL)

William G. Kilbee (SEAL)
As Testamentary Trustee under the Last W. and Testament of E. H. Kilbee, deceased

Box 94-G
Envr 1- Dec. 13 M

DEED BOOK 435 PAGE 69

WARRANTY DEED

THIS INDENTURE, Made this 10th day of December, 1956, between WILLIAM G. KILBEE, as Testamentary Trustee, under the Last Will and Testament of Edward H. Kilbee, deceased, Laura Kilbee, the widow of E. H. Kilbee, deceased, William G. Kilbee, (also known as W. G. Kilbee), and Katherine Kilbee, his wife, and Margie Tillis, and Roy Tillis, her husband, and Pearl Yarborough, and J. W. Yarborough, her husband, all of Seminole County, Florida, and Raymond L. Kilbee, and Jeanette Kilbee, his wife, of Orange County, Florida, parties of the first part, and Miami Corporation, a Deleware Corporation, authorized to do business in the State of Florida, whose address is 410 North Michigan Avenue, Chicago, Cook County, Illinois, party of the second part,

WITNESSETH: that the said parties of the first part, for and in consideration of the sum of Ten Dollars and other good and valuable considerations to them in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged, have granted, bargained and sold to the said party of the second part, its successors and assigns forever, the following described land, situate, lying and being in the County of Brevard, State of Florida, to-wit:



All of Section 13, except Tract 1, Block 1, Tracts 1, 2, 7 and 8, Block 4, Tracts 1 and 7, Block 5, and Tracts 2, 7, and 8, of Block 8;
All of Section 24, except Tracts 1 to 7, inclusive, Block 1, Tracts 5 and 6, Block 3, Tracts 1, 2, 5, and 6, Block 4, Tracts 1, 2, and 7, Block 5, and Tracts 1, thru 4, inclusive, of Block 8, and
All of Section 25, except Tract 1, Block 4, thereof,
All of said lands being in Indian River Park, according to plat thereof recorded in Plat Book 2, Page 33, of the Public Records of Brevard County, Florida, said lands lying and being in Townships 20 and 21 South, Range 34 East.

Said conveyance subject to the restrictions and limitations of record common to the neighborhood, and subject to any easements for public utilities, which may be of record, if any.





Bnf 94-C Encl 1-Item 9

WARRANTY DEED (TO CORPORATION) DEED PAPCO'S FORM 34 BOOK 424 PAGE 549 PAPCO PUBLISHING CORPORATION MIAMI 36, FLORIDA

Warranty Deed

This Indenture, Made, this 9th day of July, A. D. 1956.

BETWEEN WILLIAM G. KILBEE and KATHERINE KILBEE, his wife, and LAURA KILBEE, the widow of E. H. Kilbee; and William G. Kilbee, as Testamentary Trustee under the Last Will and Testament of E. H. Kilbee, deceased, of the County of Seminole and State of Florida, parties of the first part, and MIAMI CORPORATION, a corporation existing under the laws of the State of Delaware, having its principal place of business in the County of Cook and State of Illinois, (Address: 410 North Michigan Avenue, Chicago, Illinois, and lawfully authorized to transact business in the State of Florida, party of the second part.

WITNESSETH: That the said parties of the first part, for and in consideration of the sum of TEN DOLLARS and other valuable considerations - - - - - - - - ~~DOLLARS~~ to them in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged, have granted, bargained and sold to the said party of the second part, its successors and assigns, forever, the following described land situate, lying and being in the County of Brevard, and State of Florida, to-wit:

All of Sections 6, 7, 8, 10, 11, 12, 26 and 27, said lands being shown by plat of Indian River Park, recorded in Plat Book 2, page 33, of the public records of Brevard County, Florida, subject to the restrictions and limitations of record common to the neighborhood, and subject to any easements for public utilities, which may be of record, if any. The above lands being in Township 20 South, Range 34 East, and Township 21 South, Range 34 East.

This is a correcting deed.

And the said parties of the first part do hereby fully warrant the title to said land, and will defend the same against the lawful claims of all persons whomsoever.

IN WITNESS WHEREOF, the said parties of the first part have hereunto set their hands and seals the day and year above written.

Laura Kilbee (SEAL)
Widow of E. H. Kilbee, deceased

Signed, sealed and delivered in presence of us:

William G. Kilbee (Seal)
William G. Kilbee

Katherine Kilbee (Seal)
Katherine Kilbee

William G. Kilbee (SEAL)
As Testamentary Trustee under the Last Wi

HUNTING LEASE AGREEMENT AND REGULATIONS SUMMARY
FOR
FARMTON WILDLIFE MANAGEMENT AREA

MIAMI CORPORATION

WILDLIFE MANAGEMENT AREA

1998-99

REGULATIONS SUMMARY AND AREA MAP



A COOPERATIVE PUBLIC WILDLIFE AND RECREATIONAL AREA
MIAMI CORPORATION
MANAGEMENT DISTRICT
FLORIDA GAME AND FRESH WATER FISH COMMISSION

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ONE OF "FLORIDA'S BEST" WEB SITES

This brochure is designed to provide the public with information and a summary of regulations pertaining to hunting and other recreational use on the Miami Corporation Wildlife Management Area. **To make it easier to learn about regulation changes on this area, regulations that are new or differ substantially from last year are shown in bold print.** For the exact wording of the wildlife laws and regulations, see Florida Game and Fresh Water Fish Commission's wildlife code on file with the Secretary of State and state libraries. This brochure and the recreational use application form should provide the information necessary for you to plan your hunting activities.

For information pertaining to hunting on private lands and trapping, consult the current Florida Hunting Handbook. This publication is available from any Commission office as well as county tax collectors and their subagents.

PERMIT, STAMP AND LICENSE INFORMATION:

Persons utilizing the wildlife management areas are required to have appropriate licenses, stamps and permits for hunting and/or fishing. Florida residents who are 65 years of age or older, and residents certified totally and permanently disabled as determined by the Armed Forces or Veterans Administration, may obtain exemption certificates for most licenses, stamps and permits from the county tax collector. Hunters under age 16 and Florida residents in the U.S. Armed Forces, not stationed in Florida, home on leave with orders in possession are exempt from most permit, stamp and license requirements on this area.

Hunting License, Trapping License, Fishing License and Archery, Muzzleloading Gun, Wildlife Management Area, Wild Turkey and State Waterfowl permits may be purchased from county tax collectors, their subagents, Internet or by telephone.

Unless exempted, all hunters on this wildlife management area must have the following in their possession and display them upon request of any Commission employee.

1. Hunting License: Information on the categories and costs of hunting licenses is available in the Florida Hunting Handbook.
2. Wildlife Management Area Permit: **This permit is not required to hunt on this area.**
3. **Recreational use permit: A $125 recreational use permit is required to hunt on this area; there are no exemptions. There are 875 permits available by application. Recreational use applications are available at regional offices of the Commission on or about June 1. Permits will be issued on a first-come, first-served basis. To apply for this permit, obtain a recreational use permit application and follow the printed instructions.**

Recreational use permits on this area shall also authorize the permittee to engage in activities authorized for wildlife management area permits. This permit is renewable for two consecutive years.

Transfer of Permits: **Recreational use permits are not transferable.**

4. Archery Permit: This $5 permit is required when hunting during the archery hunt.
5. Muzzleloading Gun Permit: This $5 permit is required when hunting during the muzzleloading gun hunt.
6. Wild Turkey Permit: This $5 permit is required if hunting turkeys.
7. State Waterfowl Permit: This $3 permit is required while hunting ducks.
8. Federal Duck Stamp: Any hunter 16 years of age or older must possess a federal duck stamp while hunting ducks. This $15 stamp is available at post offices.

BAG AND POSSESSION LIMITS:

1. Deer--Daily limit 2, possession limit 4.
2. Wild hogs-- **No size or bag limit.**
3. Turkey--Daily limit 1, season limit 2, possession limit 2.
4. Gray squirrel, quail, rabbit--Daily limit 12, possession limit 24 for each game species.
5. Bobcat, mink and otter--Possession limit 1 unless in possession of a Trapping License.
6. Raccoon, opossum, armadillo, beaver, coyote, skunk and nutria--No bag limits.
7. Migratory game birds--See Migratory Game Bird Hunting Regulations pamphlet.

GENERAL WILDLIFE MANAGEMENT AREA REGULATIONS:

In addition to the regulations which follow, all general laws and regulations relating to wild animal life or freshwater aquatic life shall apply unless specifically excepted for this wildlife management area. Hunting or the taking of wildlife or fish on this area shall be allowed only during the open seasons and in the manner set forth herein.

1. It is unlawful to set fire to any forest, grass or woodlands or for any individual or groups of individuals to build a warming fire or campfire and leave same unextinguished (Chapter 590, Florida Statutes).
2. Driving a metal object into any tree or hunting from a tree into which a metal object has been driven is prohibited.
3. No person shall cut or destroy any tree or remove any tree,

shrub or protected plant (as listed in F.S. 581.185) from any wildlife management area without written permission from the landowner or primary land manager.

4. Wild hogs may not be transported alive.
5. Taking of fox is prohibited.
6. Taking fox squirrel is prohibited.
7. The wanton or willful waste of wildlife is prohibited.
8. Non-migratory game may be hunted from one-half hour before sunrise until one-half hour after sunset (see raccoon, opossum and fox exceptions under general gun hunt regulations).
9. The head and evidence of sex may not be removed from the carcass of any deer or turkey on the area. Portions of the carcass may be removed immediately prior to cooking.
10. No person shall release any wildlife on this wildlife management area.
11. It is illegal to hunt over bait or place any bait or other food for wildlife on this wildlife management area.
12. Killing swimming deer is prohibited.
13. Taking or attempting to take game with the aid of live decoys, traps, snares, nets, drugs, lights or recorded game calls is prohibited.
14. Hunting, trapping and the possession of dogs is prohibited in areas posted as "CLOSED."
15. Persons using the area shall enter and exit the area only at designated gates or entrances.
16. The area is closed to public access except during periods when hunting is allowed. Trespass laws will be enforced.
17. Any person hunting deer or accompanying another person hunting deer shall wear at least 500 square inches of daylight fluorescent-orange material above the waistline as an outer garment. This is not required when hunting during an archery-only season.
18. Deer and turkey may be dismembered in the field or camp, but each portion shall have a tag affixed to it identifying the name, address and hunting license number of the person who killed it; the date and location at which it was taken; and shall be readily traceable to the possession of the animal bearing the sex identification.

GUNS OR DOGS:

19. Dogs may be used for hunting except in the designated still hunt area (see map).
20. Hunting with gun and light is prohibited.
21. For taking non-migratory game, only shotguns, muzzleloading guns, .22 caliber rimfire rifles and pistols, longbows (including compound and recurved bows), crossbows and birds of prey may be used. The possession of centerfire rifles or centerfire pistols is prohibited.
22. Hunting deer with full-jacketed bullets or any rimfire cartridge is prohibited.
23. Fully automatic firearms, silencer-equipped firearms, explosive or drug-injecting devices, or setguns are prohibited.
24. Guns are allowed only during periods in which their use for hunting is allowed.
25. No person shall have a gun in manual possession while under the influence of alcohol or drugs.
26. Children under the age of 16 may not be in possession of a firearm unless in the presence of a supervising adult.
27. Hunting turkeys with dogs is prohibited.
28. Loaded, capped or primed guns are prohibited at campsites or check stations. The discharge of guns is prohibited on, from or across any campsite or check station.
29. Hunting wildlife or the display or use of a gun in a manner capable of taking wildlife on or from rights-of-way of Maytown Road and Harney Road is prohibited.
30. No person shall allow any dog to pursue or molest wildlife during any period in which hunting with dogs is prohibited.
31. Dogs on leashes may be used for trailing wounded game.
32. Authorized hunting equipment or dogs may be taken onto the area after 8 a.m. one day before the opening of the hunt and shall be removed from the area before 6 p.m. one day after the hunt.

VEHICLES:

33. Vehicles shall not be parked in such a manner as to obstruct roads, gates or firelanes.
34. Vehicles may be operated only on named or numbered roads in the designated still hunt area. Vehicles may be operated only on established roads in the dog hunt area.
35. Airboats and tracked vehicles are prohibited.
36. No motor vehicle shall be operated on any part of the wildlife management area designated and posted as "CLOSED" by administrative action because of inclement weather, poor road conditions, construction, management activities or wildlife surveys.

CAMPING:

37. Camping is permitted only at designated campsites. The campsite in the dog hunt area is open only during the general gun season.
38. Only tents, trailers or self-propelled camping vehicles may be used for camping.
39. Authorized camping equipment may be taken into the area beginning at 8 a.m. one day before the opening of general gun season and shall be removed from the area before 6 p.m. one day following the close of the season.

CHECK STATION:

40. Hunters shall check all deer, turkey and hogs at a check station prior to removal from the area.

SEARCH:

41. A wildlife officer may search any camp, vehicle or boat when he or she reasonably believes a violation has been committed.

ARCHERY:

September 26 through October 25; Saturdays and Sundays only.

Permit, Stamp and License Requirements--Hunting license, recreational use permit, archery permit and wild turkey permit (if hunting turkeys).

Legal to Take--Any deer (except spotted fawn),wild hogs, turkeys of either sex, gray squirrel, quail, rabbit, raccoon, opossum, armadillo, skunk, beaver, coyote, nutria and migratory game birds in season.

Regulations Unique to the Archery Hunt: In addition to these regulations, all General Wildlife Management Area Regulations shall apply.

1. Archery hunting is permitted only in the still hunt area.
2. Possession of firearms or crossbows is prohibited.

MUZZLELOADING GUN:

October 30 through November 1.

Permit, Stamp and License Requirements--Hunting license, recreational use permit, muzzleloading gun permit..

Legal to Take--Deer with one or more antlers at least five inches in length visible above the hairline, wild hogs, gray squirrel, quail, rabbit, raccoon, opossum, armadillo, skunk, beaver, coyote, nutria and migratory game birds in season.

Regulations Unique to the Muzzleloading Gun Hunt: In addition to these regulations, all General Wildlife Management Area Regulations shall apply.

1. Muzzleloading gun hunting is permitted only in the still hunt area.
2. Only muzzleloading guns are allowed.

GENERAL GUN:

November 14 through January 10 (see exceptions below).

Permit, Stamp and License Requirements--Hunting license, recreational use permit, state waterfowl permit and federal waterfowl stamp (if hunting ducks) and wild turkey permit (if hunting turkeys).

Legal to Take--Deer with one or more antlers at least five inches in ...th visible above the hairline, wild hogs, bearded turkeys or ...lers, gray squirrel, quail, rabbit, raccoon, opossum, armadillo, ...unk, beaver, coyote, nutria and migratory game birds in season. Bobcat, mink and otter after November 30.

Regulations Unique to the General Gun Hunt: In addition to these regulations, all General Wildlife Management Area Regulations shall apply.

1. The area is closed to hunting on Wednesdays and Thursdays, except during the first nine days, and Thanksgiving Day, Christmas Day and New Year's Day.
2. Raccoon and opossum hunting at night, in accordance with the rules printed in the Florida Hunting Handbook, are permitted only in the designated dog hunt area and only during the general gun season.

TRAPPING:

Trapping is prohibited.

MIGRATORY GAME BIRDS:

Rails, common moorhens, mourning doves, white-winged doves, ducks, coots, woodcock and crows may be hunted during seasons established by the Commission for these species, which coincide with the archery, muzzleloading gun and general gun seasons.

Permit, Stamp and License Requirements--Hunting license, recreational use permit, state waterfowl permit and federal waterfowl stamp (if hunting ducks).

Legal to Take: See Migratory Game Bird Hunting Regulations pamphlet.

Regulations Unique to Migratory Game Birds: All General Wildlife ...agement Area Regulations shall apply and the use of lead shot for ...g ducks and coots is prohibited.

FISHING AND FROGGING:

Permitted during general gun season or as authorized by permit from the landowner.

Permit, Stamp and License Requirements--Fishing license (not required for frogging).

Regulations Unique to Fishing and Frogging: In addition to these regulations, statewide fishing regulations shall apply.

GENERAL INFORMATION:

1. Water in wells is not certified for human consumption.
2. Selected areas containing planted pine trees will be posted as closed to hunting.
3. If water conditions on the area become extreme, roads may be closed to vehicular traffic.
4. Anyone born on or after June 1, 1975 must have passed a Commission-approved hunter safety course prior to being issued a hunting license.
5. If you have any questions about this material, please call the Game and Fresh Water Fish Commission at (352) 732-1225 {(800) 955-8771 (TDD)}.

COOPERATION REQUESTED:

Please do not discharge firearms at anything other than legal game while in a wildlife management area. Target practice and random discharge of firearms have become increasing threats to the quality of the hunting experience.

PLEASE DO NOT LITTER. TAKE TRASH OUT WITH YOU.

... conduct on this area may determine your future use of the area.

...ne U.S. Department of the Interior prohibits discrimination on the basis of race, color, national origin, age, sex or handicap. If you believe that you have been discriminated against in any program, activity or facility as described above, or if you desire further information, please write to: The Office for Human Resources, U.S. Fish and Wildlife Service, Department of the Interior, Washington, D.C. 20240.

The project described in this publication is part of a program funded by federal dollars under the Wildlife Restoration Act. Federal funds pay $2,046,150 or 32 percent of the cost of the program.

YOUR PURCHASE SUPPORTS WILDLIFE RESTORATION

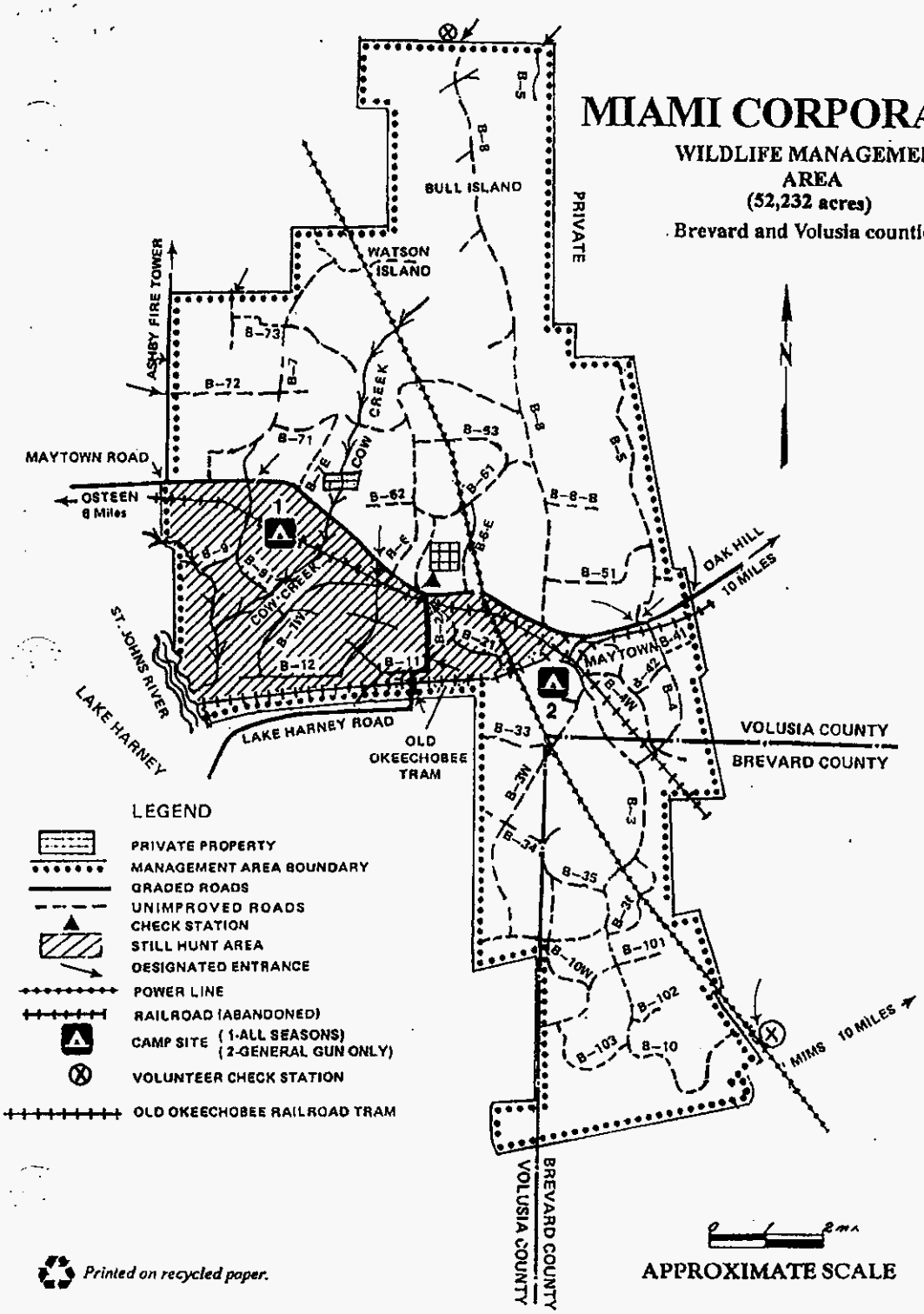
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Use Your Credit Card and

Call 1-888-FISH-FLORIDA (347-4356) OR 1-888-HUNT-FLORIDA (486-8356)

(NOTE: There is a vendor fee of $3.95 per license.)

MIAMI CORPORATION

WILDLIFE MANAGEMENT AREA
(52,232 acres)
Brevard and Volusia counties



Printed on recycled paper.

HUNTING LEASE

1. In consideration of payment of [redacted] to Lessor on or before November 1, 1998 undersigned Lessees (as defined below) and their guests are hereby extended the hunting privileges on the lands owned by the undersigned Lessor comprising 3,943 acres, more or less, in Sections 17, 18, 19, 20, 29, 30, 31 and 32, Township 18 South, Range 34 East, Volusia County, Florida, which lands are completely fenced and are known as the "Dawson Tract." (Compartment 5 west of logging road B-5)

2. Lessees' hunting privileges on said lands are to be only during State of Florida authorized hunting seasons, and Lessees are defined as: Bob Butler, Robert J. Ferreira, Wallace R. Ferreira, Donald J. Goodson, Richard Bratcher, Charlie Pratt, Dr. Bill McLeod, Mike Tenney, Ray Pyles, Jim Pratt, Mike Costes, David Vanis, Ed Shaffer, Alex Kish, Danny Moore and your personal, non-paying guests. In addition to hunting privileges for the above period, Lessees may also maintain a camp, including related structures, dogs and dog pens related to the hunting operations for the period September 1, 1998 through August 31, 1999. Lessees and guests will maintain no more than 10 camps on the subject premises at any given time. Under no circumstances shall any commercial hunting be permitted on the property. Upon a determination by the Lessor that the Lessees, or any one of them, have sold hunting privileges or taken paying guests on the property, this Lease shall immediately terminate as to all Lessees.

3. It is understood and agreed that Lessees and their guests will govern themselves according to the laws of the State of Florida and the current rules and regulations of the Florida Game and Fresh Water Fish Commission, and it is further understood and agreed that no rifles other than those using a .22 rim fire cartridge are to be used for hunting or any other purposes on this property by Lessees and their guests.

4. The said lands are being used for tree farming purposes and such use is of paramount importance not only to the parties hereto but to the economy of the area, and in view of this primary use of the land, Lessees agree to carry on their hunting operations in such manner as shall not be inconsistent with the Lessor's uses of the land as an industrial forest, to avoid any damage to the seedlings and young trees, and to follow any further regulations or restrictions which the Lessor's Tree Farm Director may deem necessary to protect the trees and minimize the

danger of fire due to drought, low humidity or any other reason. The Lessor may designate areas of young pine plantations or stands or areas on which personnel employed by the Lessor will be working during the hunting season, on which all hunting will be prohibited and upon which no vehicles shall be permitted. It is further provided that during periods of drought constituting, in the sole judgment of the Lessor, an emergency condition and upon being advised by the Lessor that continued use for hunting would jeopardize timber on said lands, the Lessees shall cease all hunting until said drought emergency has ended.

5. The said hunting privileges are granted on the condition that Lessees will not start or cause to be started any fires on the property except in their own camp, and that such fires as Lessees may start in their camp will be guarded and protected at all times and extinguished when Lessees leave the camp; that Lessees will report and lend assistance to extinguishing any fires that may occur anywhere on the lands covered by this lease; that Lessees will report and assist in preventing trespassing on the property; that Lessees will not destroy or damage the fences or any other property of the Lessor. At such time as this lease is not renewed or it is otherwise terminated, Lessees agree to remove all structures placed upon the Lessor's land by Lessees.

6. It is understood and agreed that Lessor shall not be liable for any property or personal damages that may be incurred by Lessees and their guests, or by any third party as a result of Lessees' activities under this Lease.

7. The attached save harmless and indemnity agreement executed by all Lessees shall become a part hereof and is incorporated herein by reference.

8. Lessees shall provide Lessor (a) with proof of general liability insurance in the amount of $500,000 with Lessor a named insured thereon and (b) with proof of automobile insurance.

9. It is further understood and agreed that the officers, directors and employees of Lessor and their guests shall have the right to hunt on said premises at any time during the period above mentioned.

HYDROLOGIC MONITORING DATA

HYDROLOGIC MONITORING DATA

The following tables reference locations shown in Figures 7a - 7c. Staff gauges were placed at each location on both sides of the road, and then surveyed to the same assumed datum. The intent is to show water level differences on each side of the road due to flow restrictions caused by existing culverts.

FARMTON
STAFF GAUGE MONITORING

SITE	GAUGE	7/7/97	8/13/98	8/20/97	8/28/97	9/2/97	9/10/97	9/30/97	10/29/97	11/19/97	8/3/98
W	B91-5N				2.0		2.3	DRY	2.3/DRY	2.1	DRY
W	B91-6S				2.0		2.4	DRY	2.7/DRY	2.1	DRY
W	RR-1N				1.6		2.3	2.0	1.8	1.7	
W	RR-2S				2.4		2.3	2.5	2.3	2.3	
W	RR-3N				2.2		2.2	2.6	2.6	2.4	
W	RR-4S				2.2		1.9	2.6	2.6	2.4	
W	RR-5N				2.1		2.1	2.8	3.0	2.7	
W	RR-6S				2.1		2.1	2.9	3.0	2.7	
N	B5-1W					2.0	2.1	2.3	2.3	2.2	
N	B5-2E					2.1	2.2	2.4	2.4	2.3	
N	B5-3W					1.9	2.3	2.2	2.3	2.2	
N	B5-4E					2.0	2.4	2.2	2.3	2.2	
N	B5-5W					1.5	2.2	1.8	1.8	1.6	
N	B5-6E					1.5	2.3	1.8	1.8	1.6	
N	B5-7S					2.1	2.4	2.4	2.4	2.3	
N	B5-8N					2.0	2.4	2.4	2.4	2.3	
N	B5-9W					2.0	2.9	2.6	2.3	2.3	
N	B5-10E					2.0	2.9	DRY	2.2	2.3	

NOTE: Readings are referenced from the top of the gauge, graduated from the top down.

FARMTON
STAFF GAUGE MONITORING

SITE	GAUGE	7/7/97	8/13/98	8/20/97	8/28/97	9/2/97	9/10/97	9/30/97	10/29/97	11/19/97	8/3/98
N	B8-1W	2.8	2.6	2.6			2.8	2.9	2.8	2.8	DRY
N	B8-2E	2.4	2.2	2.4			2.6	2.8	2.7	2.7	DRY
N	B8-3W	2.7	2.5	2.6			2.7	3.1	3.0	3.0	DRY
N	B8-4E	2.2	1.8	2.1			2.4	2.8	2.7	2.6	DRY
N	B8-5W	2.7	2.4	2.5			2.7	2.8	2.9	2.8	DRY
N	B8-6E	2.5	2.1	2.3			2.6	2.8	2.8	2.8	DRY
N	B51-1N	2.5	1.8				2.5	2.9	2.8	2.6	
N	B51-2S	2.4	1.7				2.4	2.9	2.8	2.5	
N	FPL-1W	2.0		1.3			1.8	2.3	2.2	2.2	
N	FPL-2E	2.0		1.2			2.0	2.1	2.1	2.1	
N	FPL-3W	1.9		1.3			1.6	2.0	2.1	1.9	DRY
N	FPL-4E	1.9		1.2			1.5	2.0	2.0	1.8	DRY
N	FPL-5W	2.7		2.0			2.2	2.9	2.9	2.7	
N	FPL-6E	2.5		1.9			2.1	2.7	2.8	2.6	
N	FPL-7W	3.1		2.4			2.6	3.1	3.2	3.0	3.3/DRY
N	FPL-8E	3.0		2.3			2.6	3.1	3.2	3.0	3.0/DRY

NOTE: Readings are referenced from the top of the gauge, graduated from the top down.

FARMTON
STAFF GAUGE MONITORING

SITE	GAUGE	7/7/97	8/13/98	8/20/97	8/28/97	9/2/97	9/10/97	9/30/97	10/29/97	11/19/97	8/3/98
S	B10-1S				2.2		2.3	2.5	2.6	2.2	3.1
S	B10-2N				2.1		2.4	2.5	2.6	2.2	3.1
S	B10-3E				2.1		2.3	2.9	3.1	2.2	3.0
S	B10-4W				2.1		2.3	2.7	2.8	2.2	2.7
S	B10-5E				1.7		2.2	2.3	2.4	2.0	2.5
S	B10-6W				2.0		1.9	2.2	2.2	1.8	2.7
S	B10-7E				2.0		2.1	2.4	2.1	1.8	1.9
S	B10-8W				2.0		2.1	2.5	2.0	1.9	1.9
S	B102-1N				2.0		2.1	2.0	2.1	1.9	2.5
S	B102-2S				2.1		2.2	2.0	2.1	1.9	2.4
W	B12-1N				2.1		2.3	2.6	2.6	2.4	2.3
W	B12-2S				2.1		2.4	2.6	2.6	2.4	
W	B13-1N				1.9		2.2	DRY	2.5	2.4	
W	B13-2S				2.1		2.3	DRY	2.7	2.4	
W	B91-1N				2.0		2.4	DRY	3.0/DRY	DRY	
W	B91-2S				2.0		2.4	DRY	2.5/DRY	DRY	
W	B91-3N				2.4		2.9	DRY	3.2/DRY	3.2	DRY
W	B91-4S				2.4		2.9	DRY	3.2/DRY	3.1	DRY

NOTE: Readings are referenced from the top of the gauge, graduated from the top down.

