Southwest Florida
Water Management District

FDOT Mitigation Plan

October 28, 2003

Prepared by:

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Cover: Tappan Tract (SW 62). Photo taken after construction in mid-2003. The property is owned by the City of Tampa, design and construction conducted through the SWFWMD – SWIM and Operations Departments and funded through the FDOT mitigation program. The construction includes the creation and restoration of salt-marsh habitat, tidal connections to adjacent mangrove habitat, isolated ephemeral marsh (center) and restoration of upland hardwood hammock buffers.

FDOT MITIGATION PROJECTS

Yellow – Existing Projects, Blue – New Projects for 2003)

SW 31 - Cattle Dock Point, Phase II (DEP / WMD – SWIM)

SW 34 - Lake Thonotasassa (WMD – SWIM / Hillsborough Co. Parks)

SW 38 - Quick Point Preserve (City of Longboat Key)

SW 45 - Gateway Restoration (Pinellas Co. / WMD – SWIM)

SW 47 - Tenoroc / Saddle Creek (DEP / FFWCC)

SW 49 - Reedy Creek Mitigation Bank (Private Mitig. Bank)

SW 50 - Terra Ceia Restoration (DEP / WMD – SWIM)

SW 51 - Myakka River State Park (DEP - Parks)

SW 52 - Little Pine Island Mitigation Bank (Private Mitig. Bank)

SW 53 - Boran Ranch Mitigation Bank (Private Mitig. Bank)

SW 54 - Anclote Parcel (WMD – Land Resources)

SW 55 - Upper Hillsborough 4&5 (WMD – Land Resources)

SW 56 - Cockroach Bay, Freshwater (Hills. Co. Parks / WMD – SWIM)

SW 57 - Lk. Panasoffkee Restoration (WMD - SWIM)

SW 58 - Ledwith Lake (Alachua County)

SW 59 - Hampton Tract (WMD – Land Resources)

SW 60 - Serenova Extension (WMD - Land Resources)

SW 61 - Cypress Ck. Preserve, Jennings Tract (Hills. County Parks)

SW 62 - Tappan Tract (City of Tampa / WMD – SWIM)

SW 63 - Hillsborough River Corridor (WMD - Land Resources)

SW 64 - Baird Tract (DEP / DOF)

SW 65 - Rutland Ranch (WMD - Land Resources)

SW 66 - Lk. Hancock Reserve (Polk County / WMD – Land Res.)

SW 67 – Apollo Beach (Hills Co. Parks / WMD – SWIM)

SW 68 – Brooker Creek Corridor to Starkey Wilderness Preserve (Pinellas, Hills., Pasco Co. / WMD - Land Resources)

SW 69 – Peace River Bridge Restoration (DOT/ WMD)

FDOT MITIGATION PROJECTS (Cont.)

SW 70 – Fort DeSoto Park (Pinellas County / WMD – SWIM)

SW 71 – Boyd Hill Nature Park (City of St. Petersburg)

SW 72 – Cypress Creek Preserve, Greer Tract (Hills. County Parks)

SW 73 – Hillsborough River State Park (DEP-Parks / WMD)

SW 74 - Serenova Preserve, Sites 2,3,4,8 (WMD – Land Resources)

SW 75 – Cockroach Bay – Saltwater (Hills. Co. Parks / WMD-SWIM)

SW 76 - Lake Lowery Tract (Polk Co. / WMD – Land Resources)

SW 78 – Bahia Beach (Hills. Co. Parks / WMD-SWIM)

INTRODUCTION

This mitigation plan has been developed by the Southwest Florida Water Management District (SWFWMD) to provide regional, long-range mitigation planning for Florida Department of Transportation (FDOT) projects in accordance with Section 373.4137, Florida Statutes. The statute language is located after the listing of FDOT projects and before the Figures.

The FDOT has provided an annual statewide inventory of projected construction impacts to wetlands since 1996. In May, 2003 the FDOT identified projected impacts for construction projects planned in Fiscal Years 2004 through 2007 and information regarding modifications to previously identified projects. In addition, advance notice was provided for many projects scheduled beyond this planning horizon so that appropriate mitigation projects can be developed and avoid deferring wetland impacts back for FDOT to implement mitigation. For each FDOT project, information was provided regarding the acreage and type of wetland impacts anticipated from construction.

Based on the information provided by the FDOT, mitigation projects were included in this plan to offset those impacts anticipated within the SWFWMD geographic area. Proposed mitigation projects are intended to meet State (ERP) and Federal (Section 404) permitting criteria pertaining to wetland mitigation. These mitigation projects are required to adequately compensate for the loss of the associated wetland impacts with similar enhanced, restored and created habitat functions and values.

Selection of mitigation projects was conducted in consultation with staff from the Florida Department of Environmental Protection, Florida Department of Transportation, Florida Fish & Wildlife Conservation Commission, U.S. Environmental Protection Agency, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, and the National Marine Fisheries Commission. Other interested local and state agencies and the public, including representatives of private mitigation banks, also provide input during the nomination and selection process.

It should be noted this plan does not represent approval from the SWFWMD or any of the participating regulatory agencies for the wetland impacts identified in the inventory or any other impacts that may be related to the inventoried FDOT projects. These agencies reserve their authority to fully evaluate permit applications for each of the FDOT construction projects according to applicable rules at the time of application.

This mitigation plan is not specifically designed to offset impacts to any State or Federally-listed species or any secondary impacts that may be incurred as a result of road construction. However, this does not mean the mitigation projects included herein could not be used for such purposes if subsequent analysis determined a mitigation project was suitable and sufficient mitigation was available to meet this requirement and need.

This plan attempts to provide enough flexibility to account for subsequent revisions that maybe necessary to address specific permitting needs of the FDOT. Annual updates will be made to add projects planned for future years and to revise previously inventoried projects. Revisions are required to address changes to construction start dates, inventoried projects, wetland impact information, and various mitigation activities. Revisions may also be necessary to provide any additional mitigation required by federal regulatory agencies.

WETLAND IMPACTS

Since the inception of the FDOT mitigation program in 1996, FDOT Districts 1 (Bartow), 5 (Deland), 7 (Tampa), and Turnpike (Orlando) have proposed 125 construction projects with wetland impacts be mitigated through the program. These include FDOT projects with anticipated construction schedules through at least 2009. Distributed over 11 drainage basins and covering 16 counties, the total wetland impact acreage projected by FDOT by all these projects is approximately 388 acres. These impacts are associated with all the construction projects currently on the impact inventory (Table 1). Figure 1 portrays the basins within the SWFWMD, Figures 2 and 3 depict the proposed FDOT project locations relative to those basins.

Within this year’s plan, FDOT has proposed an increase of 26 new projects with an anticipated 31 acres of wetland impacts. Twenty acres of the new impacts are associated with one project, the 20-year expansion of activities associated with Tampa International Airport (TIA). Previously submitted FDOT projects had a cumulative impact decrease of 24 acres compared to last year's plan. Table 2 depicts all the designated mitigation project budgets and associated FDOT wetland impacts. Tables 3 and 4 list the amended and new wetland impacts, and associated funds requested for implementing the mitigation projects. As depicted on Table 1, mitigation nominations for 11 of the 26 new FDOT projects are being developed and selection will be deferred until the 2004 mitigation plan.

MITIGATION PROJECTS

The District mitigation plan incorporates mitigation projects developed by various agencies, including various SWFWMD departments. The SWFWMD Departments

involved with the majority of nominations include the Land Resources Department (LAND) and the Surface Water Improvement & Management Section (SWIM). The SWIM-related projects include restoration activities conducted on property owned by FDEP or County Governments. The majority of the LAND-related projects include property owned by the WMD, but a few of these tracts are co-owned and managed by County agencies. Mitigation nominations submitted from other entities generally include the Department of Environmental Protection (FDEP), County Governments, and private mitigation banks. These potential mitigation options are reviewed by the previously mentioned environmental agencies as to whether they appropriately mitigate for the loss of the wetland functions associated with the FDOT construction projects.

There are two new mitigation projects adopted in the 2003 mitigation plan. As approved by the 2003 Florida Legislative session, a portion of Polk County previously within the St. John's River Water Management District (SJRWMD) was transferred to the SWFWMD. Subsequently, one of the designated mitigation projects developed and co-purchased between the SJRWMD and Polk County Natural Resources Dept. (SW 76-Lake Lowery Tract) is now within the SWFWMD. The other mitigation project (SW 78-Bahia Beach) includes property recently acquired and managed by the Hillsborough County Parks Department and habitat creation, restoration, and enhancement activities will be conducted in cooperation with the WMD-SWIM Dept. and Hillsborough County Environmental Protection Commission (HCEPC).

As noted on Table 7, to date the mitigation projects propose a cumulative 5151 acres and 30 mitigation bank credits of various mitigation activities to compensate for 366 acres of the proposed wetland impacts anticipated with the FDOT construction activities. Figure 4 depicts the selected mitigation projects relative to their associated basin. A basin-by-basin summary of wetland impacts and the designated mitigation projects is provided below and on Table 1. Tables 5 & 6 list the various mitigation activities and acreage proposed for each mitigation project. Information (narratives, location maps, aerials, designs) concerning the 34 mitigation projects is provided as separate attachments.

MODIFICATIONS TO PREVIOUS MITIGATION PLANS

Minor impact revisions are anticipated for the majority of the FDOT projects, and in some cases, the revisions can also be substantial. Modifications proposed in this plan are required to adjust projected impact acres to account for design revisions by FDOT, and reconcile projected versus permitted impact acres following issuance of state and federal wetland permits. These modifications also include and update mitigation options, designs, and activities based on ecological attributes and cost-saving options that can be incorporated into the mitigation projects. Modifications of the FDOT projects and mitigation activities are so noted where they occur in the plan.

REPAYMENT OF ADVANCE FUNDING

Pursuant to Section 373.4137, F.S., the FDOT provided $12 million in advance mitigation funding. These funds were distributed statewide to various projects listed in each of the Water Management Districts' SWIM plans and to specific aquatic and exotic

plant control projects. To the extent these projects offset the wetland impacts identified in the inventory, the FDOT received mitigation credit for them, thus offsetting a portion of the advance funding. Of the $12 million distributed statewide, the SWFWMD received $1.9 million that was designated toward SWIM projects. The savings from cost-effective mitigation projects (i.e. projects costing less than the available funding based on impact acreage) are credited toward the advance funding.

This advanced funding is required reimbursement to FDOT by 2005. As noted on Table 2, upon approval of this mitigation plan, the SWFWMD will be able to contribute approximately $9.8 million to offset the statewide $12 million advance funds. In spite of these cost-effective savings, this year's plan still provides $2.8 million toward new and expanded mitigation options.

Any questions, comments, suggestions, or questions on the FDOT Mitigation Program, or any of the associated mitigation projects, please contact Mark Brown at:

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The following information lists all the FDOT projects from inception of the mitigation program in 1996, including roadway construction dates, wetland impact acreage, associated mitigation projects, and any project revisions from the 2002 plan.

Charlotte Harbor Drainage Basin

Project: CR 765A Bridge Replacement
WPI# 1984781 **FM#** 1120082
Date: October 2005
Impacts: 0.50 acres
Mitigation: Little Pine Island Mitigation Bank (SW 52)
Status: New Project

Hillsborough River Basin

Project: Interstate 4, County Line to Memorial Blvd., Sec. 1
WPI# 7113951 **FM#** 2012081
Date: October, 1997
Impacts: 13.55 acres
Mitigation: Upper Hillsborough 4 & 5 (SW 55)
Status: No Revisions

Project: SR 54 - US 41 to Cypress Creek
WPI# 7115981 **FM#** 2563431
Date: October, 2000
Impacts: 14.20 acres
Mitigation: Lake Thonotosassa Restoration Project (SW 34)
Status: No Revisions

Project: US 41 - Bell Lake to Tower Rd.
WPI# 7115951 **FM#** 2563151
Date: June, 2001
Impacts: 1.10 acres
Mitigation: Hillsborough River Corridor (SW 63)
Status: No revisions

Project: Bruce B. Downs Bike Path (Amberly Dr. to Hunter's Green)
WPI# 7123606 **FM#** 2578071
Date: October, 1999
Impacts: 0.5 acres
Mitigation: Jennings Tract, Cypress Ck. Preserve (West) (SW 61)
Status: No Revisions

Project: Interstate 4, W. of Memorial Blvd. To W. of US 98 (Section 2)
WPI# 11479455 **FM#** 2012171
Date: September, 2002
Impacts: 4.11 acres
Mitigation: Jennings Tract, Cypress Ck. Preserve (West) (SW 61)
Status: - 4.1 acres from 2002

Project: SR 39, Blackwater Creek Bridge Replacement
WPI# 7113773 **FM#** 2555361
Date August, 2001
Impacts: 2.10 acres
Mitigation: Jennings Tract, Cypress Ck. Preserve (West) (SW 61)
Status: No Revisions

Project: SR 56 – SR 54 to Bruce B. Downs Blvd.
WPI# 47617 **FM#** 2563871
Date: July, 1999
Impacts: 5.3 acres
Mitigation: Jennings Tract, Cypress Ck. Preserve (SW 61)
Status: No Revisions

Project: Bruce B. Downs Bikepath (Tampa City Limits to Amberly Drive)
FM# 2578072
Date: February, 2002
Impacts: 0.2 acres
Mitigation: Jennings Tract, Cypress Ck. Preserve (West) (SW 61)
Status: No Revisions

Project: SR 678 (Bearss Avenue) Florida Ave. to Nebraska
FM# 2558591
Date: November, 2002
Impacts: 0.1 acres
Mitigation: Jennings Tract, Cypress Ck. Preserve (West) (SW 61)
Status: No Revisions

Project: Alexander Street, US 92 to Interstate 4
FM# 2578391
Date: September, 2004
Impacts: 2.60 acres
Mitigation: Jennings Tract, Cypress Ck. Preserve (West) (SW 61)
Status: No Revisions

Project: Alexander Street, On-Ramp to Westbound Interstate 4
FM# 2584491
Date: September, 2004
Impacts: 1.70 acres
Mitigation: Jennings Tract, Cypress Ck. Preserve (West) (SW 61)
Status: No Revisions

Project: SR 93 (Interstate-275), US 41 to Pasco County Line
FM# 2584131
Date: November, 2007
Impacts: 7.60 acres
Mitigation: Jennings Tract, Cypress Ck. Preserve (West) (SW 61)
Status: -0.5 acres from 2002 plan

Project: Bruce B. Downs at I-75 Off-Ramp
FM# 4084602
Date: December, 2001
Impacts: 0.5 Acres
Mitigation: Jennings Tract, Cypress Ck. Preserve (West) (SW 61)
Status: No Revisions

Project: US 301 (SR 41) at McIntosh Road
FM# 4037601
Date: October, 2007
Impacts: 0.40 acres
Mitigation: Hillsborough River State Park (SW 73)
Status: No Revisions

Project: SR 39 (Alexander St.), I-4 to Knights Griffin Road
FM# 2555851
Date: December, 2007
Impacts: 6.50 acres (additional 7.7 acres mitigated off the program)
Mitigation: On Program – Greer Tract (SW72), Off Program – Vicker's Swamp
Status: Deferred mitigation from 2002