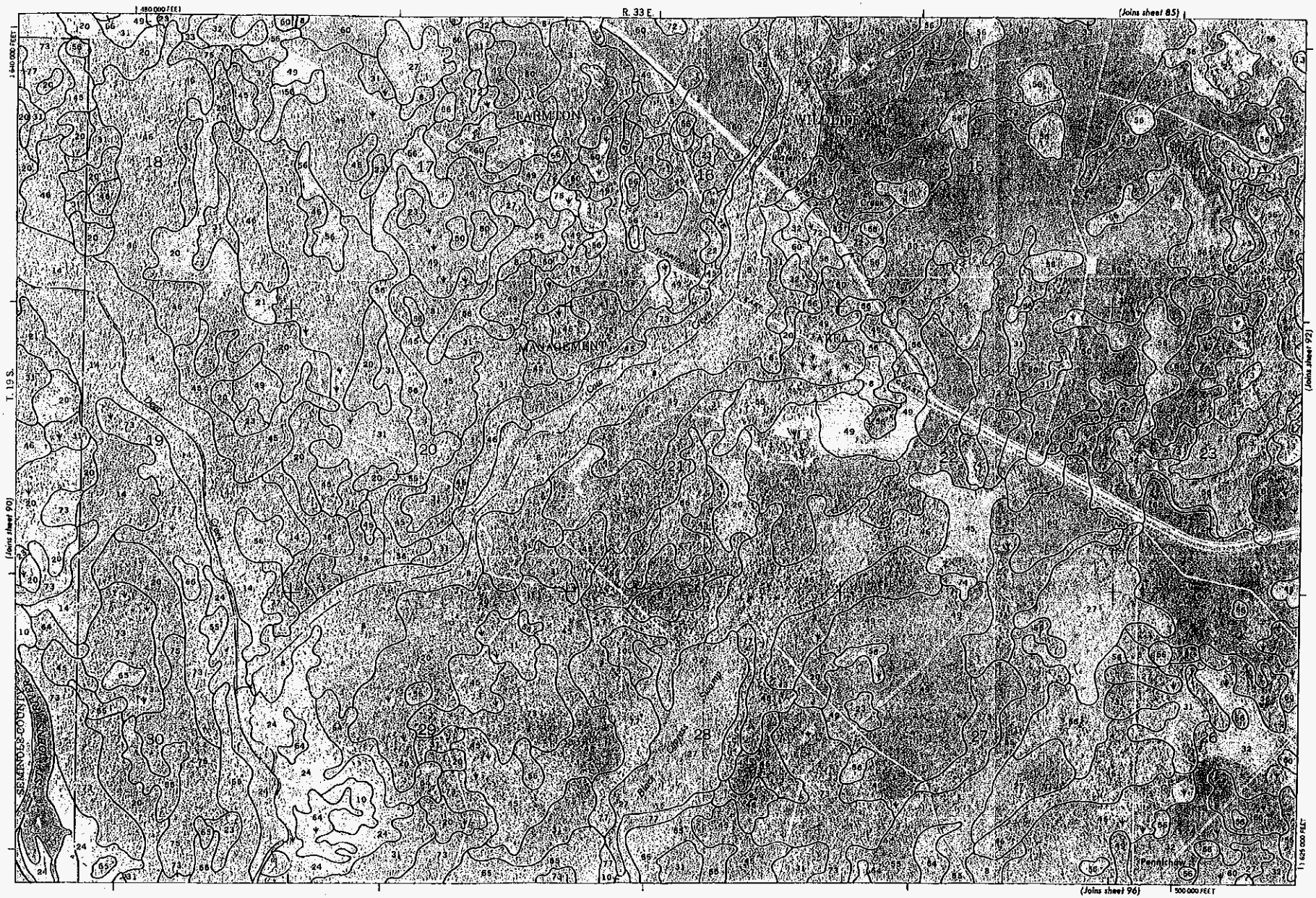
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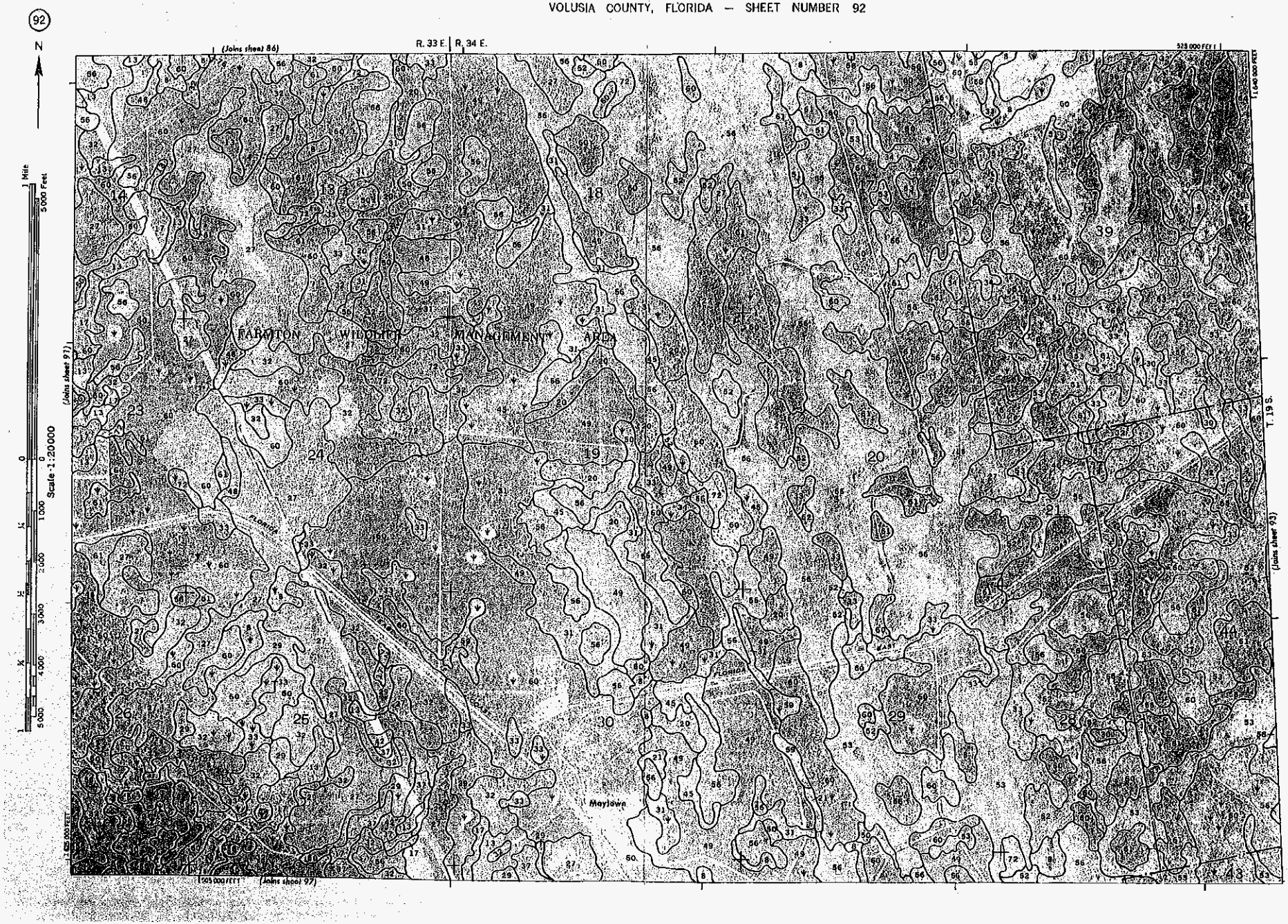
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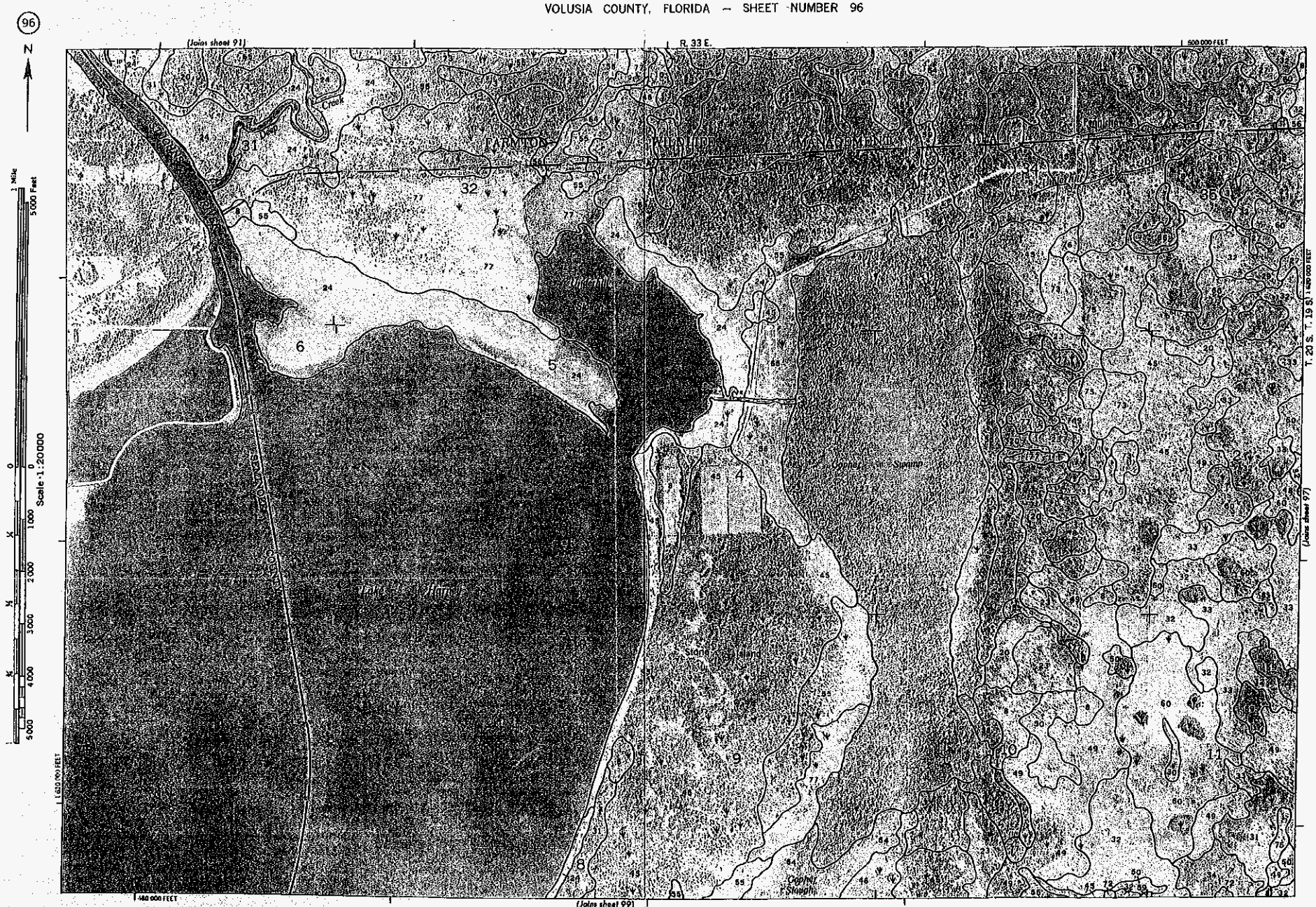
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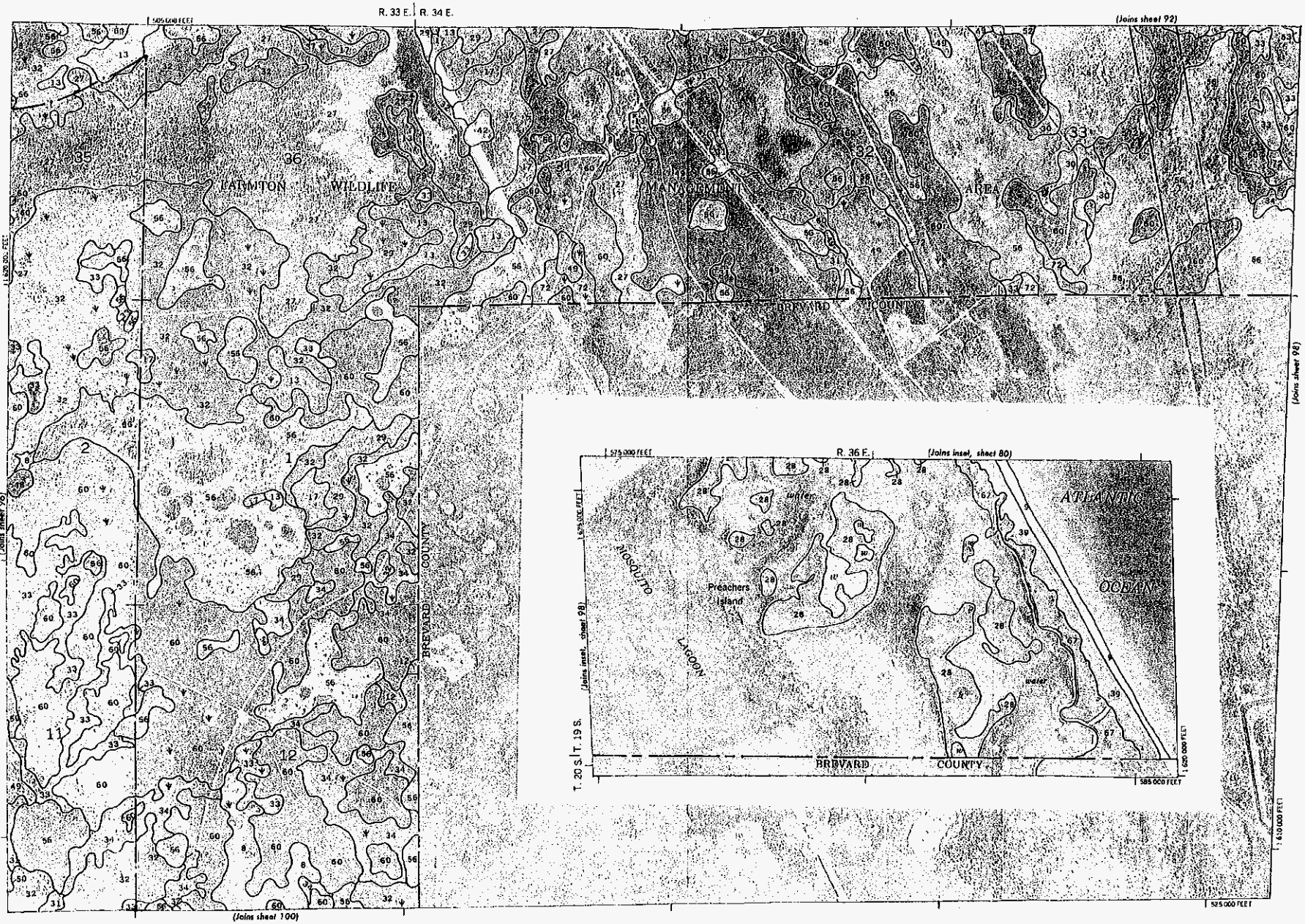
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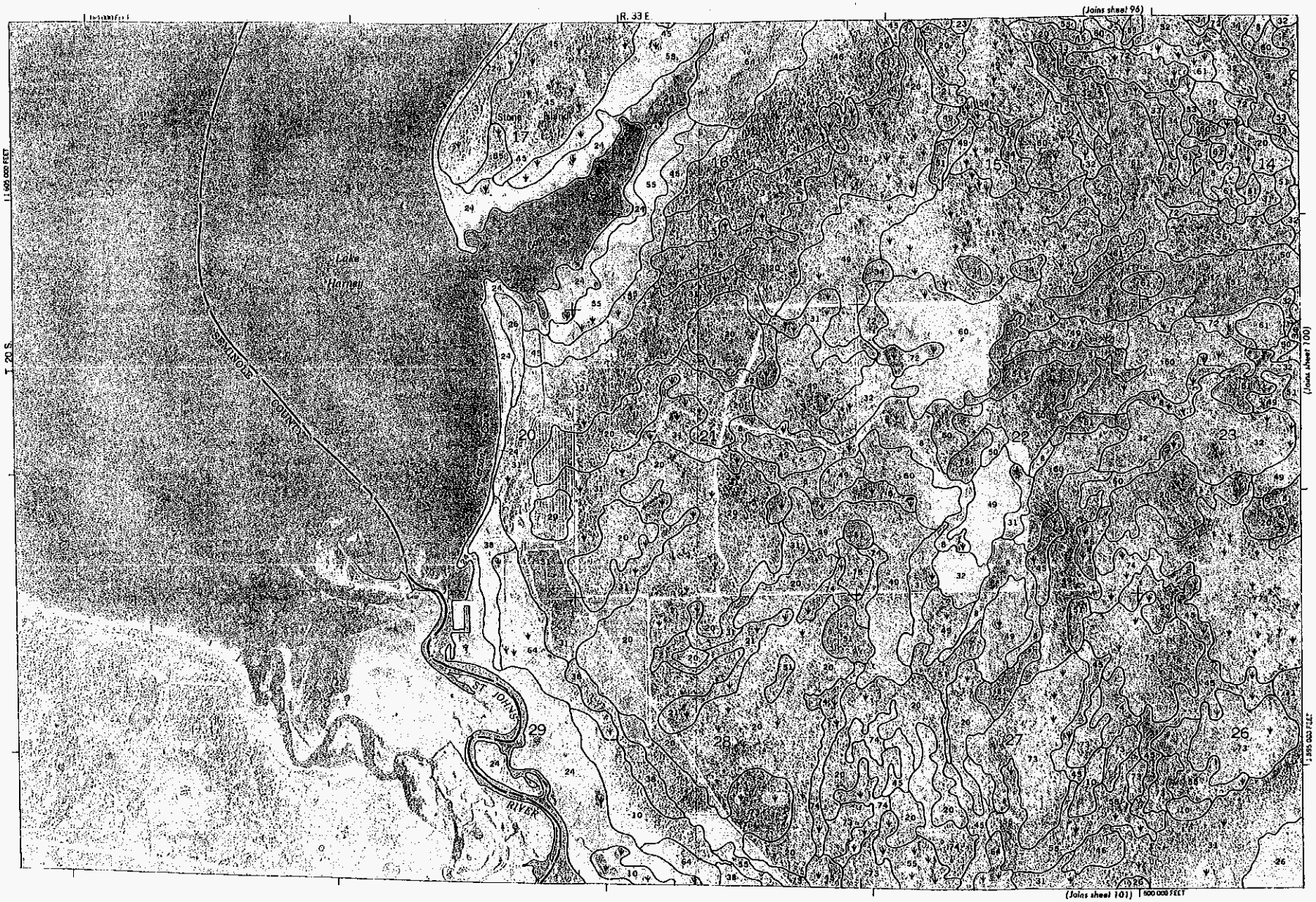
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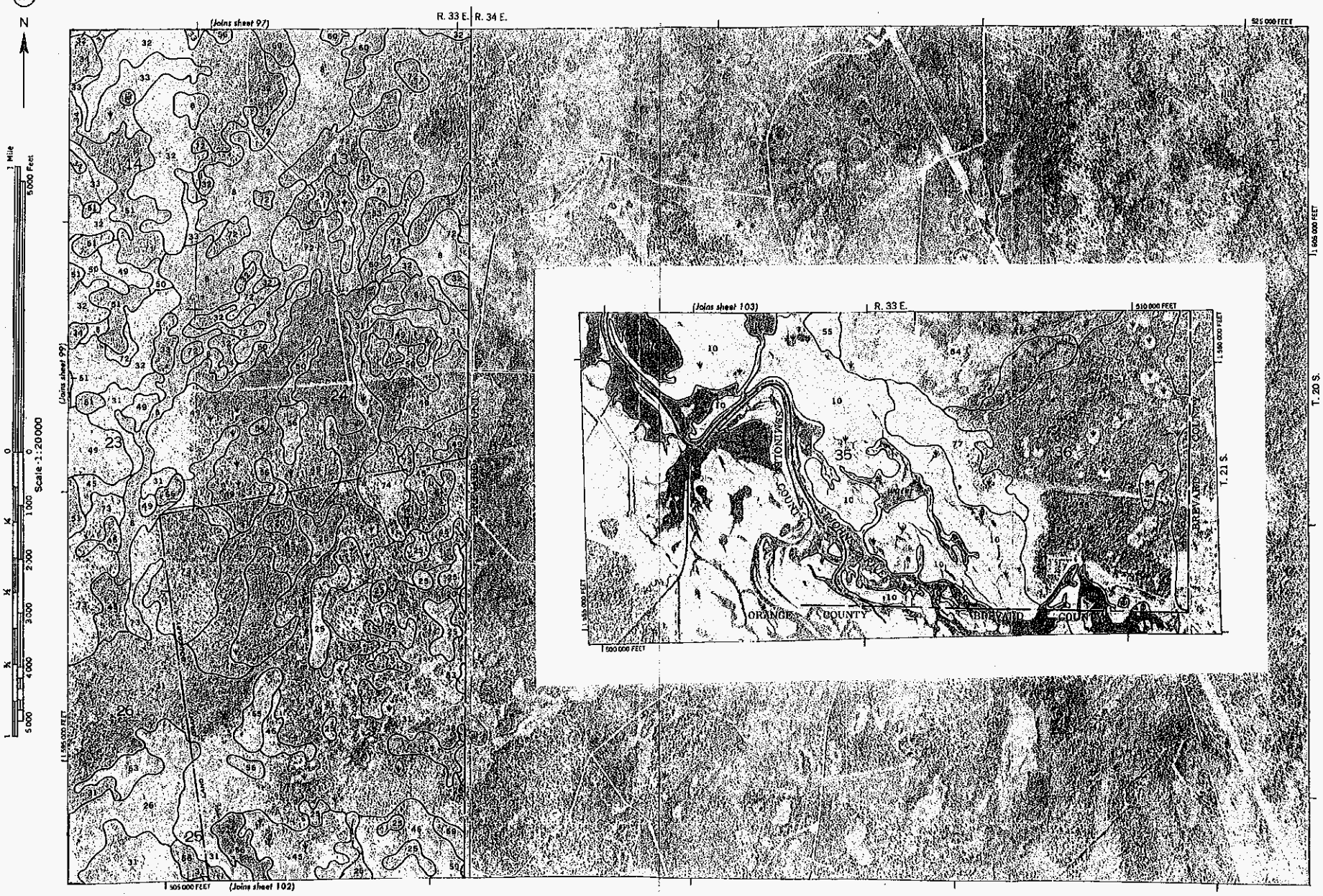
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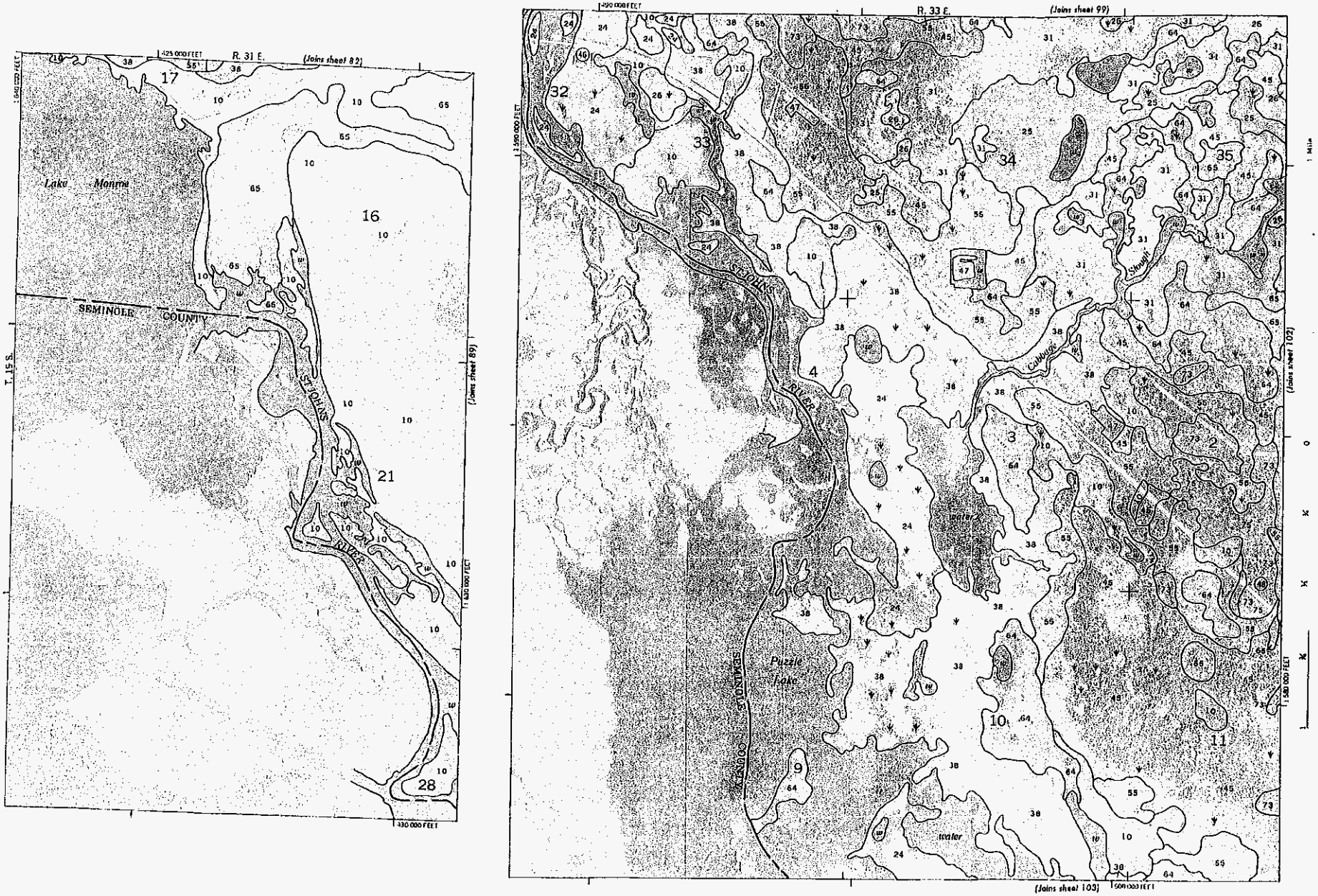
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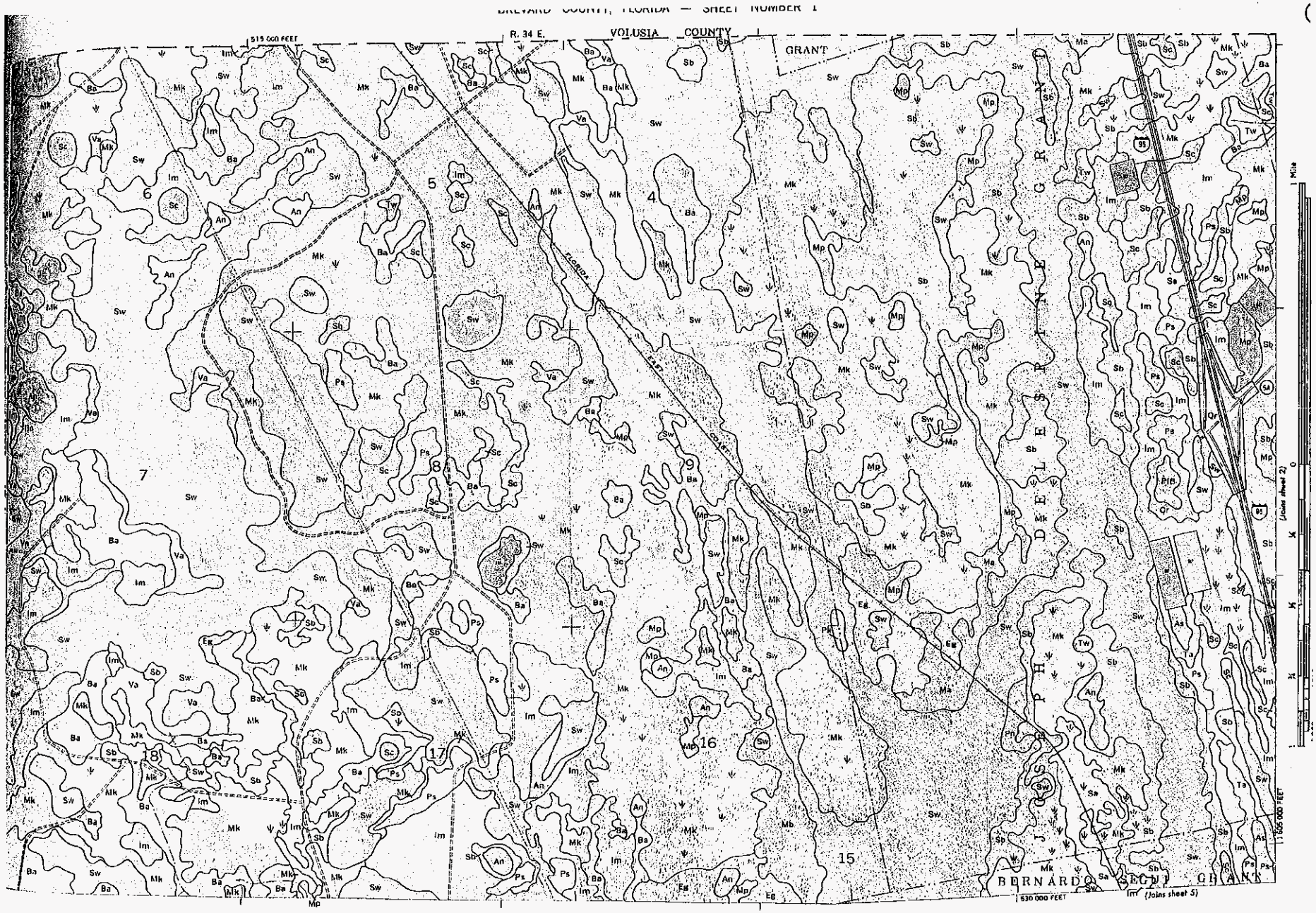
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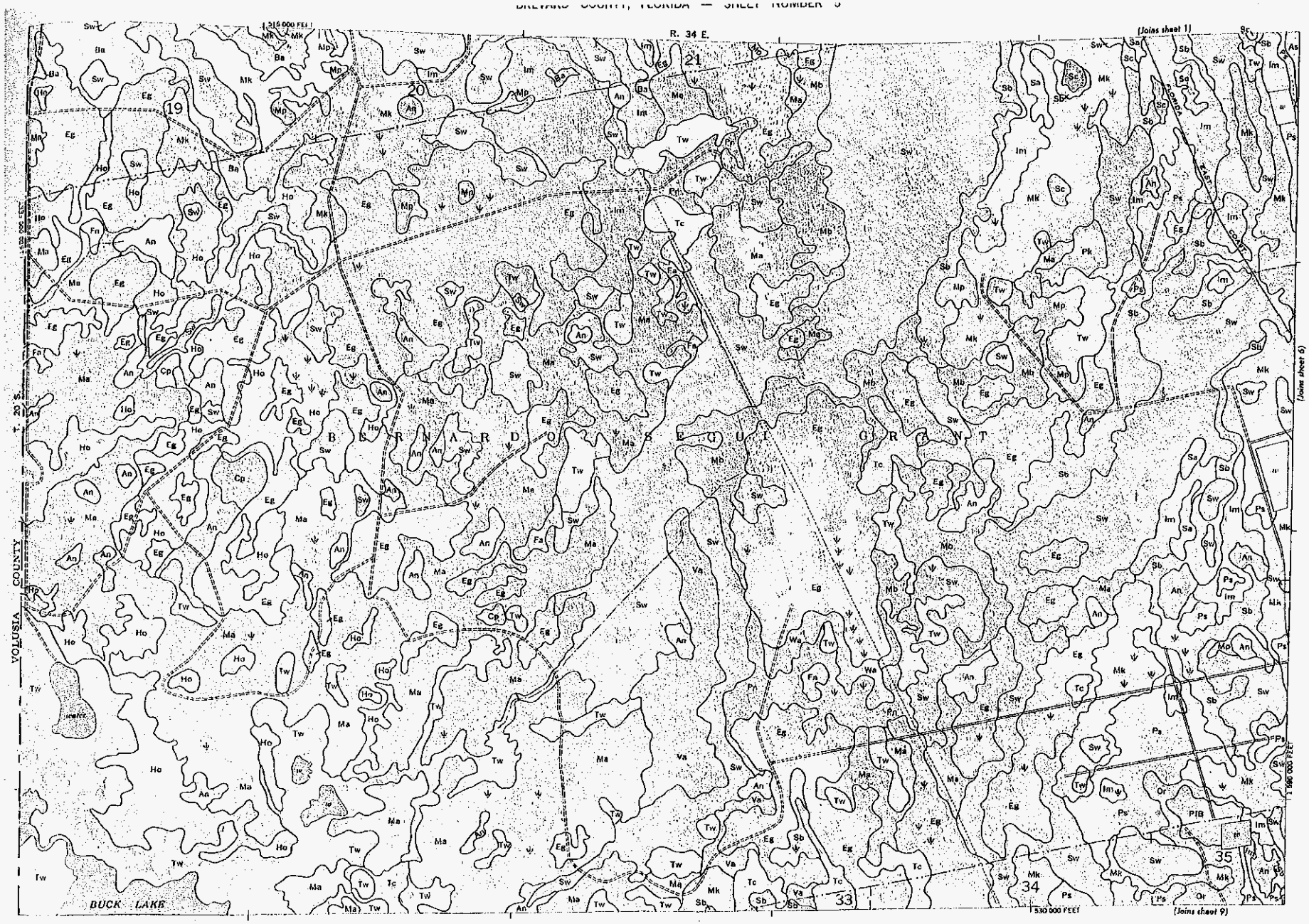


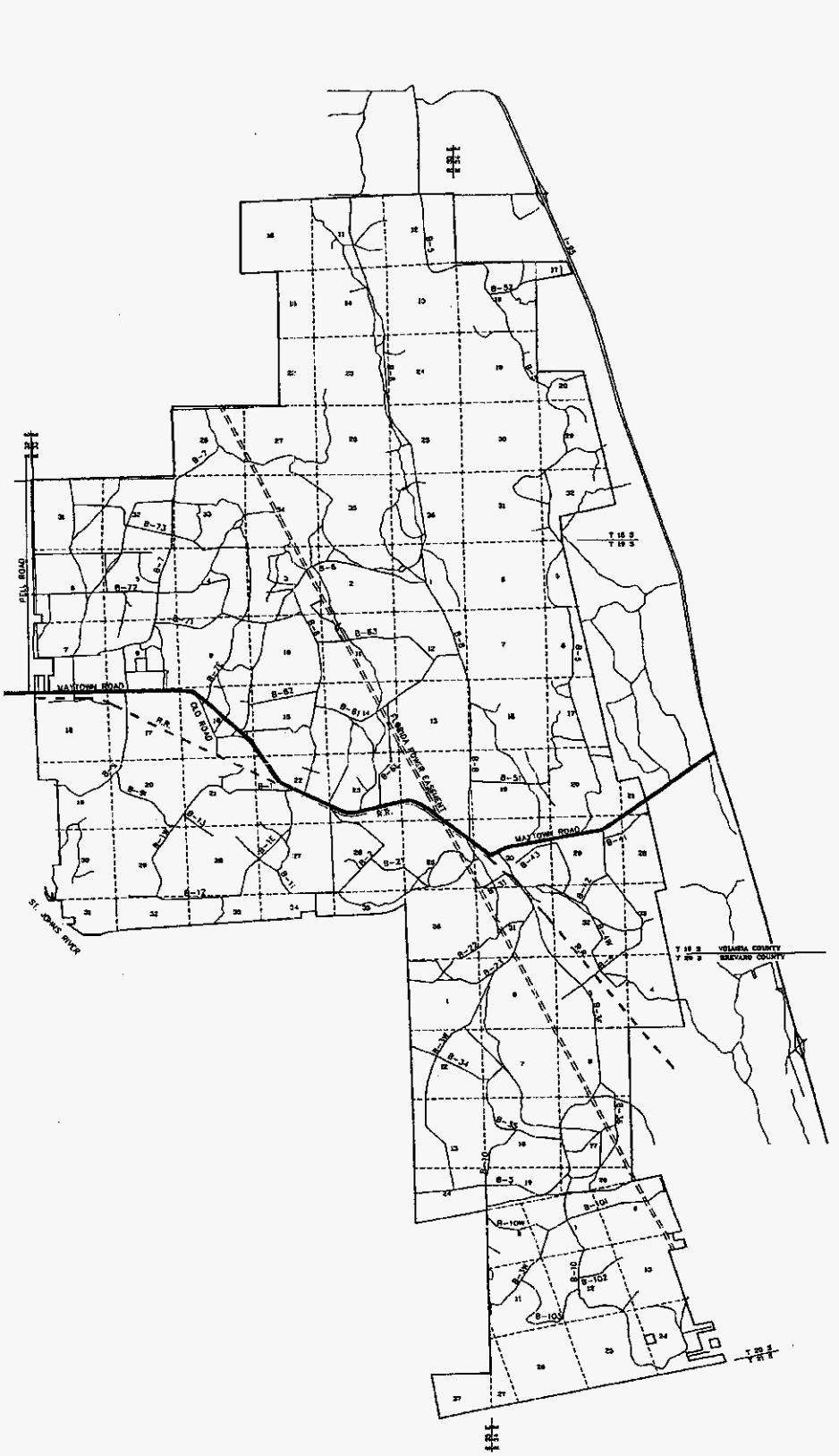
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VOLUSIA COUNTY, FLORIDA — SHEET NUMBER 102


BREVARD COUNTY, FLORIDA — SHEET NUMBER 1
R. 34 E.
VOLUSIA COUNTY
GRANT
515 000 FEET
530 000 FEET
FLORIDA EAST COAST
JUPITER
DELRAY
BERNARDO SECOND GRANT
1 Mile
1 000 000 FEET
(Joins sheet 2)
(Joins sheet 5)


BREVARD COUNTY, FLORIDA — SHEET NUMBER 5
R. 34 E.
(Joins sheet 1)
(Joins sheet 6)
(Joins sheet 9)
VOLUSIA COUNTY
BERNARD SEGUT GRANT
BUCK LAKE
1,315,000 FEET
530,000 FEET
1,590,000 FEET
19
20
21
33
34
35
1 Mile



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(407) 260-0683

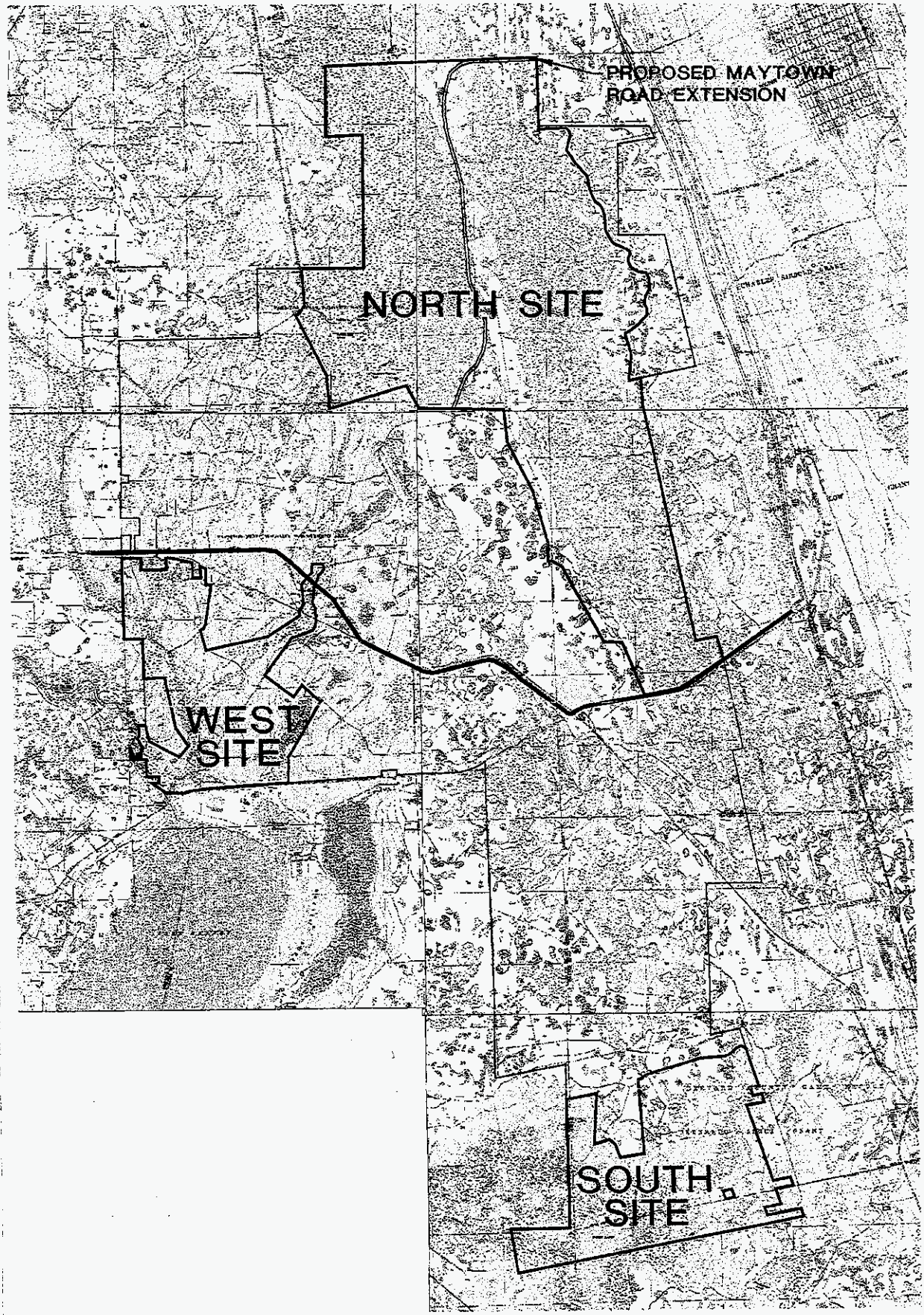
ROADWAY MAP

FARMTON PROPERTY

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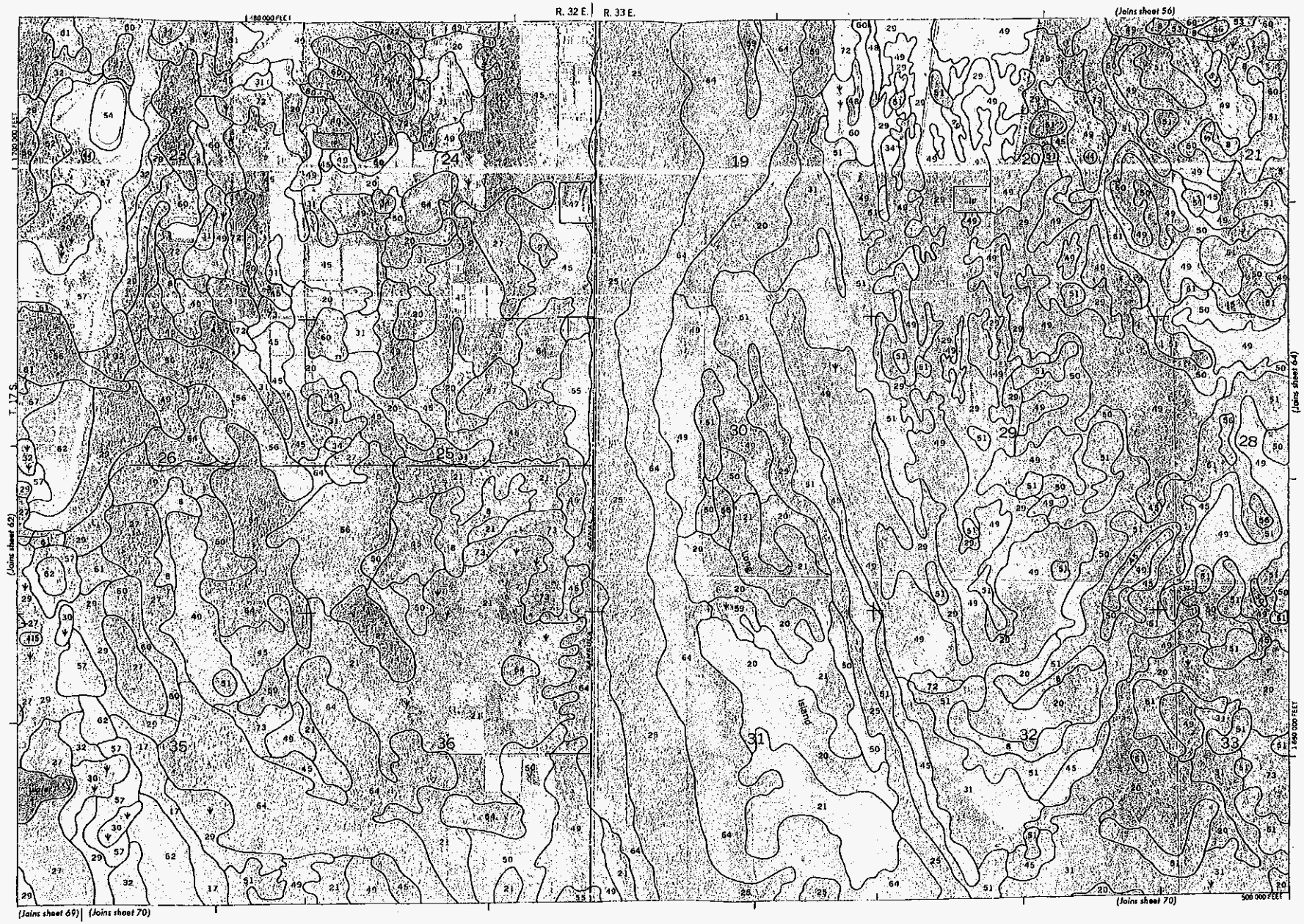
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(407) 260-0883

LOCATION MAP/QUAD SHEET

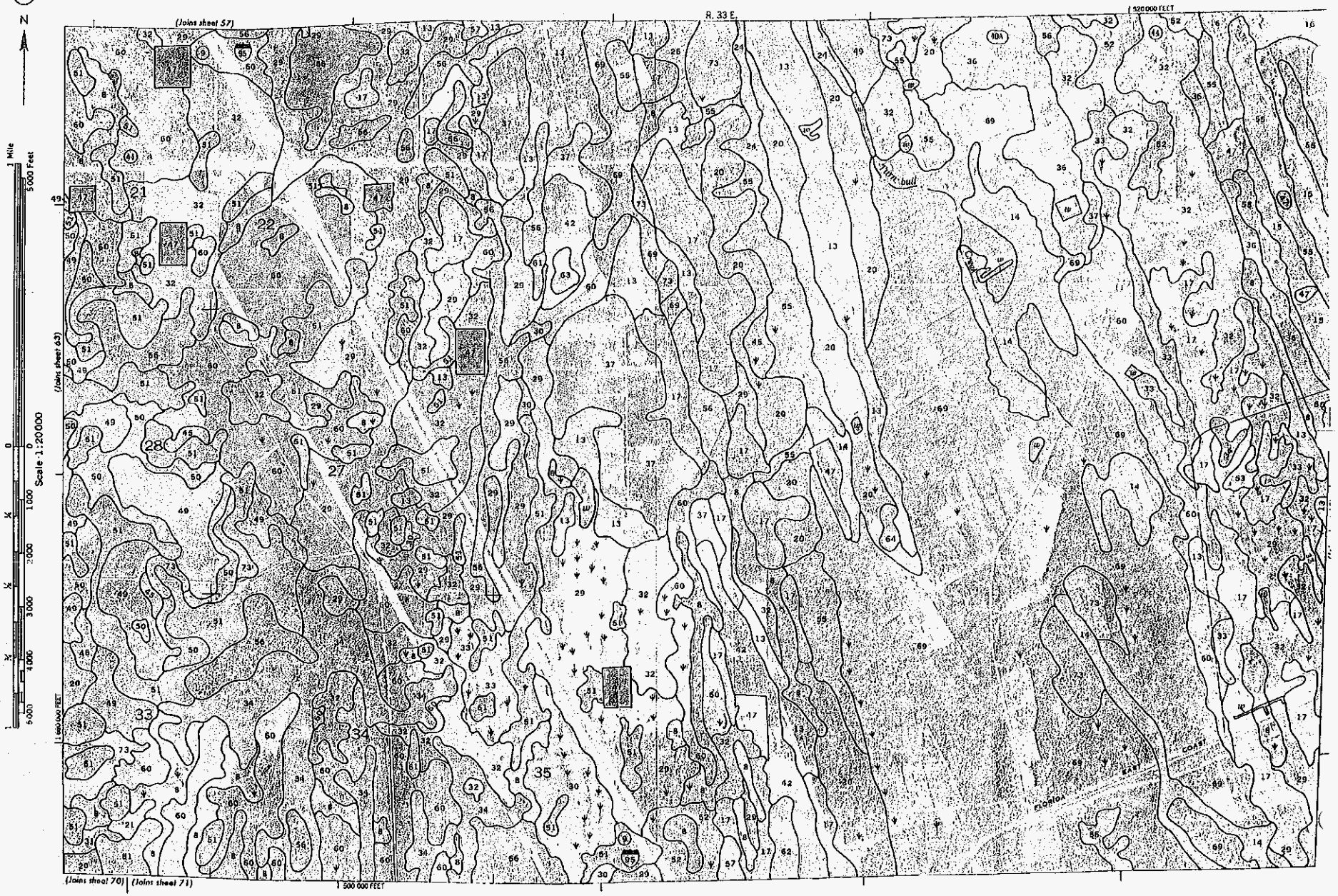
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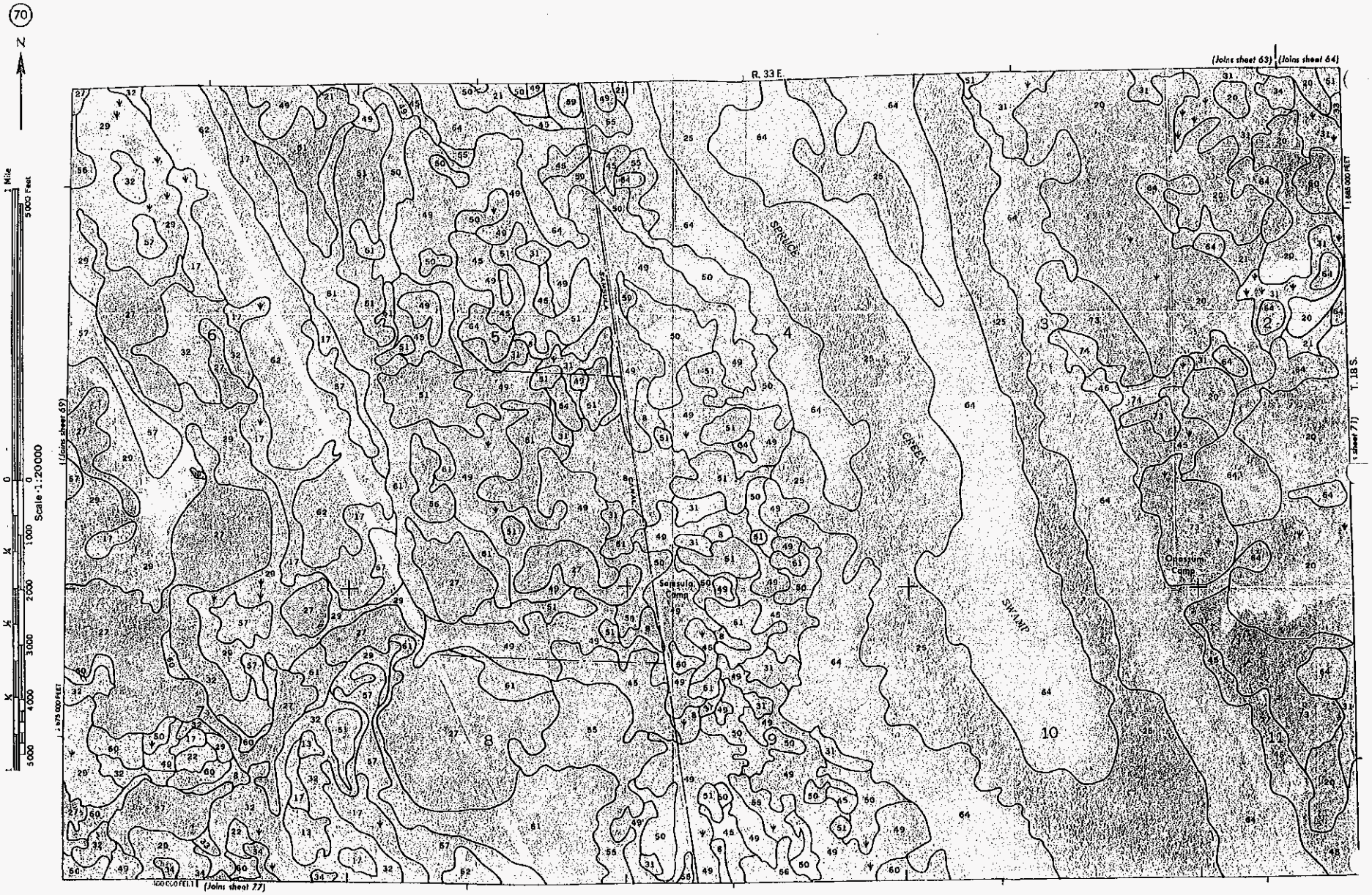
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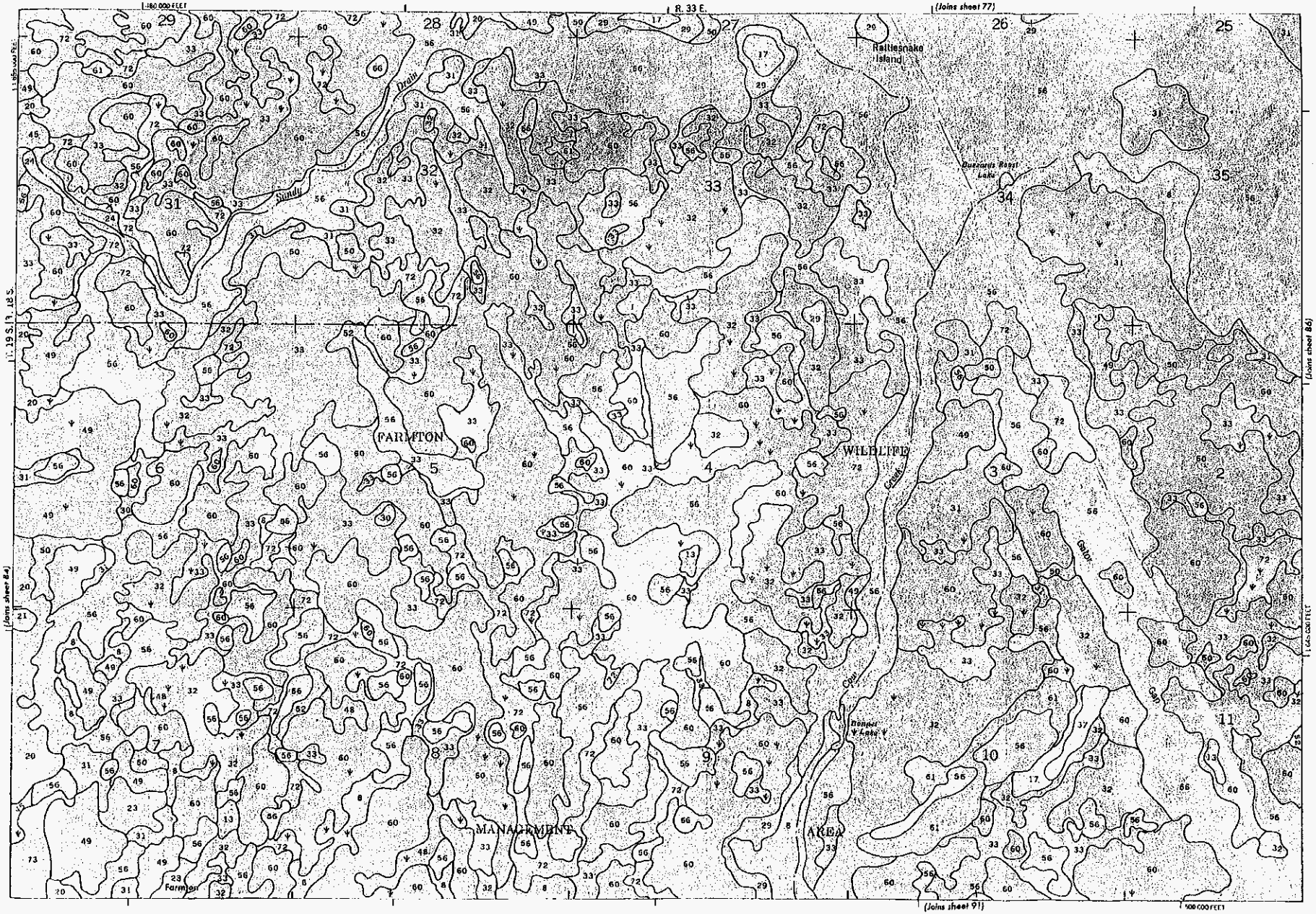
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FARMTON MITIGATION BANK

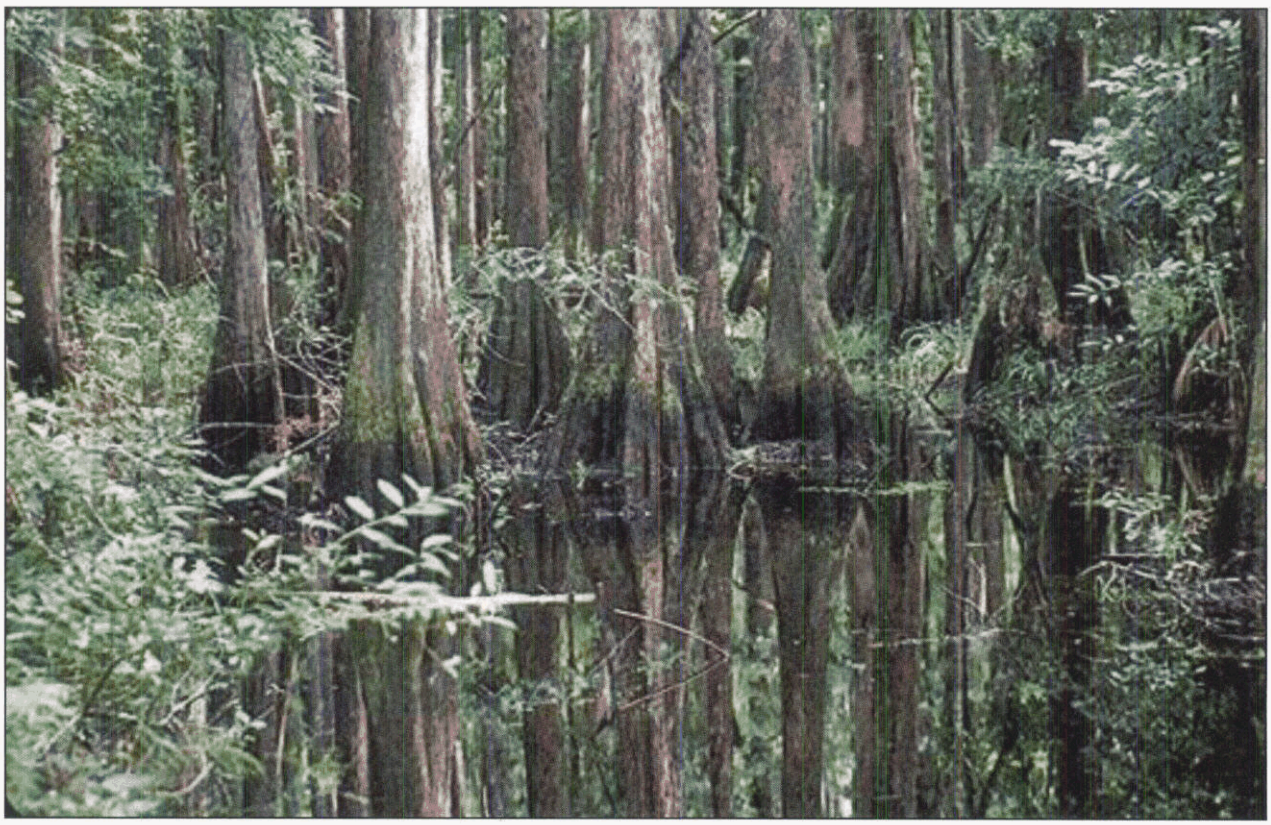
Proposed Removal of Land from Bank:

An Analysis of Resulting Ecologic and Hydrologic Impacts

January 25, 2012

Prepared for

Edgewater Citizens Alliance for Responsible Development



Basin Swamp (Source: FNAI 2010)

ESA

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FARMTON MITIGATION BANK

Proposed Removal of Land from Bank:

An Analysis of Resulting Ecologic and Hydrologic Impacts

January 25, 2012

Prepared for
Edgewater Citizens Alliance for Responsible Development

By

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Suite 405
Orlando, Florida 32819

ESA

TABLE OF CONTENTS

Farmton Mitigation Bank

		Page
1.0	Executive Summary	1
2.0.	Introduction	4
3.0.	Geography, Ecosystems, and Hydrology	6
	3.1. Location and Landscape of the Mitigation Bank	6
	3.2. Description of Ecological Communities	10
	3.3. General Hydrology and Hydrological Connections	22
	3.4. Regional and Statewide Ecological Significance	25
4.0.	Permitting History	31
	4.1. State Environmental Resource Permits	31
	4.2. Federal Mitigation Banking Instrument	32
5.0.	Mitigation Bank Plan	34
	5.1. Mitigation Activities	34
	5.2. Management	37
6.0.	Mitigation Credit Determinations	39
	6.1. Determination of State Mitigation Credits	39
	6.2. Determination of Federal Mitigation Credits	40
7.0.	Mitigation Credit Ledgers	41
	7.1. State Mitigation Credit Releases	41
	7.2. Federal Mitigation Credit Releases	43
	7.3. Mitigation Credit Withdrawals (State and Federal)	44
8.0.	History of Waiver of Requirement for Mitigation Bank Survey	46
9.0.	Mitigation Bank Removal Area Permit Modification	48
	9.1. State Application: Details and Status	48
	9.2. Federal Application: Details and Status	50
10.0.	Adverse Ecologic and Hydrologic Impacts of Landscape and Land Use Changes	51
11.0.	Summary and Conclusions	57

Appendices

	Page
A. References and Cited Literature	62
B. Farmton Mitigation Bank – State Credit Ledgers	65
C. Farmton Mitigation Bank – Federal Credit Ledger	75
D. Author's Curriculum Vitae	80

FARMTON MITIGATION BANK – PROPOSED REMOVAL OF LAND: AN ANALYSIS OF ECOLOGIC AND HYDROLOGIC IMPACTS

1.0 Executive Summary

Farmton Mitigation Bank was permitted by the St. Johns River Water Management District (SJRWMD) and U.S. Army Corps of Engineers (USACE) in April 2000, as a 24,000+ acre mitigation bank, located within a large tract (approximately 57,000 acres) owned by Miami Corporation, making it the **largest permitted wetland mitigation bank in the United States**.

The mitigation bank plan consists of a combination of hydrologic enhancement, forest stewardship, wildlife management, and preservation. The natural communities that occur on the Farmton Mitigation Bank site include a variety of high quality forested and herbaceous wetland and upland habitats. **The mitigation bank lands are hydrologically interconnected**, and drain to Spruce Creek in the Halifax River watershed, and in the St. Johns River watershed, through Deep Creek and Buck Lake. In addition, the mitigation bank, and the surrounding Miami Corporation tract, is located within several vital habitat ranges, including Florida Department of Environmental Protection (FDEP) Priority 1 Greenways with Critical Linkages, and Florida Fish and Wildlife Conservation Commission (FFWCC) Priority 2 Strategic Habitat Conservation Areas (SHCA). Finally, hundreds of thousands of acres of public and private lands managed for conservation lie contiguous to, or in close proximity to the bank.

On February 9, 2010, Miami Corporation applied to the SJRWMD and USACE for a modification to remove 1,116.35 state mitigation bank acres and 374.77 federal mitigation bank acres. The purpose of the removal is to free lands from the mitigation bank permit to be used in the implementation of the Farmton Local Plan. The plan calls for more than 15,000 acres of development areas, with a planned density of **23,100 residential units and 4.7 million square feet of non-residential space**. The SJRWMD issued the requested permit modification on September 29, 2011; the federal permit modification request is still pending.

The large-scale land use changes associated with the Farmton Local Plan will cause adverse effects to the hydrologic connectivity, surface water flows, and watershed integrity, as well as wildlife and habitat, primarily due to:

- **Disruption of hydrologic connectivity of the mitigation bank lands, degradation of the regional watersheds and sensitive wetland habitats due to roadway expansions, water withdrawals, and installation of wastewater utilities**. This will likely occur through channelization or impoundment of surface water and the resulting alteration of hydroperiods and disruption of sheet flows by Williamson Blvd. and numerous other roadway expansions; the drawdown of groundwater associated with the new water

supply wells in close proximity to sensitive wetlands on bank lands; and installation of new wastewater utilities in close proximity to sensitive wetlands. The newly proposed wastewater utilities carry the additional risk of chlorinated wastewater discharges into highly organic receiving waters, which may result in the formation of formaldehyde in the sensitive waters at potentially toxic levels. The net result of the proposed activities, in addition to the localized disruption of hydroperiods and flows, is an overall degradation of the two affected watersheds (Halifax River and St. Johns River) in terms of natural and historical flows, downstream detritus transport, and water quality.

- **Disruption to wildlife movement and migration** due to a significant reduction and narrowing in FDEP Priority 1 Greenways corridors with critical linkages, and loss of FFWCC Strategic Habitat Conservation Area lands.

- **Displacement of wildlife and disruption of foraging, nesting, and other critical life cycle activities** due to encroachment by development areas and incompatible land uses within open space and GreenKey areas.

- **Increased wildlife mortality** due to vehicular collisions. With the planned road expansion to Williamson Boulevard, Maytown Road, and other connector roads, there is the strong likelihood of increased mortality to terrestrial wildlife species.

Given the extent and intensity of the proposed development under the Farmton Local Plan, juxtaposed to the critical habitat value, sensitive nature, and hydrological interconnectivity of the affected wetlands and uplands of the Farmton Mitigation Bank, it is unlikely that the described adverse impacts can be avoided through standard engineering solutions.

The proposed land use changes under the Farmton Local Plan will also diminish the banker's ability to successfully implement important aspects of the Farmton Mitigation Bank Plan. The long-term **hydrologic enhancement** component will be reduced due to the expansion of Williamson Blvd. and numerous additional roadways; the bank's **wildlife management** plan will likely be unattainable due to the fragmentation of habitat, wildlife and habitat displacement, and increased mortality; the **forestry stewardship** plan will encounter difficulties in implementation, especially for controlled burns, due to proximity of new highly travelled roadways, and intense residential, and commercial developments; finally, the **preservation** component will be degraded through the development of previously permitted mitigation bank lands and vastly intensified land uses in the surrounding landscape, not contemplated under the original permits and bank evaluation.

State and federal mitigation credits allocated to the Farmton Mitigation bank were based on the preservation, enhancement, and restoration of wetlands and vital supporting upland

habitat unique to this vast tract. At the time of permitting, the dominant long-term land use for the area surrounding the bank was determined to be sustainable silviculture through best management practices. The proposed land use changes under the Farmton Local Plan, through numerous roadway expansions; increased groundwater withdrawals under the water utility plan; construction of numerous wastewater utilities; and addition of over 15,000 of acres of intense residential and commercial developments; **will profoundly and permanently alter the landscape conditions and habitat diversity under which the original mitigation value of the bank was established**. In addition, these land use changes are inconsistent with the goals and objectives of the mitigation bank and, accordingly, will adversely affect the value of past, present, and future mitigation provided by the bank.

Based on a careful review and analysis of the information presented in this report, and information available at the time of the report in the public domain, it is the author's expert opinion that the removal of the bank areas and activities proposed under the Farmton Local Plan are inconsistent with, and will severely, adversely impact the intent, goals, and objectives of the Farmton Mitigation Bank as established in the 2000 ERP and MBI, and the 2008 EPA rule, and its continued functioning as envisioned, planned, and permitted.

2.0 Introduction

The concept of mitigation banking arose in the 1980's in part from the recognition by the U.S. Army Corps of Engineers (USACE), the U.S. Environmental Protection Agency (EPA), and state agencies, such as the Florida Department of Environmental Regulations (FDER), that relatively small, permittee-responsible mitigation projects, which are often located in or near urbanized areas, tended to exhibit a high rate of failure, or serious problems in their implementation and management. A 1991 study conducted by the FDER, of 119 projects with permittee-responsible mitigation, found that 34% of required mitigation had not been implemented, the overall rate of non-compliance was 93%, and the actual rate of mitigation success was only 27% (USACE 2003). Even where deemed successful, mitigation areas co-located onsite with urban development projects, or on relatively small off-site parcels that were not part of a larger ecological system, might not entirely replace the ecological functions lost when natural areas were impacted or destroyed. Individual wetland mitigation parcels often lack the hydrological connections, physical continuity with supporting landscape, upland buffers, and habitat diversity of the systems they are meant to mitigate. In addition, their location and small size may complicate or preclude certain vital land management activities, such as controlled burning or forest thinning.

In a typical year, under Section 404 of the Clean Water Act, approximately 47,000 acres of wetland mitigation is required to offset near 21,000 acres of wetland losses (Kihslinger 2008). Given the nation's goal of "no net loss" of wetland acreage or functions, the importance of effective and successful compensatory mitigation cannot be understated. Since issuance of the 1995 *Federal Guidance on the Establishment, Use, and Operation of Mitigation Banks*, such mitigation banks have become a key component of meeting the national "no net loss" goal. In 2008, the USACE, and the EPA developed the final rule on the *Compensatory Mitigation for Losses of Aquatic Resources*. The rule superseded the prior guidance, established performance standards for the use of permittee-responsible compensatory mitigation, in-lieu mitigation, and mitigation banks, to improve quality, success, and emphasize a watershed approach to mitigation. Furthermore, the rule recognized the inherent values and advantages of mitigation banks, by expressing a hierarchical preference for the use of mitigation banks to provide compensatory mitigation, if a bank is available to serve the impact project (Federal Register 2008).

A 2001 study by the National Research Council described some of the key ecological advantages of compensatory mitigation through a mitigation bank, as compared to permittee-responsible individual mitigation. These advantages, which have also been described in a multitude of other sources, include:

- Improved ecological integrity, habitat diversity, landscape support, and buffers due to larger parcel size and appropriate site selection criteria;
- Regional ecological significance due to a watershed approach to mitigation;
- Greater certainty of success due to implementation of mitigation activities and satisfaction of performance benchmarks prior to full release of compensatory credits;
- Greater certainty of success due to the implementation of funded short term and perpetual management plans.

This report serves to provide an in-depth look at the permitting history, ecological characteristics, implementation, management, and likely future outlook under a changing landscape, of the Farmton Mitigation Bank, which, at 24,000+ acres is by far the largest mitigation bank in Florida, and also the largest wetlands mitigation bank in the United States. The information in this report will demonstrate the incompatibility of the proposed modification with the ecological and hydrologic sustainability of the Farmton Mitigation Bank.

Due to its size; diverse habitats, supporting a many common and listed species; location, providing a critical link in a natural communities/wildlife corridor (FDEP Greenways); and recognition by the Florida Fish and Wildlife Conservation Commission (FFWCC) as a Strategic Habitat Conservation Area (SHCA), this mitigation bank is of statewide and national significance.

This report was researched and written by Marc von Canal, M.S.; Senior Scientist at Environmental Science Associates (ESA). The author's professional experience includes over 16 years managing water resources in Florida as a Regulatory Scientist for the St. Johns River Water Management District (SJRWMD), an agency of the State, charged since 1972 under Chapter 373, Florida Statutes, with managing and protecting Florida's surface and ground water resources. Between 2007 and 2011, the author served as a senior scientist for the SJRWMD's Mitigation Bank Program. Within the SJRWMD's service area of 18 counties in northeast and east-central Florida, the program's purpose is to regulate the close to 30 active and potential future mitigation banks through application review, appropriateness determinations, coordination with federal review agencies, credit release authorizations, credit withdrawal tracking, compliance monitoring and enforcement. While serving in the program, the author gained a thorough understanding of the state and federal rules and guidelines governing mitigation banks, as well as direct experience in the common implementation of these rules, and the practices associated with the establishment, operation, and management of mitigation banks. In addition, the author served as the SJRWMD reviewer for the Farmton Mitigation Bank removal modification described in this report, and has extensive knowledge of the bank's mitigation areas, mitigation plan, and management practices.

3.0 Geography, Ecosystems, and Hydrology

This section will identify the geographical location, ecological communities, and surrounding landscape of the Farmton Mitigation Bank. In addition, this section will discuss the overall hydrological features and connections of the mitigation bank lands. Finally, it will address the regional ecological significance of the mitigation bank, particularly with respect to the preservation of large contiguous areas of high quality native communities, wildlife corridors, and use by listed wildlife species.