Project: SR 52, I-75 to Curley Road
FM# 4037801
Date: March, 2005
Impacts: 0.20 Acres
Mitigation: Cypress Ck. Preserve-Greer Tract (SW 72)
Status: New Project

Project: US 301, Holloman's Branch to Hills./Pasco Co. Line
FM# 4112771
Date: October, 2005
Impacts: 0.20 Acres
Mitigation: Cypress Ck. Preserve-Greer Tract (SW 72)
Status: New Project

Project: I-75 (SR 93A) @ CR 581
FM# 4084601
Date: September, 2006
Impacts: 2.20 Acres
Mitigation: Defer mitigation to future years
Status: New Project

Project: I-75 (SR 93A),CR 581(BB Downs) to SR 54
FM# 4084593
Date: November, 2009
Impacts: 1.90 Acres
Mitigation: Defer mitigation to future years
Status: New Project

Project: I-75 (SR 93A), Fowler Ave. to CR 581
FM# 4084592
Date: November, 2009
Impacts: 0.30 Acres
Mitigation: Defer mitigation to future years
Status: New Project

Kissimmee River Basin

Project: US 27 - Lake Glenada to Hal McRae Rd.
WPI# 1112576 **FM#** 1945101
Date: September, 2001
Impacts: 0.39 acres
Mitigation: Reedy Creek Mitigation Project (SW 49)
Status: No Revisions

Project: I-4, CR 557 to Osceola County (Seg. 6-7, 9)
WPI# 1147943 **FM#** 2012012052
Date: September, 2002
Impacts: 1.99 acres, additional impacts in the Withlacoochee & Ocklawaha Basins
Mitigation: Reedy Creek Mitigation Project (SW 49)
Status: -0.2 acre from 2002

Lower Coastal Basin

Project: SR 789 - Ringling Causeway Bridge
WPI# 1119232 **FM#** 1979421
Date: June, 2001
Impacts: 0.27 acres
Mitigation: Quick Point Nature Preserve (SW 38)
Status: No Revisions

Project: US 41 Bus. (SR 45) - Venice Ave. to Bypass
WPI# 1119295 **FM#** 1980051
Date: September, 2000
Impacts: 0.32 acres
Mitigation: Quick Point Nature Preserve (SW 38)
Status: No Revisions

Manatee River Basin

Project: US 301 (Ellenton), 60th Ave. to Erie Rd.
WPI# 1115399 **FM#** 1960581
Date: October, 2000
Impacts: 0.59 acres
Mitigation: Terra Ceia (SW 50)
Status: No Revisions

Project: SR 64 – I-75 to Lena Road (Segment 1)
WPI# 1115353 **FM#** 1960221
Date: December, 2001
Impacts: 2.42 acres
Mitigation: Rutland Ranch (SW 65)
Status: No revisions

Project: SR 64 – Lena to Lakewood Ranch Road (Segment 2)
FM# 1960223
Date: September, 2007
Impacts: 1.94 acres
Mitigation: Rutland Ranch (SW 65)
Status: +0.83 acres from 2002

Project: SR 70 – I-75 to Lakewood Ranch Road (Seg. 1)
FM# 1961211
Date: September, 2005
Impacts: 2.24 acres
Mitigation: Rutland Ranch (SW 65)
Status: +0.36 acres from 2002

Project: SR 70 – Lakewood Ranch Road to Lorraine Road (Seg. 2)
FM# 4043232
Date: September, 2003
Impacts: 4.87 acres
Mitigation: Rutland Ranch (SW 65)
Status: No Revisions

Myakka River Basin

Project: SR 776, CR 771 to Willow Bend Rd.
WPI# 1110148 **FM#** 1937941
Date: July 1999
Impacts: 11.0 acres
Mitigation: Cattle Dock Point (8.9 ac.), (SW 31)
Little Pine Island Mitigation Bank (2.1 ac.) (SW 52)

Project: SR 72, Deer Prairie to Big Slough
WPI# 1119303 **FM#** 1980131
Date: September 1999
Impacts: 0.87 acres
Mitigation: Myakka River State Park (SW 51)
Status: No Revisions

Project: SR 72, Big Slough to Desoto County line
WPI# 1119215 **FM#** 1979251
Date: January 1999
Impacts: 1.49 acres
Mitigation: Myakka River State Park (SW 51)
Status: No Revisions

Ocklawaha River Basin

Project: SR 40, CR 225a to SW 52nd Ave
WPI# 5113632
Date: December, 2004
Impacts: 0.20 acres
Mitigation: Ledwith Lake (SW 58)
Status: +0.18 acres from 2002

Project: SR 500 (US 27) - Levy Co. Line to CR 326
WPI# 5113511
Date: September, 2002
Impacts: 2.37 acres
Mitigation: Ledwith Lake (SW 58)
Status: -0.12 from 2002

Project: SR 500 (US 27), CR 464 to CR 225a
WPI# 5113549
Date: September 1999
Impacts: 1.09 acres
Mitigation: Ledwith Lake (SW 58)
Status: No Revisions

Project: SR 40, CR 328 to SW 80th
WPI# 238719
Date: June, 2004
Impacts: 0.08 acres
Mitigation: Ledwith Lake (SW 58)
Status: No Revisions

Project: US 27, SR 544 to Blue Heron Bay
WPI# 1976791
Date: June, 2003
Impacts: 0.45 acres, additional impacts in the Peace basin
Mitigation: Lake Lowery Tract (SW 76)
Status: Mitigation project transfer from SJRWMD

Project: US 27, Blue Heron Bay to CR 547
WPI# 4038901
Date: August, 2003
Impacts: 0.45 acres
Mitigation: Lake Lowery Tract (SW 76)
Status: Mitigation project transfer from SJRWMD

Project: I-4, CR 557 to Osceola Co. Line (Seg. 6,7,9)
WPI# 2012041
Date: September, 2002
Impacts: 4.32 acres, additional impacts in the Withlacoochee & Kissimmee Basins
Mitigation: Lake Lowery Tract (SW 76), Transfer from SJRWMD
Status: -5.38 acres from 2002

Peace River Basin

Project: I-4, US 98 to SR 33 (Section 3-5)
WPI# 1147952 **FM#** 2012092
Date: October 2001
Impacts: 1.50 acres
Mitigation: Tenoroc/Saddle Creek Restoration (SW 47), additional impacts in the Withlacoochee Basin
Status: No revisions

Project: Ft. Green/Ona Rd., SR 62 to N. of Vandolah Rd. (Seg. 1)
WPI# 1121259 **FM#** 1986401
Date: May, 1999
Impacts: 2.08 acres
Mitigation: Boran Ranch Mitigation Bank (SW 53)
Status: No Revisions

Project: SR72 - Sarasota County Line to SR 70
WPI# 1110453 **FM#** 1938890
Date: October, 2000
Impacts: 1.19 acres
Mitigation: Boran Ranch Mitigation Bank (SW 53)
Status: No Revisions

Project: US 17 (SR 35), SR 64 to North of Peace River Bridge
WPI# 1111286 **FM#** 1941021
Date: February, 2001
Impacts: 2.3 acres
Mitigation: Boran Ranch Mitigation Bank (SW 53)
Status: No Revisions

Project: SR 540 - Thornhill Rd. to Recker Hwy.
WPI# 1118367 **FM#** 1974751
Date: July 2000
Impacts: 5.87 acres
Mitigation: Tenoroc/Saddle Creek Restoration Project (SW 47)
Status: No Revisions

Project: SR 540 (Cypress Gardens) - 9th St. to Overlook
WPI# 1118363 **FM#** 1974711
Date: November 2000
Impacts: 0.41 acres
Mitigation: Tenoroc/Saddle Creek Restoration Project (SW 47)
Status: No Revisions

Project: US 17 (SR 35) - North of CR 74 to CR 764
WPI# 1110145 **FM#** 1937911
Date: October 2000
Impacts: 0.27 acres
Mitigation: Boran Ranch Mitigation Bank (SW 53)
Status: No Revisions

Project: Trabue Harborwalk Bike Path
WPI# 1120075 **FM#** 1984711
Date: October 2000
Impacts: 0.16 acres
Mitigation: Little Pine Island Mitigation Bank (SW 53)
Status: No Revisions

Project: CR 633 (Ft. Green/Ona Rd.), Vandolah Rd. (Segment 2)
WPI# 1121257 **FM#** 1984711
Date: October 2000
Impacts: 7.22 acres
Mitigation: Boran Ranch Mitigation Bank (SW 53)
Status: No Revisions

Project: CR 633 (Ft. Green/Ona Rd.),SR 64 to Vandolah (Seg. 3)
WPI# 1121256 **FM#** 1986371
Date: October 2003
Impacts: 5.23 acres
Mitigation: Boran Ranch Mitigation Bank (SW 53)
Status: No Revisions

Project: US 17 (SR 35),CR 764 South to CR 764 North
WPI# 1110152 **FM#** 1937981
Date: October 2002
Impacts: 3.58 acres
Mitigation: Boran Ranch Mitigation Bank (SW 53)
Status: +0.11 acres from 2002

Project: I-75 Widen Bridge over Peace River
FM# 4046971
Date: January, 2002
Impacts: 3.55 acres
Mitigation: Peace River Rest. (SW 69), on-site mitig. for 0.8 imp. ac.
Little Pine Island Mit.Bank (SW 52), 2.75 impact ac.
Status: No Revisions

Project: US 27 – Towerview Rd. to SR 540
FM# 1975331
Date: June, 2003
Impacts: 3.46 acres
Mitigation: Lake Hancock Reserve (SW 66)
Status: -2.00 acres from 2002

Project: US 17 (SR 35) - Peace River to Tropicana Rd.
WPI# 1111277 **FM#** 1940931
Date: October 2002
Impacts: 4.42 acres
Mitigation: Lake Hancock Reserve (SW 66)
Status: No Revisions

Project: US 17 (SR 35) Livingston to Hardee County Line
WPI# 1110467 **FM#** 1938991
Date: September 2002
Impacts: 11.59 acres
Mitigation: Lake Hancock Reserve (SW 66)
Status: No Revisions

Project: SR 60A (Van Fleet Drive), CR 555 to Broadway Avenue
WPI# 1118059 **FM#** 1971681
Date: September, 2002
Impacts: 0.46 acres
Mitigation: Lake Hancock Reserve (SW 66)
Status: No Revisions

Project: US 27 - SR 544 to Blue Heron Bay
WPI# 1118571 **FM#** 1976791
Date: June, 2003
Impacts: 1.48 acres, additional impacts in the Ocklawaha basin
Mitigation: Lake Hancock Reserve (SW 66)
Status: +0.02 acre from 2002

Project: US 27 – SR 540 to SR 542
FM# 1976021
Date: June, 2009
Impacts: 16.98 acres
Mitigation: Lake Hancock Reserve (SW 66)
Status: No Revisions

Project: US 27 – SR 542 to SR 546
FM# 1976721
Date: June, 2009
Impacts: 4.76 acres
Mitigation: Lake Hancock Reserve (SW 66)
Status: No Revisions

Project: US 98 – Carpenter's Way to Daugherty Road
FM# 1976381
Date: August, 2003
Impacts: 0.09 Acres
Mitigation: Lake Hancock Reserve (SW 66)
Status: -0.19 acre from 2002

Project: Kelly Roberts Road at Bridge #064043
FM# 4084411
Date: February, 2007
Impacts: 1.0 acre
Mitigation: Lake Hancock Reserve (SW 66)
Status: New Project

Project: US 27 – SR 60 to Towerview Road
FM# 1977051
Date: July, 2006
Impacts: 1.08 Acres
Mitigation: Lake Hancock Reserve (SW 66)
Status: New Project

Tampa Bay Drainage

Project: SR 676 - Maritime Blvd. To SR 60
WPI# 7113975 **FM#** 2557341
Date: January, 2001
Impacts: 1.5 acres
Mitigation: Gateway Restoration (SW 45)
Status: No Revisions

Project: SR 55 (US 19) - Drew St. to Railroad
WPI# 7117045 **FM#** 2569571
Date: September, 2002
Impacts: 0.50 acres
Mitigation: Cockroach Bay - Freshwater (SW 56)
Status: No Revisions

Project: Interstate 275 - Roosevelt to Big Island Gap
WPI# 7147874 **FM#** 2588701
Date: September, 2001
Impacts: 9.10 acres
Mitigation: Gateway Restoration (SW 45)
Status: No Revisions

Project: SR 679 (Bayway), Bunces Pass Bridge #150
WPI# 7116992 **FM#** 2569051
Date: February, 2000
Impacts: 0.60 acres
Mitigation: Gateway Restoration (SW 45)
Status: No Revisions

Project: US 19, CR 816 (Alderman) to SR 582 (Tarpon)
FM# 4037701
Date: April, 2002
Impacts: 0.10 acres
Mitigation: Boyd Hill Nature Park (SW 67)
Status: No Revisions

Project: US 19, Coachman Rd. to Sunset Point
FM# 2568881
Date: February, 2003
Impacts: 0.50 acres
Mitigation: Boyd Hill Nature Park (SW 67)
Status: No Revisions

Project: SR 686 (Roosevelt) at 49th Street
FM# 4062531
Date: November, 2003
Impacts: 0.20 acres
Mitigation: Gateway Restoration (SW 45)
Status: No Revisions

Project: SR 60, Cypress St. to Fish Creek
FM# 2557031
Date: August, 2004
Impacts: 16.6 acres
Mitigation: Tappan (SW 62-4.9 Ac.), C.R Bay (SW 56 & SW 76 - 5.8 ac.), Apollo Bch. (SW 67-5.9 ac.)
Status: -1.5 acres from 2002

Project: Interstate-275, Howard Franklin to Himes Avenue
FM# 2583981
Date: December 2006
Impacts: 1.90 acres
Mitigation: Gateway Tract (SW 49)
Status: No Revisions

Project: SR 60, Courtney Campbell to Fish Creek
FM# 2556301
Date: August, 2004
Impacts: 12.2 acres
Mitigation: Gateway Restoration (SW 45)
Status: 0.2 acre of seagrass impacts has on-site mitigation by DOT

Project: US 301 – Sligh Avenue to Tampa Bypass Canal
FM# 2558881
Date: October, 2005
Impacts: 12.30 acres
Mitigation: Boyd Hill Nature Park (SW 67 – 7.6 acres), Cockroach Bay – Freshwater (SW 56 – 4.7 Acres)
Status: +0.6 acres from 2002

Project: Ulmerton Road – US 19 to 49th Street
FM# 2571391
Date: August, 2005
Impacts: 0.20 acres
Mitigation: Cockroach Bay – Saltwater (SW 76)
Status: No Revisions

Project: Himes Avenue to Hillsborough Avenue
FM# 4082011
Date: September, 2003
Impacts: 0.10 acres
Mitigation: Boyd Hill Nature Park (SW 71)
Status: No Revisions

Project: East-West Trail, Coopers Bayou to Bayshore
FM# 4062561
Date: November, 2003
Impacts: 0.10 acres
Mitigation: Boyd Hill Nature Park (SW 71)
Status: No Revisions