3.1 Location and Landscape of the Mitigation Bank

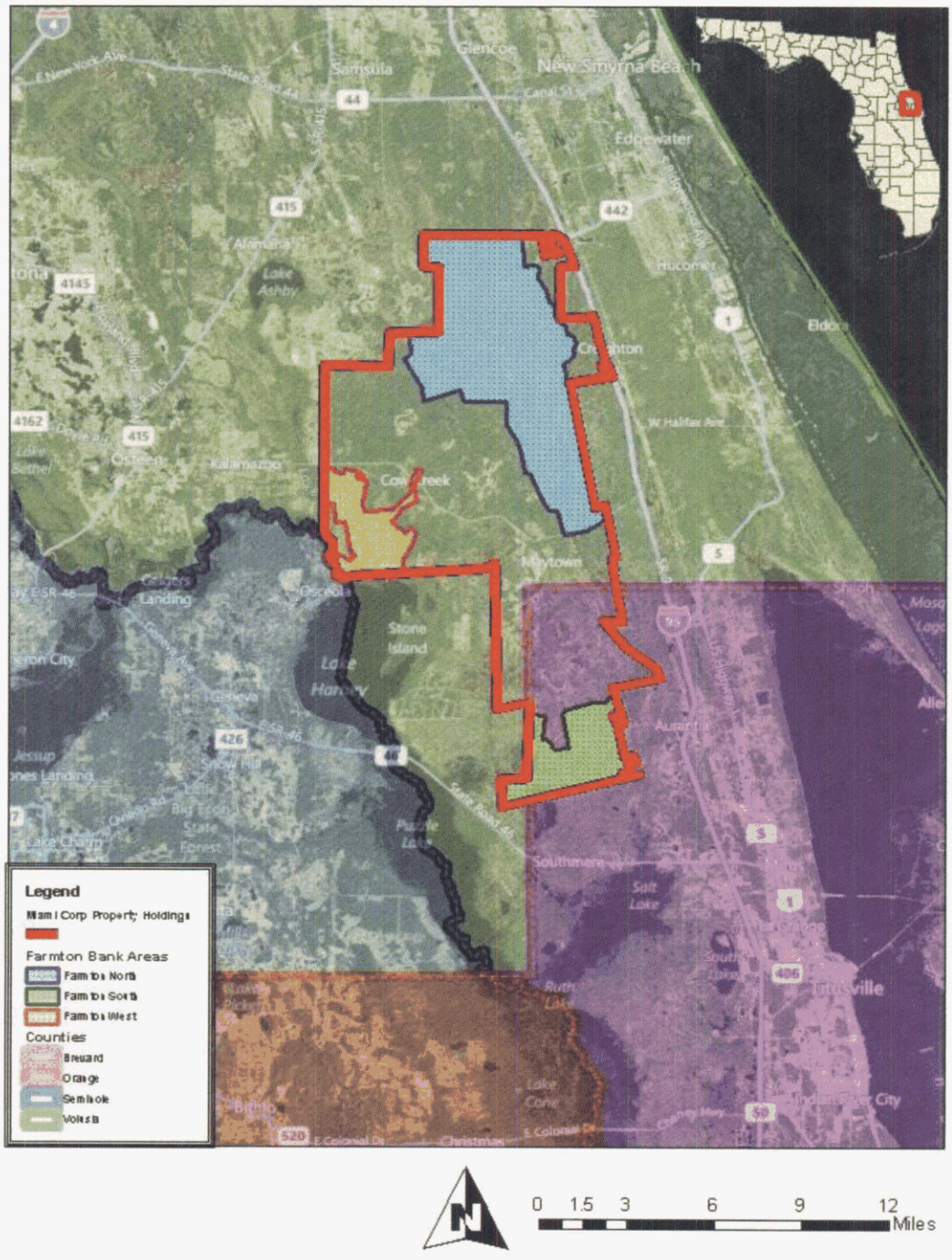
The lands contained within the Farmton Mitigation bank lie in east-central Florida, more specifically in southern Volusia and northern Brevard Counties. The mitigation bank lands exist within a larger (approximately 57,000 acres) tract owned by the Miami Corporation, lying south of State Road 44, north of State Road 46, east of State Road 415, and west of Interstate 95.

The mitigation bank lands within the larger Miami Corporation tract are located in three distinct sites. The North Site was permitted by the SJRWMD as 16,493 acres entirely within Volusia County and comprises a large part of the northern and east-central portion of the Miami Corporation tract. The West site is 3,595 acres in size, also lies entirely in Volusia County, and is located in the west-central portion of the larger tract. Finally, the South site is 4,391 acres in size, is located predominantly in Brevard County, and comprises the extreme southern portion of the Miami Corporation tract (Figure 1). **The three bank sites total 24,479 acres, currently making Farmton Mitigation Bank the largest mitigation bank in the United States.**

The historical anthropogenic use of the lands within and around the mitigation bank, dating back over 100 years, has been cattle grazing. Where suitable forest lands were present, this activity generally involved clearing, planting of pasture grasses, fencing, and stocking the land with cattle at the maximum sustainable rate. In some cases fertilization and surface water management, primarily through ditching, was also needed. However, the extensive cypress and hardwood swamps and marshes throughout the area were generally not subjected to this conversion, since they were too wet for productive cattle (Florida Memory Project 2011).

For the past 60 years, the predominant land use of the mitigation bank lands, the larger Miami Corporation tract and the surrounding landscape, has been slash pine plantation. This activity typically involves the initial clear cutting of timber, followed by bedding (if needed) and planting slash pine, at stocking rates from 600 to over 1000 trees per acre. Suitable trees are then harvested on an average 25-year cycle and, as a common practice, mature seed trees are

Figure 1. Farmton Mitigation Bank Location Map

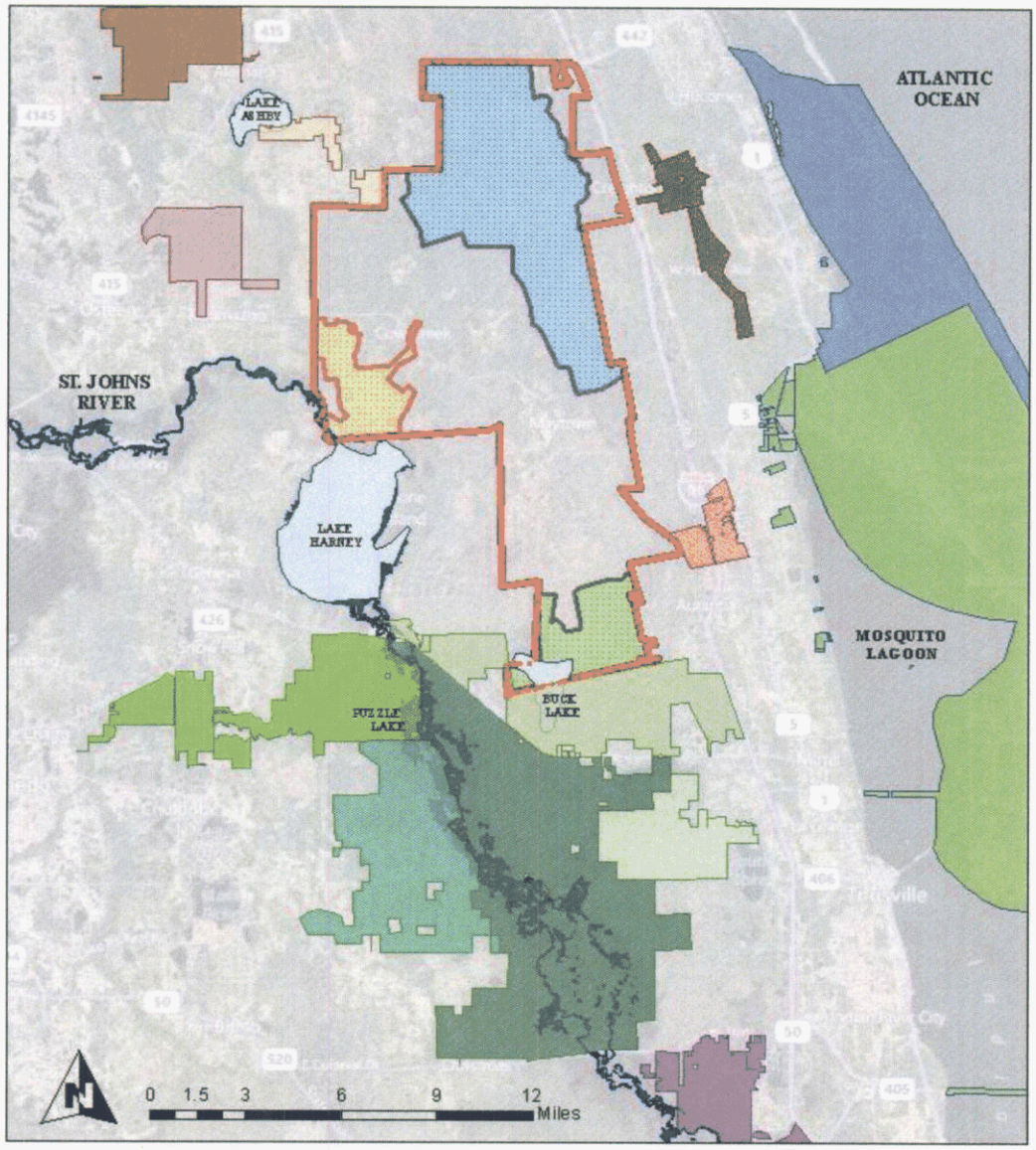


left to reforest the area and restart the growth cycle. Land management activities during the growth cycle include fertilization at the start and mid-cycle, brush management, and fire suppression (USDA Forest Service 2004). These activities, provided they are conducted in accordance with established best management practices, have generally been deemed by state and federal regulatory staff as compatible with adjacent or nearby conservation lands.

The major water bodies and wetlands on, or hydrologically connected to, the mitigation bank include **Crane Swamp** and **Spruce Creek Swamp** (North Bank site), which comprise the headwaters of Spruce Creek; **Cow Creek**, **Deep Creek**, and **Lake Harney** (West Bank site); and **Buck Lake** (South Bank site). The importance of these connections will be described in Section 3.3. In addition, the mitigation bank lies in close proximity, to numerous conservation and public lands, including Wiregrass Prairie Preserve, Deep Creek Preserve, Palm Bluff Conservation Area, Turnbull Hammock Conservation Area, Doris Leeper Spruce Creek Preserve, Canaveral National Seashore, Merritt Island National Wildlife Refuge, Scottsmoor Flatwoods Sanctuary, Buck Lake Conservation Area, Little Big Econ State Forest, Seminole Ranch Conservation Area, Salt Lake Wildlife Management Area, and Charles H. Bronson State Forest, many of which are contiguous with additional public and private conservation lands (Figure 2). Additional details on the mitigation bank's ecological significance with respect to the nearby public lands will be provided in Section 3.4.

The mitigation bank is located in a Florida Department of Protection (FDEP) Greenways corridor predominantly comprised of cypress swamp, hardwood swamp, and wet and mesic pine flatwoods, along with freshwater marshes, prairies, shrub, and brushland to a lesser degree. In the vicinity of the mitigation bank, this natural areas corridor effectively separates the coastal, urban areas of New Smyrna Beach, Edgewater, Oak Hill, Titusville, and developed areas along the I-95 and US-1 corridors, with a combined estimated population of 100,000, from the urban sprawl that characterizes much of the central Florida landscape, west of the mitigation bank, stretching from Deland to Kissimmee, with an estimated population in excess of 500,000 (U.S. Census Bureau 2010). The major roadways traversing the mitigation bank's surrounding landscape, connecting the aforementioned coastal and central Florida population centers, include State Road 44 (New Smyrna Beach to Deland) and State Road 46 (Titusville to Sanford). In addition, Interstate 95 traverses the bank's surrounding landscape to the east, and State Road 415, connecting Port Orange to Osteen, lies to the west. According to the FDOT traffic analysis (2010), State Road 44, in the mitigation bank's vicinity, has an annual average daily traffic (AADT) load of 17,700 vehicles, while State Road 46 has an annual average daily traffic load ranging from 5,200 to 8,900 vehicle trips. Interstate 95, near the mitigation bank,

Figure 2. Proximity to Conservation Lands



carries an AADT ranging from 24,500 to 32,000 trips, and State Road 415 carries up to 7,600 AADT trips. Although Maytown Road, a small rural road that traverses the landscape between Interstate 95 and Osteen, lies along the North Bank site's southern boundary, its traffic load is not significant (FDOT Traffic Data Online 2010). The current road network maintains the heavy urban traffic, and resulting adverse hydrologic and ecologic impacts, along the perimeter of the sensitive natural areas of the mitigation bank and surrounding tracts. However, **the proposed modification, through Williamson Blvd. and other associated roadways, will provide direct ingress for traffic and result in adverse hydrologic and ecologic impacts to these sensitive natural systems.**

3.2 Description of Ecological Communities

The mitigation bank lands are comprised of a diverse assemblage of natural wetland and upland communities that are well integrated and contiguous with the surrounding landscape. Although many of the natural communities have been converted to pine plantation, **the majority of the bank is dominated by preserved or enhanced natural areas**. The aspects of the mitigation bank plan that address the preservation, enhancement, restoration, and management of the impacted communities will be described in Section 5.0. This section serves to describe the current and historical native communities that characterize the Farmton Mitigation Bank.

During permitting of the mitigation bank, the various upland and wetland communities on the bank were classified according to the *Florida Land-use, Cover and Forms Classification System* (FLUCCS, FDOT 1985). Although this is a flexible and useful system for the characterization of land cover, it does not always sufficiently describe native communities. For this report a crosswalk system, described by Doherty et al. 2000 and the *Guide to the Natural Communities of Florida 2010 Edition* (FNAI 2010) was used to convert the permitted FLUCCS codes into the matching native community classes determined and described in FNAI 2010.

Table 3.2-1: FLUCCS 1985 to FNAI 2010 Natural Community Crosswalk for Farmton

1985 FLUCCS Cover	2010 FNAI Natural Community
411 – Pine Flatwoods	Mesic Flatwoods
421 – Xeric Oak	Sandhill
425 – Temperate Hardwood Forest	Mesic Hammock
427 – Live Oak Hammock	Mesic Hammock
434 – Hardwood/Conifer Mixed	Upland Hardwood Forest
610 – Wetland Hardwood Forests	Bottomland Forest
613 – Gum Swamp	Basin Swamp
617 – Mixed Wetland Hardwoods	Bottomland Forest
620 – Wetland Coniferous Forests	Basin Swamp
621 – Cypress	Basin Swamp
624 – Cypress – Pine – Cabbage Palm	Wet Flatwoods (Basin Swamp)

630 – Wetland Forested Mixed	Bottomland Forest
641 – Freshwater Marsh	Basin Marsh
642 – Saltwater Marsh	Salt Marsh
643 – Wet Prairie	Wet Prairie
646 – Wetland Shrub	Wet Prairie (Shrub)

Using the relevant FNAI 2010 native communities summarized in Table 3.2-1, along with the information available from the original state and federal mitigation bank permit applications, the following table provides a breakdown of the acreages of native wetland and upland communities that exist on the Farmton Mitigation Bank lands:

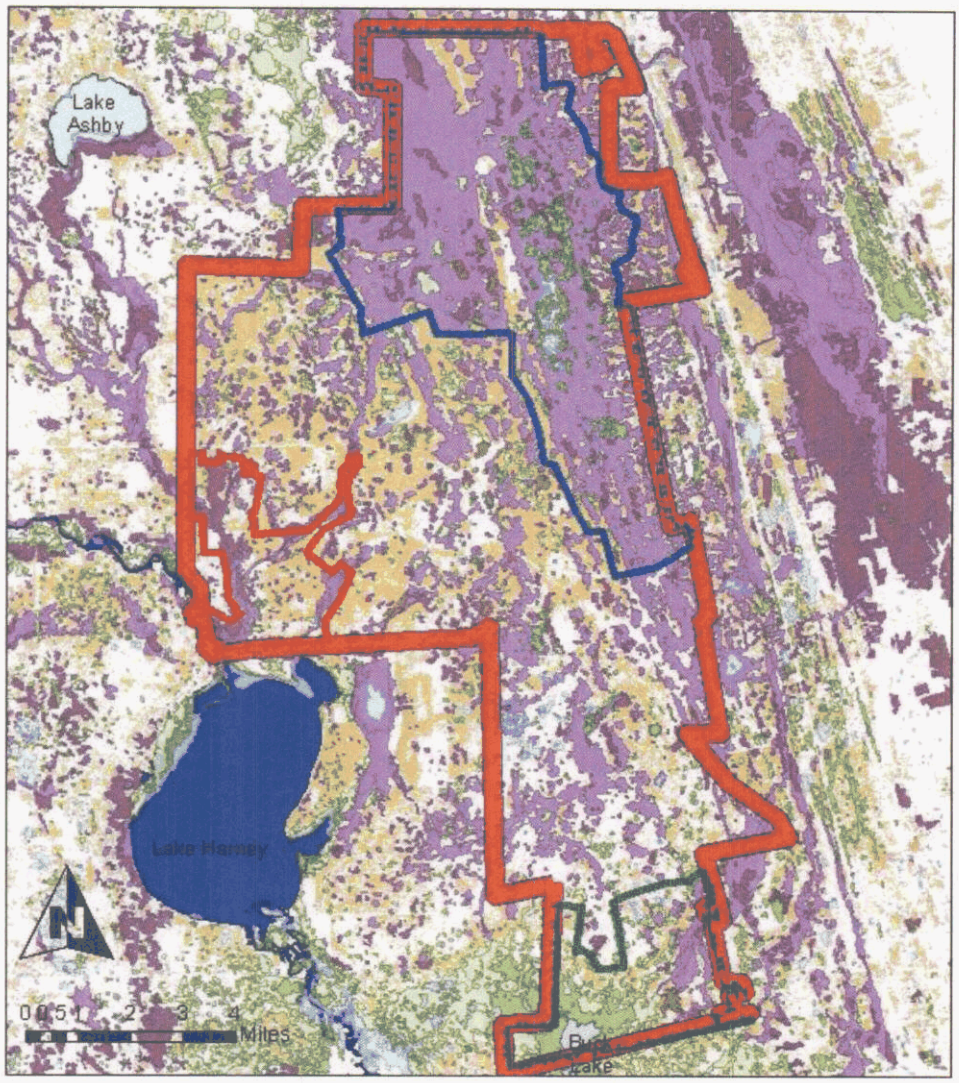
Table 3.2-2: FNAI 2010 Natural Communities present on the Farmton Mitigation Bank*

Ecological Community (FNAI 2010)	Total Acreage	North Bank Acreage	West Bank Acreage	South Bank Acreage
Wetland Communities				
Basin Swamp	10,206	9,776	332	198
Bottomland Forest	2,109	156	1,193	760
Wet Flatwoods	909	761	-	148
Basin Marsh	2,276	1,267	109	900
Wet Prairie (Shrub)	491	-	6	485
Salt Marsh	21	-	-	21
Marsh Lake	216	-	-	216
Total Wetlands	***16,228***	***11,960***	***1,640***	***2,728***
Upland Communities				
Mesic Flatwoods	6,895	3,933	1,312	1,650
Mesic Hammock	442	37	390	15
Sandhill	27	27	-	-
Upland Hardwood Forest	251	10	241	-
Total Uplands	***7,615***	***4,007***	***1,943***	***1,665***
Total Acreage	***23,843***	***15,967***	***3,583***	***4,393***

**The acreages provided in this table do not match the acreages used for the mitigation assessment areas and credit calculations, since those areas are based on mitigation activities not reflected here.*

As shown in Figure 3, and summarized in Table 3.2-2, the mitigation bank sites contain a diverse and hydrologically interconnected assemblage of natural wetland and supporting upland communities. The dominant wetland community on the North Bank site is basin swamp. The West Bank site's wetland landscape is dominated by bottomland forest, while the South Bank site contains a more evenly varied assemblage of wetland communities consisting mostly of basin marsh, bottomland forest, and wet prairie shrub. The uplands throughout all three bank sites are dominated by mesic flatwoods that have been converted to pine plantation. Each of the natural communities present on the mitigation bank is described below.

Figure 3. FNAI Natural Communities



3.2.1 Basin Swamp

Basin swamp wetlands are vegetated with hydrophytic trees and shrubs that are acclimated to extended inundation. The canopy of basin swamps is typically co-dominated by pond cypress (*Taxodium ascendens*) and swamp tupelo (*Nyssa sylvatica*), however common canopy species also include slash pine (*Pinus elliottii*), red maple (*Acer rubrum*), dahoon holly (*Ilex cassine*), swamp bay (*Persea palustris*), sweetbay (*Magnolia virginiana*), loblolly bay (*Gordonia lasianthus*), swamp laurel oak (*Quercus laurifolia*), sweetgum (*liquidambar styraciflua*), water oak (*Quercus nigra*), and American elm (*Ulmus americana*). Shrubs, if present, include Virginia willow (*Itea virginiana*), swamp dogwood (*Cornus foemina*), fetterbush (*Lyonia lucida*), wax myrtle (*Myrica cerifera*), titi (*Cyrilla racemiflora*), and buttonbush (*Cephalanthus occidentalis*). The presence of herbaceous groundcover is highly variable, depending on hydroperiod and shading, and typically includes maidencane (*Panicum hemitomon*), Virginia chain fern (*Woodwardia virginiana*), arrowheads (*Sagittaria spp.*), lizard's tail (*Saururus cernuus*), beaksedges (*Rhyncospora spp.*), bladderworts (*Utricularia spp.*), royal fern (*Osmunda regalis*), and sphagnum moss (*Sphagnum spp.*) (FNAI 2010).

Basin swamps are typically associated with extensive landscape depressions, such as lake beds, river basins, and ancient dunes or lagoons, formed during periods of higher sea levels. This is the case for the extensive network of basin swamps that exist along central Florida's east coast. In central Florida, this community is typically closely associated with pine dominated wetland and upland communities, floodplain swamps, dome swamps, and baygall (FNAI 2010).

Basin swamps provide important foraging and nesting habitat for a variety of rare and listed species, including blackbanded sunfish (*Enneacanthus chaetodon*), frosted flatwoods salamander (*Ambystoma cingulatum*), carpenter frog (*Rana virgatipes*), many-lined salamander (*Stereochilus marginatus*), spotted turtle (*Clemmys guttata*), swallow-tailed kite (*Elanoides forficatus*), wood stork (*Mycteria americana*), southeastern weasel (*Mustela frenata olivacea*), and the Florida long-tailed weasel (*Mustela frenata peninsulae*) (FNAI 2010).

There are approximately 10,206 acres of basin swamp within the boundaries of the mitigation bank. This community is predominantly located on the North Bank site, where it covers approximately 9,776 acres and is closely associated with Crane Swamp and Spruce Creek swamp. Basin swamps represent only minor community components of the West and South Bank sites. The basin swamps on the mitigation bank are dominated by a mature cypress canopy, with black gum, bay trees, red maple, sweetgum, slash pine and oaks (Farmton Mitigation Bank MBI 2000). This community type is well integrated and supported by adjacent bottomland forests, mesic flatwoods, and upland hardwoods.

3.2.2 Bottomland Forest

Bottomland forests are characterized by a deciduous or mixed deciduous/evergreen closed canopy, commonly dominated by sweetgum, spruce pine (Pinus glabra), loblolly pine (Pinus taeda), sweetbay, swamp laurel oak, water oak, live oak (*Quercus virginiana*), swamp chestnut oak (*Quercus michauxii*), American elm, sugarberry (*Celtis laevigata*), red maple, swamp tupelo, and bald cypress (*Taxodium distichum*). The understory is often dense with shrubs, reducing the effective ground cover, or open with a groundcover comprised of hydrophytic and mesophytic ferns, herbs, and grasses. When present, understory trees and shrubs typically include American hornbeam (*Carpinus caroliniana*), swamp dogwood, possumhaw (*Ilex decidua*), dahoon holly, dwarf palmetto (*Sabal minor*), swamp bay, wax myrtle, and highbush blueberry (*Vaccinium corymbosum*) (FNAI 2010).

Bottomland forests are commonly found as transitional wetland systems, between swamps, rivers, and creeks, and associated uplands. They are closely associated with blackwater streams, alluvial floodplains, and basin swamps. At higher elevations, bottomland forests gradually overlap with associated upland systems, such as mesic flatwoods and upland hardwoods.

Rare and listed species that are supported by bottomland forest systems include the Apalachicola dusky salamander (*Desmognathus apalachicolae*), four-toed salamander (*Hemidactylium scutatum*), copperhead (*Agkistrodon contortrix*), Mississippi green water snake (*Nerodia cyclopion*), yellow-crowned night-heron (*Nyctanassa violacea)*, black-crowned night-heron (*Nycticorax nycticorax)*, Louisiana waterthrush (*Seiurus motacilla*), Rafinesque's big-eared bat (*Corynorhinus rafinesquii*), big brown bat (*Eptesicus fuscus*), southeastern bat (*Myotis austroriparius*), gray bat (*Myotis grisescens*), northern long-eared bat (*Myotis septentrionalis*), southeastern weasel, Florida long-tailed weasel, and Florida black bear (*Ursus americanus floridanus*) (FNAI 2010).

At the Farmton Mitigation Bank, the bottomland forest communities are primarily located at the West and South Bank sites, respectively covering 1,193 and 760 acres. At the West Bank site, this community is closely associated with Cow Creek and Deep Creek, and is characterized by a canopy of red maple, sweetgum, various oaks, cabbage palms, cypress, and slash pine. At the South Bank site this community exists near the freshwater marsh associated with Buck Lake, and is characterized by a canopy of water oak, laurel oak, dahoon holly, red maple, bay trees, cabbage palms, and slash pine. In addition, at the South Bank site, portion of this wetland community was converted to slash pine plantation (FMB MBI 2000).

3.2.3 Wet Flatwoods

Wet flatwoods are seasonally inundated pine forests with a sparse or absent midstory and a dense groundcover of hydrophytic grasses, herbs, and low shrubs. The pine canopy typically consists of one or a combination of longleaf pine (*Pinus palustris*), slash pine, pond pine (*P. serotina*), or South Florida slash pine (*P. elliottii* var. *densa*). The subcanopy, if present, consists of scattered sweetbay, swamp bay, loblolly bay, pond cypress, dahoon, titi, and/or wax myrtle. Shrubs include large gallberry (*Ilex coriacea*), fetterbush, titi, black titi (*Cliftonia monophylla*), sweet pepperbush (*Clethra alnifolia*), red chokeberry (*Photinia pyrifolia*), and azaleas *(Rhododendron canescens, R. viscosum*). Saw palmetto (*Serenoa repens*) and gallberry *(Ilex glabra*), species also found in mesic flatwoods sites, may be present. On calcareous sites cabbage palm (*Sabal palmetto*) is common, both in the subcanopy and shrub layers. Herbs include wiregrass (*Aristida stricta var. beyrichiana*), blue maidencane (*Amphicarpum muhlenbergianum*), and/or hydrophytic species such as toothache grass (*Ctenium aromaticum*), Curtiss' sandgrass (*Calamovilfa curtissii*), cutover muhly (*Muhlenbergia expansa*), coastalplain yellow-eyed grass (*Xyris ambigua*), Carolina redroot (*Lachnanthes caroliana*), beaksedges (*Rhynchospora chapmanii, R. latifolia, R. compressa*), and pitcherplants (*Sarracenia* spp.), among others (FNAI 2010).

Wet flatwoods systems are often closely associated with mesic flatwoods, shrub bogs, and wet prairies, where the communities very gradually transition or overlap. In addition, dome and basin swamps (or strand swamps in south Florida) commonly share the same landscape with wet flatwoods.

Wet flatwoods support a large number of rare and listed plant species, in the peninsula of Florida, these include purple honeycomb-head (*Balduina atropurpurea*), Bartram's ixia (*Calydorea coelestina*), hartwrightia (*Hartwrightia floridana*), lake-side sunflower (*Helianthus carnosus*), and cutthroat grass (*Panicum abscissum*), St. John's blackeyed susan (*Rudbeckia nitida*) and white-flowered wild petunia (*Ruellia noctiflora*). In addition, these systems provide important habitat for the frosted flatwoods salamander, reticulated flatwoods salamander (*A. bishopi*), Florida black bear, red-cockaded woodpecker (*Picoides borealis*) and the Big Cypress fox squirrel (*Sciurus niger avicennia*) (FNAI 2010).

At the North Bank site, wet flatwoods are closely associated with the basin swamps, and are characterized by a canopy of cypress, slash pine, and cabbage palm, with an understory that includes dahoon holly, gallberry, wax myrtle, fetterbush, yellow-eyed grass, and St. Johns wort. There are no wet flatwoods at the West Bank site, and at the South Bank site, wet flatwoods exist mainly in areas converted from bottomland forest to pine plantation.

3.2.4 Basin Marsh (Depression Marsh at West Bank Site)

Basin marshes are frequently flooded herbaceous freshwater wetlands that are typically divided into four zones, from deepest to shallowest: submersed, floating-leaved, emergent, and grassy. Depending on the topography, a basin marsh may exhibit some or all of these zones, along with shrubby patches. Common species found in the floating-leaved zone of basin marshes include white waterlily (*Nymphaea odorata*), American lotus (*Nelumbo lutea*), and yellow pondlily (*Nuphar advena*); the emergent zone may have pickerelweed (*Pontederia cordata*), bulltongue arrowhead (*Sagittaria lancifolia*), southern cattail (*Typha domingensis*), sawgrass (*Cladium jamaicense*), and softstem bulrush (*Scirpus tabernaemontani*); the grassy zone is typically characterized by maidencane, smooth beggarticks (*Bidens laevis*), dotted smartweed (*Polygonum punctatum*), and sand cordgrass (*Spartina bakeri*), accompanied by a diverse mixture of less common forbs such as sweetscent (*Pluchea odorata*), spadeleaf (*Centella asiatica*), and lemon bacopa (*Bacopa caroliniana*). Coastalplain willow (*Salix caroliniana*), common buttonbush, elderberry (*Sambucus nigra* ssp. *canadensis*), and wax myrtle are common shrubby components. Occasional isolated areas of salt flat vegetation, including shoreline seapurslane (*Sesuvium portulacastrum*) and perennial glasswort (*Sarcocornia perennis*) occur in the marshes of the St. Johns River Basin. These salt pockets are presumably relict deposits from an earlier geologic episode when the area was an arm of the sea (FNAI 2010). Such salt marsh areas exist on the South Bank site.

Basin marshes are commonly associated with the shorelines of lakes, headwaters of creeks and rivers, basin swamps, and as large inclusions in broad, flat upland communities, such as flatwoods and hardwoods.

Rare and listed plants that can be found in basin marshes include Florida corkwood (*Leitneria floridana*), narrowleaf naiad (*Najas filifolia*), and Mexican tear-thumb (*Polygonum meisnerianum* var. *beyrichianum*) in northern Florida, plus piedmont jointgrass (*Coelorachis tuberculosa*) and piedmont water milfoil (*Myriophyllum laxum*) from the Panhandle to south-central Florida. Rare animal species found in basin marshes include American alligator (*Alligator mississippiensis*), snail kite (*Rostrhamus sociabilis plumbeus*), black rail (*Laterallus jamaicensis*), Florida sandhill crane (*Grus canadensis pratensis*), numerous species of wading birds, and round-tailed muskrat (*Neofiber alleni*) (FNAI 2010).

Marsh communities can be found at all three bank sites, however, at the West Bank they are only a minor component of the landscape. At the North Bank the basin marsh communities are dominated by sawgrass and exist within the large expanses of basin swamp. At the West Bank small pockets of depression marsh exist mostly in and around the mesic flatwoods. At the South Bank site most of the marsh communities surround Buck Lake and are dominated by sawgrass.

3.2.5 Wet Prairie (Shrub Wetlands)

Wet prairies are herbaceous wetland communities that are experience frequent to continuous saturated (wet) conditions. Wet prairies that have not been altered through human activities, with sufficient hydrology and a natural fire regime, and are among the most diverse plant communities in the world (Duever 1987). They tend to be found between low lying swamps and marshes and higher flatwoods and dry prairies. These systems are typically dominated by dense wiregrass in the drier portions, along with foxtail club-moss (*Lycopodiella alopecuroides*), cutover muhly, yellow butterwort (*Pinguicula lutea*), and savannah meadowbeauty (*Rhexia alifanus*). In the wetter portions, wiregrass may occur with, or be replaced by, species in the sedge family, such as plumed beaksedge (*Rhynchospora plumosa*), featherbristle beaksedge (*R. oligantha*), Baldwin's nutrush (*Scleria baldwinii*), or slenderfruit nutrush (*S. georgiana*), plus longleaved threeawn (*Aristida palustris*). Also common in wetter areas are carnivorous species, such as pitcher plants, sundews (*Drosera* spp.), butterworts (*Pinguicula* spp.), and bladderworts. Other characteristic species in this community include toothache grass, pineland rayless goldenrod (*Bigelowia nudata*), flattened pipewort (*Eriocaulon compressum*), water cowbane (*Oxypolis filifolia*), and coastalplain yellow-eyed grass. In the absence of frequent fire, wet prairies tend to become shrub wetlands, as species such as gallberry, wax myrtle, St. Johns wort, and titi encroach from surrounding communities (FNAI 2010).

Listed animal species that utilize on wet prairies for a portion of their life cycle include the Florida panther, Key deer (*Odocoileus virginianus clavium*), Lower Keys rabbit (*Sylvilagus palustris hefneri*), Silver rice rat, Audubon's crested caracara (*Polyborus plancus audubonii*), bald eagle (*Haliaeetus leucocephalus*), Cape Sable seaside sparrow, Everglade snail kite, Florida grasshopper sparrow (*Ammodramus savannarum floridanus*), wood stork, and eastern indigo snake (*Drymarchon couperi*) (USFWS 1999).

At the Farmton Mitigation Bank, wet prairie systems exist at the West and South Bank sites, however, they only represent a significant component of the landscape at the South Bank. Here the wet prairies are associated with marshes surrounding Buck Lake, and the higher hardwoods and flatwoods uplands. Likely due to fire suppression, these systems have become shrub wetlands, exhibiting a vegetative assemblage that includes St. Johns wort, pickerelweed, yellow-eyed grass, cordgrass, beakrush, spikerush, bog-buttons, and a variety of other sedges, grasses, and rushes (FMB MBI 2000).

3.2.6 Salt Marsh

At the South Bank site, there are several small salt marsh communities, combined totaling approximately 21 acres in size. These are rare inland salt marshes that are believed to occur due to saltwater upwelling through geological salt deposits. These communities exist within the basin marsh and wet prairie shrub areas of the site. Due to the high salt content in the water and soils in these areas, a unique inland assemblage of salt-tolerant vegetation has established, including saltwort (*Batis maritima*), seashore paspalum (*Paspalum vaginatum*), black rush (*Juncus roemerianus*), cordgrass (*Spartina maritima*), sea myrtle (*Baccharis halimifolia*), flat sedge (*Cyperus odoratus*), seashore dropseed (*Sporobolus virginicus*), glasswort (*Salicornia virginica*), bald rush (*Rhyncospora nitens*), marsh mallow (*Althaea officinalis*), saltmarsh false-foxglove (*Agilinis maritima*), water hyssop (*Bacopa monnieri*), and sea-purslane (*Sesuvium portulacastrum*) (FMB MBI 2000).