Project: US 19 – 49th St. to 118th Avenue
FM# 2570701
Date: October, 2006
Impacts: 0.10 acres
Mitigation: Boyd Hill Nature Park (SW 71 – 0.1 ac.)
Status: No Revisions

Project: CR 296 Connector, 40th St. to 28th St.
FM# 2569941
Date: April, 2007
Impacts: 1.0 acres
Mitigation: Cockroach Bay – Freshwater (SW 56 – 3.1 ac.)
Status: -2.0 acres from 2002

Project: SR 676 (Causeway Blvd.) – US 301 to US 41
FM# 2555991
Date: August, 2007
Impacts: 3.9 acres
Mitigation: Cockroach Bay – Freshwater (SW 56 – 3.1 acres)
Boyd Hill Nature Park (SW 71 – 0.8 acre)
Status: No revisions

Project: CR 296 at I-275 Interchange
FM# 2569981
Date: November, 2007
Impacts: 2.0 acres
Mitigation: Cockroach Bay – Freshwater (SR 56)
Status: -1.0 acre from 2002

Project: Gandy Blvd. (SR 694), US 19 to 4th Street
FM# 2569311
Date: January, 2010
Impacts: 5.0 acres
Mitigation: Boyd Hill Nature Park (SW 71)
Status: No Revisions

Project: Tampa International Airport (TIA), Runway 17-35
FM# 4143481
Date: November, 2007
Impacts: 20.10 acres
Mitigation: Bahia Beach (SW 78)
Status: New Project

Project: US 19 (SR 55) – Seville Dr. to SR 60
FM# 2569491
Date: November, 2007
Impacts: 0.10 acre
Mitigation: Cockroach Bay- Freshwater (SW 56)
Status: New Project

Project: I-275, Howard Franklin to Himes Avenue
FM# 2583982
Date: November, 2008
Impacts: 0.4 acre
Mitigation: Bahia Beach (SW 78)
Status: New Project

Project: SR 574 (MLK Blvd.) – Highview to Parsons
FM# 2558932
Date: April, 2011
Impacts: 0.40 acre
Mitigation: Boyd Hill Nature Park (SW 71)
Status: New Project

Project: Gunn Hwy., Erlich Rd. to Mobley Rd.
FM# 4052141
Date: June, 2004
Impacts: 0.5 acre
Mitigation: Cockroach Bay – Freshwater (SW 56)
Status: New Project

Project: SR 686 (Roosevelt) – Ulmerton Rd. to 40th St.
FM# 2569951
Date: June, 2011
Impacts: 2.10 acre
Mitigation: Boyd Hill Nature Park (SW 71)
Status: New Project

Upper Coastal Basin

Project: SR 54 - Mitchell to Gunn Hwy.
WPI# 7115974 **FM#** 2563361
Date: January, 2004
Impacts: 6.6 acres,
Mitigation: Anclote Parcel (SW54)
Status: No revisions

Project: SR 54 – North Suncoast to West of US 41
WPI# 7115977 **FM#** 2563391
Date: October, 2002
Impacts: 7.00 acres
Mitigation: Anclote Parcel (SW54)
Status: No Revisions

Project: Suncoast Parkway / Ridge Road Interchange
FM# 2589581
Date: February, 2005
Impacts: 11.82 acres
Mitigation: Serenova Extension (SW 60)
Status: No Revisions

Project: SR 60, Clearwater Harbor Bridge Replacement
FM# 2570931
Date: January, 2002
Impacts: 1.50 acres
Mitigation: Gateway Restoration (SW 45) & on-site mangrove restoration
Status: No Revisions

Project: US 19 – Republic Drive to CR 816 (Alderman)
FM# 4037711
Date: April, 2002
Impacts: 0.1 acre
Mitigation: Brooker – Starkey Corridor (SW 68)
Status: No Revisions

Project: US 98 – Hernando Co. Line to US 19
Date: August, 2003
FM# 2571741
Impacts: 1.40 acres
Mitigation: Brooker-Starkey Corridor (SW 68)
Status: No Revisions

Project: SR 688 (Ulmerton Road), Oakhurst Rd. to 119th Street
FM# 2570501
Date: May, 2004
Impacts: 0.20 acres
Mitigation: Brooker-Starkey Corridor (SW 68)
Status: -1.8 acres from 2002

Project: SR 52 – Moon Lake to Suncoast Parkway
FM# 2563221
Date: February, 2006
Impacts: 6.3 acres
Mitigation: Brooker-Starkey Corridor (SW 68)
Status: -0.6 acre from 2002

Project: SR 54 - Rowan Rd. to Mitchell Bypass
FM# 2563321
Date: July, 1996
Impacts: 3.60 acres
Mitigation: Brooker-Starkey Corridor (SW 68)
Status: No Revisions

Project: SR 586 (Curlew Road) – CR 1 to Fisher Road
FM# 2568151
Date: July, 2004
Impacts: 0.10 acres
Mitigation: Brooker-Starkey Corridor (SW 68)
Status: No Revisions

Project: SR 52 – Hicks to Moon Lake
FM# 2563161
Date: November, 1996
Impacts: 1.6 acres
Mitigation: Serenova 2,3,4,8 (SW 75)
Status: No Revisions

Project: SR 682 (Bayway), SR 679 to West Toll Plaza
FM# 2569031
Date: August, 2003
Impacts: 0.8 acre
Mitigation: Ft. DeSoto Park (SW 70)
Status: No Revisions

Project: SR 699 (Gulf Blvd.) John's Pass Bridge Replacement
FM# 4064741
Date: October, 2005
Impacts: 0.1 acre
Mitigation: Ft. DeSoto Park (SW 70)
Status: No Revisions

Project: SR 688 (Ulmerton Road), 119th to Long Beach Canal
FM# 2571551
Date: June, 2006
Impacts: 0.2 acre
Mitigation: Ft. DeSoto Park (SW 70)
Status: No Revisions

Project: SR 688 (Ulmerton Rd.), El Centro / Ranchero to US 19
FM# 2571541
Date: May, 2008
Impacts: 0.1 acre
Mitigation: Ft. DeSoto Park (SW 70)
Status: No Revisions

Project: SR 679 (Bayway), Intercoastal to Bridge
FM# 2571521
Date: November, 2007
Impacts: 0.3 acre
Mitigation: Ft. DeSoto Park (SW 70)
Status: No Revisions

Project: Alternate 19 – Meres Blvd. to Pasco County Line
FM# 2571371
Date: July, 2005
Impacts: 0.2 acre
Mitigation: Ft. DeSoto Park (SW 70)
Status: No Revisions

Project: US 19 (SR 55) – CR 490 (Yulee) to CR 44
FM# 2571931
Date: February, 2005
Impacts: 0.09 acre
Mitigation: Nomination for 2004, Connerton Tract
Status: New Project

Project: US 19 (SR 55) – 3rd Ave. NE to NW 6th Ave.
FM# 4089061
Date: February, 2005
Impacts: 0.20 acre
Mitigation: Nomination for 2004, Connerton Tract
Status: New Project

Project: US 19 (SR 55) – Harry St. to Meres Blvd.
FM# 2570781
Date: November, 2005
Impacts: 0.10 acre
Mitigation: Nomination for 2004, Connerton Tract
Status: New Project

Project: US 19 (SR 55) – Harry St. to Meres Blvd.
FM# 2570781
Date: November, 2005
Impacts: 0.10 acre
Mitigation: Nomination for 2004, Connerton Tract
Status: New Project

Project: US 41 (SR 45) – Tower Rd. to Ridge Road
FM# 2563241
Date: September, 2009
Impacts: 11.0 acres
Mitigation: Nomination for 2004, Connerton Tract
Status: New Project

Project: SR 599 (Gulf Blvd.) – 192nd Avenue to Walsingham/Ulmerton Road
FM# 2570831
Date: November, 2008
Impacts: 0.1 acre
Mitigation: Pinellas Co. – Ft. DeSoto Park
Status: New Project

Project: Alt. US 19 (SR 595) – Pinellas Co. Line to US 19
FM# 4037661
Date: November, 2008
Impacts: 0.3 acre
Mitigation: Nomination for 2004, Connerton Tract
Status: New Project

Project: SR 688 (Ulmerton Rd.) – Wild Acres to El Centro/Ranchero Road
FM# 4091541
Date: November, 2008
Impacts: 0.2 acre
Mitigation: Pinellas Co. – Ft. DeSoto Park
Status: New Project

Project: CR 578 (County Line Rd.) – East Rd. to Mariner Blvd.
FM# 2572983
Date: June, 2011
Impacts: 1.3 acres
Mitigation: Nomination for 2004, Connerton Tract
Status: New Project

Project: US 98 – CR 485 (Cobb Rd.) to CR 491 (Citrus Way)
FM# 4050172
Date: September, 2011
Impacts: 0.1 acre
Mitigation: Nomination for 2004, Connerton Tract
Status: New Project

Withlacoochee River Basin

Project: SR 44 - CR 470 to County Line
WPI#: 7119003 **FM#** 2571641
Date: December, 2002
Impacts: 13.90 acres
Mitigation: Baird Tract (SW 64)
Status: No Revisions

Project: SR 44 - US 41 to CR 470
WPI# 7119002 **FM#** 2571631
Date: August, 2002
Impacts: 7.90 acres
Mitigation: Baird Tract (SW 64)
Status: No Revisions

Project: Interstate 4 - E. of US 98 to CR 557 - (Sections 3-5)
WPI# 1147952 **FM#** 2012092
Date: October, 2002
Impacts: 17.80 acres, Additional impacts in the Peace Basin
Mitigation: Hampton Tract (SW 59)
Status: No Revisions

Project: Interstate 4 -CR 557 to Osceola (Sections 6-7,9)
WPI# 1147952 **FM#** 2012142
Date: November, 2001
Impacts: 3.55 acres, additional impacts in Ocklawaha & Kissimmee Basins
Mitigation: Hampton Tract (SW 59)
Status: -5.35 acres from 2002

Project: Interstate -75 Lake Panasoffkee Bridge Widening
WPI# 548964 **FM#** 4063291
Date: November, 2000
Impacts: 5.93 acres
Mitigation: Lake Panasoffkee Restoration (SW 57)
Status: No Revisions

Project: SR 45 (US 41) – Watson Street to SR 44 East
FM# 2571841
Date: November, 2004
Impacts: 0.10 acre
Mitigation: Baird Tract (SW 64), No Revisions

Project: CR 470 (Gospel Isle)
FM# 4092071
Date: November, 2004
Impacts: 0.2 acre
Mitigation: Baird Tract (SW 64)
Status: +0.1 acre from 2002

Project: US 41 (SR 45), SR 44 to SR 200
FM# 2571651
Date: November, 2007
Impacts: 0.70 acre
Mitigation: Baird Tract (SW 64)
Status: No Revisions

Project: SR 52 – Curley Rd. to Smith Rd.
FM# 4037811
Date: November, 2005
Impacts: 0.40 acre
Mitigation: Baird Tract (SW 64)
Status: New Project

Project: SR 200 – US 41 to Marion County Line
FM# 2571882
Date: June, 2011
Impacts: 5.80 acres
Mitigation: Defer mitigation selection to future plans
Status: New Project

Project: CR 485 (Cobb Rd.) - SR 50 to US 98
FM# 2572992
Date: December, 2012
Impacts: 3.00 acres
Mitigation: Defer mitigation selection to future plans
Status: New Project

The 2000 Florida Statutes

Title XXVIII	Chapter 373	View Entire Chapter
NATURAL RESOURCES; CONSERVATION, RECLAMATION, AND USE	Water Resources	

373.4137 Mitigation requirements.--

(1) The Legislature finds that environmental mitigation for the impact of transportation projects proposed by the Department of Transportation can be more effectively achieved by regional, long-range mitigation planning rather than on a project-by-project basis. It is the intent of the Legislature that mitigation to offset the adverse effects of these transportation projects be funded by the Department of Transportation and be carried out by the Department of Environmental Protection and the water management districts, including the use of mitigation banks established pursuant to this part.

(2) Environmental impact inventories for transportation projects proposed by the Department of Transportation shall be developed as follows:

(a) By May 1 of each year, the Department of Transportation shall submit to the Department of Environmental Protection and the water management districts a copy of its adopted work program and an inventory of habitats addressed in the rules tentatively, pursuant to this part and s. 404 of the Clean Water Act, 33 U.S.C. s. 1344, which may be impacted by its plan of construction for transportation projects in the next 3 years of the tentative work program. The Department of Transportation may also include in its inventory the habitat impacts of any future transportation project identified in the tentative work program.

(b) The environmental impact inventory shall include a description of these habitat impacts, including their location, acreage, and type; state water quality classification of impacted wetlands and other surface waters; any other state or regional designations for these habitats; and a survey of threatened species, endangered species, and species of special concern affected by the proposed project.

(3) To fund the mitigation plan for the projected impacts identified in the inventory described in subsection (2), the Department of Transportation shall identify funds quarterly in an escrow account within the State Transportation Trust Fund for the environmental mitigation phase of projects budgeted by the Department of Transportation for the current fiscal year. The escrow account will be maintained by the Department of Transportation for the benefit of the Department of Environmental Protection and the water management districts. Any interest earnings from the escrow account shall remain with the Department of Transportation. The Department of Environmental Protection or water management districts may request a transfer of funds from the escrow account no sooner than 30 days prior to the date the funds are needed to pay for activities associated with development or implementation of the approved mitigation plan described in subsection (4) for the current fiscal year, including, but not limited to, design, engineering, production, and staff support. Actual conceptual plan preparation costs incurred before plan approval may be submitted to the Department of Transportation and the Department of Environmental Protection by November 1 of each year with the plan. The conceptual plan preparation costs of each water management district will be paid based on the amount approved on the mitigation plan and allocated to the current fiscal year projects identified by the water management district. The amount transferred to the escrow account each year by the

Department of Transportation shall correspond to a cost per acre of $75,000 multiplied by the projected acres of impact identified in the inventory described in subsection (2). However, the $75,000 cost per acre does not constitute an admission against interest by the state or its subdivisions nor is the cost admissible as evidence of full compensation for any property acquired by eminent domain or through inverse condemnation. Each July 1, the cost per acre shall be adjusted by the percentage change in the average of the Consumer Price Index issued by the United States Department of Labor for the most recent 12-month period ending September 30, compared to the base year average, which is the average for the 12-month period ending September 30, 1996. At the end of each year, the projected acreage of impact shall be reconciled with the acreage of impact of projects as permitted, including permit modifications, pursuant to this part and s. 404 of the Clean Water Act, 33 U.S.C. s. 1344. The subject year's transfer of funds shall be adjusted accordingly to reflect the overtransfer or undertransfer of funds from the preceding year. The Department of Transportation is authorized to transfer such funds from the escrow account to the Department of Environmental Protection and the water management districts to carry out the mitigation programs.