3.2.7 Marsh Lake

This community refers to the 216-acre northern portion of Buck Lake that exists within the boundaries of the South Bank site. This lake extends off-site to the adjacent Buck Lake Conservation Area, a 9638-acre conservation parcel owned and managed by the St. Johns River Water Management District. Within the South Bank boundaries, the lake is surrounded by an extensive basin marsh with pockets of wet prairie shrub.



Buck Lake Conservation Area (Source: SJRWMD)

3.2.8 Mesic Flatwoods

Mesic flatwoods are open-canopy forested systems that are dominated by pines, typically with a dense shrub and ground layer. The most common pine trees found in these systems are longleaf and slash. Over the past century slash pine has become the more common pine tree in Florida flatwoods due to extensive planting of the faster growing slash pines on plantations, following the logging of longleaf pines. Characteristic shrubs in mesic flatwoods include saw palmetto, gallberry, coastalplain staggerbush (*Lyonia fruticosa*), and fetterbush. Rhizomatous dwarf shrubs, usually less than two feet tall, are common and include dwarf live oak (*Quercus minima*), runner oak (*Q. elliottii*), shiny blueberry (*Vaccinium myrsinites*), Darrow's blueberry (*V. darrowii*), and dwarf huckleberry (*Gaylussacia dumosa*). The herbaceous layer is predominantly grasses, including wiregrass, dropseeds (*Sporobolus curtissii, S. floridanus*), panicgrasses (*Dichanthelium* spp.), and broomsedges (*Andropogon* spp.), plus a large number of forbs (FNAI 2010).

Peninsular mesic flatwoods support a large variety of rare plants, including Canby's wild indigo (*Baptisia calycosa* var. *calycosa*), beautiful pawpaw (*Deeringothamnus pulchellus*), Rugel's pawpaw (*Deeringothamnus rugelii*), and variable-leaf crownbeard (*Verbesina heterophylla*). Found throughout Florida are pine-woods bluestem (*Andropogon arctatus*), many-flowered grass-pink (*Calopogon multiflorus*), and Florida beargrass (*Nolina atopocarpa*). In addition, rare and listed animals that utilize mesic flatwoods include the frosted flatwoods salamander, reticulated flatwoods salamander, eastern diamondback rattlesnake (*Crotalus adamanteus*), timber rattlesnake (*Crotalus horridus*), Bachman's sparrow (*Aimophila aestivalis*), red-cockaded woodpecker, Sherman's fox squirrel (*Sciurus niger shermani*), Big Cypress fox squirrel, and Florida black bear. Among rare invertebrates, three rare butterflies are found in mesic flatwoods, the Arogos skipper (*Atrytone arogos arogos*), the Loammi skipper (*Atrytonopsis loammi*), and the dusky roadside skipper (*Amblyscirtes alternata*) (FNAI 2010).

At the mitigation bank and larger Miami Corp. tract for the past 50 years, most of the mesic flatwoods have been in slash pine timber production. These pine production areas exhibit a dense slash pine canopy with an understory of saw palmetto, gallberry, wiregrass, wax myrtle shiny blueberry, dwarf huckleberry, and other typical flatwoods species. At the time of original permitting, approximately 4,000 acres of flatwoods within the North Bank site, 1,300 acres at the West Bank site and 1,700 acres at the South Bank site were in pine production. At all three bank sites the pine production areas are generally adjacent to basin swamp and other wetland and upland hardwood areas (FMB MBI 2000).

3.2.9 Mesic Hammock

Mesic hammocks are typically closed canopy forested systems that are rarely inundated. The canopy is usually dominated by live oak, with a subcanopy consisting of cabbage palm, southern magnolia (*Magnolia grandiflora*), and pignut hickory (*Carya glabra*). Other components of the canopy and subcanopy may include water oak, laurel oak (*Quercus hemisphaerica*), sweetgum, sugarberry, slash pine, and loblolly pine. The understory in these systems tends to be shrubby, and comprised of saw palmetto, American beautyberry (*Callicarpa americana*), American holly (*Ilex opaca*), gallberry, sparkleberry (*Vaccinium arboreum*), hog plum (*Ximenia americana*), common persimmon (*Diospyros virginiana*), highbush blueberry, Carolina laurelcherry (*Prunus caroliniana*), yaupon (*Ilex vomitoria*), wild olive (*Osmanthus americanus*), and/or wax myrtle. In the central and southern peninsula, abundant epiphytes on live oaks and cabbage palms are a characteristic feature of mesic hammocks. In addition to Spanish moss (*Tillandsia usneoides*) and other air-plants (*Tillandsia* spp.), epiphytic ferns such as resurrection fern (*Pleopeltis polypodioides* var. *michauxiana*), golden polypody (*Phlebodium aureum*), and shoestring fern (*Vittaria lineata*) are common in undisturbed stands. The most northern ranging epiphytic orchids in Florida, green fly orchid (*Epidendrum conopseum*) and Florida butterfly orchid (*Encyclia tampensis*), occur in mesic hammock. Vines are common and often abundant, occasionally creating a solid groundcover in disturbed hammocks. Species include muscadine (*Vitis rotundifolia*), sarsaparilla vine (*Smilax pumila*), greenbriers (*Smilax* spp.), yellow jessamine (*Gelsemium sempervirens*), eastern poison ivy (*Toxicodendron radicans*), crossvine (*Bignonia capreolata*) and Virginia creeper (*Parthenocissus quinquefolia*) (FNAI 2010).

Rare and listed animal species that utilize mesic hammocks include the eastern indigo snake, Cooper's hawk (*Accipiter cooperii*), short-tailed hawk (*Buteo brachyurus*), Florida crested caracara (*Caracara cheriway*), swallow-tailed kite, Rafinesque's big-eared bat, Florida panther (*Puma concolor coryi*), southeastern weasel, Florida long-tailed weasel, southeastern bat, fox squirrel, and Florida black bear (FNAI 2010).

At the mitigation bank mesic hammocks represent only a small component of the ecological landscape, covering only 37 and 15 acres and the North and South Bank sites, respectively. At the West Bank site this community is represented by 390 acres of oak uplands that have for the most part been converted to pine production (FMB MBI 2000).

3.2.10 Sandhill

A sand hill community is characterized by widely spaced pine trees (usually longleaf pine) with an understory, or shrub stratum, comprised of xeric oak trees, such as turkey oak (*Quercus laevis*), bluejack oak (*Q. incana*), sand live oak (*Q. geminata*) and sand post oak (*Q. margaretta*). Groundcover in sand hill communities is typically comprised of wiregrass, pineywoods dropseed (*Sporobolus junceus*), lopsided indiangrass (*Sorghastrum secundum*), and bluestem (FNAI 2010).

At the Farmton Mitigation Bank, this xeric pine - oak community only exists at the North Bank site, where it is represented by a 27-acre area that has been cleared and converted to pine production (FMB MBI 2000).

3.2.11 Upland Hardwood Forest

Upland hardwood forest communities typically contain a closed canopy comprised of deciduous and evergreen trees, with a well developed mid-story and, due to shading, relatively sparse groundcover. Common canopy components include southern magnolia, pignut hickory, sweetgum, Florida maple (*Acer saccharum* ssp. *floridanum*), live oak, laurel oak, swamp chestnut oak, southern hackberry (*Celtis occidentalis*), white ash (*Fraxinus americana*), and loblolly pine. The midstory, in addition to young canopy species, contains American holly, red bay (*Persea borbonia*), American hornbeam, gum bully (*Sideroxylon lanuginosum*), devil's walkingstick (*Aralia spinosa*), eastern hophornbeam (*Ostrya virginiana*), flowering dogwood (*Cornus florida*), eastern redbud (*Cercis canadensis*), horse sugar (*Symplocos tinctoria*), American strawberrybush (*Euonymus americanus*), silverbells (*Halesia* spp.), winged elm (*Ulmus alata*), black cherry (*Prunus serotina*), basswood (*Tilia americana*) (FNAI 2010).

This community is a minor component of the North Bank site, and is primarily present at the West Bank site, where it covers approximately 241 acres. At the West Bank site, these oak uplands areas have been cleared and planted in pine. Natural regeneration of oaks is evident in this community (FMB MBI 2000).

3.3 General Hydrology and Hydrological Connections

The parcels of the Farmton Mitigation Bank and the larger Miami Corporation tract share extensive hydrological connections that are of regional importance. Together these lands comprise major portions of the Halifax River (including Spruce Creek), and St. Johns River (Canaveral Marshes to Wekiva) watersheds (Figure 4).

The eastern portion of the Northern Bank site contains the **9000-acre Crane Swamp**, which is the largest remaining freshwater swamp in east-central Florida. The northern part of Crane Swamp flows westward through culverts and low water crossings, across an existing logging road, to Spruce Creek Swamp. The southern portion of Crane Swamp drains to the south, toward Maytown Road, then across the Miami Corp. tract, west and south, and ultimately to the St. Johns River. Spruce Creek Swamp occupies the western portion of the North Bank site, drains off-site to the north, and comprises a vital part of the headwaters of Spruce Creek. The southwestern portion of the North Bank site (within the St. Johns River watershed) drains southwest, across the Miami Corporation tract, to Cow Creek, and then to the St. Johns River.

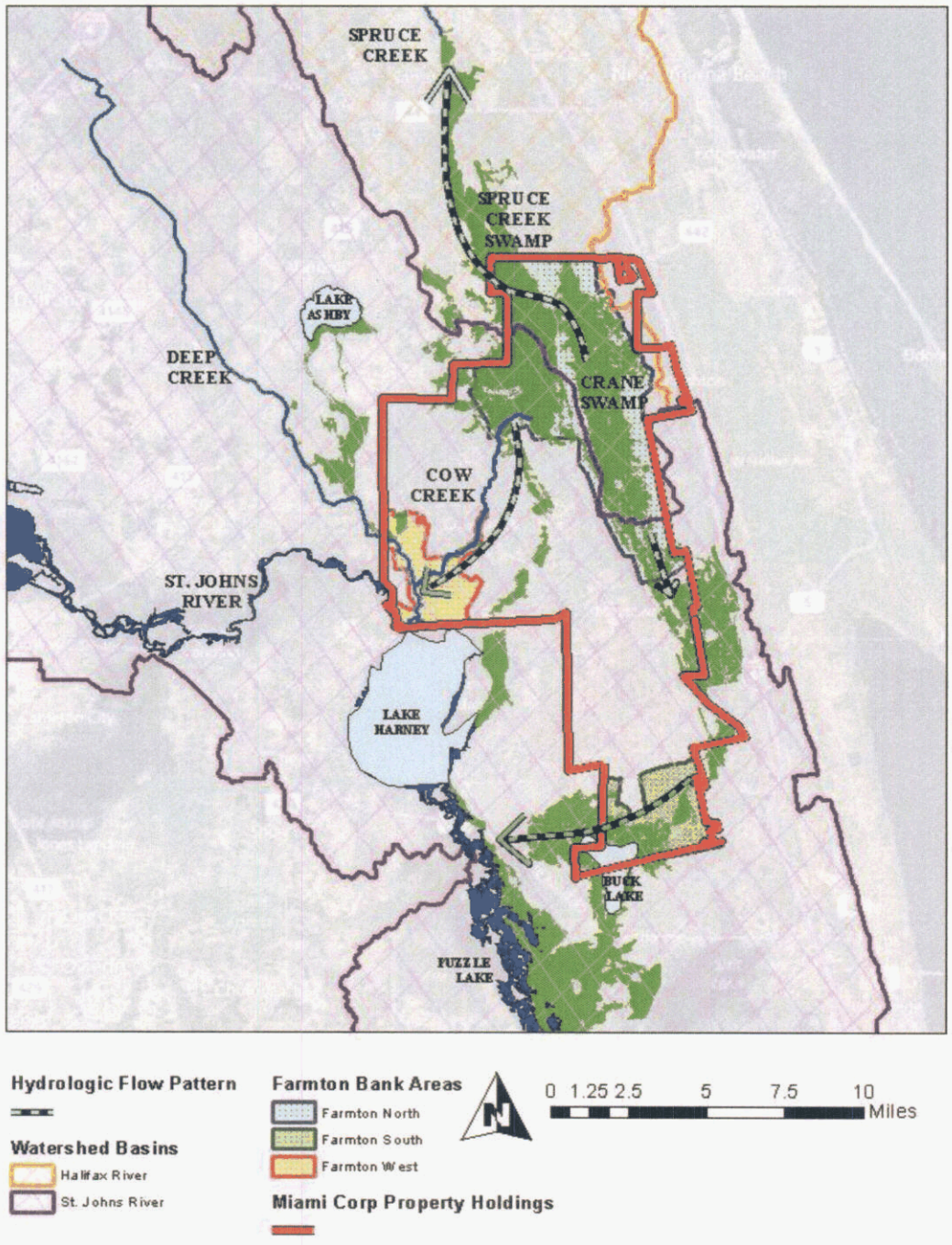
The swamps and marshes of the West Bank site drain southward, to Deep Creek and Cow Creek, and ultimately to the St. Johns River. The hydrology of the West Bank is also closely associated with Lake Harney, which lies just south of the Bank site, less than one mile upstream of the Deep Creek and St. Johns River confluence. Due to the flat topography of the bank lands and surrounding landscape, the direction of drainage often depends on rainfall. **This makes the critical sheet flows sustaining the natural systems particularly susceptible to impoundment by roads or channelization by culverts.**

As previously described, the South Bank contains a large portion of Buck Lake, and is hydrologically and physically contiguous with the Buck Lake Conservation Area. Drainage across the swamps, prairies, and marshes of the South Bank is north to southwest, into Buck Lake. From Buck Lake, drainage continues to the west, through a chain of small marsh lakes, to Puzzle Lake, and the St. Johns River.

The ecological importance of large tracts of natural lands such as the Farmton Mitigation Bank and greater Miami Corporation tract, in terms of preserving and restoring natural drainage patterns and protecting and improving water quality within the regional watersheds, cannot be understated. Only through the preservation and management of such large and contiguous tracts can significant protections and improvements to the regional watersheds be effectively realized. Since the Farmton Mitigation Bank and Miami Corporation tract lands are hydrologically interconnected and contain critical headwater

portions of two major, healthy central Florida watersheds, Halifax River and St. Johns River (Canaveral Marshes to Wekiva), preservation and ecological management of these lands is of great importance to the central Florida eco-region. A loss of natural sheet flows, and the resulting changes in hydroperiods and reduction in detrital transport to receiving waters, compounded by a degradation of water quality due to urbanization, including the installation of numerous wastewater utilities, in close proximity to critical wetlands, will result in degradation of the integrity, quality, and health of the surrounding Halifax River and St. Johns River watersheds.

Figure 4. Hydrologic Connections



3.4 Regional and Statewide Ecological Significance

The regional significance of the Farmton Mitigation Bank and Miami Corporation tracts, with respect to hydrology, has been discussed in the previous section. In addition to the regional hydrologic benefits, preservation and ecological management of large natural areas, such as the Farmton Mitigation Bank, provides benefits to regional wildlife habitat, especially for species with large habitat ranges, such as the Florida black bear. As illustrated in Figure 5, the mitigation bank lands and the greater Miami Corporation tract occupy a portion of the FDEP highest priority/critical linkages Greenways corridor that extends from the Kissimmee River and Upper St. Johns River basins, along the east coast of central Florida, through the Ocala National Forest, then northwest to the Osceola National Forest, and across the panhandle to terminate near the Apalachicola National Forest in Alabama. The mitigation bank and Miami Corporation tract lands occupy almost the entire width of the Priority 1/Critical Linkages Greenways corridor for a significant portion of the east-central Florida eco-region. Any significant degradation of habitat or intensified land use within this critical link of the Priority 1 Greenways corridor will reduce its value and functions for target wildlife species. Further the mitigation bank sites and Miami Corporation tract include the southernmost limits of the defined range for Florida black bears. That range extends from the bank lands north and west, through the Ocala and Osceola National Forests, to the Okefenokee Wildlife Refuge in southern Georgia (Figure 6).

According to 2009 GIS data provided by the Florida Fish and Wildlife Conservation Commission (FFWCC), there are approximately two dozen eagle nests on or in close proximity to the mitigation bank. The extensive basin marshes and lakes, especially in the western and southern portions of the bank lands, along with suitable nest trees in adjacent forests, provide suitable habitat for this recovering species.

The mitigation bank lands and larger tract have also been identified by the FFWCC as Priority 2 Strategic Habitat Conservation Areas (SHCA). The significance of this designation is that it identifies these parcels as important private lands for the statewide effort to preserve the minimum acreage necessary to ensure long-term survival of Florida's biological diversity (Endries et al. 2009)

The State and / or Federally listed species either identified or with the potential to occur on the mitigation bank sites include: gopher frog (*Rana capito*), American alligator, eastern indigo snake, gopher tortoise (*Gopherus polyphemus*), Florida pine snake (*Pituophis melanoleucus mugitus*), roseate spoonbill (*Platalea ajaja*), Florida scrub jay (*Aphelocoma coerulescens*), limpkin (*Aramus guarauna*), Kirtland's warbler (*Dendroica kirtlandii*), little blue heron (*Egretta caerulea*), snowy egret (*E. thula*), tricolored heron (*E. tricolor*), white ibis (*Eudocimus albus*), arctic peregrine falcon (*Falco peregrinus tundrius*), southeastern American kestrel (*Falco*

Figure 5. Florida Ecological Greenway - Critical Linkage

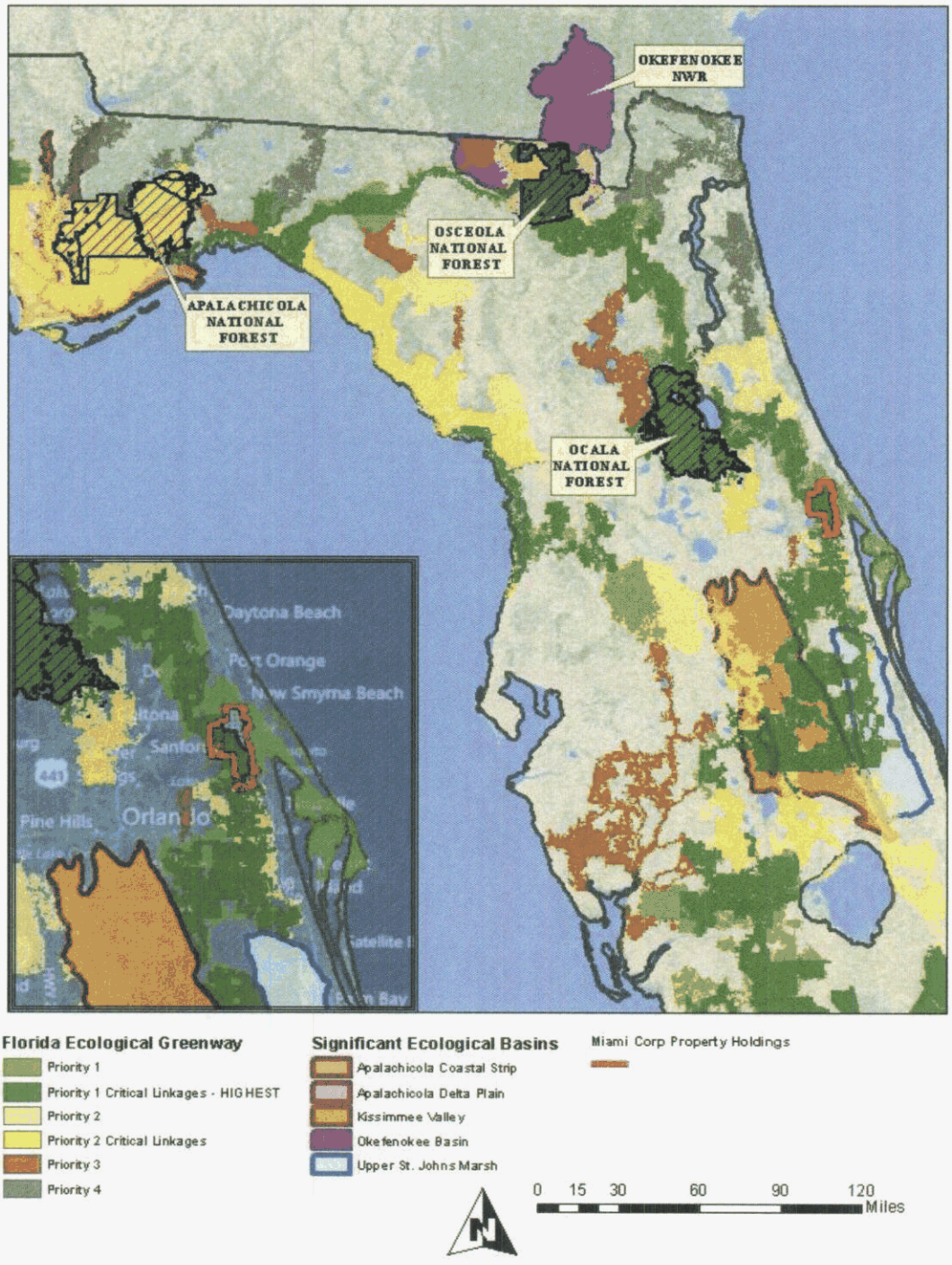


Figure 6. Florida Black Bear Range



sparverius), Florida sandhill crane, bald eagle, wood stork, red-cockaded woodpecker, Audubon's crested caracara, Florida burrowing owl (*Athene cunicularia floridana*), least tern (*Sternula antillarum*) , Bachman's warbler (*Vermivora bachmanii*), Florida mouse (*Podomys floridanus*), Sherman's fox squirrel, Florida manatee (*Trichechus manatus latirostris*), and Florida black bear (FMB MBI, 2000). The richness and diversity of this group of protected species further illustrates the regional ecological significance of the mitigation bank lands.

As mentioned earlier, and shown in Figure 2, **the mitigation bank is strategically located adjacent to or in close proximity to numerous publically and privately managed conservation lands, greatly expanding its ecological benefits throughout the region.** The total number of conservation parcels is extensive, and a few of the more significant parcels are summarized below.

Wiregrass Prairie Preserve: This 1,400-acre conservation parcel is located less than one mile west of the North Bank. It was acquired in 2002 through a joint acquisition by the SJRWMD and Volusia County, using Florida Forever funds. The conservation area is comprised of a mosaic of upland and wetland communities, including mesic and wet flatwoods, cypress domes, strand swamps, and wet prairies.

Deep Creek Preserve: This 4,800-acre parcel is located approximately five miles west of the North Bank. It was recently acquired by Volusia County using Florida Forever funds. The conservation lands are comprised of cypress swamp, flatwoods, and prairie shrub.

Palm Bluff Conservation Area: This 3,321-acre parcel lies less than five miles west of the North Bank. It was acquired in 2009 by the SJRWMD using a combination of funding sources. The conservation area features a mosaic of basin and depression marsh, basin, dome, and floodplain swamp, and wet and mesic flatwoods.

Turnbull Hammock Conservation Area: This 1,184-acre conservation parcel is located approximately two miles east of the North Bank. The lands comprising the conservation area were acquired between 1980 and 1994, by the SJRWMD through a combination of federal and local funding sources. Its communities include floodplain and strand swamp, hydric hammock, and upland mixed forest. This parcel represents an important part of the Indian River Lagoon Blueway project, and strategically supports the critical Greenway/Blueway link near the Farmton Mitigation Bank lands.

Doris Leeper Spruce Creek Preserve: This 2489-acre preservation area is located along Spruce Creek, near its confluence with the Halifax River. It was acquired with a variety of state and local funds, and is managed by Volusia County. The preserve protects the creek's vital riparian habitat near its mouth, where freshwater wetlands give way to brackish, estuarine systems, such as tidal marshes and mangrove swamp.

Canaveral National Seashore: The national park is almost 60,000 acres in total size, and lies approximately five miles east of the North Bank. The ecological and cultural significance of these federal conservation lands is well documented numerous other reports and publications. Its prominent ecosystems include beach, coastal dune, high marsh, mangrove, coastal hammock, flatwoods, oak scrub, and saltwater estuary.

Merritt Island National Wildlife Refuge: As with the Canaveral National Seashore, the ecological benefits of the 140,000-acre wildlife refuge, established in 1963, is well documented. The refuge lands, which also include the Kennedy Space Center, are situated approximately six miles east of the North and South Bank sites. Its wide variety of habitats includes coastal dunes, saltwater estuary, salt marshes, scrub, flatwoods, and hardwood hammock. The refuge has been documented to support over 1,500 species of plants and animals.

Scottsmoor Flatwoods Sanctuary: This 1,522-acre conservation area lies approximately two miles northeast of the South Bank site. It is managed by Brevard County and features a mosaic of hardwood swamp, flatwoods, and prairies.

Buck Lake Conservation Area: This 9,638-acre conservation area is contiguous with the South Bank site, which also features the northern portion of Buck Lake. The conservation lands are owned and managed by the SJRWMD, and the natural communities include marsh lake, basin swamp, depression marsh, wet prairie and flatwoods.

Little Big Econ State Forest: This 10,000-acre state forest is located less than three miles west of the South Bank site. It is managed by the Florida Forest Service in cooperation with the FFWCC as a wildlife management area. In addition to riparian habitat for the Econlockhatchee River, its natural communities include cypress and hardwood swamp, wet prairie, and shrub.

Seminole Ranch Conservation Area: This 29,145-acre SJRWMD-owned and managed conservation area lies approximately one mile south of the South Bank site, and is contiguous with the Buck Lake Conservation area, Little Big Econ Conservation Area, Salt Lake Wildlife Management Area, Charles H. Bronson State Forest, Tosohatchee Wildlife Management Area, and numerous other public and private conservation lands. This vitally important conservation parcel contains a large extent of the St. Johns River and its floodplain marsh, several lakes, and a diverse mosaic of swamps, marshes, and prairies.

Salt Lake Wildlife Management Area: Located approximately four miles south of the South Bank site, and directly east of the Seminole Ranch Conservation Area, this 7,805-acre conservation parcel is jointly owned by the SJRWMD and the FDEP. Its range of natural communities includes marshes, oak scrub, flatwoods, and oak hammocks.

As the information presented illustrates, the Farmton Mitigation Bank lands clearly are key pieces of the puzzle that supports the continuing efforts by Floridians to preserve and restore the incredibly diverse and unique natural landscape of east-central Florida, with a strong statewide and national significance.



Salt Lake Wildlife Management Area (Source: SJRWMD)

4.0 Permitting History

4.1 State Environmental Resource Permits

On January 13, 1999, Miami Corporation submitted a Joint Application for Environmental Resource Permit (ERP) application to the SJRWMD, for the establishment and operation of a mitigation bank called Farmton Mitigation Bank. The ERP program was established to streamline the state and federal application processes, so this ERP application was forwarded the USACE for concurrent review.

On February 10, 1999, SJRWMD staff sent a request for additional information (RAI) to the applicant's agent, which at the time was Environmental Management Systems, Inc (EMS). The RAI identified 19 technical deficiency items that were requested to allow SJRWMD staff to make a recommendation for action on the application.

On July 15, 1999, EMS submitted a response to the SJRWMD's February 10, 1999, RAI. The response was fairly extensive and intended to address all of the technical deficiency items of the RAI.

After initially filing a notice of intended action to issue the mitigation bank permit, the SJRWMD removed the application from consideration at the November 1999 Governing Board Meeting, citing unresolved issues pertaining to state-owned sovereign submerged lands, land titles, financial responsibility, and watersheds.

To allow time for resolution of the outstanding issues, on January 10, 2000, EMS, on behalf of the applicant, waived their Chapter 120, Florida Statutes time frames. This provided the SJRWMD staff with additional time to proceed to final action on the application at the April 11, 2000, meeting of the Governing Board. The ERP (4-127-76185-1) for the Farmton Mitigation Bank was issued on April 11, 2000.

On January 4, 2006, Miami Corp. submitted an application (4-127-76185-2) to remove a road corridor from the South Bank site, for the construction of an access roadway between future mitigation bank phases S2 and S3. However, on February 22, 2006, the permittee's agent, EMS, withdrew the application.

On October 10, 2006, the permittee submitted an application to the SJRWMD to modify the permit (4-127-76185-3) to place a conservation easement over lands currently encumbered by mineral rights. However, on November 27, 2006, the permittee promptly withdrew the application.

Miami Corporation submitted an application (4-127-76185-4) to the SJRWMD on February 9, 2010, for the removal 1,116 acres from the North Bank site; adjustment of an existing 200 foot-wide road corridor through the North Bank site; removal of two areas from the West Bank site for the construction of a radio tower and a canoe launch on Deep Creek; and the addition of an outparcel to the South Bank site. During subsequent review, all but the 1,116-acre removal area from the North Bank site were dropped by the permittee from the application. On September 29, 2011, the SJRWMD issued the ERP to authorize removal of the requested 1,116 acres from the North Bank site. This modification to the mitigation bank will be described in greater detail in Section 9.0 of this report.

4.2 Federal Mitigation Banking Instrument

In accordance with the Joint ERP Application procedure, the SJRWMD forwarded Miami Corporation's ERP application to establish and use the Farmton Mitigation Bank to the USACE Palatka Regulatory Office for review on January 14, 1999. In accordance with the *Federal Guidance for the Establishment, Use, and Operation of Mitigation Banks* (eff. November 28, 1995), the application was reviewed by the Federal Mitigation Banking Review Team (MBRT), which is comprised of key staff from the USACE, EPA, U. S. Fish and Wildlife Service (USFWS), and the SJRWMD. During this review, the originally proposed Mitigation Banking Instrument (MBI) under application SAJ-1998-01836 was revised by the applicant on June 24, 1999, and on December 29, 1999. A third revision was approved by the USACE on June 7, 2000. This approved MBI currently governs the Farmton Mitigation Bank's implementation.

When Miami Corporation submitted the application 4-125-76185-4, for a modification to remove a portion of the North Bank site to the SJRWMD on February 9, 2010, under the Joint ERP Application procedure, the SJRWMD forwarded a copy of the application to the USACE. The application for modification was processed under IP-ME 199801836.

On May 26, 2011, the USACE forwarded the Interagency Review Team's (IRT, which has replaced the MBRT under the 2008 Federal Guidance) request for additional information to the applicant. A response to these comments was provided by the applicant's agent on June 9, 2011. As of the date of this report, the USACE has not taken action on the response or the application.

Note that to the author's knowledge, the IRT was not informed by the banker of several key issues that directly affect the federal review of this application. These issues include:

- Banker's creation of Farmton Water Resources, LLC, in 2004, to develop future water supply for areas including the bank lands;
- Banker's establishment of the TIFA, LLC, in 2010, to sell water to the City of Titusville;

- Details of the Consumptive Use Permits (CUP) #99052-5, in Volusia County, and #127579-1, in Brevard County, which may affect surface and groundwater levels on bank lands;
- Banker's application of for a Wastewater Utility in Brevard County, which includes mitigation bank lands.

5.0 Mitigation Bank Plan

This chapter describes the overall mitigation bank plan for the Farmton Mitigation Bank, as approved by the state's ERP 4-127-76185-1, and the federal MBI SAJ-1998-01836. Although these are two separate authorizing documents, the bank operates under a single Mitigation Bank Plan, which describes the implementation and management activities authorized for the mitigation bank.

5.1 Mitigation Activities

The mitigation bank plan is comprised of four major components: hydrologic enhancement, wildlife management, forestry stewardship, and preservation.

5.1.1 Hydrologic Enhancement

A primary goal of the mitigation plan, as clearly stated and described in the federal MBI, is to re-establish the hydrologic balance of the three hydrologically interconnected bank sites. Based on the results of three years of hydrologic data (1997-2000) and direct site observations, it was determined that the logging road B-8 at the North Bank site impeded a significant amount of drainage west, from Crane Swamp to Spruce Creek Swamp. To eliminate this surface flow obstruction, and restore drainage more similar to historical conditions, numerous culverts and low water crossings were installed along the road. The mitigation plan also includes a provision for the installation of additional culverts and low water crossings if post construction hydrologic monitoring data indicates that the surface water elevations east and west of logging road B-8 diverge by more than one inch.

At the West Bank site, the remains of bridge B-9, over Deep Creek, and accumulated debris within the creek, were proposed to be removed, restoring historical flows. In addition, the bridge on road B-91 over Cow Creek was proposed to be lengthened to match the actual channel width, restoring historical flows to the southwest wetlands. Further, the plan calls for installation of several additional culverts under roads B-1W and B-12 in an attempt to restore historical flows throughout the West Bank site.

At the South Bank site, the mitigation plan calls for five additional culverts under road B-10, near existing culverts that were found to provide inadequate drainage for the major slough system. Installation of these additional culverts was expected to restore near-historical flows throughout the communities surrounding Buck Lake.

5.1.2 Wildlife Management

For decades prior to implementation of the mitigation bank, FFWCC leased the Miami Corporation tract to as many as 2,500 hunters. The mitigation bank plan features a wildlife

management plan for the entire Miami Corporation tract, including the mitigation bank lands, that reduces the total number of hunters on the site to approximately 500. The wildlife management plan is implemented by the FFWCC, which is responsible for record keeping and enforcement. In addition, the overall plan calls for the removal of cattle from any activated phase within five years of activation. Where possible, cattle are to be removed immediately upon or prior to activation.

5.1.3 Forestry Stewardship

Enhancement of the over 20,000 acres of forested wetlands and uplands on the mitigation bank is governed by the ERP and MBI's Forestry Stewardship Plan, which identifies 6 primary goals:

- Preservation of existing wetlands and regeneration of harvested wetlands
- Increase in the availability of habitats providing wildlife food sources
- Protection of wetlands through an average 300-foot upland buffer
- Improved habitat value through the increase in tree age and species diversity
- Regeneration of upland and wetland hardwood areas
- Limit clear cutting activities to the Designated Forestry Areas (DFAs)

The Forestry Stewardship Plan identifies the planted pine flatwoods as DFAs, and states that these DFAs are outside the boundaries of the mitigation bank for the federal MBI, but within the mitigation bank boundaries for the state ERP. According to the Forestry Stewardship Plan, timber harvesting through clear cutting of large tracts (approximately 150 acres) will continue after implementation of the Mitigation Bank Plan. These DFAs are surrounded by 300-foot average buffers with adjacent wetlands, in which pine areas are managed for uneven (more natural) tree age distribution. In addition, the pine flatwoods outside the DFAs will be subjected to a prescribed burn program, calling for burns on a 2 to 5 year rotation.

It should be noted that the provision for continued pine production, especially through clear cutting, in active mitigation bank areas is unusual. Most mitigation banks in Florida with pine plantation areas will thin existing stands under the mitigation bank plan and then manage the community for natural regeneration and succession. Although on some mitigation banks, selective timber harvesting using best management practices is allowed (example: Colbert Cameron Mitigation Bank), a review of the mitigation banks permitted throughout Florida found no other mitigation bank where timber production through clear cutting was an ongoing component of the active mitigation bank plan.

In hardwood wetlands and uplands, where clearing and planting of pines has occurred, under the Forestry Stewardship Plan the pines are to be selectively harvested and the hardwoods are preserved to promote regeneration to the historical hardwood communities.

Within cypress wetlands the plan calls for all tree-harvesting to cease.

5.1.4 Preservation

At the time of MBI and ERP issuance, the banker committed to the preservation, through vacating existing plats and recording conservation easements, for phase 1 in each bank location: North Bank Phase N1 (508.04 acres), West Bank Phase W1 (380.29 acres) and South Bank Phase S1 (286.34 acres). In addition, the approximate future boundaries of phases 2 and 3 in each bank location were indicated.

Under the MBI and the ERP, the banker proposed to activate future phases on an as-needed basis. Such activation was to consist of submittal of a GIS map with the proposed phase boundaries, a mitigation credit calculation based on the acreages of the various assessment areas within the proposed phase boundaries, and draft conservation easement covering the proposed phase. Each phase after the initial three phases (N1, W1, and S1) was proposed to be contiguous with a previously activated phase, and approximately 500 acres in size.

As of the date of this report, the following phases have been activated and preserved by conservation easement on the Farmton Mitigation Bank:

Table 4.1.4-1: Activated Phases at Farmton Mitigation Bank

Phase	Active Acreage	Date of Activation*
North Bank Site	**6352.25**	
N1	508.04	March 21, 2002
N2	465.97	December 10, 2003
N3	474.91	April 15, 2004
N4	482.78	November 24, 2004
N5	1796.86	April 1, 2005
N6	938.50	November 9, 2005
N7	511.40	August 30, 2007
N8	528.86	August 31, 2007
N9	644.93	February 2, 2009
West Bank Site	**380.29**	
W1	380.29	May 5, 2001
South Bank Site	**871.83**	
S1	286.34	May 2, 2001
S2	585.49	September 29, 2011
S3**	3412.74**	**
All Farmton Mitigation Bank	**7604.37**	*(excluding S3)*

*Activation date is based on SJRMWD initial credit release for each phase.

**Phase S3 is not yet activated, however, a survey sketch and legal description was submitted to the SJRWMD.

The mitigation bank plan includes the assertion by Miami Corporation that, if market demand for credits is inadequate for any reason, it reserves the right to remove unused portions from the bank (i.e.: portions not covered by conservation easements).

It is important to note that in comparison to other mitigation banks permitted throughout Florida, the fact that the future phases at the Farmton Mitigation Bank did not require delineation or defined phase boundaries at the time of activation, is unconventional. A review of more than thirty permitted mitigation banks throughout Florida found no similar provision at these banks.

5.2 Management

The mitigation bank's management plan calls for the following ongoing activities:

- Controlled burns of non-DFA flatwoods communities
- Under brushing, thinning, and other methods to reduce undesirable species
- Administration of Wildlife Management Plan
- Fence, gate, road, culvert and low water crossing maintenance
- Forestry management of the DFAs for timber production
- Site security to reduce impacts from trespassing

In addition the management plan, the mitigation plan also includes a monitoring program to measure success of the mitigation activities. A short term-monitoring program is to be implemented for the first five-years after activation of a phase. The short-term monitoring program involves submittal of annual monitoring reports that include the following information:

- Piezometer and staff gauge readings
- Rainfall data
- GIS maps showing all mitigation bank plan activities
- Hunting data under the Wildlife Management Plan
- Bi-annual aerial photographs
- Photos of on-site activities
- Limited vegetative data

Upon completion of the short-term program, monitoring is proposed to shift to a long-term program. Under this program, a monitoring report is to be submitted only once every five years. That monitoring report is required to contain maps of forestry activities and bedding removal and aerial photographs.

A noteworthy divergence from common conditions for mitigation banks is the five-year interval for the submittal of long-term monitoring data. The review of other mitigation banks permitted throughout Florida found that reporting for short and long-term (perpetual) monitoring is typically required on an annual basis.

6.0 Mitigation Credit Determinations

This chapter describes the assessment methods used by the state and federal review teams to determine the mitigation credit allocation for the mitigation bank under the ERP and the MBI.

6.1 Determination of State Mitigation Credits

The number of mitigation credits that were allocated to the Farmton Mitigation Bank under the state ERP was determined using the mitigation assessment method and ratio guidelines described under Section 12.3 of the *Applicant's Handbook: Management and Storage of Surface Waters (MSSW)*. For the assessment, ten different mitigation categories were established. Each category was based the community type, current conditions, and the types of mitigation activities proposed under the mitigation bank plan. Based on these characteristics, a mitigation ratio (acres of mitigation per acre of impact offset) was established for each mitigation category. The lower the ratio, the fewer mitigation bank acres are needed to offset one acre of offsite wetland loss. For example, an 8:1 ratio indicates that 8 acres of mitigation bank lands of the specified category should offset one acre of moderate quality offsite wetland loss. During the application review processes for wetland impact projects intending to mitigate at the bank, the mitigation ratio may be less than or greater than that depending upon on the quality, uniqueness, type and / or location of the proposed impact wetlands. The permitted mitigation categories, ratios, acres, and credits are summarized in the table below.

Table 6.1-1: State Mitigation Credit Allocation for Farmton Mitigation Bank

Mitigation Category	Ratio	North Bank Acres (Credits)	West Bank Acres (Credits)	South Bank Acres (Credits)	Total Bank Acres (Credits)
Hydrologically Enhanced Forested Wetlands	8:1	10709.12 (1338.6)	1441.23 (180.20)	1453.41 (181.70)	13603.76 (1700.5)
Hydrologically Enhanced Non-Forested Wetlands	13:1	1261.92 (97.1)	68.37 (5.3)	619.78 (47.7)	1950.07 (150.0)
Restored Forested Wetlands	1:1	875.98 (876.0)	174.34 (174.3)	99.53 (99.5)	1149.85 (1149.8)
Enhanced Cypress Wetland	10:1	258.28 (25.8)	46.08 (4.6)	47.54 (4.8)	351.90 (35.2)
Enhanced Hardwood Wetland	9:1	54.22 (6.0)	82.92 (9.2)	246.91 (27.4)	384.05 (42.6)
Preserved Inland Salt Marsh	14:1	-	-	20.20 (1.4)	20.20 (1.4)
Enhanced Hardwood Upland	2.67:1	72.93 (27.3)	630.13 (236.0)	14.56 (5.5)	717.62 (268.8)
Enhanced Pine Flatwoods (Former Pine Plantation)	3:1	1784.87 ((595.0)	292.16 (97.4)	413.09 (137.7)	2490.12 (830.1)
Designated Forestry Areas (Slash Pine Production)	8:1	1271.75 (159.0)	845.47 (105.7)	1136.97 (142.1)	3254.19 (406.8)
Totals		**16,289.07 (3124.8)**	**3580.70 (812.7)**	**4051.99 (647.8)**	**23,921.76 (4585.2)**

Source: ERP 4-127-76185-1

6.2 Determination of Federal Mitigation Credits

The credits allocated to Farmton Mitigation Bank under the federal MBI were determined using the Wetlands Rapid Assessment Method (WRAP). Using this methodology which is similar to the state method applied at this bank (ratio based), eight mitigation categories were established based upon community type, habitat conditions, and proposed mitigation activities. Instead of using a ratio, under WRAP, a mitigation delta was generated. Based on a variety of ecological metrics, comparing WRAP functional scores, this delta represents the per acre ecological lift of the various mitigation categories. Under this method, the higher the delta, the less mitigation acreage is needed to offset one acre of offsite wetland loss. For example, a mitigation delta of 0.50 indicates that one acre of mitigation bank lands offsets ½ acre of offsite wetland losses, thus two acres of mitigation bank lands of the specified category would be needed to offset one acre of offsite wetland loss. However, as with the state application review process, the USACE may adjust the mitigation delta for a proposed wetland impact based on the quality, type and / or location of the impact wetlands. Another distinction from the state ERP review process, which includes uplands in the functional assessment, is that under the federal review process functional assessment is only applied to wetlands (Federal Register 1995, 2008). The value of supporting uplands and upland buffers is indirectly reflected in the wetland scoring as they are assessed for location and landscape parameters. The permitted outcome of the federal functional analysis for this bank is summarized below.

Table 6.2-1: Federal Mitigation Credit Allocation for Farmton Mitigation Bank

Mitigation Category	North Bank Delta	North Bank Acres (Credits)	West Bank Delta	West Bank Acres (Credits)	South Bank Delta	South Bank Acres (Credits)
W-1: Harvested Wetland Hydrologic Enhancement	0.47	505.69 (237.67)	0.47	255.67 (120.16)	0.49	220.86 (108.22)
W-2: Wetland Hydrologic Enhancement	0.30	11,465.35 (3,439.91)	0.24	1,268.29 (304.39)	0.27.	2,191.18 (591.62)
W-3: Wetland Restoration	0.44	875.98 (385.43)	0.44	174.34 (76.71)	0.44	99.53 (43.79)
W-4: Harvested Cypress Wetland Enhancement	0.61	48.18 (29.39)	0.3	11.65 (3.49)	0.30	25.35 (7.61)
W-5: Cypress Wetland Enhancement	0.53	210.10 (111.35)	0.42	34.43 (14.46)	0.42	22.19 (9.32)
W-6: Harvested Hardwood Wetland Enhancement	0.61	10.18 (6.21)	-	-	0.30	1.23 (0.40)
W-7: Hardwood Wetland Enhancement	0.53	44.04 (23.34)	0.42	82.92 (34.83)	0.42	245.68 (103.19)
W-8: Rare Inland Salt Marshes Preservation	-	-	-	-	0.27	20.20 (5.45)
Totals		**12,159.52 (4,233.0)**		**1,827.30 (554.04)**		**2,826.22 (869.60)**

Source: MBI SAJ-1998-01836

7.0 Mitigation Credit Ledgers

When a mitigation bank is established, the mitigation credit balances for the state ERP and the federal MBI are tracked on separate credit ledgers. A mitigation bank credit ledger tracks all credit releases (credits available to be withdrawn to offset impacts), debits (credit withdrawals for wetland impacts), and cancellations (previously debited credits that were not used and returned to the ledger). In addition, on some state credit ledgers, such as the ledgers maintained by the SJRWMD, reserved credits are also shown. Reserved credits are set aside for a particular debit project, where the potential user has entered into a contractual agreement with the banker for the reserved credits, often in exchange for a monetary deposit.

7.1 State Mitigation Credit Releases

During the state ERP permitting of the Farmton Mitigation Bank, a schedule for the release of mitigation credits was established. This credit release schedule, which is a condition of the permit, governs the release of credits to the credit ledger, where they will be available for marketing and sale by the banker to offset offsite wetland losses. A credit release schedule specifies the conditions that trigger a particular credit release, and the amount of credits that are released. For the Farmton ERP, the following credit release schedule was established:

Table 7.1-1: Farmton Mitigation Bank ERP Credit Release Schedule

Mitigation Categories	Credit Release Condition	Percent Release
• Hydrologically-Enhanced Forested Wetlands • Hydrologically-Enhanced Non-Forested Wetlands • Enhanced Cypress Wetlands • Enhanced Hardwood Wetlands	Submit C&I financial assurance (if not submitted, the release is deferred for a release of 100% as described below)	25%
	Complete Construction; document hydrologic enhancement success; implement wildlife and forestry management plans; record conservation easement; submit title insurance; establish perpetual management trust fund.	75%
• Preserved Inland Marsh • Designated Forestry Area	Record conservation easement	100%
• Enhanced Hardwood Upland	Record easement; implement wildlife and forestry plans; title insurance; establish perpetual management trust fund.	50%
	Complete selective pine removal	25%
	Document appropriate vegetative re-establishment	25%
• Enhanced Pine Flatwoods	Record easement; implement wildlife and forestry plans; title insurance; establish perpetual management trust fund.	50%
	Initiate uneven-aged tree management	25%
	Document appropriate vegetative re-establishment	25%
• Restored Forested Wetlands	Record easement; implement wildlife and forestry plans; title insurance; establish perpetual management trust fund.	15%
	Complete clear-cut pine removal	25%
	Complete swale/berm regarding	25%
	Document wetland status & vegetative success	35%

Source: Source: ERP 4-127-76185-1

Based on the credit release schedule above, once a release is triggered, the actual credit release amount in a mitigation bank phase is determined by the actual acreage and mitigation credit ratio of each of the qualifying mitigation categories.

As of the date of this report, the following mitigation credit releases have been authorized by the SJRWMD, under ERP 4-127-76185-1, for the Farmton Mitigation Bank:

Table 7.1-2: Farmton Mitigation Bank ERP Credit Releases

Release Date	Release Location/Condition	Credit Amount Released
	North Bank, Mitigation Basin 17	
May 2, 2001	Permit issuance	15.90
March 21, 2002	Phase N1 Activation	47.60
December 10, 2003	Phase N2 Activation	58.25
April 15, 2004	Phase N3 Activation	59.82
November 24, 2004	Phase N4 Activation	59.72
April 1, 2005	Phase N5 Activation	227.35
November 9, 2005	Phase N6 Activation	108.79
August 30, 2007	Phase N7 Activation	52.23
August 31, 2007	Phase N8 Activation	66.46
February 2, 2009	Phase N9 Activation	77.50
November 23, 2010	Phases N1-N9 credits transferred to Mitigation Basin 18	-160.57
	North Bank, Mitigation Basin 18	
November 23, 2010	Phases N1-N9 credits transferred from Mitigation Basin 17	160.57
	North Bank Total Credit Releases to date	**773.62**
	West Bank, Mitigation Basin 18	
May 5, 2001	Permit issuance	30.70
March 21, 2002	Phase W-1 Activation	22.20
	West Bank Total Credit Releases to date	**52.90**
	South Bank, Mitigation Basin 18	
May 2, 2001	Permit issuance	14.70
February 21, 2002	Phase S1 Activation	19.50
September 29, 2011	Phase S2 Activation (Forested Freshwater)	18.90
September 29, 2011	Phase S2 Activation (Herbaceous Freshwater)	20.40
	South Bank Total Credit Releases to date	**73.50**
	Total Credit Releases to date for all Phases	**900.02**

Source: SJRWMD Mitigation Bank Search Tool

7.2 Federal Mitigation Credit Releases

The federal MBI established a separate credit release schedule for each of the eight wetland mitigation credit categories (W1-W8). The release schedules for mitigation categories W1 through W7 (refer to Table 6.2-1 for a description of each category) are very similar, and differ only in a few of the mitigation activities as they pertain to the specific mitigation areas. The release schedule for W-8 (Inland Salt Marsh Preservation) differs from the others in that it calls for the release of 100% of the mitigation credits for recording of the conservation easement, removal of cattle, and implementation of the forestry plan. The credit release schedule for mitigation category W-1 (Harvested Wetland Hydrologic Enhancement) is shown below to serve as a typical example. All release schedules can be reviewed under Table 1, pages 5-9, of the federal MBI.

Table 7.2-1: Farmton Mitigation Bank MBI Credit Release Schedule for W-1

Mitigation Activity	Percent Release
Record Conservation Easement	15%
Remove cattle, fence	5%
Implement/complete hydrologic enhancement activities – complete installation of low-water crossings	10%
Hydrologic enhancement success criteria met – provide documentation of water elevation balance and no washouts via monitoring for second year	10%
Implement Forestry Stewardship Plan – document existing baseline conditions	15%
Implement Wildlife Management Plan – document that hunting leases and restrictions have changed to limit number of hunters	5%
Preservation/Enhancement area show ≤ 5% exotic vegetation infestation	2%
Release of buffer credits when 2 project phases adjoin existing phase	8%
Year 3: Document that hydrologic enhancement success criteria are met: water elevation balance and no washouts continue (5%), document continuing forestry stewardship conditions via aerial photos (5%). 10% total	10%
Year 4: Document that hydrologic enhancement success criteria are met: water elevation balance and no washouts continue (5%), document continuing forestry stewardship conditions via aerial photos (5%). 10% total	10%
Year 5: Document that hydrologic enhancement success criteria are met: water elevation balance and no washouts continue (5%), document continuing forestry stewardship conditions via aerial photos (5%). 10% total	10%

Source: MBI SAJ-1998-01836

The total credit release amount for a release-triggering event in a mitigation bank phase is based on the acreage of each of the wetland mitigation categories (W1-W-8) within the mitigation bank phase, multiplied by the WRAP mitigation delta and the release percentage.

As of the date of this report, the following credit releases have been authorized by the USACE under MBI SAJ-1998-01836 for the Farmton Mitigation Bank. Note that, unlike the SJRWMD, the USACE maintains a single, comprehensive ledger for all bank locations and phases.

Table 7.2-2: Farmton Mitigation Bank MBI Credit Releases

Release Date	Release Location/Condition	Credit Amount Released
June 11, 2001	Phase N1, W1, S1 initial release	160.98
March 22, 2002	Phase N1, W1, S1 additional release	31.39
March 17, 2004	Phase N2, N3 initial release	230.51
February 28, 2005	Phase N4 initial release	159.01
October 14, 2005	Phase N5, N6 initial release	888.12
September 30, 2007	Phase N7, N8 initial release	323.97
April 13, 2009	Phase N9 initial release	206.54
	Total Credit Releases to date for all Phases	**2000.52**

Source: Farmton Mitigation Bank MBI Ledger

7.3 Mitigation Credit Withdrawals

The total state ERP mitigation credit withdrawals from the Farmton Mitigation Bank are summarized in the table below. The specific transaction details can be reviewed on the state credit ledgers included under Appendix B of this report.

Table 7.3-1: State Mitigation Credit Withdrawals for Farmton Mitigation Bank

Site	Total Credit Releases	Total Credit Sales	Total Credit Reservations	Total Credit Withdrawals	Current Credit Balance
North Bank	773.62	597.99	68.36	666.35	107.27
West Bank	52.9	42.86	0.00	42.86	10.04
South Bank	73.5	34.11	0.00	34.11	39.39
Whole Bank	900.02	674.96	68.36	743.32	156.7

Source: SJRWMD Mitigation Bank Search Tool

Projects that have utilized mitigation credits from the Farmton Mitigation Bank to offset wetland losses are comprised of permits authorized under ERP by the SJRMWD and the FDEP, throughout the bank's Mitigation Service Area (MSA). The MSA is the geographical area within which projects may have their wetland impacts mitigated at the mitigation bank. For Farmton Mitigation Bank, the MSA is rather extensive, and includes the mitigation basins, or watersheds, for the Halifax River (Basin 17), St. Johns River – Canaveral Marshes to Wekiva (Basin 18), Econlockhatchee River (Nested Basin 19), Lake Jessup (Basin 23), and parts of the St. Johns River – Wekiva to Welaka (Basin 14), Crescent Lake (Basin 16) and Southern St. Johns River (Basin 20).

Based on the natural communities present on the Farmton Mitigation Bank, projects with impacts, primarily to forested freshwater systems, and to a lesser degree herbaceous freshwater systems, which occur within the bank's MSA, would be appropriate to be mitigated at the Farmton Mitigation Bank. In addition, due to the presence of the rare salt marsh systems on the South Bank site, up to the number of credits derived from this community (1.4 state

credits and 5.45 federal credits), the bank would be an appropriate site to offset offsite losses to such systems located in the St. Johns River Basin (18).

Single transaction credit withdrawals (purchases) within the service area range in size from 0.1 credits, which is common for small impacts associated with single family homes, to 70.5 credits. Credit sales in excess of 10 credits are typically associated with large scale transportation projects, such as road or airport projects, commercial or institutional construction, and large scale residential developments. More frequent sales fall in the 1 to 10 credit range, which are typically associated with small to medium size residential developments, commercial construction, and local road projects.

According to the federal MBI Farmton Mitigation Bank ledger, of the 2000.52 released credits, as of October 21, 2011, a total of 375.968 credits have been withdrawn (sold), leaving an available balance of 1624.552 credits. The federal credit ledger for the mitigation bank is included for review in Appendix C.

All projects that have utilized the Farmton Mitigation Bank to offset wetland impacts in accordance with the MBI fall under federal jurisdiction (i.e.: require federal permits). These projects are reviewed separately by USACE staff and, although many are reviewed concurrently with the associated state ERP application, determinations of impact acreage and required mitigation credits usually differ. A major difference between the state and federal ledgers is that many of the state projects with relatively small impacts to isolated wetland systems do not require a federal permit. Thus, many of the smaller credit withdrawals on the state ledgers, typically in the 0.1 to 0.4 credit range, are not reflected on the federal ledger. For the medium to large impact projects, the overall characteristics described for the state ledgers above also apply to the federal ledger, as they represent the same project, permitted separately under state and federal jurisdictions.

8.0 History of Waiver of Requirement for Mitigation Bank Survey

According to ERP rules (12.4.3 and 12.4.7, Applicant's Handbook) one of the key permitting criteria for establishing a mitigation bank is that the banker must have sufficient legal or equitable interest in the (bank) property to ensure perpetual protection and management of the land within the mitigation bank, and meet the requirements of Section 12.4.7 in the Applicant's Handbook: Management of Storage of Surface Waters (A.H.).

In Section 12.4.7(e), A.H., the rules state that, as part of providing reasonable assurance that the **mitigation bank site will be preserved in perpetuity**, the grantor of the property or conservation easement shall provide the following unless the District determines during the permit review process that such items are not necessary to ensure preservation of the mitigation bank according to the permit:

> ***A boundary survey to the real property interest being conveyed. The survey must be certified by a land surveyor and mapper****, registered in the State of Florida to meet the requirements of the District, and the minimum technical standards set forth by the Florida Board of Professional Land Surveyors and Mappers in Chapter 21 HH-6, F.A.C, pursuant to Section 472.027, F.S.*

During the ERP permit review for the mitigation bank, in a request for additional information (RAI) letter, dated February 10, 1999, the SJRWMD requested a legal description, title commitments, and a more detailed phasing plan, stating that the submitted phasing plan was too vague to review for consistency with the phasing criterion (12.4.4, A.H.). In a response letter, dated July 12, 1999, and subsequent correspondence from the project's attorney, dated September 1, 1999, the applicant provided a legal description and title opinion for the overall tract owned by Miami Corporation, but not a specific description of the mitigation bank lands. Furthermore, the response stated that no legal description of the specific mitigation bank would be provided, but that legal descriptions would accompany the conservation easements for the parcels of the individual phases (i.e.: N1, W1, S1, etc.).

A review of memos of the SJRWMD, dated November 16 and 17, 1999, indicated that District legal staff accepted the applicant's proposed approach of a title opinion for the overall property, provided the permit included a condition to require title commitments for the individual phase parcels prior to activation.

On April 11, 2000, the SJRWMD issued the ERP for the Farmton Mitigation Bank, which included the following under condition #18:

The permittee must have a conservation easement conveyed in favor of the District and the

Department of Environmental Protection (DEP) recorded over Phase 1, and each subsequent phase as implemented. The conservation easement must grant the permittee access to the project area to perform all activities required by this permit, and must also grant the District and DEP access to perform these activities in the event the permittee fails to do so. The conservation easement must be submitted to District staff for review prior to execution and recording. Prior to recording the conservation easement, the permittee shall provide District staff with a marketable title commitment insuring the District's interest in the conservation easement that meets the requirements of Section 12.4.7(e), A.H., for review and approval. ***If requested by District staff after reviewing the title commitment, the permittee shall submit a survey of the property covered by the conservation easement which meets the minimum technical requirements in Chapter 21 HH-6, F.A.C., and any additional requirements of District staff.*** *After receiving District staff approval of the title commitment, and after recording the conservation easement, the permittee shall provide the District and the DEP with an owner's title policy meeting the requirements of Section 12.4.7(e), A.H. The permittee must submit the original recorded conservation easement to District staff within 30 days of recording. No mitigation credits shall be released until the original recorded conservation easement and the owner's title policy have been provided to District staff with copies to DEP.*

Thus, although the SJRWMD did not require submittal of title commitments or boundary surveys prior to permit issuance, with condition #18, the **SJRWMD deferred the determination for the need of a boundary survey to the review of submitted information for each individual phase parcel**. A comprehensive review of relevant correspondence between District staff and the banker's agents appears to indicate that the SJRWMD accepted legal descriptions referenced by conservation easements for the activation of Phases N1-N8, S1, and W1.

On November 18, 2008, after review of the information submitted by the banker's agent for activation of Phase N9, District staff requested, among several items, a boundary survey for the lands covered by the Phase N9 conservation easement. In a response letter, dated January 16, 2009, the agent dismissed the need for a survey, citing that no survey was needed in the past and none shall be required for this phase. On February 2, 2009, the District sent a direct response to the agent's January 16, 2009, letter, confirming activation of Phase N9 and the initial release of 77.50 credits for this phase, without the requirement to submit a boundary survey. Similarly Phase S2 was activated on September 29, 2011, without a boundary survey, and on May 9, 2011, the banker requested the activation of Phase S3, covering the remaining 3,362.91 mitigation area-acres of the South Bank site, also without a boundary survey.

Subsequent correspondence between District staff and the banker's agent, as recently as October 2011, revealed that the actual boundaries and size of the phase are in question. As of the date of this report, the banker's activation request for Phase S3 is still pending District action.

9.0 Mitigation Bank Removal Area Permit Modification

9.1 State Application: Details and Status

On February 9, 2010, Miami Corporation submitted an application (4-127-76185-4) to the SJRWMD, which was also forwarded to the USACE under the joint ERP application process, for a modification to the existing mitigation bank permit. The application initially requested the following:

- Removal of several parcels from the North Bank site for a total of **1116.35 acres**
- Addition of a 33.60-acre parcel to the North Bank site
- Removal of 1.09 acres from the West Bank site for a proposed radio tower and canoe launch at Deep Creek
- Addition of a 10.07-acre previous outparcel to the South Bank site

The reasons for the permit modification cited in the application included:

- A diminished demand for mitigation credits
- Future implementation of a comprehensive land use amendment called the Farmton Local Plan

According to the information provided in the application and subsequent correspondence, the North Bank removal areas were necessary for the future construction of a Gateway District at the northern extent of the North Bank site along SR 442; construction of a paved road (Williamson Blvd.) in the approximate location of the current logging road B-8; construction of a future mixed use district, termed a Sustainable Development Area (SDA), along the future Williamson Blvd., in the central portion of the North Bank site; and improvement to Maytown Road, along the southern boundary of the North Bank site.

In response to the application, on March 9, 2010, the SJRWMD sent a request for additional information to the banker's agent. In addition to numerous technical clarifications and administrative items, the letter requested the following [rule quotes provided]:

- Proposed boundaries of all future phases of the mitigation bank [12.4.3(c), A.H.]
- A copy of the Farmton Local Plan [12.4.3(a), A.H.]
- A description of planned future land uses surrounding the mitigation bank, and a description how these land uses differ from those considered at the time of original mitigation credit evaluation (silviculture and low density residential) [12.4.3(a), A.H.]
- Boundary surveys for any revised mitigation bank sites (i.e.: bank removal area) [12.4.4(f) and 12.4.7, A.H.]

- Detailed maps showing all permitted structures for hydrological enhancement (culverts and low water crossings) within the bank removal areas and acceptable legal mechanism to provide perpetual protection and maintenance access [12.4.3(a-b), A.H.]

In the agent's response, dated May 14, 2010, all but the North Bank removal areas were eliminated from the banker's modification request**. Thus, the modification was limited to the removal of 1116.35 acres from the North Bank site to allow for the implementation of the Farmton Local Plan**. The response did not fully address District staff's questions, and in subsequent requests for additional information and supplementary correspondence, **District staff restated the need for a complete boundary survey of the bank removal areas**; a re-evaluation of the mitigation credits allocated to the bank due to the proposed increase in land use intensity surrounding the mitigation bank (Farmton Local Plan); and the requirement to provide perpetual protection and maintenance access to the hydrological enhancement structures.

Despite the proposed zoning changes under the Farmton Local Plan, and elimination of lands that would have constituted future phases, the SJRWMD eventually agreed to limit the reduction of mitigation credits to a direct reduction of 240.20 credits, proportional to the removed acreage. **Thus, the SJRWMD did not conduct a re-evaluation of the remaining credits due to the expected increase in surrounding land use intensity resulting from implementation of the Farmton Local Plan.**

The **issue pertaining to the boundary survey** was resolved through the following condition of the modification permit issued to Miami Corporation of September 29, 2011:

> *Condition #4: Prior to construction within the removal area or the request for a credit release from any phase adjacent to the removal area, whichever occurs first, permittee shall submit a boundary survey of the removal area signed and sealed by a land surveyor licensed and registered in the State of Florida. If the boundary survey yields a removal area with an acreage that differs from 1,116.35 acres, the remaining mitigation bank acreage and associated total potential mitigation credit allocation for the mitigation bank shall be adjusted by the District accordingly.*

The **remaining issue pertaining to perpetual protection of the hydrological enhancement structures** was resolved through acceptance by the SJRWMD of a draft access and maintenance easement, supported by the following set of conditions:

> *Condition #5: The permittee shall grant the District an easement to access, operate, and maintain the hydrologic structures in perpetuity. The easement shall include language received by the District on September 21, 2011 and subsequently approved by the*

District, in writing. Within 120 days of permit issuance, the permittee shall record the approved easement in the public record.

Condition #6: The permittee shall continue to operate and maintain the hydrologic structures as required under the permit, to include those structures located on property not included in the Bank as shown on Exhibits 5 and 8 of the Technical Staff Report.

Condition #7: The permittee shall maintain sufficient legal or equitable interest in the property where each permitted hydrologic structure for the mitigation bank is located.

9.2 Federal Application: Details and Status

Due to the fact that the MBI for Farmton Mitigation Bank only covers wetland areas, the bank removal application to the USACE was limited to 374.77 acres of wetlands within the North Bank site. In response to the Miami Corporation's application to modify the MBI, on March 17, 2011, the USACE reviewer, on behalf of the IRT forwarded a request for additional information to the banker's agent. The correspondence requested the following items:

- Legible survey drawings and conservation easement documentation for the North Bank site;
- Sufficient documentation that the bank removal areas and implementation of the proposed Farmton Local Plan will not adversely impact future hydrologic restoration of the North Bank site;
- Due to the IRT's concern that the bank removal areas will lead to residential and commercial developments surrounding the mitigation bank (Farmton Local Plan), additional details regarding these future development was requested, and sufficient documentation to justify the banker's assertion that the mitigation deltas for the remaining lands within the bank should not be revised.
- Due to the IRT's concern regarding fragmentation of bear habitat, evidence of coordination with the FFWCC regarding this issue.

On June 9, 2011, the applicant's agent responded to the USACE's request for additional information. However, due to staff changes at the USACE's Jacksonville District office, the project reviewer has changed several times, and as of the date of this report, there is no known action by the USACE regarding the response.

10.0 Harmful Ecologic & Hydrologic Impacts of Landscape and Land Use Changes

The local and regional ecological value of the Farmton Mitigation Bank has been described in great detail in Section 3.0 of this report. Because of its expansive tracts of ecologically diverse natural communities, extending throughout designated key habitat regions and corridors, the vital hydrological and wildlife functions provided by the mitigation bank are regionally magnified. **Due to the interconnectivity and interdependence of these ecosystems, significant land use changes affecting the mitigation bank lands and surrounding communities will likely degrade the range and value of local and regional ecologic and hydrologic functions they provide.** This section briefly describes the expected future land use changes on and in the vicinity of the mitigation bank, and explores likely effects of these changes on the habitat functions the bank lands currently provide.

The removal of the 1116.35 acres from the North Bank site of Farmton Mitigation Bank will eliminate the following communities from the state permitted bank acreage:

- 198.67 acres of bottomland forest
- 91.47 acres of wet flatwoods (pine plantation)
- 84.63 acres of basin (cypress) swamp
- 740.95 acres of mesic flatwoods (pine plantation)
- 0.63 acres of mesic hammock

As previously described, since the MBI for Farmton Mitigation Bank does not cover the upland areas, the bank communities that would be eliminated from the MBI through the proposed modification are comprised of 198.67 acres of bottomland forest, 91.47 acres of wet flatwoods, and 84.63 acres of basin swamp.

Due to the removal of these areas from the permitted mitigation bank, large tracts of high quality ecological communities, that were internal to the bank boundaries and protected from development and intensified land use changes, will be adjacent to the land alterations proposed under the Farmton Local Plan. Although a significant portion of these exposed communities is comprised of mesic flatwoods/pine plantation, also known as the previously described designated forestry areas (DFA), other communities that lie adjacent to the bank removal areas include tracts of basin swamp, bottomland forest, marsh and shrub.

The proposed bank removal areas at the northern boundary of the North Bank site, along SR 442, will be developed into a Gateway District. The Gateway District is one of the more than 15,000 acres of Sustainable Development Areas (SDA) proposed across the Miami Corporation tract under the 47,382-acre Farmton Local Plan. The Gateway District is proposed to cover 821 acres, and will be developed into a mixed use community, comprised of residential, retail,

commercial, hotel, office, and institutional land uses. Upon implementation, the Gateway District is designed to accommodate up to 4,692 residential units and 820,217 square feet of non-residential (i.e.: other aforementioned land uses) space. The minimum and target residential densities within the Gateway District have been set at 4 and 12 units per acre, respectively. Peak hour external trips have are proposed to be limited to 6,821 (Volusia County 2009 and 2011).

The Gateway District will be connected to an SDA in the central portion of the North Bank site, known as The Villages, through an improved, 200-foot wide transportation corridor and four-lane thoroughfare roadway, known as Williamson Boulevard. The roadway, which mostly follows the existing logging road B-8, and the northern portion of the Villages SDA, are partially located within bank removal area (Volusia County 2009 and 2011).

The Villages SDA is comprised of compact residential areas of a variety of housing types, with mixed use village centers. The target density for the Villages is 6 units per acre, and for the village centers it is 10 units per acre. The Village SDAs are proposed to be surrounded by areas known as Resource Based Open Space (RBOS). These RBOS areas may consist of a combination of wetlands, mitigation areas, vegetative buffers, special habitat for key flora and fauna, passive recreation areas, trails, and water resource development areas (i.e.: wells). The plan calls for a minimum of 25% of each SDA to be comprised of RBOS. (Volusia County 2009 and 2011)

The overall development density within the Farmton Local Plan area, beyond the year 2025, is planned for **23,100 residential units and 4.7 million square feet of non-residential space**, excluding institutional uses.

Areas outside the SDAs, surrounding RBOS, and transportation corridors, have been designated by the Farmton Local Plan as GreenKey areas. Proposed land uses within the GreenKey areas, aside from mitigation and conservation bank lands and agriculture conducted in accordance with Florida Department of Agriculture approved best management practices; include roads, utility crossings, trails, boardwalks, passive recreation, water resource development (wells), solar energy fields, and environmental learning centers. The proposed overall layout of the Farmton Local Plan can be seen in Figure 7 (Volusia County 2009 and 2011). **Several of these land uses are contrary to ecological preservation and restoration, and will severely impair the banker's ability to implement the mitigation bank land management practices.**

Water for the growing community and population under the Farmton Local Plan is scheduled to be provided by Farmton Water Resources LLC, the City of Edgewater, and the recently created TIFA LLC, a joint venture between Farmton Water Resources and the City of Titusville. Under the Farmton water use plan, numerous new water supply wells are proposed to be installed throughout Farmton Local Plan tract, many of which are directly adjacent to the

western boundary of the North Bank site (see also Figure 7). The IRT was not informed by the permittee of the proposed water supply development along the bank boundary. Furthermore, the IRT was not apprised of the Farmton Local Plan until a formal application for bank modification was submitted.