(4) Prior to December 1 of each year, each water management district, in consultation with the Department of Environmental Protection, the United States Army Corps of Engineers, the Department of Transportation, and other appropriate federal, state, and local governments, and other interested parties, including entities operating mitigation banks, shall develop a plan for the primary purpose of complying with the mitigation requirements adopted pursuant to this part and 33 U.S.C. s. 1344. This plan shall also address significant invasive plant problems within wetlands and other surface waters. In developing such plans, the districts shall utilize sound ecosystem management practices to address significant water resource needs and shall focus on activities of the Department of Environmental Protection and the water management districts, such as surface water improvement and management (SWIM) waterbodies and lands identified for potential acquisition for preservation, restoration, and enhancement, to the extent that such activities comply with the mitigation requirements adopted under this part and 33 U.S.C. s. 1344. In determining the activities to be included in such plans, the districts shall also consider the purchase of credits from public or private mitigation banks permitted under s. 373.4136 and associated federal authorization and shall include such purchase as a part of the mitigation plan when such purchase would offset the impact of the transportation project, provide equal benefits to the water resources than other mitigation options being considered, and provide the most cost-effective mitigation option. The mitigation plan shall be preliminarily approved by the water management district governing board and shall be submitted to the secretary of the Department of Environmental Protection for review and final approval. The preliminary approval by the water management district governing board does not constitute a decision that affects substantial interests as provided by s. 120.569. At least 30 days prior to preliminary approval, the water management district shall provide a copy of the draft mitigation plan to any person who has requested a copy.

(a) For each transportation project with a funding request for the next fiscal year, the mitigation plan must include a brief explanation of why a mitigation bank was or was not chosen as a mitigation option, including an estimation of identifiable costs of the mitigation bank and nonbank options to the extent practicable.

(b) Specific projects may be excluded from the mitigation plan and shall not be subject to this section upon the agreement of the Department of Transportation, the Department of Environmental Protection, and the appropriate water management district that the inclusion of such projects would hamper the efficiency or timeliness of the mitigation planning and permitting process, or the Department of Environmental Protection and the water management district are unable to identify mitigation that would offset the impacts of the project.

(c) Surface water improvement and management or invasive plant control projects undertaken using the $12 million advance transferred from the Department of Transportation to the Department of Environmental Protection in fiscal year 1996-1997 which meet the requirements for mitigation under this part and 33 U.S.C. s. 1344 shall remain available for mitigation until the $12 million is fully credited up to and including fiscal year 2004-2005. When these projects are used as mitigation, the $12 million advance shall be reduced by $75,000 per acre of impact mitigated. For any fiscal year through and including fiscal year 2004-2005, to the extent the cost of developing and implementing the mitigation plans is less than the amount transferred

pursuant to subsection (3), the difference shall be credited towards the $12 million advance. Except as provided in this paragraph, any funds not directed to implement the mitigation plan should, to the greatest extent possible, be directed to fund invasive plant control within wetlands and other surface waters.

(5) The water management district shall be responsible for ensuring that mitigation requirements pursuant to 33 U.S.C. s. 1344 are met for the impacts identified in the inventory described in subsection (2), by implementation of the approved plan described in subsection (4) to the extent funding is provided by the Department of Transportation. During the federal permitting process, the water management district may deviate from the approved mitigation plan in order to comply with federal permitting requirements.

(6) The mitigation plan shall be updated annually to reflect the most current Department of Transportation work program and may be amended throughout the year to anticipate schedule changes or additional projects which may arise. Each update and amendment of the mitigation plan shall be submitted to the secretary of the Department of Environmental Protection for approval. However, such approval shall not be applicable to a deviation as described in subsection (5).

(7) Upon approval by the secretary of the Department of Environmental Protection, the mitigation plan shall be deemed to satisfy the mitigation requirements under this part and any other mitigation requirements imposed by local, regional, and state agencies for impacts identified in the inventory described in subsection (2). The approval of the secretary shall authorize the activities proposed in the mitigation plan, and no other state, regional, or local permit or approval shall be necessary.

(8) This section shall not be construed to eliminate the need for the Department of Transportation to comply with the requirement to implement practicable design modifications, including realignment of transportation projects, to reduce or eliminate the impacts of its transportation projects on wetlands and other surface waters as required by rules adopted pursuant to this part, or to diminish the authority under this part to regulate other impacts, including water quantity or water quality impacts, or impacts regulated under this part that are not identified in the inventory described in subsection (2).

History.--s. 1, ch. 96-238; s. 36, ch. 99-385; s. 1, ch. 2000-261.

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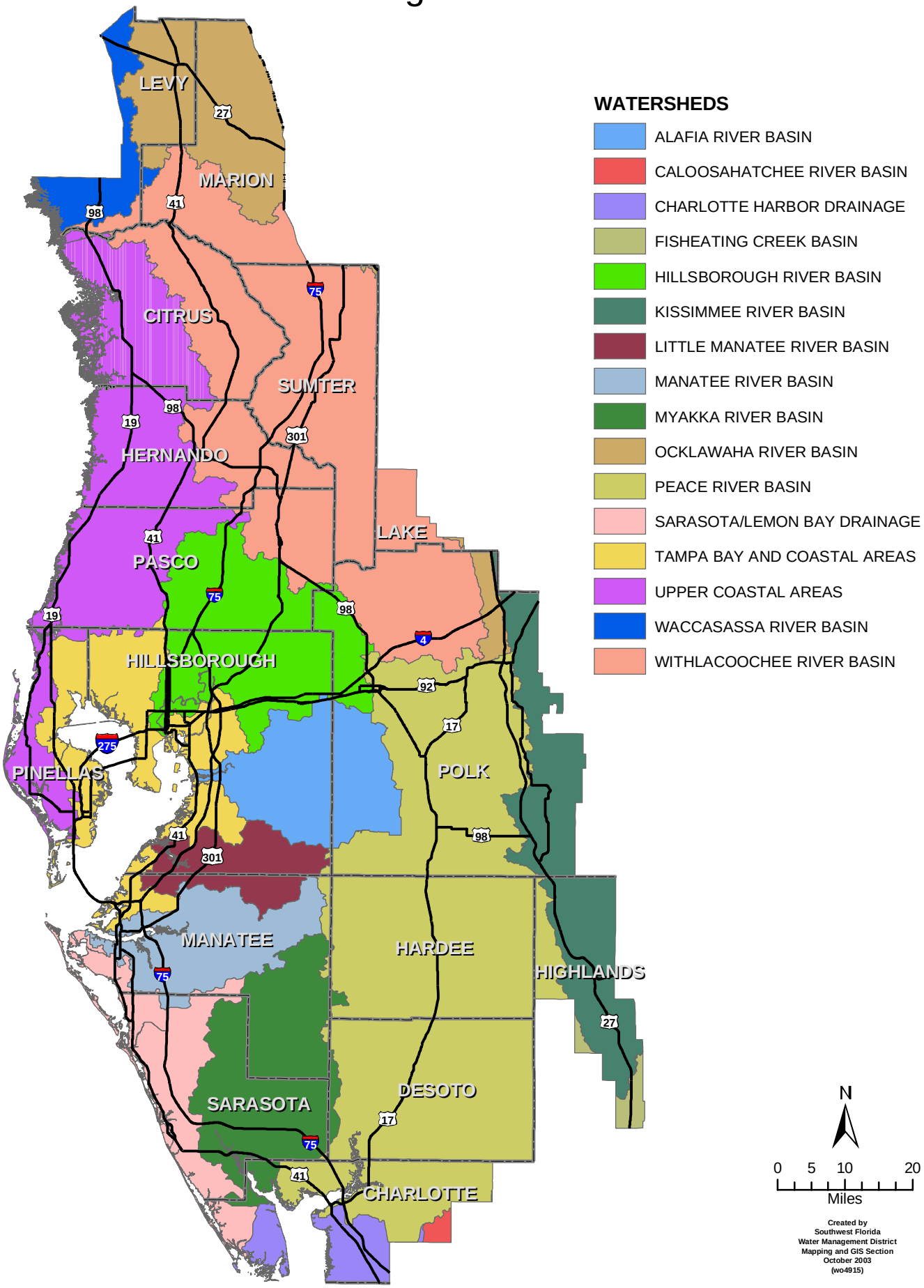
ERP Watersheds/Basins in the S.W.F.W.M.D.

Figure 1



FDOT Wetland Impact Inventory
(District 1)
Anticipated Construction Commencement
2004-2009
Figure 2

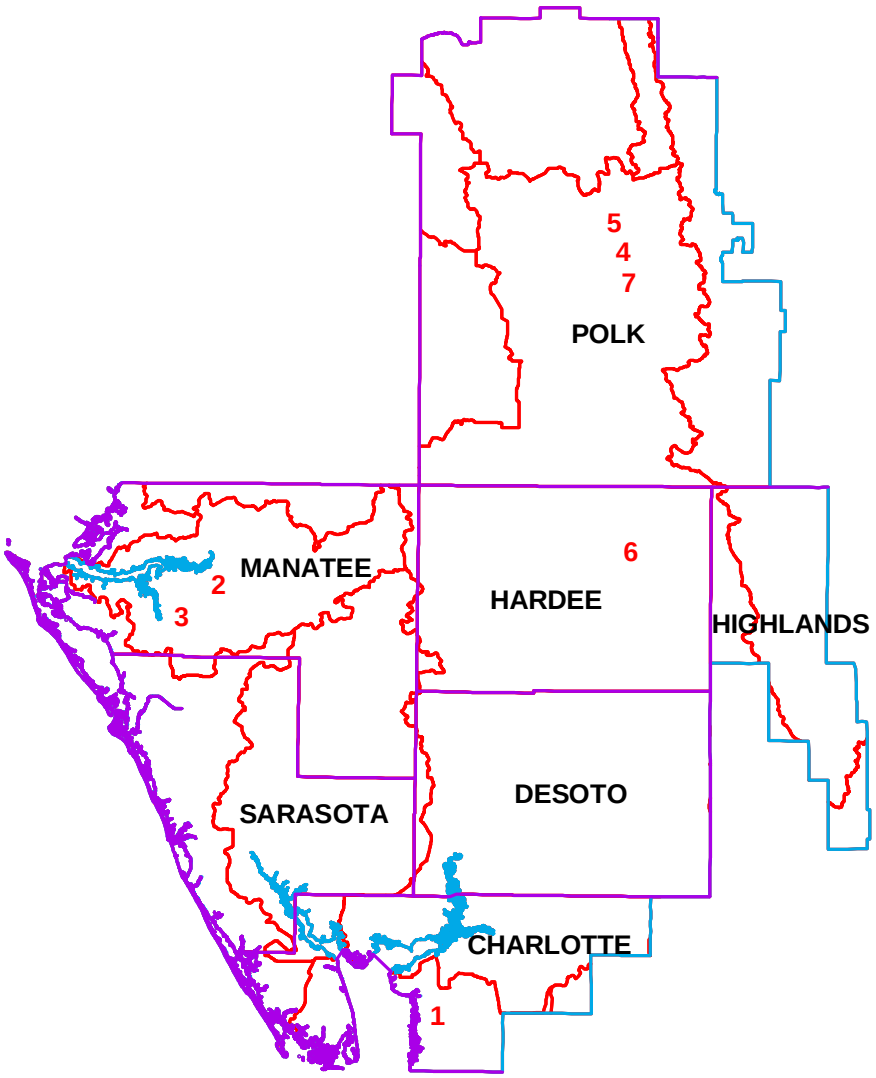


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FIGURE 2 – FDOT Project Location
FDOT Wetland Impact Inventory (District 1 – 7 Projects)
Anticipated Construction Commencement Dates – 2004 through 2009

Map#	County	Project Number & Name	Const.
1	Charlotte	1120082 - CR 765A Bridge Replacement	Oct -2005
2	Manatee	1960223 - SR 64 – Lena to Lakewood (Seg.2)	Sept -2007
3	Manatee	4043231 - SR 70 – Lake. to Lorraine (Seg.1)	Sept -2005
4	Polk	1976021 - US 27 – SR 540 to SR 542	Oct -2009
5	Polk	1976721 - US 27 – SR 542 to SR 546	June - 2009
6	Hardee	4084411 - Kelly Roberts Road Bridge	Feb -2007
7	Polk	1977051 -US 27 – SR 60 to Towerview Blvd.	July - 2006

FDOT Wetland Impact Inventory
(District 1, District 7, Turnpike)
Anticipated Construction Commencement
2004-2013
Figure 3

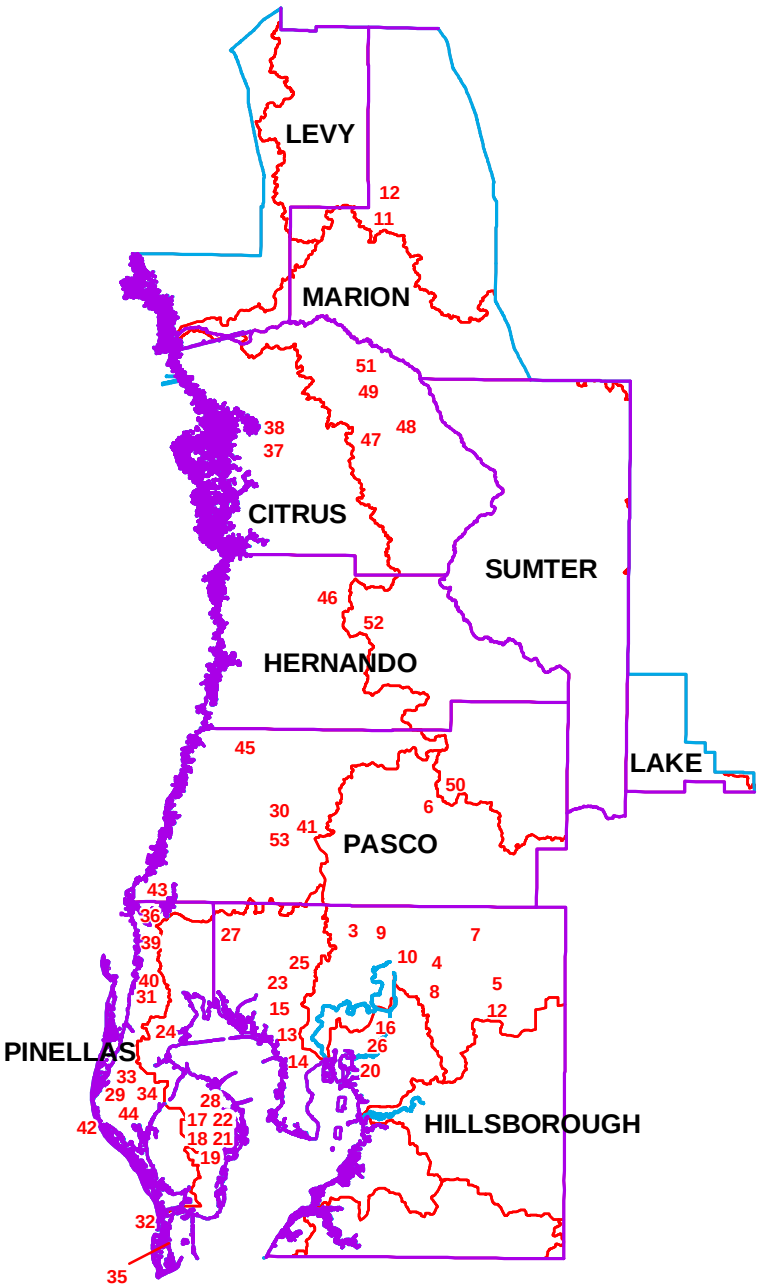

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FIGURE 3 – FDOT Project Location
FDOT Wetland Impact Inventory (District 5 – 2 Projects, District 7- 49 Projects, Turnpike – 1 Project)
Anticipated Construction Commencement Dates – 2004 through 2013

Map#	County	Project Number & Name	Const.
1	Hillsbor.	2578391 - Alexander St.-US 92 to I-4	Sept -2004
2	Hillsbor.	2584491 - Int.-4 at Alexander St. Ramp	Sept -2004
3	Hillsbor.	2584131 - SR 93 (I-275) – US 41 to Pasco C.L.	Nov -2007
4	Hillsbor.	4037601 - US 301 at McIntosh Road	Oct -2007
5	Hillsbor.	2555851 - SR 39 – I-4 to Knights Griffin Rd.	Dec -2007
6	Hillsbor.	4037801 - SR 52 - I-75 to Curley Rd.	March-2007
7	Hillsbor.	4112771 - US 301-Holloman's Branch to Hills. C.L.	Oct -2005
8	Hillsbor.	4084601 - I-75 @ CR 581 (BB Downs Blvd.)	Sept -2006
9	Hillsbor.	4084593 - I-75 - CR 581 to SR 54	Nov -2009
10	Hillsbor.	4084592 - I-75 - Fowler Ave. to CR 581	Nov -2009
11	Marion	2387621 - SR 40 – CR 225A to SW 52nd Ave.	Dec -2004
12	Marion	2387191 - SR 40 – CR 328 to SW 80th	June-2004
13	Hillsbor.	2557031 - SR 60 – Cypress St. to Fish Creek	Aug -2004
14	Hillsbor.	2583981 - I-275 – Howard Franklin to Himes Ave.	Dec -2006
15	Hillsbor.	2556301 - SR 60 – Courtney Campbell to Fish Ck.	Aug -2004
16	Hillsbor.	2558881 - US 301-Sligh Ave. to Tampa Bypass	Oct -2005
17	Pinellas	2571391 - Ulmerton Rd. – US 19 to 49th Street	Aug -2005
18	Pinellas	2570701 - US 19 – 49th St. to 118 Ave.	Oct -2006
19	Pinellas	2569941 - CR 296 Connector, 40th St. to 28th St.	April-2007
20	Hillsbor.	2555991 - SR 676 (Causeway) – US 301 to US 41	Aug -2007
21	Pinellas	2569981 - CR 296 @ I-275 Interchange	Nov -2007
22	Pinellas	2569311 - Gandy Blvd. (SR 694)- US 19 to 4th St.	Dec -2013
23	Hillsbor.	4143481 - Tampa Int. Airport (TIA), Runway 17-35	Nov -2007
24	Pinellas	2569491 - US 19 (SR 55) – Seville Dr. to SR 60	Nov -2007
25	Hillsbor.	2583982 - I-275 – Howard Franklin to Himes Ave.	Nov -2008
26	Hillsbor.	2558932 - SR 574(MLK Bld.)–Highview to Parsons	April-2008
27	Hillsbor.	4052141 - Gunn Hwy. – Ehlich Rd. to Mobley Rd.	June-2004
28	Pinellas	2569951 - SR 686 (Roosevelt) – Ulmerton to 40th	June-2011
29	Pinellas	2570501 - SR 688 (Ulmerton)-Oakhurst to 119th	May-2004
30	Pasco	2563221 - SR 52 – Moon Lake to Suncoast Pkwy.	Feb –2006
31	Pinellas	2568151 - SR 586 (Curlew Rd.) – CR 1 to Fischer	July – 2004
32	Pinellas	4064741 - SR 699 (Gulf Bld.) – John's Pass Bridge	Oct – 2005
33	Pinellas	2571551 - SR 688 – 119th to Long Beach Canal	June – 2006
34	Pinellas	2571541 - SR 688 – El Centro/Ranchero to US 19	May – 2008
35	Pinellas	4107551 - SR 679(Bayway)–Intercoastal to Bridge	Nov – 2007
36	Pinellas	2571371 - US Alt. 19 – Meres Blvd. to Pasco C.L.	July – 2005
37	Pinellas	2571931 - US 19 – CR 490 (Yulee) to CR 44	Feb -2005
38	Pinellas	4089061 - US 19 – 3rd Ave. NE to NW 6th Ave.	Feb –2005
39	Pinellas	2570781 - US Alt. 19 – Harry St. to Meres Blvd.	Nov - 2005

Figure 3 (cont.) - Wetland Impact Inventory (District 7, Turnpike)

Map#	County	Project Number & Name	Const.
40	Pinellas	2568901 - US Alt. 19 – Sunset Pt. to Countryside	Aug – 2008
41	Pasco	2563241 - US 41– Tower Rd. to Ridge Rd.	Sept – 2009
42	Pinellas	2570831 - SR 699-192nd Ave. to Walsingham/Ulmer.	Nov – 2008
43	Pinellas	4037661 - Alt. US 19 – Pinellas C.L. to US 19	Nov – 2008
44	Pinellas	4091541 - SR 688 – Wild Ac. to El Centro/Ranchero	Nov – 2008
45	Pasco	2572983 - CR 578(C.L. Road)–East Rd. to Mariner	June – 2011
46	Hernando	4050172 - US 98-CR 485 (Cobb Rd.) to CR 491	Sept – 2011
47	Citrus	2571841 - US 41 – Watson St. to SR 44 East	Nov – 2004
48	Citrus	4092071 - CR 470 (Gospel Isle)	Nov – 2004
49	Pasco	2571651 - US 41 – SR 44 to SR 200	Nov – 2007
50	Pasco	4037811 - SR 52 – Curley Rd. to Smith Rd.	Nov – 2005
51	Citrus	2571882 - SR 200, US 41 to Marion County Line	June – 2011
52	Hernando	2572992 - CR 485 (Cobb Rd.) - SR 50 to US 98	Dec –2012
53	Pasco	2589581 - Suncoast Parkway / Ridge Rd. Interch.	Feb - 2005

FDOT Mitigation Projects

Figure 4

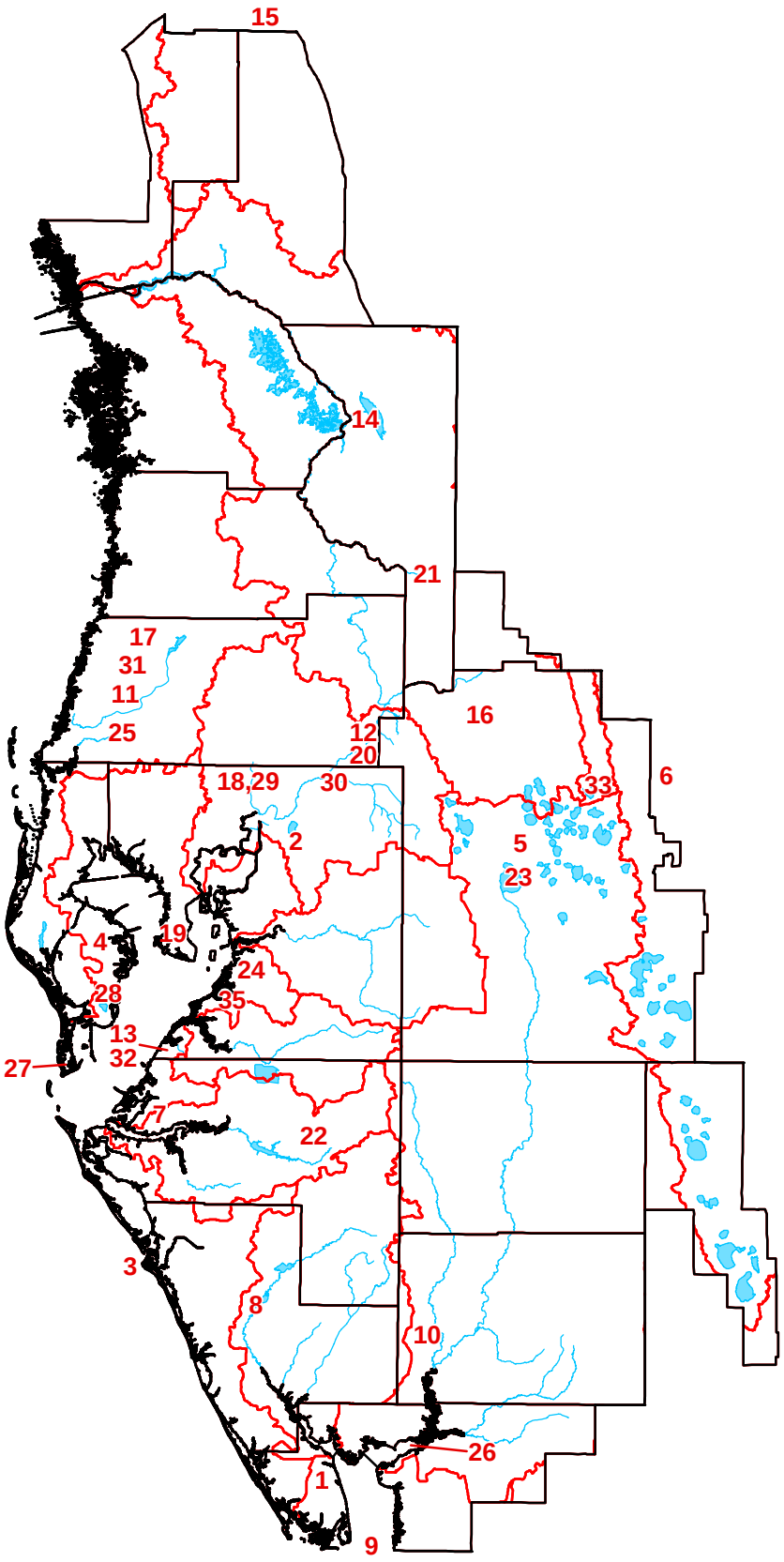

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FIGURE 4 - FDOT Mitigation Projects

1 SW 31 - Cattle Dock Point, Phase II (DEP / WMD – SWIM)

2 SW 34 - Lake Thonotasassa (WMD – SWIM / Hillsborough Co. Parks)

3 SW 38 - Quick Point Preserve (City of Longboat Key)

4 SW 45 - Gateway Restoration (Pinellas Co. / WMD – SWIM)

5 SW 47 - Tenoroc / Saddle Creek (DEP / FFWCC)

6 SW 49 - Reedy Creek Mitigation Bank (Private Mitig. Bank)

7 SW 50 - Terra Ceia Restoration (DEP / WMD – SWIM)

8 SW 51 - Myakka River State Park (DEP - Parks)

9 SW 52 - Little Pine Island Mitigation Bank (Private Mitig. Bank)

10 SW 53 - Boran Ranch Mitigation Bank (Private Mitig. Bank)

11 SW 54 - Anclote Parcel (WMD – Land Resources)

12 SW 55 - Upper Hillsborough 4&5 (WMD – Land Resources)

13 SW 56 - Cockroach Bay, Freshwater (Hills. Co. Parks / WMD – SWIM)

14 SW 57 - Lk. Panasoffkee Restoration (WMD - SWIM)

15 SW 58 - Ledwith Lake (Alachua County)

16 SW 59 - Hampton Tract (WMD – Land Resources)

17 SW 60 - Serenova Extension (WMD - Land Resources)

18 SW 61 - Cypress Ck. Preserve, Jennings Tract (Hills. County Parks)

19 SW 62 - Tappan Tract (City of Tampa / WMD – SWIM)

20 SW 63 - Hillsborough River Corridor (WMD - Land Resources)

21 SW 64 - Baird Tract (DEP / DOF)

22 SW 65 - Rutland Ranch (WMD - Land Resources)

23 SW 66 - Lk. Hancock Reserve (Polk County / WMD – Land Res.)

24 SW 67 – Apollo Beach (Hills Co. Parks / WMD – SWIM)

25 SW 68 – Brooker Creek Corridor to Starkey Wilderness Preserve (Pinellas, Hills., Pasco Co. / WMD - Land Resources)

26 SW 69 – Peace River Bridge Restoration (DOT/ WMD)

FIGURE 4 - FDOT MITIGATION PROJECTS (Cont.)