The Farmton Local Plan includes a Conservation Management Plan, comprised primarily of the GreenKey and RBOS areas, that seeks to address potential issues of natural habitat functional degradation, fragmentation, and loss. **Despite that plan, the conversion of the current landscape dominated of natural areas and silviculture to one that is characterized by extensive tracts of intense residential, commercial, and institutional development, connected by a new road network, and supplied with water drawn from critical conservation lands, will result in adverse wildlife and large-scale habitat impacts, as well as a degradation of the hydrologic integrity of the bank. These impacts include:**

- **Disruption of hydrologic connectivity of the mitigation bank lands, degradation of the regional watersheds and sensitive wetland habitats due to roadway expansions, water withdrawals, and installation of wastewater utilities**. The interconnected hydrology of the three mitigation bank sites and the surrounding lands is currently enhanced through the installation (for mitigation credit) of numerous culverts and low water crossings in key locations, and sustained through the overall absence of additional significant, impounding roadways throughout the tract. Adverse impacts to this hydrologic balance will likely occur through channelization or impoundment of surface water and the resulting alteration of hydroperiods and disruption of sheet flows by the proposed Williamson Blvd. and numerous other roadway expansions; the drawdown of groundwater associated with the new water supply wells in close proximity to sensitive wetlands on bank lands; and installation of new wastewater utilities in close proximity to sensitive wetlands. The newly proposed wastewater utilities carry the additional risk of chlorinated wastewater discharges into highly organic receiving waters, which may result in the formation of formaldehyde in the sensitive waters at potentially toxic levels. The net result of the proposed activities, in addition to the localized disruption of hydroperiods and flows, is an overall degradation of the two affected watersheds (Halifax River and St. Johns River) in terms of natural and historical flows, downstream detritus transport, and water quality. Although basin swamps and bottomland forests are typically more tolerant of the type of ground water draw downs that might occur from wells located near the bank, wet flatwoods, wet prairies, and some basin marshes are more susceptible to ground water table draw downs. An average drawdown of only a few tenths of a foot will likely shift the long-term vegetative community of wet flatwoods to mesic flatwoods; wet prairies to upland shrub; and marsh to prairie or shrub habitat (FNAI 2010). Such as shift of habitat due to hydrologic impacts is in direct

conflict with the criteria and objectives of the mitigation bank. Furthermore, impairment of the enhanced and sustained hydrologic connectivity of the bank lands due to these road and development encroachments and groundwater withdrawals will reduce the bank's overall value to the regional watersheds it serves.

- **Disruption to wildlife movement and migration due to a significant reduction and narrowing in Priority 1 Greenways corridors with critical linkages, and loss of Strategic Habitat Conservation Area lands.** A key species that could be affected by this impact is the Florida black bear, whose southern range extends throughout the Farmton tract.

- **Displacement of wildlife and disruption of foraging, nesting, and other critical life cycle activities** due to encroachment by SDAs and incompatible land uses within RBOS and GreenKey areas. This includes roads, utility crossings, recreational and equestrian trails, boardwalks, environmental learning centers, solar energy fields, and water resource development infrastructure. Species known or expected to use the habitats of the Farmton Mitigation Bank and surrounding landscape, that are sensitive to these encroachments include bald eagle, Arctic peregrine falcon, wood stork, red-cockaded woodpecker, Audubon's crested caracara, southeastern American kestrel, roseate spoonbill, limpkin, white ibis, herons and egrets, Florida sandhill crane, eastern indigo snake, gopher tortoise, gopher frog, Florida pine snake, Florida mouse, Sherman's fox squirrel, and Florida black bear. A benefit of the Farmton Mitigation Bank is the sustainability of genetically stable wildlife populations due to the availability of large tracts of habitat without barriers. The fragmentation and reduction in habitat, and introduction of artificial barriers in the landscape due to the encroachments proposed under the Farmton Local Plan will adversely affect the bank's ability to sustain genetic stability.

- **Increased wildlife mortality due to vehicular collisions.** With the planned road expansion to Williamson Boulevard, Maytown Road, and other connector roads, there is the strong likelihood of increased mortality to terrestrial wildlife species. Although the installation of barrier walls and wildlife culverts may reduce such mortality incidents, studies have shown that significant mortality may still occur, depending on traffic patterns and surrounding wildlife use (Dodd et al. 2003). In addition to common reptiles, amphibians, and mammals, the listed wildlife species expected to be most affected by this impact include eastern indigo snake, gopher tortoise, gopher frog, Florida pine snake, Florida mouse, Sherman's fox squirrel, and Florida black bear.

The likely wildlife and habitat impacts described above illustrate the importance to minimize or avoid large scale losses of extensive tracts of natural communities, especially tracts within

critical habitat ranges, such as high priority Greenways and Strategic Habitat Conservation Areas.

In addition to the direct ecological effects of the aforementioned impacts, the proposed land use changes under the Farmton Local Plan will compromise the banker's ability to successfully implement important aspects of the Farmton Mitigation Bank Plan. The long-term **hydrologic enhancement** component will not be fully realized due to the proposed expansion of Williamson Blvd. and numerous additional roadways; the bank's **wildlife management** plan will be diminished through the well documented fragmentation of habitat, wildlife and habitat displacement, and increased mortality; the **forestry stewardship** plan cannot effectively be implemented, especially controlled burns, due to proximity of new highly travelled roadways, and intense residential, and commercial developments; finally, the **preservation** component will be reduced through the development of previously permitted mitigation bank lands and vastly intensified land uses in the surround landscape, not contemplated under the original permits and bank evaluation.

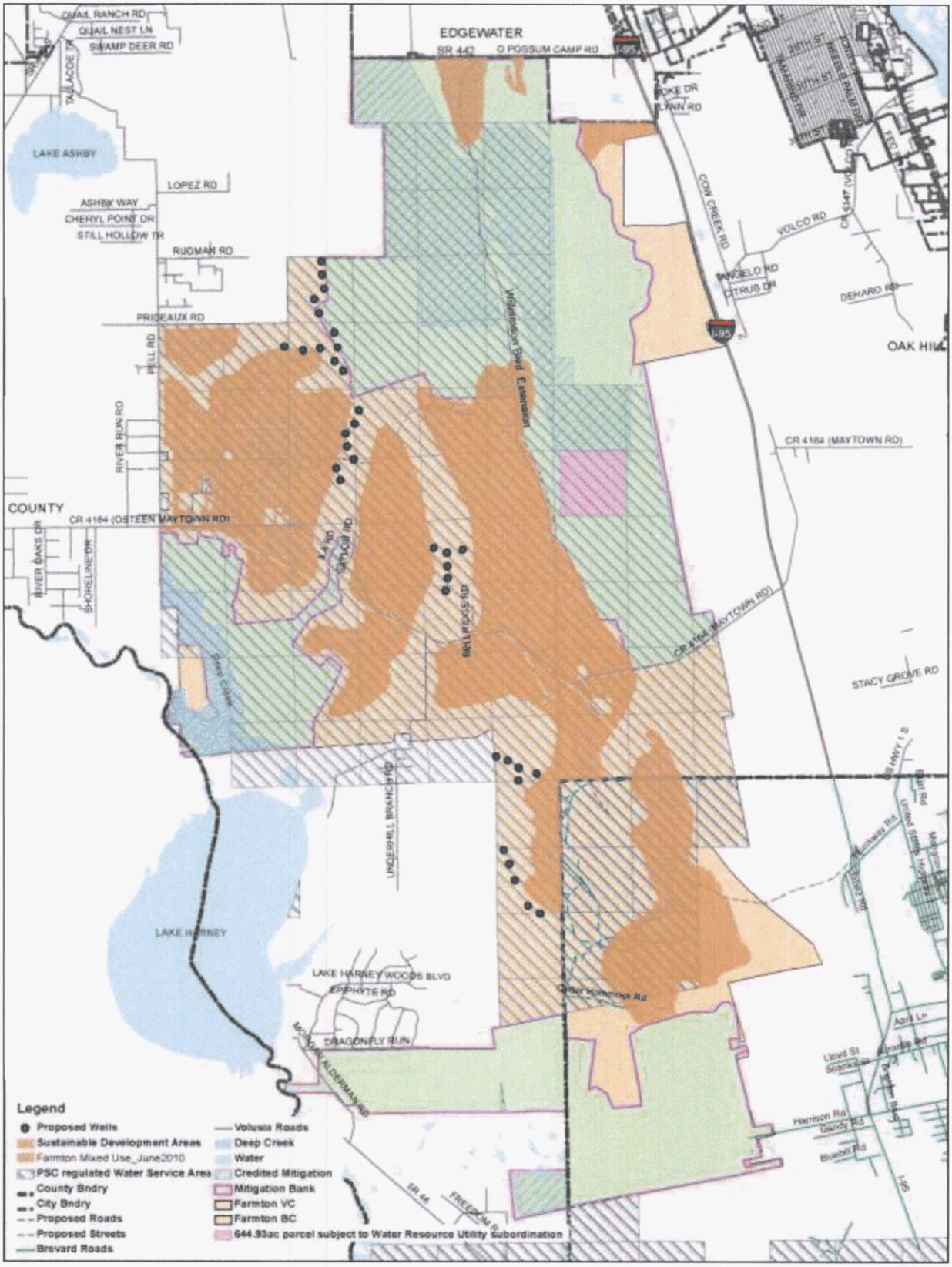


Figure 7. Farmton Local Plan Map (Sources: Volusia County and ECARD)

11.0 Summary and Conclusions

Farmton Mitigation Bank was permitted by the SJRWMD and ACOE in April 2000, as a 24,000+ acre mitigation bank, located within a large tract (approximately 57,000 acres) owned by Miami Corporation in east-central Florida. The mitigation bank consist of three separate sites (North Bank, West Bank, and South Bank) within the Miami Corporation tract, which are approximately 16,000 acres (North), 3,500 acres (West) and 4,500 acres (South) in size. Farmton Mitigation Bank ranks as **the largest wetlands mitigation bank in the United States**.

The natural communities that occur on the Farmton Mitigation Bank site include, in order of prevalence: basin swamp, mesic flatwoods, basin marsh, bottomland forest, wet flatwoods, wet prairie shrub, mesic hammock, upland hardwood forest, marsh lake, sandhill, and inland salt marsh. The mitigation bank lands are hydrologically connected to Spruce Creek in the Halifax River watershed, and the St. Johns River, through Deep Creek and Buck Lake. In addition, the mitigation bank, and surrounding Miami Corporation tract, is located within several vital habitat ranges, including Priority 1 Greenways with Critical Linkages, and FFWCC Priority 2 Strategic Habitat Conservation Areas (SHCA). Finally, hundreds of thousands of acres of public and private lands managed for conservation lie contiguous with, or in close proximity to the bank.

The mitigation bank is located within the southern extent of the habitat range of the Florida black bear, and also provides habitat for a variety of listed species, known or expected to occur on the site, including: gopher frog, American alligator, eastern indigo snake, gopher tortoise, Florida pine snake, roseate spoonbill, Florida scrub jay, limpkin, Kirtland's warbler, little blue heron, snowy egret, tricolored heron, white ibis, arctic peregrine falcon, southeastern American kestrel, Florida sandhill crane, bald eagle, wood stork, red-cockaded woodpecker, Audubon's crested caracara, Florida burrowing owl, Least tern, Bachman's warbler, Florida mouse, Sherman's fox squirrel, Florida manatee.

In summary, the key features that drive Farmton Mitigation Bank's regional, statewide and arguably, national ecological significance include:

- *Size*: At 24,000+ acres, Farmton Mitigation Bank is the largest wetlands mitigation in the United States. Tract size is of critical importance for the management of natural habitat and the use by large range listed species, such as the Florida black bear.
- *Diversity*: As defined by the Florida Natural Areas Inventory (2010 ed.), the lands of the Farmton Mitigation Banks are comprised of seven distinct wetland communities, ranging from basin swamp to marsh lake, including rare inland salt marshes, and four supporting upland communities, including mesic flatwoods, hammocks, sandhill, and hardwood forests. Habitat diversity, including a variety of wetlands with sufficient

supporting uplands, especially on large contiguous tracts, is a critical component of the FFWCC's statewide, and FWS's nationwide strategic habitat conservation efforts.

- *Location*: The mitigation bank's location, encompassing essentially the entire extent of a critical linkage within the Priority 1 (highest priority) Greenways corridor (as defined by FDEP) along east-central Florida; its recognition by the FFWCC as a Strategic Habitat Conservation Area (SHCA), which identifies private lands deemed vital to statewide habitat conservation efforts; location as the southern extent of Florida black bear range that connects the Ocala and Osceola National Forests; and its continuity with, or close proximity to hundreds of thousands of acres of state and national conservation lands.

The mitigation bank plan consists of a combination of hydrologic enhancement, forest stewardship, wildlife management, and preservation. A short-term and long-term management plan for the mitigation bank, financed through a trust fund, is in place.

In the author's experience, serving in the SJRWMD's Mitigation Bank Program for over four years, and supported by data from a multitude of permitted mitigation banks throughout Florida, the Farmton Mitigation Bank's ERP permit deviates from common permitting practices in numerous ways, as summarized below:

- *Pine production*: Farmton Mitigation Bank contains over 3,000 acres of DFAs, in which pine production can continue in perpetuity, while mitigation credit is derived at an 8:1 ratio, for preservation of upland communities. In contrast, the common practice at mitigation banks is to immediately cease pine production upon activation of the bank or a phase, or the cease production after a final harvest or thinning. Cessation of pine production is a vital aspect of mitigation on banks with historical silviculture land uses, to allow natural, uneven-aged, and successional re-growth to occur and ultimately achieve key characteristics of the target communities.

- *Bank Phasing:* In comparison to other mitigation banks permitted throughout Florida, future phases at the Farmton Mitigation Bank did not require delineation or defined phase boundaries at the time of activation. A review of a multitude of mitigation banks throughout Florida found no similar provision at these banks.

- *Perpetual Monitoring:* Farmton Mitigation bank was permitted with a five-year interval for the submittal of long-term (perpetual) monitoring data. The review of other mitigation banks permitted throughout Florida found that reporting for short and long-term monitoring is typically required on an annual basis. As common practice, annual monitoring is deemed to be necessary to document progress toward success, and to identify problems, such as mortality or invasion by nuisance vegetation, before

extensive damage or loss of function occurs, or management attains a high risk of failure or excessive expense.

- *Survey information:* In accordance with Section 12.4.7(e), A.H., and in common practice, the SJRWMD requires boundary surveys of mitigation banks and phases. This has been deemed necessary to provide sufficient assurance of the accuracy of the boundaries of conservation easements conveyed to the District for mitigation credit. Despite requests for such surveys from District staff, the original bank permit was issued without this requirement, instead deferring the decision to require surveys to the activation of each phase. To date twelve phases have been activated, with conservation easements conveyed to the SJRWMD and DEP, without a boundary survey of any phase.

To date nine phases, for a total of 6,325 acres under conservation, have been activated at the North Bank site; one phase of 380.29 acres has been activated and placed under conservation at the West Bank site; and two phases for a total of 871.83 acres have been activated and placed under conservation at the South Bank. An additional phase of 3,312.74 acres at the South Bank, that will place the remainder of the South Bank under conservation, is currently under review by the SJRWMD, pending action for activation.

To date 900.2 state credits and 2000.52 federal mitigation credits have been released for use (withdrawal) to the Farmton Mitigation Bank. Of these released credits, 674.96 state mitigation credits and 375.968 federal mitigation credits have been sold. In addition 68.36 state mitigation credits have been reserved under contract for future sale.

On February 9, 2010, Miami Corporation applied to the SJRWMD and USACE for a modification to the state mitigation bank ERP and federal MBI, respectively, to remove lands from the mitigation bank. The proposed removal amounted to 1,116.35 state mitigation bank acres and 374.77 federal mitigation bank acres. The federal removal acres are significantly less since the Farmton MBI only covers wetlands. The purpose of the removal is to free lands from the mitigation bank permit to be used in the implementation of a comprehensive land use amendment in Volusia County, called the Farmton Local Plan. Under this plan, the removed bank lands are proposed to be developed into a Gateway District, road corridor expansions (Williamson Boulevard and Maytown Road), and a mixed use residential District, to be called The Villages. The SJRWMD issued the requested permit modification on September 29, 2011; the federal MBI permit modification request is still pending.

The large-scale land use changes associated with the Farmton Local Plan, facilitated by the proposed removal of bank lands, will in all likelihood cause adverse effects to hydrology, critical habitat, and wildlife throughout two important and healthy, regional watersheds, primarily due to:

- **Disruption of hydrologic connectivity of the mitigation bank lands, degradation of the regional watersheds and sensitive wetland habitats due to roadway expansions, water withdrawals, and installation of wastewater utilities**. The interconnected hydrology of the three mitigation bank sites and its surrounding lands is currently enhanced through the installation (for mitigation credit) of numerous culverts and low water crossings in key locations, and sustained through the overall absence of additional significant, impounding roadways throughout the tract. Adverse impacts to this hydrologic balance will likely occur through channelization or impoundment of surface water and the resulting alteration of hydroperiods and disruption of sheet flows by the proposed Williamson Blvd. and numerous other roadway expansions; the drawdown of groundwater associated with the new water supply wells in close proximity to sensitive wetlands on bank lands; and installation of new wastewater utilities in close proximity to sensitive wetlands. The newly proposed wastewater utilities carry the additional risk of chlorinated wastewater discharges into highly organic receiving waters, which may result in the formation of formaldehyde in the sensitive waters at potentially toxic levels. The net result of the proposed activities, in addition to the localized disruption of hydroperiods and flows, is an overall degradation of the two affected watersheds (Halifax River and St. Johns River) in terms of natural and historical flows, downstream detritus transport, and water quality. Such hydrologic impacts, and the resulting degradation of natural habitat, are in direct conflict with the criteria and objectives of the mitigation bank.

- **Disruption to wildlife movement and migration due to a significant reduction and narrowing in Priority 1 Greenways corridors with critical linkages, and loss of Strategic Habitat Conservation Area lands.** A key species that could be affected by this impact is the Florida black bear, whose southern range extends throughout the Farmton tract.

- **Displacement of wildlife and disruption of foraging, nesting, and other critical life cycle activities** due to encroachment by SDAs and incompatible land uses within RBOS and GreenKey areas. This includes roads, utility crossings, recreational and equestrian trails, boardwalks, environmental learning centers, solar energy fields, and water resource development infrastructure. Species known or expected to use the habitats of the Farmton Mitigation Bank and surrounding landscape, that are sensitive to these encroachments include bald eagle, Arctic peregrine falcon, wood stork, red-cockaded woodpecker, Audubon's crested caracara, southeastern American kestrel, roseate spoonbill, limpkin, white ibis, herons and egrets, Florida sandhill crane, eastern indigo snake, gopher tortoise, gopher frog, Florida pine snake, Florida mouse, Sherman's fox squirrel, and Florida black bear. A benefit of the Farmton Mitigation Bank is the sustainability of genetically stable wildlife populations due to the availability of large

tracts of habitat without barriers. The fragmentation and reduction in habitat, and introduction of artificial barriers in the landscape due to the encroachments proposed under the Farmton Local Plan will adversely affect the bank's ability to sustain genetic stability.

- **Increased wildlife mortality due to vehicular collisions.** With the planned road expansion to Williamson Boulevard, Maytown Road, and other connector roads, there is the strong likelihood of increased mortality to terrestrial wildlife species. Although the installation of barrier walls and wildlife culverts may reduce such mortality incidents, studies have shown that significant mortality may still occur, depending on traffic patterns and surrounding wildlife use (Dodd et al. 2003). In addition to common reptiles, amphibians, and mammals, the listed wildlife species expected to be most affected by this impact include eastern indigo snake, gopher tortoise, gopher frog, Florida pine snake, Florida mouse, Sherman's fox squirrel, and Florida black bear.

Given the extent and intensity of the proposed development under the Farmton Local Plan, juxtaposed to the critical habitat value, sensitive nature, and hydrological interconnectivity of the affected wetlands and uplands of the Farmton Mitigation Bank, it is unlikely that the described adverse impacts can be avoided through standard engineering solutions.

As detailed in this report, state and federal mitigation credits allocated to the Farmton Mitigation bank were based on the preservation, enhancement, and restoration of wetlands and vital supporting upland habitat. At the time of permitting, the dominant long-term land use for the area surrounding the bank was determined to be sustainable silviculture through best management practices. The proposed land use changes under the Farmton Local Plan, through numerous roadway expansions; increased groundwater withdrawals under the water utility plan; construction of numerous wastewater utilities; and addition of thousands of acres of intense residential and commercial developments; will profoundly and irreversibly alter the landscape conditions, hydrology, and habitat diversity under which the original mitigation value of the bank was established.

Based on a careful review and analysis of the information presented in this report, and the information available in the public domain at the time of this report, it is the author's expert opinion that the removal of the bank areas and activities proposed under the Farmton Local Plan are inconsistent with, and will severely, adversely impact the intent, goals, and objectives of the Farmton Mitigation Bank as established in the 2000 ERP and MBI, and the 2008 EPA rule, and its continued functioning as envisioned, planned, and permitted.

APPENDIX A

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APPENDIX B

Farmton Mitigation Bank – State Credit Ledgers

Permit # 76185-1 **Bank Name: Farmton North**

Basin ID: 17 **Community Type:** General Wetlands **Current Balance:** 78.3 0 **Available Balance:** 27.04

Released/Purchased Credits

Transaction Date	Description	Credit Quantity	Debit Quantity	Balance
02-May-2001	RELEASE PERMIT ISSUANCE			15.90
21-Mar-2002	Phase N1			63.50
04-Jun-2002	Majestic Oaks Phase 1 & 2 (83051-1)		0.66	62.84
07-Jan-2003	LPGA Boulevard Office Park (22941-45)		0.30	62.54
26-Feb-2003	Daytona Surgery Center (22941-48)		2.30	60.24
21-Mar-2003	Halifax Plantation Unit II, Section J (64086-3)		1.00	59.24
03-Apr-2003	Comfort Suites and Retail/Office Facility (79807-1)		2.00	57.24
23-May-2003	Grand Preserve (83145-1)		7.50	49.74
27-Aug-2003	Countryside PCD - Countryside CC Ph IIIA (22603-6)		6.00	43.74
09-Dec-2003	Lakeside Professional Center (82585-1)		0.32	43.42
10-Dec-2003	Phase N2			101.67
22-Dec-2003	US1 & I-95 Interchange Commercial Center (74954-2)		9.30	92.37
22-Mar-2004	George Reilly (DEP OGC-032228)		0.10	92.27
15-Apr-2004	Phase N3			152.09
10-May-2004	Mason Commerce Center (22941-54)		1.40	150.69
07-Jun-2004	Bayberry Colony (83725-1)		13.90	136.79
09-Jun-2004	Creekside Planned Residential Development (82879-2)		2.40	134.39
22-Jul-2004	SunTrust Bank - Port Orange (90179-1)		3.00	131.39
29-Jul-2004	News-Journal New Office Additions (91896-1)		0.30	131.09
02-Aug-2004	Medical Center @ Clyde Morris & Hand Avenue Phase II (71689-2)		0.90	130.19
02-Aug-2004	Sunset Cove Subdivision (89285-1)		3.00	127.19
09-Aug-2004	MBA Business Center/Gardens at Addison MPUD (91106-1)		1.00	126.19
09-Aug-2004	Mason Avenue Extension (22941-57)		2.30	123.89
27-Oct-2004	Fountain Lake (29715-3)		0.10	123.79
24-Nov-2004	Phase N4			183.51
08-Dec-2004	Bermuda Estates @ Ormond Beach (88106-1)		1.00	182.51
13-Dec-2004	Port Orange Plantation (92263-1)		19.00	163.51
20-Dec-2004	Perimeter Service Road (22729-13)		0.30	163.21
28-Dec-2004	Clyde Morris Blvd Widening: SR40 to LPGA Blvd (29565-3)		0.60	162.61
10-Jan-2005	Dunn Avenue Extension (23036-8)		5.29	157.32
25-Jan-2005	ELAB at Airport Business Park (22566-5)		0.30	157.02
07-Feb-2005	Sugar Mill Gardens (90311-1)		0.50	156.52
21-Mar-2005	River Moorings (Transfer) (16406-6)		0.20	156.32
30-Mar-2005	Port Orange Landings (91048-2)		2.90	153.42
31-Mar-2005	Florida Hospital Memorial PCD (93948-1)		70.50	82.92
31-Mar-2005	Lakeside North Executive Centre (94729-1)		0.80	82.12

01-Apr-2005	Phase N5		309.47
05-Apr-2005	Lot 4 Dairy Court (92032-2)	0.50	308.97
09-May-2005	Tuscany Woods (95756-1)	7.38	301.59
14-Jun-2005	Coquina Cove (Olson subdivision) (91871-1)	17.60	283.99
18-Jul-2005	Deer Creek (fka Fawn Lakes) (22838-16)	31.50	252.49
20-Jul-2005	Walgreens @ Tymber Creek (95674-1)	0.10	252.39
03-Aug-2005	Sable Key (82825-2)	3.20	249.19
15-Aug-2005	Robert Sherrier (DEP 64-240444-001)	0.50	248.69
12-Sep-2005	Lot 2 Dairy Court (92032-3)	0.40	248.29
12-Sep-2005	Villaggio PUD (96383-1)	3.80	244.49
21-Oct-2005	Grande Venetian Bay Boulevard (83671-5)	25.00	219.49
09-Nov-2005	Phase N6		328.28
07-Dec-2005	Riverbend Community Church Expansion (29792-2)	32.70	295.58
03-Jan-2006	Holly Business Park (98769-1)	6.20	289.38
05-Jan-2006	1293 7th Ave./Maronda Homes (DEP 64-257026-001)	0.40	288.98
05-Jan-2006	560 McNeal/Maronda (DEP 64-256114-001)	0.40	288.58
25-Jan-2006	Springleaf Unit III (29590-3)	0.50	288.08
02-Feb-2006	Interstate Commerce Park & CR 415 extension (87243-2)	27.70	260.38
07-Feb-2006	Greg Ballard (DEP 64-259785-001)	0.20	260.18
13-Feb-2006	JPJ Investments Inc. (Promenade Parke) (83671-7)	3.47	256.71
16-Feb-2006	New Smyrna Bch Interchange (4-127-78968-2)	10.50	246.21
22-Feb-2006	Ormond Commerce Park (97648-1)	0.70	245.51
10-Mar-2006	FP&L Korona Substation (DEP 18-254953-001)	2.50	243.01
10-Mar-2006	Chabad Lubavitch Synagogue (98850-1)	0.70	242.31
13-Mar-2006	New Smyrna Beach SE Interchange Complex (96611-1)	9.00	233.31
22-Mar-2006	Maronda Homes/1167 7th Ave. (DEP 65-258907-001)	0.40	232.91
22-Mar-2006	Maronda Homes/1996 1st Ave. (DEP 65-261133-001)	0.40	232.51
28-Mar-2006	First Baptist Church of Daytona Beach (90141-1)	6.20	226.31
28-Mar-2006	Venetian Bay Phase 2 (83671-9)	31.90	194.41
24-Apr-2006	Home Depot @ New Smyrna Beach (98281-1)	0.60	193.81
09-Jun-2006	Ormond Town Commercial Center - Phase II (51624-2)	1.80	192.01
15-Jun-2006	GG & R Enterprises expansion (77103-3)	1.50	190.51
23-Jun-2006	Plantation Oaks of Ormond Beach (92254-1)	4.50	186.01
19-Jul-2006	Benjamin & Martha Sibley (DEP 64-258262-001)	0.10	185.91
27-Jul-2006	Ormond Grande (100074-1)	0.50	185.41
11-Aug-2006	Mason Ave Extension (Ph 3) / Center Pt Business Park (22941-73)	4.70	180.71
17-Aug-2006	Venetian Bay: Tiffany Homes (83671-8)	2.80	177.91
18-Aug-2006	Indian Springs RV Park (86817-2)	0.90	177.01
07-Sep-2006	Gateway Daytona (52133-4)	13.00	164.01
20-Sep-2006	DIS Dunn Ave Office Complex (29905-20)	1.00	163.01
04-Oct-2006	Beach Village (105129-1)	0.50	162.51
29-Oct-2006	Interstate Commerce Park: CR 415 - Wickwire culverts (87243-4)	0.45	162.06
01-Nov-2006	Amaral Office Plaza at Ormond Beach (101960-1)	0.30	161.76
01-Nov-2006	Ingham Road Subdivision (103458-1)	0.80	160.96

02-Nov-2006	Villas Del Rio (106684-1)	Canceled	160.96
07-Nov-2006	B-19 Canal Relocation (Sweetwater Branch segment) (98464-1)	3.10	157.86
13-Nov-2006	Turnbull Estates Residential (101527-1)	0.30	157.56
15-Dec-2006	The Reserve @ Port Orange (95092-1)	1.50	156.06
26-Dec-2006	Townhomes at Tuscany Woods Phase 1 (101583-1)	2.70	153.36
07-Feb-2007	Shree Krishna LLC (103477-1)	Canceled	153.36
13-Feb-2007	Secretary Trail Lots / D.R. Horton (DEP 259924 and DEP 260270)	1.00	152.36
02-Mar-2007	Surya Hotel @ US 92 & Tomoka Farms Road (106592-1)	Canceled	152.36
19-Mar-2007	Daytona RV Resort (70872-2)	3.30	149.06
19-Mar-2007	S. Williamson Blvd from Moody Bridge at Spruce Creek to Taylor Rd (98702-2)	0.60	148.46
27-Mar-2007	Pioneer Trail Shoulder Widening Project No. 4785 (65424-1)	0.20	148.26
31-Mar-2007	Airport Commerce Center (98659-1)	0.30	147.96
02-Apr-2007	S.R. Perrott - US 1 Distribution Center (106923-1)	3.20	144.76
03-Apr-2007	S Williamson Blvd Causeway Surcharge Plans (98702-3)	4.55	140.21
10-May-2007	Gateway North (22941-85)	4.80	135.41
30-May-2007	Father Lopez Catholic High School (103531-1)	1.80	133.61
16-Aug-2007	Yorktown Boulevard extension (106500-1)	0.50	133.11
30-Aug-2007	Phase N7		185.34
31-Aug-2007	Phase N8		251.80
21-Sep-2007	Cape Morris Cove (110871-1)	1.50	250.30
24-Sep-2007	LPGA Blvd (23052-2)	1.60	248.70
07-Nov-2007	Old Kings Road Widening - Phase I (89550-2)	4.80	243.90
11-Dec-2007	Avalon Commons - One, Assisted Care Living Facility (29807-5)	1.80	242.10
11-Dec-2007	Integra Shores (112378-1)	4.00	238.10
14-Jan-2008	MEMORIAL MEDICAL PARK-Helipad Addition (26008-2)	8.50	229.60
07-Feb-2008	Town Center at Grande Champion - UTC 1 (22941-91)	4.80	224.80
28-Apr-2008	Plantation Crossings (111975-2)	Canceled	224.80
11-Aug-2008	Bayberry Cove (83725-3)	2.30	222.50
27-Oct-2008	Memorial Medical Park (26008-4)	12.50	210.00
08-Dec-2008	Maria Samet (DEP 05-229989)	Canceled	210.00
02-Feb-2009	Phase N9		287.50
11-Feb-2009	Daytona Beach International Airport: Parcel 62 Development (22729-18)	15.60	271.90
19-Feb-2009	Rojo Arabian Residential (104392-1)	2.80	269.10
06-Apr-2009	Rinker Materials - Ormond Beach (91410-2)	Canceled	269.10
06-Apr-2009	The Townhomes at Tuscany Woods (Phases 2 & 3) (101583-2)	Canceled	269.10
15-Oct-2009	Jimmy Ann Property (107658-1)	Canceled	269.10
10-Nov-2009	Plantation Crossing (111975-3)	Canceled	269.10
21-Jan-2010	Tuscany Village (101560-2)	4.70	264.40
08-Apr-2010	Precision Manufacturing (29765-2)	0.91	263.49
18-May-2010	Proposed Shopping Center (115320-1)	4.00	259.49
07-Jun-2010	Beach Street Skyline (104391-1)	5.00	254.49
30-Jun-2010	Wal-Mart Supercenter Store No. 4212-00 (108804-1)	6.00	248.49
07-Sep-2010	Cape Morris Cove Outparcel (110871-2)	1.60	246.89

05-Nov-2010	1400 Hand Avenue Centre (85744-1)		0.10	246.79
22-Nov-2010	Gregory Ballard (DEP CO 10-2587)		0.10	246.69
22-Nov-2010	FP&L Volusia Substation Expansion (DEP 64-278861-001)		0.30	246.39
22-Nov-2010	FPL Volusia Substation (DEP 64-135217-014)		0.30	246.09
23-Nov-2010	Phases N1 - N9 Basin 18 Credit Adjustment			85.52
07-Jan-2011	Grande Champion - US 92 (22941-81)		2.60	82.92
04-Feb-2011	TowerCom/Flagler Airport (76127-17)		0.52	82.40
10-Mar-2011	Daytona Beach International Airport: Parcel 62 Development (22729-18)		4.10	78.30
	Total Credits & Debits	**613.05**	**534.75**	

Reserved Credits

Transaction Date	Description	Credit Quantity	Debit Quantity	Balance
	Edgewater Oaks (104699-1)		1.90	76.40
	Hidden Forest Townhome Subdivision (105938-1)		1.00	75.40
	Indian Lake Industrial Park (114889-1)		0.14	75.26
	Microflex Phase 1 and 2 (104097-1)		3.70	71.56
	Proposed Shopping Center (115320-1)		20.10	51.46
	Tournament Drive Extension (110096-1)		21.90	29.56
	Volusia Teachers Organization (109092-1)		1.70	27.86
	Williamson North Professional Center (23092-6)		0.82	27.04
	Total Reserved Credits		**51.26**	

Basin ID: 18 **Community Type:** General Wetlands **Current Balance:** 97.33 **Available Balance:** 80.23