27 **SW 70 - Fort DeSoto Park (Pinellas County / WMD – SWIM)**

28 **SW 71 - Boyd Hill Nature Park (City of St. Petersburg)**

29 **SW 72 - Cypress Creek Preserve, Greer Tract (Hills. County Parks)**

30 **SW 73 – Hillsborough River State Park (DEP-Parks / WMD)**

31 **SW 74 - Serenova Preserve, Sites 2,3,4,8 (WMD – Land Resources)**

32 **SW 75 – Cockroach Bay – Saltwater (Hills. Co. Parks / WMD-SWIM)**

33 **SW 76 - Lake Lowery Tract (Polk Co. / WMD – Land Resources)**

34 **SW 78 - Bahia Beach (Hills. Co. Parks / WMD-SWIM)**

Table 1. FDOT WETLAND IMPACT INVENTORY

Update - September , 2003

Mitig. Transfer> <Deferred Mitig. From Previous Plans

New DOT Proj.> <Deferring Mitig. To Future Plans

Wetland Habitat Type - Proposed Impact Acreages

Mit. Plan Year	DOT Dis.	County	Drainage Basin	FM No.	DOT Construction Date	Project Description	500 Open Water	510 Streams & Waterways	530 Reservoir	540 Bays & Estuaries	610 Freshwater Hardwood Forest	611 Bay Swamp	612 Mangrove	615 Stream Swamp	616 Inland Pond	617 Mixed Hardwood Forest	618 Willow & Elderberry	619 Exotic Hardwood	621 Cypress	630 Mixed Wetland Forest	640 Fresh Water Non-For.	641 Fresh Water Marsh	641x Fresh Water (Ditch)	642 Estuarine Marsh	642x S.Water (Ditch)	643 Wet Prairie	644 Lake Marsh	911 Seagrass	Total Impacted Acreage	Mitigation Location	Remarks
02	1	Charlotte	Charlotte Harbor	1120082	Oct., 2005	CR 765A Bridge Replacement								0.50															0.50	Private Mit. Bank L.Pine Island Mit. Bank	2002, new project
						SUBTOTAL BY BASIN:	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.50**		
96	1	Polk	Hillsbor. River	2012081	Oct., 1997	I-4 - County Line to Memorial Blvd. -Sec. 1										6.57						6.98							13.55	WMD-LAND U.H. 4&5	no revisions
97	7	Pasco	Hillsbor. River	2563431	Oct., 2000	SR 54 - US 41 to Cypress Creek									0.80			4.10	4.60			4.70							14.20	WMD- SWIM L. Thonotassassa	no revisions
97	7	Pasco	Hillsbor. River	2563151	June, 2001	US 41- Bell Lake to Tower Road													1.10										1.10	WMD - LAND Hills. River Corridor	no revisions
98	7	Hillsborough	Hillsbor. River	2578071	Oct., 1999	Bruce B. Downs Bike Path Amberly Dr. - Hunter's Green											0.40					0.10							0.50	Hills. Co. Parks (ELAPP) Jennings Tract	no revisions
98	1	Polk	Hillsbor. River	2012172	Sept., 2002	I-4 West of Memorial Blvd to west of US 98 - Sec. 2								0.93						1.34				1.84					4.11	Hills. Co. Parks (ELAPP) Jennings Tract	-4.08 ac. from 2002
99	7	Hillsborough	Hillsbor. River	2555361	Aug., 2001	SR 39, Blackwater Creek Bridge Replacement								1.40								0.70							2.10	Hills. Co. Parks (ELAPP) Jennings Tract	no revisions
00	7	Pasco	Hillsbor. River	2587341	July, 1999	SR 56, Cypress Creek to CR 581 (B.B. Downs)													5.20			0.10							5.30	Hills. Co. Parks (ELAPP) Jennings Tract	no revisions
00	7	Hillsborough	Hillsbor. River	2578072	Feb., 2002	Bruce B. Downs Bike Path Tampa Limits to Amberly Dr.					0.20																		0.20	Hills. Co. Parks (ELAPP) Jennings Tract	no revisions
00	7	Hillsborough	Hillsbor. River	2558591	Nov., 2002	SR 678 (Bearss Ave.) Florida Ave. to Nebraska											0.10												0.10	Hills. Co. Parks (ELAPP) Jennings Tract	no revisions
00	7	Hillsborough	Hillsbor. River	2578391	Sept., 2004	Alexander Street US 92 to Interstate 4										2.60													2.60	Hills. Co. Parks (ELAPP) Jennings Tract	no revisions
00	7	Hillsborough	Hillsbor. River	2584491	Sept., 2004	Interstate 4 (SR 400) at Alexander Street Ramp										1.70													1.70	Hills. Co. Parks (ELAPP) Jennings Tract	no revisions
00	7	Hillsborough	Hillsbor. River	2584131	Nov., 2007	SR 93 (Interstate-275) US 41 to Pasco Co. Line					4.60								0.20	0.10	0.70	2.00							7.60	Hills. Co. Parks (ELAPP) Jennings Tract	-0.5 ac. from 2002
01	7	Hillsborough	Hillsbor. River	4084602	Dec., 2001	I-75 Off-Ramp at CR 581													0.50										0.50	Hills. Co. Parks (ELAPP) Jennings Tract	no revisions
02	7	Hillsborough	Hillsbor. River	4037601	Oct., 2007	US 301 (SR 41) at McIntosh Road										0.30						0.10							0.40	DEP / WMD Hills. River State Park	no revisions
02	7	Hillsborough	Hillsbor. River	2555851	Dec., 2007	SR 39 (Alexander St) I-4 to Knights Griffin Rd.										6.50													6.50	Hills. Co. Parks (ELAPP) Greer Tract	Addit. 7.7 marsh impact ac. Mit. off-program @ Victor's
03	7	Hillsborough	Hillsbor. River	4037801	March, 2005	SR 52, I-75 to Curley Rd.		0.10														0.10							0.20	Hills. Co. Parks (ELAPP) Greer Tract	2003, new project
03	7	Hillsborough	Hillsbor. River	4112771	October, 2005	US 301, Holloman's Branch to Hills / Pasco Co. Line																0.20							0.20	Hills. Co. Parks (ELAPP) Greer Tract	2003, new project
03	7	Hillsborough	Hillsbor. River	4084601	Sept., 2006	I-75 (SR 93A) @ CR 581 (Bruce B. Downs)											0.50		0.70	0.90		0.10							2.20	Defer mitigation selection to future plans	2003, new project
03	7	Hillsborough	Hillsbor. River	4084593	Nov., 2009	I-75 (SR 93A), CR 581 (BB Downs) to SR 54								0.10		0.30			0.90	0.40	0.20								1.90	Defer mitigation selection to future plans	2003, new project
03	7	Hillsborough	Hillsbor. River	4084592	Nov., 2009	I-75 (SR 93A), Fowler Ave. to CR 581								0.10					0.10		0.10								0.30	Defer mitigation selection to future plans	2003, new project
						SUBTOTAL BY BASIN:	**0.00**	**0.10**	**0.00**	**0.00**	**4.80**	**0.00**	**0.00**	**2.53**	**0.80**	**17.97**	**1.00**	**4.10**	**13.30**	**2.74**	**1.00**	**15.08**	**1.84**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**65.26**	65.26	
97	1	Highlands	Kissimmee Ridge	1945101	Sept., 2001	US 27 - Lake Glenada to Hal McRae						0.05									0.34								0.39	Private Mit. Bank Reedy Ck. Mitig. Bank	no revisions
01	1	Polk	Kissimmee Ridge	2012092	Sept., 2002	I-4, East of CR 557 to Osceola County (Sec. 6-7,9)										1.17					0.82								1.99	Private Mit. Bank Reedy Ck. Mitig. Bank	-0.2 ac. from 2002 Addit. impacts in Withlac.
						SUBTOTAL BY BASIN:	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.05**	**0.00**	**0.00**	**0.00**	**1.17**	**0.00**	**0.00**	**0.00**	**0.00**	**1.16**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.38**	2.38	
97	1	Sarasota	Lower Coastal	1979421	June, 2001	SR 789 - Ringling Causeway Blvd																						0.27	0.27	City of Longboat Key Quick Point Nat. Preserve	no revisions
97	1	Sarasota	Lower Coastal	1980051	Sept., 2000	US 41 Bus. (SR 45) Venice to US 41 Bypass							0.32																0.32	City of Longboat Key Quick Point Nat. Preserve	no revisions
						SUBTOTAL BY BASIN:	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.32**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.27**	**0.59**	0.59	
98	1	Manatee	Manatee River	1960581	Oct., 2000	US 301 (Ellenton) 60th Ave to Erie Road							0.18				0.41													0.59	WMD - SWIM / DEP Terra Ceia	no revisions
01	1	Manatee	Manatee River	1960221	Dec., 2001	SR 64 - I-75 to Lena Rd. (Seg. 1)										0.68					1.29	0.45							2.42	WMD - LAND Rutland Ranch	no revisions
02	1	Manatee	Manatee River	1960223	Sept., 2007	SR 64 - Lena to Lakewood (Seg. 2)														0.18		1.76							1.94	WMD-LAND Rutland Ranch	+0.83 ac. from 2002
02	1	Manatee	Manatee River	1961211	July, 2005	SR 70 - I-75 to Lakewood Ranch Rd. (Seg. 1)		0.42														0.92	0.90						2.24	WMD-LAND Rutland Ranch	+0.36 ac. from 2002
02	1	Manatee	Manatee River	4043231	Sept., 2003	SR 70 - Lakewood Ranch to Lorraine Road (Seg. 2)								2.08						1.25	1.54								4.87	WMD-LAND Rutland Ranch	no revisions
						SUBTOTAL BY BASIN:	**0.00**	**0.42**	**0.00**	**0.00**	**0.00**	**0.00**	**0.18**	**2.08**	**0.00**	**0.68**	**0.41**	**0.00**	**0.00**	**1.43**	**2.83**	**3.13**	**0.90**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**12.06**	12.06	
97	1	Charlotte	Myakka River	1937941	July, 1999	SR 776 - CR 771 to Willow Bend Road				2.08			1.93									3.66		3.33					11.00	L. Pine Is.Mit.Bank (2.1 Ac.) SWIM-Cattle Dock (8.9 Ac.)	no revisions
98	1	Sarasota	Myakka River	1980131	Sept., 1999	SR 72, Deer Prairie to Big Slough																0.87							0.87	DEP - State Park Myakka River S.P.	no revisions
98	1	Sarasota	Myakka River	1979251	Jan., 1999	SR 72, Big Slough to DeSoto Cnl.								0.30								1.19							1.49	DEP - State Park Myakka River S.P.	no revisions
						SUBTOTAL BY BASIN:	**0.00**	**0.00**	**0.00**	**2.08**	**0.00**	**0.00**	**1.93**	**0.30**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**5.72**	**0.00**	**3.33**	**0.00**	**0.00**	**0.00**	**0.00**	**13.36**	13.36	
98	5	Marion	Ocklawaha	238762	Dec., 2004	SR 40-CR 225A to SW 52nd Ave.										0.20													0.20	Alachua Co. Ledwith Lake	+0.18 ac. from 2002
97	5	Marion	Ocklawaha	238641	Sept., 2002	SR 500 (US 27) - Levy Co. Line to CR 326															2.37								2.37	Alachua Co. Ledwith Lake	-0.12 ac. from 2002
97	5	Marion	Ocklawaha	238679	Sept., 1999	SR 500 (US 27) - CR 464 to CR 225a																1.09							1.09	Alachua Co. Ledwith Lake	no revisions
01	5	Marion	Ocklawaha	238719	June, 2004	SR 40 - CR 328 to SW 80th																0.08							0.08	Alachua Co. Ledwith Lake	no revisions
03	7	Polk	Ocklawaha	1976791	June, 2003	US 27 - SR 544 to Blue Heron Bay		0.02												0.43									0.45	Polk Co. / WMD Lake Lowery	Transfer project from SJRWMD
03	7	Polk	Ocklawaha	4036901	August, 2003	US 27 - Blue Heron Bay to CR 547														0.45									0.45	Polk Co. / WMD Lake Lowery	Transfer project from SJRWMD
03	7	Polk	Ocklawaha	2012041	Sept., 2002	I-4, CR 557 to Osceola Co. Line (Sec. 6, 7, & 9)													2.32		2.00								4.32	Polk Co. / WMD Lake Lowery	-0.12 ac. from 2002
						SUBTOTAL BY BASIN:	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.20**	**0.00**	**0.00**	**2.32**	**0.88**	**4.37**	**1.17**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**8.96**	8.96	

Table 1. FDOT WETLAND IMPACT INVENTORY

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Update - September , 2003
From Previous Plans
To Future Plans

Wetland Habitat Type - Proposed Impact Acreages

Mit. Plan Year	DOT Dis.	County	Drainage Basin	FM No.	DOT Construction Date	Project Description	500 Open Water	510 Streams & Waterways	530 Reservoir	540 Bays & Estuaries	610 Freshwater Hardwood Forest	611 Bay Swamp	612 Mangrove	615 Stream Swamp	616 Inland Pond	617 Mixed Hardwood Forest	618 Willow & Elderberry	619 Exotic Hardwood	621 Cypress	630 Mixed Wetland Forest	640 Fresh Water Non-For.	641 Fresh Water Marsh	641x Fresh Water (Ditch)	642 Estuarine Marsh	642x S.Water (Ditch)	643 Wet Prairie	644 Lake Marsh	911 Seagrass	Total Impacted Acreage	Mitigation Location	Remarks
98	1	Polk	Peace River	2012092	Oct., 2002	I-4, East of US 98 to East of CR 557 (Sec. 3-5)		0.20				1.30																	1.50	DEP/ FFWCC Tenoroc/Saddle Creek	Addit. impacts in Withlac.
97	1	Hardee	Peace River	1986401	May, 1999	Ft. Green/Ona Road - Vandolah to SR 62 (Seg. 1)										2.08												2.08	Private Mit. Bank Boran Ranch Mit. Bank	no revisions
97	1	Desoto	Peace River	1938880	Oct., 2000	SR 72 - Sarasota Co. Line to SR 70								1.19														1.19	Private Mit. Bank Boran Ranch Mit. Bank	no revisions
97	1	Hardee	Peace River	1111286	Feb., 2001	US 17 (SR 35) - SR 64 to north of Peace River Bridge								1.84								0.46						2.30	Private Mit. Bank Boran Ranch Mit. Bank	no revisions
97	1	Polk	Peace River	1974751	July, 2000	SR 540 - Thornhill Rd to Recker Hwy.					0.59	0.33		2.86		1.35						0.74						5.87	DEP/ FFWCC Tenoroc/Saddle Creek	no revisions
97	1	Polk	Peace River	1974711	Nov., 2000	SR 540 (Cypress Gardens) - 9th Street to Overlook															0.06					0.35		0.41	DEP/ FFWCC Tenoroc/Saddle Creek	no revisions
98	1	Charlotte	Peace River	1937911	Oct., 2000	US 17 (SR 35) from CR 74 to CR 764 North														0.27								0.27	Private Mit. Bank Boran Ranch Mit. Bank	no revisions
98	1	Charlotte	Peace River	1984711	Oct., 2000	Trabue Harborwalk Bike Path				0.16																		0.16	Private Mit. Bank L Pine Island Mit. Bank	no revisions
98	1	Hardee	Peace River	1986381	Oct., 2000	Ft. Green/Ona - Vandolah to North of Vandolah (Seg. 2)																7.22						7.22	Private Mit. Bank Boran Ranch Mit. Bank	no revisions
98	1	Hardee	Peace River	1986371	Oct., 2003	Ft. Green/Ona - SR 64 to Vandolah Rd. (Seg. 3)								0.68		0.43					4.12								5.23	Private Mit. Bank Boran Ranch Mit. Bank	no revisions
99	1	Charlotte	Peace River	1937981	Oct., 2002	US 17 (SR35) CR 764 South to CR 764 North														3.00		0.58						3.58	Private Mit. Bank Boran Ranch Mit. Bank	+ 0.11 ac. from 2002
99	1	Charlotte	Peace River	4046971	Jan., 2002	I-75 Widen Bridge over Peace River							3.55															3.55	WMD - Peace Restor. (0.8 ac.) LPI Mit. Bank (2.75 ac.)	no revisions
00	1	Polk	Peace River	1975331	June, 2003	US 27- Towerview Rd. to SR 540															3.46							3.46	Polk Co. / WMD-Land Lk. Hancock Reserve	-2.0 ac. from 2002
00	1	Hardee	Peace River	1940931	Oct., 2002	US 17 (SR 35)-Peace River to Tropicana Rd.														3.00	0.49	0.93						4.42	Polk Co. / WMD Lk. Hancock Reserve	no revisions
01	1	Polk	Peace River	1938991	Sept., 2002	US 17-Livingston to Hardee County Line											0.48			6.92	0.59	0.20	3.40					11.59	Polk Co. / WMD Lk. Hancock Reserve	no revisions
01	1	Polk	Peace River	1971681	Aug., 2002	SR 60A (Van Fleet Dr.) CR 555 to Broadway Ave.														0.46								0.46	Polk Co. / WMD Lk. Hancock Reserve	no revisions
01	1	Polk	Peace River	1976791	June, 2003	US 27- SR 544 to Blue Heron Bay														0.59		0.89						1.48	Polk Co. / WMD Lk. Hancock Reserve	Addit. Impacts in Ocklaw. +0.02 ac. from 2002
02	1	Polk	Peace River	1977061	June, 2009	US 27- SR 540 to SR 542														0.28		6.28	10.42					16.98	Polk Co. / WMD Lk. Hancock Reserve	no revisions
02	1	Polk	Peace River	1977071	June, 2009	US 27- SR 542 to SR 546			0.34											3.60		0.82						4.76	Polk Co. / WMD-Land Lk. Hancock Reserve	no revisions
02	1	Polk	Peace River	1976381	Aug., 2003	US 98 - Carpenter's Way to Daugherty Road								0.09														0.09	Polk Co. / WMD-Land Lk. Hancock Reserve	-0.19 ac. from 2002
03	1	Hardee	Peace River	4084411	Feb., 2007	Kelly Roberts Road at Bridge #064043								1.00														1.00	Polk Co. / WMD-Land Lk. Hancock Reserve	2003, new project
03	1	Polk	Peace River	1977051	July, 2006	US 27 - SR 60 to Towerview Blvd.																1.08						1.08	Polk Co. / WMD-Land Lk. Hancock Reserve	2003, new project
						SUBTOTAL BY BASIN:	**0.00**	**0.20**	**0.34**	**0.16**	**0.59**	**1.63**	**3.55**	**7.66**	**0.00**	**3.86**	**0.48**	**0.00**	**0.00**	**18.12**	**8.72**	**19.20**	**13.82**	**0.00**	**0.00**	**0.00**	**0.35**	**0.00**	**78.68**	**78.68**	
97	7	Hillsborough	Tampa Bay	2557341	Jan., 2001	SR 676 - Maritime Blvd. to SR 60							1.00					0.50										1.50	WMD-SWIM / Pinellas Co Gateway Tract	no revisions
97	7	Pinellas	Tampa Bay	2569571	Sept., 2002	US 19 - SR 60 (Drew) to Railroad											0.20					0.30						0.50	WMD-SWIM / Hills. Co. Cockroach Bay (Fresh)	no revisions
97	7	Pinellas	Tampa Bay	2588701	May, 2002	I-275 - Roosevelt to Big Island Gap							4.90					3.20				0.50		0.50				9.10	WMD-SWIM / Pinellas Co. Gateway Tract	no revisions
98	7	Pinellas	Tampa Bay	2569051	Feb., 2000	SR 679 (Bayway). Bunces Pass Bridge # 150				0.10														0.50				0.60	WMD-SWIM / Pinellas Co. Gateway Tract	no revisions
00	7	Pinellas	Tampa Bay	4037701	April, 2002	US 19, CR 816 (Alderman) to SR 582 (Tarpon)											0.10											0.10	City of St. Petersburg Boyd Hill Nature Park	no revisions
00	7	Pinellas	Tampa Bay	2568881	Feb., 2003	US 19, Coachman Rd. to Sunset Point										0.30	0.20											0.50	City of St. Petersburg Boyd Hill Nature Park	no revisions
00	7	Pinellas	Tampa Bay	4062531	Nov., 2003	SR 686 (Roosevelt) at 49th Street							0.20															0.20	WMD- SWIM / Pinellas Co. Gateway Tract	no revisions
00	7	Hillsborough	Tampa Bay	2557031	Aug., 2004	SR 60, Cypress St. to Fish Creek		(salt) 0.60	0.10				0.30										0.80	0.60	10.70	3.50			16.60	WMD-SWIM - Tappan (5.1) Cockroach (6.2), Apollo (5.3)	-1.5 ac. from 2002
00	7	Hillsborough	Tampa Bay	2583981	Dec., 2006	Inter.-275, Howard Franklin to Himes Ave.							1.60											0.30				1.90	WMD - SWIM / Pinellas Co. Gateway Tract	no revisions
00	7	Hillsborough	Tampa Bay	2556301	Aug., 2004	SR 60, Courtney Campbell to Fish Creek				3.70			4.40												4.10			12.20	WMD - SWIM / Pinellas Co. Gateway Tract	0.2 ac. seagrass impact on-site mitig. by DOT
01	7	Hillsborough	Tampa Bay	2558881	Oct., 2005	US 301- Sligh Avenue to Tampa Bypass Canal										7.60	1.70					3.00						12.30	St. Pete - Boyd Hill (9.3) SWIM - C.R. Bay (Fresh) (3.3)	+ 0.6 ac. from 2002
01	7	Pinellas	Tampa Bay	2571391	Aug., 2005	Ulmerton Rd. - US 19 to 49th Street							0.20															0.20	WMD-SWIM / Hills. Co. Cockroach Bay (Salt)	no revisions
01	7	Hillsborough	Tampa Bay	4082011	Sept., 2003	Himes Ave. at Hillsborough Ave.											0.10											0.10	City of St. Petersburg Boyd Hill Nature Park	no revisions
02	7	Pinellas	Tampa Bay	4062561	Nov., 2003	East-West Trail, Coopers Bayou to Bayshore											0.10											0.10	City of St. Petersburg Boyd Hill Nature Park	no revisions
02	7	Pinellas	Tampa Bay	2570701	Oct., 2006	US 19 - 49th St. to 118th Avenue										0.10												0.10	City of St. Petersburg Boyd Hill Nature Park	- 0.1 from 2002
02	7	Pinellas	Tampa Bay	2569941	April, 2007	CR 296 Connector, 40th St. to 28th St.																			1.00			1.00	WMD-SWIM / Hills. Co. Cockroach Bay (Fresh)	- 2.0 ac. from 2002
02	7	Hillsborough	Tampa Bay	2555991	Aug., 2007	SR 676 (Causeway Blvd.) US 301 to US 41		0.80			0.80											2.30						3.90	SWIM-C.R. Bay (Fresh) (3.1) Boyd Hill Nature Park (0.8)	no revisions
02	7	Pinellas	Tampa Bay	2569981	Nov., 2007	CR 296 at I-275 Interchange															1.50				0.50			2.00	WMD - SWIM / Hills. Co. Cockroach Bay (Fresh)	- 1.0 ac. from 2002
02	7	Pinellas	Tampa Bay	2569311	Dec., 2013	Gandy Blvd. (SR 694) US 19 to 4th St.			0.50							0.30		4.00					0.10	0.10				5.00	City of St. Petersburg Boyd Hill Nature Park	no revisions
03	7	Hillsborough	Tampa Bay	4143481	Nov., 2007	Tampa International Airport (TIA) Runway 17-35		(Canal) 3.40			0.10		0.40			0.70		2.80	0.30	1.50	3.40	0.40	6.30	0.80				20.10	WMD-SWIM / Hills. Co. Bahia Beach	2003, new project
03	7	Pinellas	Tampa Bay	2569491	Nov., 2007	US 19 (SR 55) - Seville Dr. to SR 60																	0.10					0.10	WMD-SWIM / Hills. Co. Cockroach Bay (Fresh)	2003, new project
03	7	Hillsborough	Tampa Bay	2583982	Nov., 2008	I-275 - Howard Franklin to Himes Ave.							0.40															0.40	WMD-SWIM / Hills. Co. Bahia Beach	2003, new project
03	7	Hillsborough	Tampa Bay	2558932	April, 2011	SR 574 (MLK Blvd.) - Highview to Parsons					0.40																	0.40	City of St. Petersburg Boyd Hill Nature Park	2003, new project
03	7	Hillsborough	Tampa Bay	4052141	June, 2004	Gunn Hwy., Erlich Rd. to Mobley Rd.															0.50							0.50	WMD-SWIM / Hills. Co. Cockroach Bay (Fresh)	2003, new project
03	7	Pinellas	Tampa Bay	2569951	June, 2011	SR 686 (Roosevelt) - Ulmerton Rd. to 40th St.		(Canal) 0.50	0.30								0.40	0.10				0.60	0.20						2.10	City of St. Petersburg Boyd Hill Nature Park	2003, new project
						SUBTOTAL BY BASIN:	**0.00**	**5.30**	**0.90**	**3.80**	**1.30**	**0.00**	**13.40**	**0.00**	**0.00**	**9.00**	**2.80**	**10.60**	**0.30**	**1.50**	**5.40**	**7.90**	**7.60**	**16.70**	**3.50**	**1.50**	**0.00**	**0.00**	**91.50**	**91.5**	

Table 1. FDOT WETLAND IMPACT INVENTORY

Update - September , 2003

Mitig. Transfer> <Deferred Mitig. From Previous Plans

New DOT Proj.> <Deferring Mitig. To Future Plans

Wetland Habitat Type - Proposed Impact Acreages

Mit. Plan Year	DOT Dis.	County	Drainage Basin	FM No.	DOT Construction Date	Project Description	500 Open Water	510 Streams & Waterways	530 Reservoir	540 Bays & Estuaries	610 Freshwater Hardwood Forest	611 Bay Swamp	612 Mangrove	615 Stream Swamp	616 Inland Pond	617 Mixed Hardwood Forest	618 Willow & Elderberry	619 Exotic Hardwood	621 Cypress	630 Mixed Wetland Forest	640 Fresh Water Non-For.	641 Fresh Water Marsh	641x Fresh Water (Ditch)	642 Estuarine Marsh	642x S.Water (Ditch)	643 Wet Prairie	644 Lake Marsh	911 Seagrass	Total Impacted Acreage	Mitigation Location	Remarks
97	7	Pasco	Upper Coastal	2563361	Jan., 2003	SR 54 - Mitchell to Gunn													1.60	2.80		2.20							6.60	WMD - LAND Anclote Parcel	no revisions
98	7	Pasco	Upper Coastal	2563391	Jan., 2003	SR 54 - North Suncoast to West of US 41										1.30		0.8	3.00			0.50	1.40						7.00	WMD - Land Anclote Parcel	no revisions
00	8	Pasco	Upper Coastal	2589581	Feb., 2005	Suncoast Parkway/ Ridge Road Interchange			0.15										8.19			3.48							11.82	WMD - Land Serenova Extension	no revisions
00	7	Pinellas	Upper Coastal	2570931	Feb., 2002	SR 60, Clearwater Harbor Bridge Replacement							1.30											0.20					1.50	On-site Restoration & SWIM- Gateway Tract	no revisions
00	7	Pinellas	Upper Coastal	4037711	April, 2002	US 19 - Republic Drive to CR 816 (Alderman)											0.10												0.10	Pinellas Co. / WMD-Land Brooker-Starkey Corridor	no revisions
00	7	Hernando	Upper Coastal	2571741	Aug., 2003	US 98 - Hernando Co. Line to US 19													1.40										1.40	Pinellas Co. / WMD-Land Brooker-Starkey Corridor	no revisions
00	7	Pinellas	Upper Coastal	2570501	May, 2004	SR 688 (Ulmerton Rd.) Oakhurst Rd. to 119th St.														0.20									0.20	Pinellas Co. / WMD-Land Brooker-Starkey Corridor	-1.8 ac. from 2002
00	7	Pasco	Upper Coastal	2563221	Feb., 2006	SR 52 - Moon Lake to Suncoast Parkway										3.20	0.90		2.10				0.10						6.30	Pinellas Co. / WMD-Land Brooker-Starkey Corridor	-0.6 ac. from 2002
01	7	Pasco	Upper Coastal	2563321	July, 1996	SR 54 - Rowan Rd. to Mitchell Bypass										0.10	0.20					3.30							3.60	Pinellas Co. / WMD-Land Brooker-Starkey Corridor	no revisions
01	7	Pinellas	Upper Coastal	2568151	July, 2004	SR 586 (Curlew Rd.) -CR 1 to Fisher Road											0.10												0.10	Pinellas Co. / WMD-Land Brooker-Starkey Corridor	no revisions
02	7	Pasco	Upper Coastal	2563161	Nov., 1996	SR 52, Hicks to Moon Lake										1.60													1.60	WMD-Land Serenova - Sites 2,3,4,8	no revisions
02	7	Pinellas	Upper Coastal	2569031	Sept., 2003	SR 682 (Bayway Bridge) SR 679 to W. Toll Plaza				0.10												0.30					0.40		0.80	Pinellas Co. / WMD-SWIM Ft. DeSoto Park	no revisions
02	7	Pinellas	Upper Coastal	4064741	Oct., 2005	SR 699 (Gulf Blvd.) John's Pass Bridge Replace.				0.10																			0.10	Pinellas Co. / WMD-SWIM Ft. DeSoto Park	no revisions
02	7	Pinellas	Upper Coastal	2571551	June, 2006	SR 688 (Ulmerton Rd.) 119th to Long Beach Canal																	0.20						0.20	Pinellas Co. / WMD-SWIM Ft. DeSoto Park	no revisions
02	7	Pinellas	Upper Coastal	2571541	May, 2008	SR 688 (Ulmerton Rd.) El Centro/Ranchero to US 19																0.10							0.10	Pinellas Co. / WMD-SWIM Ft. DeSoto Park	no revisions
02	7	Pinellas	Upper Coastal	4107551	Nov., 2007	SR 679 (Bayway) Intercoastal to Bridge				0.30																			0.30	Pinellas Co. / WMD-SWIM Ft. DeSoto Park	no revisions
02	7	Pinellas	Upper Coastal	2571371	July, 2005	Alt. 19 - Meres Blvd. to Pasco County Line							0.10										0.10						0.20	Pinellas Co. / WMD-SWIM Ft. DeSoto Park	no revisions
03	7	Citrus	Upper Coastal	2571931	Feb., 2005	US 19 (SR 55) - CR 490 (Yulee) to CR 44								0.05						0.02		0.02							0.09	WMD-LAND Nomination - Connerton	Defer mitigation selection 2003, new project
03	7	Citrus	Upper Coastal	4089061	Feb., 2005	US 19 (SR 55) - 3rd Ave. NE to NW 6th Ave.								0.20															0.20	WMD-LAND Nomination - Connerton	Defer mitigation selection 2003, new project
03	7	Pinellas	Upper Coastal	2570781	Nov., 2005	US Alt. 19 (SR 55) - Harry St. to Meres Blvd.											0.10												0.10	Pinellas Co./ WMD-SWIM DeSoto Park	2003, new project
03	7	Pinellas	Upper Coastal	2568901	Aug., 2008	US 19 (SR55) - Sunset Pt. Rd. to Countryside Blvd.										0.10													0.10	WMD-LAND Nomination - Connerton	Defer mitigation selection 2003, new project
03	7	Pasco	Upper Coastal	2563241	Sept., 2009	US 41 (SR 45) - Tower Rd. to Ridge Road					2.00					2.00			5.00			2.00							11.00	WMD-LAND Nomination - Connerton	Defer mitigation selection 2003, new project
03	7	Pinellas	Upper Coastal	2570831	Nov., 2008	SR 699 (Gulf Blvd.) - 192nd Ave. to Walsingham/Ulmerton Rd.							0.10																0.10	Pinellas Co./ WMD-SWIM Ft. DeSoto Park	2003, new project
03	7	Pinellas	Upper Coastal	4037661	Nov., 2008	Alt. US 19 (SR 595) - Pinellas Co. Line to US 19 (SR 55)															0.10	0.20							0.30	Pinellas Co./ WMD-SWIM DeSoto Park	2003, new project
03	7	Pinellas	Upper Coastal	4091541	Nov., 2008	SR 688 (Ulmerton Rd.) - Wild Acres to El Centro/Ranchero Blvd.		(Canal) 0.20																					0.20	Pinellas Co./ WMD-SWIM Ft. DeSoto Park	2003, new project
03	7	Pasco	Upper Coastal	2572983	June, 2011	CR 578 (County Line Rd.) - East Rd. to Mariner Blvd.			0.90													0.40							1.30	WMD-LAND Nomination - Connerton	Defer mitigation selection 2003, new project
03	7	Hernando	Upper Coastal	4050172	Sept., 2011	US 98 - CR 485 (Cobb Rd.) to CR 491 (Citrus Way)					0.10																		0.10	WMD-LAND Nomination - Connerton	Defer mitigation selection 2003, new project
						SUBTOTAL BY BASIN:	**0.00**	**0.20**	**1.05**	**0.50**	**2.10**	**0.00**	**1.50**	**0.25**	**0.00**	**8.30**	**1.40**	**0.80**	**21.29**	**3.02**	**0.10**	**12.50**	**1.80**	**0.20**	**0.00**	**0.00**	**0.00**	**0.40**	**55.41**	55.41	
98	7	Citrus	Withlac. River	2571641	Dec., 2002	SR 44 -CR 470 to Withlacoochee River										4.90				4.10		4.90							13.90	DOF / DEP With. State Forest - Baird	no revisions
98	7	Citrus	Withlac. River	2571631	Aug., 2002	SR 44 - US 41 to CR470								3.10			3.20					1.60							7.90	DOF / DEP With. State Forest - Baird	no revisions
98	1	Polk	Withlac. River	2012092	Oct., 2002	I-4 East of US 98 to East of CR 557 (Sec. 3-5)		2.40								0.40	2.30		3.50	8.10		0.40			0.70				17.80	WMD - LAND Hampton Tract	Addit. project impacts in Peace Basin
98	1	Polk	Withlac. River	2012041	Sept., 2002	I-4 East of CR 557 to Osceola County (Sec. 6-7,9)															3.55								3.55	WMD - LAND Hampton Tract	-5.35 ac. from 2002
99	5	Sumter	Withlac. River	4063291	Nov., 2000	I-75 Lk. Panasoffkee Bridge	5.93																						5.93	WMD - SWIM Lake Panasoffkee	no revisions
01	7	Citrus	Withlac. River	2571841	Nov., 2004	SR 45 (US 41) - Watson St. to SR 44 East																	0.10						0.10	DOF / DEP - With. State Forest - Baird	no revisions
02	7	Citrus	Withlac. River	4092071	Nov., 2004	CR 470 (Gospel Isle)										0.10						0.10							0.20	DOF / DEP With. State Forest - Baird	+0.1 ac. from 2002
02	7	Pasco	Withlac. River	2571651	Nov., 2007	US 41 (SR 45) SR 44 to SR 200										0.50	0.20												0.70	DOF / DEP With. State Forest - Baird	no revisions
02	7	Pasco	Withlac. River	4037811	Nov., 2005	SR 52 - Curley Rd. to Smith Rd.		0.30														0.10							0.40	DOF / DEP With. State Forest - Baird	2003, new project
03	7	Citrus	Withlac. River	2571882	June, 2011	SR 200, US 41 to Marion Co. Line		(River) 2.70														2.60			0.50				5.80	Defer mitigation selection to future plans	2003, new project
03	7	Hernando	Withlac. River	2572992	Dec., 2012	CR 485 (Cobb Rd.) - SR 50 to US 98					2.80											0.20							3.00	Defer mitigation selection to future plans	2003, new project
						SUBTOTAL BY BASIN:	**5.93**	**5.40**	**0.00**	**0.00**	**2.80**	**0.00**	**0.00**	**3.10**	**0.00**	**5.90**	**5.70**	**0.00**	**3.50**	**12.20**	**3.55**	**9.90**	**0.10**	**0.00**	**0.00**	**1.20**	**0.00**	**0.00**	**59.28**	59.28	
						GRAND TOTALS	**5.93** 5.93	**11.64** 11.64	**2.29** 2.29	**6.54** 6.54	**11.59** 11.59	**1.68** 1.68	**20.88** 20.88	**16.42** 16.42	**0.80** 0.80	**47.08** 47.08	**11.79** 11.79	**15.50** 15.50	**40.71** 40.71	**39.89** 39.89	**27.13** 27.13	**74.60** 74.60	**26.06** 26.06	**20.23** 20.23	**3.50** 3.50	**2.70** 2.70	**0.35** 0.35	**0.67** 0.67	**387.98** 387.98		