Released/Purchased Credits

Transaction Date	Description	Credit Quantity	Debit Quantity	Balance
26-Nov-2004	Evans Trust Medical (4-009-43575-2)		11.20	-11.20
02-May-2005	James Garrison (DEP 05-246685-001)		0.40	-11.60
12-May-2005	Darin Fackler (DEP 05-224667-007)		0.40	-12.00
13-May-2005	Bruce Crescini (DEP 05-245099-002)		0.20	-12.20
13-May-2005	Rambling Acres Lot 59 (DEP 05-239221-001)		1.00	-13.20
13-May-2005	Rambling Acres Lot 67 (DEP 05-241310-001)		1.00	-14.20
21-Jun-2005	Rambling Acres Lot 63-64 (DEP 05-248970-001)		1.00	-15.20
20-Jul-2005	Amanda Thommes (DEP 05-247061-002)		0.50	-15.70
01-Aug-2005	Barbara Doran (DEP 05-237515-001)		0.14	-15.84
10-Nov-2005	Paul Herrick (Volusia 030920033)		0.10	-15.94
21-Jun-2006	Adamson Creek (100215-1)		46.20	-62.14
07-Aug-2006	Vinceno Construction/Old Mill Road/ Vincent Formoso (DEP 64-262256-001)		0.40	-62.54
22-Nov-2010	Westport Center (29930-2)		0.10	-62.64

23-Nov-2010	Phases N1 - N9 Basin 18 adjustment - Banker requested credits be assigned to Basin 17 & 18 for North Bank			97.93
07-Jan-2011	Grande Champion - SW-28A, SW-28B & SW-28C (22941-90)		0.60	97.33
	Total Credits & Debits	**160.57**	**63.24**	

Reserved Credits

Transaction Date	Description	Credit Quantity	Debit Quantity	Balance
	SR 15 / Hoffner Ave / Narcoossee Rd (Lee Vista to Conway Rd), FPID 239266-3-32-01 & 239266-4-32-01 (110189-2)		17.10	80.23
	Total Reserved Credits		**17.10**	

Permit # 76185-1 **Bank Name: Farmton West**

Basin ID: 18 **Community Type:** General Wetlands **Current Balance:** 10.04 **Available Balance:** 10.04

Released/Purchased Credits

Transaction Date	Description	Credit Quantity	Debit Quantity	Balance
05-May-2001	CREDIT RELEASE (Phase I)			30.70
21-Mar-2002	CREDIT RELEASE (Phase I)			52.90
16-Jul-2003	FPL Volusia Substation (DEP 64-135217-014)		Canceled	52.90
12-Aug-2003	Sweetwater Oaks (87207-1)		0.20	52.70
08-Oct-2003	TD Taylor Middle & High School campus expansion (29677-3)		0.20	52.50
12-Jan-2004	FL Gas Transmission (DEP 59-223160-001)		0.10	52.40
25-Feb-2004	Wayne Ryback (DEP ONC-03-0055)		0.20	52.20
30-Apr-2004	Janice Rachwal (DEP OGC 00-1313)		0.10	52.10
27-Dec-2004	David Lanier (DEP 59-235227-001)		0.50	51.60
02-May-2005	James Garrison (DEP 05-246865-001)		Canceled	51.60
12-May-2005	Darin Fackler (DEP 05-224667-007)		Canceled	51.60
13-May-2005	Bruce Crescini (DEP 05-245099-002)		Canceled	51.60
13-May-2005	Rambling Acres Lot 59 (DEP 05-239221-001)		Canceled	51.60
13-May-2005	Rambling Acres Lot 67 (DEP 05-241310-001)		Canceled	51.60
21-Jun-2005	Rambling Acres Lot 63-64 (DEP 05-248970-001)		Canceled	51.60
11-Jul-2005	Maronda Homes (Port St. John) (DEP multiple [586])		3.30	48.30
14-Jul-2005	Eloisa Sotomayer (DEP 05-250606-001)		0.30	48.00
20-Jul-2005	Amanda Thommes (DEP 05-247061-002)		Canceled	48.00
28-Jul-2005	Alan Palange (DEP 05-242737-001)		0.20	47.80
01-Aug-2005	Barbara Doran (DEP 05-237515-001)		Canceled	47.80
03-Aug-2005	Erik Nelson (DEP 05-251614-001)		0.20	47.60
22-Aug-2005	Florida Gas Trans. CS19-CS20 (DEP 05-252172-001)		0.70	46.90
02-Sep-2005	Jameson Place (95641-1)		1.91	44.99
09-Sep-2005	Milton Ave Lots 1 - 5 (DEP multiple [593])		1.90	43.09
21-Sep-2005	Concrete Impressions Deland (Vol. Co. 05-F-FSP-0669)		0.10	42.99
11-Oct-2005	Joseph Gramzinski & Jennifer Ault (DEP OCD 05-0211)		0.30	42.69
18-Oct-2005	Maronda (Grissom/Banyan/Wien) (DEP 05-253389/253390/253391-001)		1.10	41.59
07-Nov-2005	James Devine & Diana Roca (DEP 05-253231-001)		0.30	41.29
09-Nov-2005	Christopher Fara, Sr. (DEP 48-252004-001)		0.10	41.19
10-Nov-2005	Paul Herrick (Volusia 030920033)		Canceled	41.19
10-Nov-2005	Joseph Hurley (DEP 59-244236-001)		0.35	40.84
17-Nov-2005	6455 Mira Ave./ Maronda Homes (DEP 05-255210-001)		0.50	40.34
08-Dec-2005	6475 Homestead Ave. (DEP 05-256596-001)		0.40	39.94
08-Dec-2005	7165 Kimball Ave (DEP 05-242733-001)		0.40	39.54
19-Dec-2005	Kevin & Abby Elliott/925 Grant Road (DEP 05-246161-001)		0.05	39.49
05-Jan-2006	5695 Hemsing St./Holiday Builders (DEP 05-257177-001)		0.04	39.45

17-Jan-2006	Stephen & Luann Jacob/6595 Ainsworth Road (DEP 05-257371-001)		0.50	38.95
19-Jan-2006	1347 Alcazar St./Maronda Homes (DEP 05-256857-001 [234])		Canceled	38.95
06-Feb-2006	Drysdale Drive/Chapel Drive Drainage Improvements (97380-1)		1.20	37.75
09-Feb-2006	Clayton Human (DEP 05-250237-001)		0.60	37.15
17-Feb-2006	FAWN LAKE SUBDIVISION (16214-4)		0.10	37.05
03-Mar-2006	Frank Ciardullo (DEP 05-256246)		0.20	36.85
06-Apr-2006	Cottages & Campground Expansion For Florida United Methodist Childrens Home (77953-6)		2.00	34.85
23-May-2006	Karla Shaffer (DEP 05-261225-001)		0.30	34.55
22-Aug-2006	Treetops (92249-1)		3.00	31.55
21-Sep-2006	Seminole Business Centre Two (63879-3)		2.11	29.44
04-Oct-2006	Beach Village (105129-1)		Canceled	29.44
16-May-2007	Fox Lake Townhomes (100814-1)		2.90	26.54
22-Nov-2010	Maronda (1349, 1407, 1387 Wigmore) (DEP 05-253726/252582/253732-001)		1.40	25.14
30-Nov-2010	Willow Creek Entrance Road (Transfer) (92265-9)		11.80	13.34
20-Dec-2010	City of Titusville (DEP 05-295111-001 EI)		1.50	11.84
31-Mar-2011	City of Titusville - Area IV Wellfield Project (DEP 05-295111-002)		1.80	10.04
	Total Credits & Debits	**52.90**	**42.86**	

Permit # 76185-1 Bank Name: Farmton South

Basin ID: 18 **Community Type:** Forested Freshwater **Current Balance:** 18.90 **Available Balance:** 18.90

Released/Purchased Credits

Transaction Date	Description	Credit Quantity	Debit Quantity	Balance
29-Sep-2011	Phase S2 - Initial credit release			18.90
	Total Credits & Debits	**18.90**		

Basin ID: 18 **Community Type:** Herbaceous Freshwater **Current Balance:** 20.40 **Available Balance:** 20.40

Released/Purchased Credits

Transaction Date	Description	Credit Quantity	Debit Quantity	Balance
29-Sep-2011	Phase S2 - Initial credit release			20.40
	Total Credits & Debits	**20.40**		

Basin ID: 18 **Community Type:** General Wetlands **Current Balance:** 0.09 **Available Balance:** 0.09

Released/Purchased Credits

Transaction Date	Description	Credit Quantity	Debit Quantity	Balance
02-May-2001	RELEASE PERMIT ISSUANCE - Phase 1			14.70
21-Feb-2002	Phase 1			34.20
25-Mar-2002	Florida Gas Transmission #1 (DEP 05-167266-005 [541])		4.00	30.20
11-Sep-2002	David Iodice (DEP 05-197570-001)		0.30	29.90
07-Nov-2002	Florida Gas Transmission #2 (DEP 05-167266-005 [542])		1.00	28.90
04-Feb-2003	Don Simms (DEP 05-203730-001,2,3)		0.90	28.00
24-Jul-2003	Byron Benn (DEP 05-203295-001)		0.10	27.90
30-Jul-2003	Wal-Mart-Cocoa Store No. 174-03, RSC, BP Development Site (86250-1)		5.20	22.70
23-Sep-2003	Aurantia Road Pedway (32288-3)		0.25	22.45
19-Jan-2004	Dan Preuss Lots 10 & 11 (DEP 05-217506-001,2)		0.20	22.25
02-Feb-2004	Roger Boos (DEP 05-213962-001)		0.40	21.85
01-Mar-2004	Clyde & Anne McCoy (DEP 05-208324-001)		0.20	21.65
17-Mar-2004	Florida Gas Trans. Mainline (DEP 48-141841-006)		0.10	21.55
26-Apr-2004	Kevin Cooksey (DEP 05-226886-001)		0.20	21.35
03-May-2004	Canaveral Grove (DEP 05-220514-001)		0.15	21.20
03-May-2004	Robert Scoville (DEP 05-217038-001)		0.40	20.80
10-May-2004	Summerhill of Titusville (90034-1)		2.50	18.30
11-May-2004	Rambling Acres West, Lot 58 (DEP 05-203730-004)		0.40	17.90
01-Jun-2004	Frank Thomas (DEP 05-230171-001)		0.30	17.60
01-Jun-2004	Tropical Breeze Carwash (16794-3)		0.70	16.90

07-Jun-2004	Steve Nugent (DEP OGC 04-0764)		0.10	16.80
28-Jun-2004	Corey Lopez (DEP 05-203975-001)		0.10	16.70
08-Jul-2004	Shahid Haque (DEP 05-215981-002,3)		1.20	15.50
11-Aug-2004	Walter Gatti (DEP 59-234723-001)		0.10	15.40
13-Aug-2004	Don Simms (DEP 05-203730-002)		0.10	15.30
29-Sep-2004	Gary Watson (DEP 05-235614-001)		0.30	15.00
08-Oct-2004	Scott Dalrymple (DEP ONC-04-0100)		0.20	14.80
18-Oct-2004	Ernst Pikker (DEP 05-225606-001)		0.40	14.40
27-Oct-2004	Carl & Judith Jones (DEP OGC 04-1680)		0.20	14.20
09-Nov-2004	TRUSSWOOD TRUSS PLANT (63820-1)		2.00	12.20
15-Nov-2004	Bella Vista Townhomes (90336-1)		1.75	10.45
20-Dec-2004	Stacie Smith (DEP 05-240184-001)		0.20	10.25
03-Jan-2005	Maronda Homes/ Aberdeen Ave. (DEP 05-240032-001)		0.20	10.05
07-Jan-2005	Larry Fineberg (DEP 05-239084-001)		0.10	9.95
28-Feb-2005	Julie Stephens (DEP OGC 04-2044)		0.30	9.65
25-Mar-2005	Mercedes Homes/Derman St. (DEP 05-244239-001)		0.20	9.45
29-Mar-2005	Paul McGlynn (DEP 05-243944-001)		0.30	9.15
05-May-2005	MB Custom Homes (DEP 05-246868-001)		0.10	9.05
11-May-2005	Ronald Cavendish (DEP 05-245808-001)		0.04	9.01
27-Mar-2006	4D Lightning Detection Network, Site 2 and Site 5 (104687-1)		0.10	8.91
20-Jun-2006	Buffkin Tile and Carpet, East, Parcel 550, Ph 1;West Parcel 549-Ph 2 (102148-1)		3.30	5.61
22-Jun-2006	Space Coast Honda Expansion Site (90239-1)		3.50	2.11
03-Aug-2006	FAWN LAKE SUBDIVISION (16214-4)		0.30	1.81
21-Sep-2006	Seminole Business Centre Two (63879-3)		0.09	1.72
10-Oct-2006	Paul Spampanato (DEP 05-268086-001)		0.20	1.52
14-Feb-2007	Executive Specialty Homes, LLC (DEP 64-270604-001)		0.23	1.29
04-Apr-2007	Rambling Acres Lot 62 (DEP 05-250353-001 / DEP 05-241310-002)		1.00	0.29
20-Dec-2010	Maria Samet (DEP 05-229989)		0.20	0.09
	Total Credits & Debits	**34.20**	**34.11**	

APPENDIX C

Farmton Mitigation Bank – Federal Credit Ledger

Farmton Mitigation Bank – Federal Credit Ledger

Key:

Init = Initial Allocation; Rel = Release; Wdr = Withdrawal; Permits = USACE Permit Number for Withdrawal; TW = Total Withdrawals; BOR = Balance of Released Credits

Type	Jurisdiction	Date	Credits	Permits	TW	BoR
Init	Federal	6/7/2000	4,233.000		0	0
Init	Federal	6/7/2000	869.600		0	0
Rel	Federal	6/11/2001	160.980		0	160.98
Rel	Federal	3/22/2002	31.390		0	192.37
Wdr	Federal	3/25/2002	4.000	SAJ-2002-01244	4	188.37
Wdr	Federal	9/11/2002	0.300	SAJ-2002-02621	4.3	188.07
Wdr	Federal	1/7/2003	0.300	SAJ-2002-03112	4.6	187.77
Wdr	Federal	2/4/2003	0.300	SAJ-2002-06469	4.9	187.47
Wdr	Federal	4/3/2003	2.300	SAJ-2002-08109	7.2	185.17
Wdr	Federal	4/3/2003	2.000	SAJ-2001-05750	9.2	183.17
Wdr	Federal	5/23/2003	7.500		16.7	175.67
Wdr	Federal	7/16/2003	0.300	SAJ-2003-03467	17	175.37
Wdr	Federal	7/30/2003	4.000	SAJ-2002-07799	21	171.37
Wdr	Federal	8/27/2003	6.000		27	165.37
Wdr	Federal	9/23/2003	0.250	SAJ-2002-06257	27.25	165.12
Wdr	Federal	10/8/2003	0.200	SAJ-2003-04294	27.45	164.92
Wdr	Federal	12/9/2003	0.300	SAJ-1994-03091	27.75	164.62
Wdr	Federal	1/19/2004	0.100	SAJ-2003-07198	27.85	164.52
Wdr	Federal	1/19/2004	0.100	SAJ-2003-07195	27.95	164.42
Wdr	Federal	2/2/2004	0.400	SAJ-2003-04590	28.35	164.02
Wdr	Federal	2/25/2004	0.200	SAJ-2001-05180	28.55	163.82
Wdr	Federal	3/1/2004	0.200	SAJ-2003-00112	28.75	163.62
Rel	Federal	3/17/2004	230.510		28.75	394.13
Wdr	Federal	3/17/2004	0.100	SAJ-2003-12867	28.85	394.03
Wdr	Federal	5/10/2004	2.500	SAJ-2002-03700	31.35	391.53
Wdr	Federal	5/11/2004	0.400	SAJ-2003-10911	31.75	391.13
Wdr	Federal	6/1/2004	0.700	SAJ-2004-00398	32.45	390.43
Wdr	Federal	6/7/2004	13.900	SAJ-2002-03470	46.35	376.53
Wdr	Federal	6/9/2004	2.400		48.75	374.13
Wdr	Federal	7/8/2004	0.400	SAJ-2004-00526	49.15	373.73
Wdr	Federal	7/8/2004	0.800	SAJ-2004-07008	49.95	372.93

Wdr	Federal	7/29/2004	0.300	SAJ-2004-01056	50.25	372.63
Wdr	Federal	8/2/2004	0.150	SAJ-1997-01068	50.4	372.48
Wdr	Federal	8/9/2004	2.300		52.7	370.18
Wdr	Federal	9/14/2004	3.500	SAJ-2001-06028	56.2	366.68
Wdr	Federal	9/22/2004	23.767	SAJ-2004-07359	79.967	342.913
Wdr	Federal	9/29/2004	0.200	SAJ-2004-08979	80.167	342.713
Wdr	Federal	10/18/2004	0.040	SAJ-2004-00966	80.207	342.673
Wdr	Federal	11/15/2004	1.750	SAJ-2003-09028	81.957	340.923
Wdr	Federal	12/8/2004	1.000	SAJ-2003-03188	82.957	339.923
Wdr	Federal	1/3/2005	0.200	SAJ-2004-11436	83.157	339.723
Wdr	Federal	1/10/2005	0.800	SAJ-2004-08535	83.957	338.923
Wdr	Federal	1/25/2005	0.300	SAJ-2004-11570	84.257	338.623
Rel	Federal	2/28/2005	159.010		84.257	497.633
Wdr	Federal	3/21/2005	0.360	SAJ-2004-05309	84.617	497.273
Wdr	Federal	5/2/2005	0.200	SAJ-2005-03196	84.817	497.073
Wdr	Federal	5/6/2005	0.300		85.117	496.773
Wdr	Federal	5/12/2005	0.400	SAJ-2004-00531	85.517	496.373
Wdr	Federal	5/13/2005	0.200	SAJ-2005-02837	85.717	496.173
Wdr	Federal	5/27/2005	0.170	SAJ-2003-04845	85.887	496.003
Wdr	Federal	6/14/2005	4.700	SAJ-2004-01052	90.587	491.303
Wdr	Federal	6/21/2005	1.000	SAJ-2005-04703	91.587	490.303
Wdr	Federal	6/21/2005	1.000	SAJ-2004-12210	92.587	489.303
Wdr	Federal	7/11/2005	3.300		95.887	486.003
Wdr	Federal	7/14/2005	0.300	SAJ-2005-05789	96.187	485.703
Wdr	Federal	7/18/2005	31.500	SAJ-2004-08563	127.69	454.203
Wdr	Federal	7/20/2005	0.400	SAJ-2005-05942	128.09	453.803
Wdr	Federal	8/1/2005	0.100	SAJ-2004-10463	128.19	453.703
Wdr	Federal	8/3/2005	3.200		131.39	450.503
Wdr	Federal	9/12/2005	1.000	SAJ-2004-12686	132.39	449.503
Wdr	Federal	9/27/2005	16.300	SAJ-2004-01749	148.69	433.203
Rel	Federal	10/14/2005	888.120		148.69	1,321.32
Wdr	Federal	10/21/2005	25.000	SAJ-2002-06597	173.69	1,296.32
Wdr	Federal	11/4/2005	27.700		201.39	1,268.62
Wdr	Federal	11/7/2005	0.300	SAJ-2005-07505	201.69	1,268.32
Wdr	Federal	11/16/2005	0.500	SAJ-2005-08667	202.19	1,267.82
Wdr	Federal	12/5/2005	1.000	SAJ-2004-00202	203.19	1,266.82
Wdr	Federal	12/7/2005	7.811	SAJ-1995-05787	211	1,259.01
Wdr	Federal	12/7/2005	0.400		211.4	1,258.61
Wdr	Federal	12/7/2005	0.400		211.8	1,258.21
Wdr	Federal	12/8/2005	6.200	SAJ-2002-04565	218	1,252.01
Wdr	Federal	12/13/2005	0.300		218.3	1,251.71
Wdr	Federal	12/16/2005	0.500	SAJ-2005-09345	218.8	1,251.21
Wdr	Federal	1/3/2006	2.900	SAJ-2005-08116	221.7	1,248.31

Wdr	Federal	1/3/2006	0.400	SAJ-2005-10553	222.1	1,247.91
Wdr	Federal	2/8/2006	0.600	SAJ-2005-04518	222.7	1,247.31
Wdr	Federal	2/13/2006	3.470	SAJ-2002-06597	226.17	1,243.84
Wdr	Federal	2/13/2006	0.200	SAJ-2004-07995	226.37	1,243.64
Wdr	Federal	2/16/2006	2.500	SAJ-2004-11733	228.87	1,241.14
Wdr	Federal	3/2/2006	0.200	SAJ-2005-09866	229.07	1,240.94
Wdr	Federal	3/13/2006	9.000	SAJ-2004-12664	238.07	1,231.94
Wdr	Federal	3/22/2006	0.300	SAJ-2006-00221	238.37	1,231.64
Wdr	Federal	3/22/2006	0.400	SAJ-2006-01043	238.77	1,231.24
Wdr	Federal	3/24/2006	2.650	SAJ-2003-08800	241.42	1,228.59
Wdr	Federal	3/24/2006	0.670	SAJ-2003-10987	242.09	1,227.92
Wdr	Federal	4/11/2006	1.000	SAJ-2005-05656	243.09	1,226.92
Wdr	Federal	4/21/2006	0.400	SAJ-2005-04978	243.49	1,226.52
Wdr	Federal	5/22/2006	0.300	SAJ-2006-02168	243.79	1,226.22
Wdr	Federal	6/13/2006	1.000	SAJ-2005-07779	244.79	1,225.22
Wdr	Federal	6/23/2006	4.500	SAJ-2003-04295	249.29	1,220.72
Wdr	Federal	7/11/2006	0.500	SAJ-2005-06939	249.79	1,220.22
Wdr	Federal	7/17/2006	7.180	SAJ-2004-09527	256.97	1,213.04
Wdr	Federal	8/16/2006	0.900	SAJ-2004-02003	257.87	1,212.14
Wdr	Federal	8/17/2006	1.290	SAJ-2005-08565	259.16	1,210.85
Wdr	Federal	8/23/2006	3.000	SAJ-2004-01679	262.16	1,207.85
Wdr	Federal	8/28/2006	2.500	SAJ-2005-07678	264.66	1,205.35
Wdr	Federal	9/7/2006	13.000	SAJ-1995-02908	277.66	1,192.35
Wdr	Federal	9/7/2006	0.250	SAJ-2005-07453	277.91	1,192.10
Wdr	Federal	9/19/2006	1.000	SAJ-2006-02482	278.91	1,191.10
Wdr	Federal	9/20/2006	1.000	SAJ-2006-03217	279.91	1,190.10
Wdr	Federal	9/29/2006	0.450		280.36	1,189.65
Wdr	Federal	10/5/2006	0.450	SAJ-2004-05511	280.81	1,189.20
Wdr	Federal	10/5/2006	0.200	SAJ-2006-05493	281.01	1,189.00
Wdr	Federal	10/17/2006	1.620	SAJ-2006-05483	282.63	1,187.38
Wdr	Federal	10/30/2006	0.390	SAJ-2006-01528	283.02	1,186.99
Wdr	Federal	10/31/2006	0.800		283.82	1,186.19
Wdr	Federal	10/31/2006	0.300		284.12	1,185.89
Wdr	Federal	10/31/2006	4.550	SAJ-2004-09462	288.67	1,181.34
Wdr	Federal	12/15/2006	1.500		290.17	1,179.84
Wdr	Federal	12/26/2006	0.300	SAJ-2005-09379	290.47	1,179.54
Wdr	Federal	1/17/2007	2.000	SAJ-2006-06293	292.47	1,177.54
Wdr	Federal	2/2/2007	3.700	SAJ-2006-05651	296.17	1,173.84
Wdr	Federal	3/13/2007	3.240	SAJ-2001-04967	299.41	1,170.60
Wdr	Federal	3/15/2007	0.290	SAJ-2005-04729	299.7	1,170.31
Wdr	Federal	3/16/2007	1.500	SAJ-1989-25010	301.2	1,168.81
Wdr	Federal	4/23/2007	4.600		305.8	1,164.21
Wdr	Federal	5/8/2007	8.000	SAJ-2005-00377	313.8	1,156.21

Wdr	Federal	5/30/2007	1.800	SAJ-2005-10349	315.6	1,154.41
Wdr	Federal	9/6/2007	1.000	SAJ-2007-04292	316.6	1,153.41
Rel	Federal	9/30/2007	323.970		316.6	1,477.38
Wdr	Federal	11/14/2007	1.800		318.4	1,475.58
Wdr	Federal	1/14/2008	5.000	SAJ-1994-04165	323.4	1,470.58
Wdr	Federal	4/1/2008	21.900		345.3	1,448.68
Wdr	Federal	5/8/2008	3.500	SAJ-2006-01795	348.8	1,445.18
Wdr	Federal	7/1/2008	0.100		348.9	1,445.08
Wdr	Federal	2/8/2009	1.840	SAJ-2007-01228	350.74	1,443.24
Rel	Federal	4/13/2009	206.540		350.74	1,649.78
Wdr	Federal	5/1/2009	4.550	SAJ-2004-09462	355.29	1,645.23
Wdr	Federal	5/15/2009	1.000	SAJ-2006-02482	356.29	1,644.23
Wdr	Federal	9/1/2010	0.500	SAJ-2009-01355	356.79	1,643.73
Wdr	Federal	9/23/2010	1.000	SAJ-2008-00870	357.79	1,642.73
Wdr	Federal	10/8/2010	0.830	SAJ-2004-10759	358.62	1,641.90
Wdr	Federal	10/25/2010	0.900	SAJ-2006-06302	359.52	1,641.00
Wdr	Federal	1/10/2011	5.700	SAJ-2009-02681	365.22	1,635.30
Wdr	Federal	8/12/2011	6.600	SAJ-2008-03805	371.82	1,628.70

APPENDIX D

Author's Curriculum Vitae

MARC VON CANAL

Senior Scientist and Managing Associate, Biological Resources and Land Management

Marc von Canal is a Senior Scientist and Managing Associate in Biological Resources and Land Management for ESA's Southeast Region. Marc draws from over 17 years experience in environmental resource management and regulations throughout Florida. A former environmental regulator with the St. Johns River Water Management District (SJRWMD), an agency of the State of Florida tasked with managing and regulating water resources, natural systems, and public lands, Marc's expertise includes Environmental Resource Permitting (ERP), state and federal wetland delineation, ecological restoration, natural community management, mitigation plan and functional assessments, including the Uniform Mitigation Assessment Method (UMAM) and Wetland Rapid Assessment Procedure (WRAP), and biological monitoring and reporting.

Serving over four years as a Senior Scientist in SJRWMD's Mitigation Banking Program, Marc is highly proficient in mitigation bank feasibility and appropriateness determinations, mitigation bank permit applications, land management planning, management cost estimates, monitoring and maintenance plans, and regulatory compliance. Marc successfully coordinated with federal, state, and local agencies, as well as private consultants and stakeholders, to permit 7 mitigation banks and manage all regulatory aspects for over twenty banks throughout Florida, covering in excess of 70,000 acres and representing more than 15,000 mitigation credits. In addition, Marc's experience includes the permitting and management of numerous other large scale restoration, mitigation, and development projects. His contributions were instrumental in the agency's development of a variety of tools and strategies that significantly improved the regulatory processes for the tracking of mitigation credits, development and review of cost estimates, access to mitigation banking data, and statewide consistency in the application of ERP and UMAM rules.

As a recognized expert in environmental permitting and mitigation banking, Marc has served on numerous committees to develop and implement ERP and UMAM rules, best management practices, and mitigation banking rules and guidelines. In addition, Marc gave a presentation on emerging technologies at the 11th National Mitigation & Ecosystem Banking Conference, and lectured on mitigation banking to an Environmental Law class at the University of Florida. Marc's demonstrated expertise in environmental regulations and management, combined with his strong and positive working relationships with many key agency staff at the federal, state, and local levels, profoundly enhance his ability to secure efficient review of permit applications with the best results for his clients.

Education

M,S,, Environmental Science
Florida Institute of Technology

B.S., Biology & Psychology
Tulane University

Relevant Experience

Floravista, Inc., Mathur Property Wetland Delineation. ***Senior Scientist.*** Marc provided technical field support and oversight for a wetland delineation on an 18-acre property in the City of Titusville, located in Brevard County. The field work included identification of jurisdictional plants, characterization of hydric and non-hydric soils, investigation of hydrological indicators, and description of native communities.

Presentations

Speaker: "Mitigation Banking" to University of Florida School of Law class in Environmental Law. Gainesville, FL, April 7, 2009.

Speaker: "Implementation of a Mitigation Banking Website" 11th National Mitigation & Ecosystem Banking Conference. Jacksonville, FL, April 6, 2008.

Session Panel: "Emerging Technologies in Mitigation Banking. 11th National Mitigation Banking Conference. Jacksonville, FL, April 6, 2008

Publications

"A simple field technique for Accurate reparation estimates In aquatic systems." Lake and Reservoir Management 15(3): 185-199. March 1999.

"A new technique to estimate the oxygen transfer coefficient in Lentic systems with a soluble benzoic acid probe." Master's Thesis Florida Institute of Technology December 1994.

Flagler County: Parcel D Long Term Land Management Options Study. ***Senior Scientist.*** Parcel D is a 1000-acre tract comprised of environmentally sensitive lands owned by Flagler County, in east-central Florida. To complement an earlier study by ESA for the Flagler County Airport, addressing the feasibility of off-site mitigation on the site, Marc conducted a regulatory study comparing and contrasting different land management options for the parcel. The final document and presentation to the County compared the advantages and challenges of implementing a mitigation bank, Regional Off-Site Mitigation Area (ROMA), In-Lieu Fee (ILF) mitigation, or permittee responsible mitigation on the site. The information provided to the County also addressed the County's requirement to provide public recreational access to the site.

Mitigation Marketing: Due Diligence Mitigation Bank Feasibility Study. ***Senior Scientist.*** Marc conducted a preliminary feasibility study for a potential mitigation bank in Highlands County, Florida. For this study Marc developed and profile of the site's likely historical communities, current conditions, suitability of the surrounding landscape, hydrologic connectivity, significance to the watershed, likely mitigation bank service area, mitigation activities, management requirements, and reasonably expected range for mitigation credits. The information Marc provided on behalf of ESA proved pivotal in the owner's decision-making regarding the project.

Greens Creek Mitigation Bank, Clay County, FL. ***Senior Regulatory Scientist.*** Marc conducted a comprehensive regulatory and ecological review for the permitting of this 4,200-acre mitigation bank. During the permitting process, Marc conducted numerous site visits with the project's environmental consultants and federal Interagency Review Team (IRT) staff. During these site visits Marc reviewed and approved wetland lines, evaluated community descriptions, and obtained ecological data to develop a complete mitigation credit assessment using UMAM. In addition, Marc successfully coordinated with the project's forester to develop a Forest Stewardship Plan for the mitigation bank that struck the best balance for the banker in terms of mitigation credits, credit releases, tree thinning, and timber revenues.

Fish Tail Swamp Mitigation Bank, Flagler and St. Johns Counties, FL. ***Senior Regulatory Scientist.*** Marc conducted a comprehensive regulatory and ecological review for the permitting of this 5,200-acre mitigation bank. The hydrologic restoration aspects of this bank project proved far more technically challenging than on other mitigation banks permitted within the SJRWMD service area. Marc engaged the SJRWMD's and banker's project engineers at the outset of the permitting process to provide coordination and feedback on the natural community requirements for hydrologic restoration. In addition, Marc worked diligently with the banker's consultants to

Organizations

National Association of Environmental Professionals (NAEP)
Central Florida Association of Environmental Professionals (CFAEP)
Society of Wetland Scientists (SWS)
Florida Association of Mitigation Bankers (FAMB)

develop an accurate model for the degree and extent of hydrologic restoration. Through Marc's proactive efforts, and open communications throughout the permitting process, this extremely challenging project was permitted efficiently, with a fair credit allocation to the bank that accurately reflected the significance of hydrologic restoration and resulting natural community ecological lift.

Lake Louisa and Green Swamp Mitigation Bank, Lake County, FL. ***Senior Regulatory Scientist.*** Ten years after permitting and mitigation plan implementation, this 1000-acre mitigation bank experienced extensive failure of mitigation plantings. As the regulatory reviewer for the project, Marc worked efficiently with the banker's consultants to develop and permit a cost effective remediation plan that got the project back into compliance, and allowed the timely release of mitigation credits for a vital transportation project in the City of Leesburg.

Port Orange Mitigation Bank, Volusia County, FL. ***Senior Regulatory Scientist***. This project involved the modification of a previously permitted hydrologic monitoring and well/piezometer implementation plan for the Port Orange Mitigation Bank. The City of Port Orange operates a wellfield in the northeastern portion of the mitigation bank. A previously permitted monitoring program to demonstrate that the well withdrawals would not cause adverse impacts to wetlands was deemed to be cumbersome, inadequate to meet project goals, and not cost effective. Marc successfully coordinated with the project scientist and District water use staff to identify optimal locations for the monitoring wells, improving the quality of data while reducing redundancy and cost; to develop a more streamlined and efficient wetland monitoring plan; and to develop common sense hydrologic monitoring parameters and success criteria. Marc received personal recognition from the City Manager, Mike Ulrich, for his assistance in the project and for the resulting cost savings to the city.

Lake Swamp Mitigation Bank, Flagler County, FL. ***Senior Regulatory Scientist.*** Marc conduced a comprehensive regulatory review of this 1,800-acre mitigation bank, located in southern Flagler County. During permit review Marc worked closely with the banker's consultants to provide guidance and feedback on a the habitat enhancement and restoration activities, to develop meaningful success criteria and an effective land management plan.

Nochaway Mitigation Bank, Clay County, FL. ***Senior Regulatory Scientist.*** Marc was the lead environmental reviewer for this 4,000-acre mitigation bank in southern Clay County. The identification of appropriate habitat restoration techniques and certain land management strategies, with respect

to hunting/game management and long-term monitoring proved to be particularly challenging on this project. Marc engaged the project's consultant in effective communications throughout the permitting process to help in the development of solutions to these challenges. In part through Marc's efforts, the banker implemented the most cost effective and adaptive mitigation activities along with a hunt management plan that met regulatory criteria and the bank's ecological goals, while serving the banker's need to maintain a level of hunting on the site.

Sebastian River Preserve State Park, Brevard and Indian River Counties, FL. ***Senior Regulatory Scientist.*** Provided technical field support to staff from the FDEP in the development and implementation of a large-scale long term management plan for the 16,683-acre State Park. The work Marc performed included vegetative and hydrologic monitoring and natural community evaluation to determine the most appropriate and effective restoration techniques and management strategies.

St. Johns River Water Management District, St. Johns River Upper Basin Agricultural Water Quality Program. Environmental Specialist. Helped to develop and manage a large scale water quality sampling program for agricultural discharges to the upper basin of the St. Johns River. The program involved quarterly sampling for a variety of parameters from dozens of pumped and gravity discharge sites. Marc conducted the sampling, managed the water quality data, and evaluated results to help guide program policy decisions. In addition, Marc designed and implemented a study to determine sources of high nutrient runoffs from a large agricultural site. The information was used develop management strategies to reduce nutrient loads to the receiving waters.