Table 2. Net funding requested by mitigation project, including all modifications and new projects. **Sept., 2003**

Mitig. Project Name	Mitig. Project	WPI #	FM #	Acreage Impacts (Prev.)	Acreage Impacts (Current)	Plan Year	Previous Cost Estimate	Proposed Requested Funds	Remarks/Fund Allocation (Fund Shortage -Parenth.)	Available Funds	Available Funds Minus Proposed Mitig. Cost (Surplus Funds)	
Cattle Dock Point (SWIM)	**SW 31**	1110148	1937941	8.92	8.92	97	$ 669,250.00	$ 669,250.00	Partial mit. @ SW52, No Revisions	$ 698,106.00	$ -	
Project Total				**8.92**	**8.92**		**$ 669,250.00**	**$ 669,250.00**	**$ -**	**$ 698,106.00**	**$ 28,856.00**	$ 28,856.00
Lake Thonotasassa (SWIM)	**SW 34**	7115981	2563431	14.20	14.20	97	$ 611,349.00	$ 635,349.00	Increased Costs	$ 1,093,443.00	$ 458,094.00	
Project Total				**14.20**	**14.20**		**$ 611,349.00**	**$ 635,349.00**	**$ (24,000.00)**	**$ 1,093,443.00**	**$ 458,094.00**	$ 458,094.00
Quick Point	**SW 38**	1119232	1979421	0.27	0.27	97	$ 21,536.00	$ 21,131.00	No Revisions	$ 21,131.00	$ -	
(Longboat Key)		1119295	1980051	0.32	0.32	97	$ 25,044.00	$ 25,044.00	No Revisions	$ 25,044.00	$ -	
Project Total				**0.59**	**0.59**		**$ 46,580.00**	**$ 46,175.00**	**$ 405.00**	**$ 46,175.00**	**$ -**	$ -
Gateway Restoration	**SW 45**	7113975	2557341	1.50	1.50	97	$ 115,505.00	$ 100,000.00	Decreased Costs	$ 115,505.00	$ 15,505.00	
(Pinellas / SWIM)		7147874	2588701	9.00	9.10	97	$ 704,366.00	$ 600,000.00	Impact Inc., Decreased Costs	$ 712,192.00	$ 112,192.00	
		7116991	2569051	0.60	0.60	98	$ 46,202.00	$ 40,000.00	Decreased Costs	$ 46,202.00	$ 6,202.00	
		7117181	2570931	1.50	1.50	^00	$ 41,140.00	$ 40,000.00	Decreased Costs	$ 123,422.00	$ 83,422.00	
		7123639	2583981	1.90	1.90	^01	$ 163,590.00	$ 100,000.00	Decreased Costs	$ 163,590.00	$ 63,590.00	
		NA	4062531	0.20	0.20	^00	$ 8,228.00	$ 8,000.00	Decreased Costs	$ 16,456.00	$ 8,456.00	
		7113871	2556301	12.13	12.20	^00	$ 887,754.00	$ 600,000.00	Impact Inc., Decreased Costs	$ 1,036,231.00	$ 436,231.00	
Project Total				**26.83**	**27.00**		**$ 1,966,785.00**	**$ 1,488,000.00**	**$ 478,785.00**	**$ 2,213,598.00**	**$ 725,598.00**	$ 725,598.00
Tenoroc / Saddle Creek	**SW 47**	1147942	2012041	1.50	1.89	96	$ 127,405.00	$ 160,530.00	Impact Inc., Increased Costs	$ 160,530.00	$ -	
(FDEP / FFWCC)		1118367	1974751	5.87	5.87	97	$ 440,250.00	$ 459,404.00	Increased Costs	$ 459,404.00	$ -	
		1118363	1974711	0.41	0.41	97	$ 32,088.00	$ 32,088.00	No Revisions	$ 32,088.00	$ -	
Project Total				**7.78**	**8.17**		**$ 599,743.00**	**$ 652,022.00**	**$ (52,279.00)**	**$ 652,022.00**	**$ -**	$ -
Reedy Ck. Mitig. Bank	**SW 49**	1112576	1945101	0.39	0.39	97	$ 13,650.00	$ 13,650.00	No Revisions	$ 31,108.00	$ 17,458.00	
		1147942	2012041	2.20	1.99	^01	$ 35,020.00	$ 32,900.00	Impact Decrease	$ 169,025.00	$ 136,125.00	
Project Total				**2.59**	**2.38**		**$ 48,670.00**	**$ 46,550.00**	**$ 2,120.00**	**$ 200,133.00**	**$ 153,583.00**	$ 153,583.00
Terra Ceia (DEP/ SWIM)	**SW 50**	1115399	1960581	0.59	0.59	98	$ 46,175.00	$ 46,175.00	No Revisions	$ 46,175.00	$ -	
Project Total				**0.59**	**0.59**		**$ 46,175.00**	**$ 46,175.00**	**$ -**	**$ 46,175.00**	**$ -**	$ -
Myakka River State Park	**SW 51**	1119303	1980131	0.87	0.87	98	$ 33,000.00	$ 33,000.00	No Revisions	$ 68,089.00	$ 35,089.00	
(FDEP)		1119215	1979251	1.49	1.49	98	$ 56,000.00	$ 66,000.00	No Revisions	$ 116,612.00	$ 50,612.00	
Project Total				**2.36**	**2.36**		**$ 89,000.00**	**$ 99,000.00**	**$ (10,000.00)**	**$ 184,701.00**	**$ 85,701.00**	$ 85,701.00
Little Pine Island	**SW 52**	1120075	1984711	0.16	0.16	98	$ 5,920.00	$ 5,920.00	No Revisions	$ 12,522.00	$ 6,602.00	
Mitigation Bank		1110148	1937941	2.08	2.08	98	$ 76,960.00	$ 76,960.00	No Revisions	$ 162,787.00	$ 85,827.00	
		NA	4046971	2.75	2.75	^01	$ 145,750.00	$ 145,750.00	No Revisions	$ 226,273.00	$ 80,523.00	
		NA	1984781	0.50	0.50	^02	$ 24,000.00	$ 24,000.00	No Revisions	$ 44,072.00	$ 20,072.00	
Project Total				**5.49**	**5.49**		**$ 252,630.00**	**$ 252,630.00**	**$ -**	**$ 445,654.00**	**$ 193,024.00**	$ 193,024.00
Boran Ranch Mitig. Bank	**SW 53**	1121259	1986401	2.08	2.08	97	$ 62,400.00	$ 62,400.00	No Revisions	$ 160,166.00	$ 97,766.00	
		1110453	1938851	1.19	1.19	97	$ 35,700.00	$ 35,700.00	No Revisions	$ 91,634.00	$ 55,934.00	
		1111286	1941021	2.30	2.30	97	$ 69,000.00	$ 69,000.00	No Revisions	$ 180,004.00	$ 111,004.00	
		1110145	1937911	0.27	0.27	98	$ 8,100.00	$ 8,100.00	No Revisions	$ 21,536.00	$ 13,436.00	
		1121257	1986381	7.22	7.22	98	$ 216,600.00	$ 216,600.00	No Revisions	$ 565,059.00	$ 348,459.00	
		1121256	1986371	5.23	5.23	98	$ 174,600.00	$ 174,600.00	No Revisions	$ 416,281.00	$ 241,681.00	
		1110152	1937981	3.47	3.58	99	$ 104,100.00	$ 107,400.00	Impact Increase	$ 285,515.00	$ 178,115.00	
Project Total				**21.76**	**21.87**		**$ 670,500.00**	**$ 673,800.00**	**$ (3,300.00)**	**$ 1,720,195.00**	**$ 1,046,395.00**	$ 1,046,395.00
Anclote Parcel	**SW 54**	7115977	2563361	7.00	7.00	98	$ 299,132.00	$ 375,000.00	No Revisions	$ 575,967.00	$ 200,967.00	
(WMD-LAND)		7115974	2563391	6.60	6.60	97	$ 375,868.00	$ 300,000.00	No Revisions	$ 560,584.00	$ 260,584.00	
Project Total				**13.60**	**13.60**		**$ 675,000.00**	**$ 675,000.00**	**$ -**	**$ 1,136,551.00**	**$ 461,551.00**	$ 461,551.00
Up.Hills.4&5 (WMD-LAND)	**SW 55**	1147946	2012081	13.55	13.55	96	$ 160,000.00	$ 230,000.00	Increased Costs	$ 1,016,250.00	$ 786,250.00	
Project Total				**13.55**	**13.55**		**$ 160,000.00**	**$ 230,000.00**	**$ (70,000.00)**	**$ 1,016,250.00**	**$ 786,250.00**	$ 786,250.00
Cockroach Bay (SWIM)	**SW 56**	7117045	2569571	0.50	0.50	97	$ 38,500.00	$ 38,500.00	No Revisions	$ 38,500.00	$ -	
(Freshwater)		NA	2557031	0.80	0.80	^00	$ 63,811.00	$ 63,811.00	No Revisions	$ 63,811.00	$ -	
		NA	2558881	2.40	3.00	^01	$ 197,474.00	$ 197,474.00	Impact Increase	$ 254,811.00	$ 57,337.00	
		NA	4089191	0.10	0.00	^02	$ 8,494.00	$ -	No Mitigation Required	$ -	$ -	
		NA	2569941	1.00	1.00	^02	$ 84,937.00	$ 84,937.00	No Revisions	$ 84,937.00	$ -	
		NA	2555991	3.10	3.10	^02	$ 263,305.00	$ 263,305.00	No Revisions	$ 335,782.00	$ 72,477.00	
		7117086	2569981	1.00	2.00	^02	$ 84,937.00	$ 84,937.00	Impact Increase	$ 169,874.00	$ 84,937.00	
		NA	2569491	0.00	0.10	^03	$ -	$ 4,000.00	New Project	$ 8,494.00	$ 4,494.00	
		NA	4052141	0.00	0.50	^03	$ -	$ 10,000.00	New Project	$ 42,468.00	$ 32,468.00	
Project Total				**8.90**	**11.00**		**$ 741,458.00**	**$ 746,964.00**	**$ (5,506.00)**	**$ 998,677.00**	**$ 251,713.00**	$ 251,713.00
Lk. Panasoffkee (SWIM)	**SW 57**	NA	4063291	5.93	5.93	99	$ 469,733.00	$ 469,733.00	No Revisions	$ 473,000.00	$ 3,267.00	
Project Total				**5.93**	**5.93**		**$ 469,733.00**	**$ 469,733.00**	**$ -**	**$ 473,000.00**	**$ 3,267.00**	$ 3,267.00

Table 2. Net funding requested by mitigation project, including all modifications and new projects. **Sept., 2003**

Mitig. Project Name	Mitig. Project	WPI #	FM #	Impacts (Prev.)	Impacts (Current)	Plan Year	Previous Cost Estimate	Proposed Requested Funds	Remarks/Fund Allocation (Fund Shortage-Parenth.)	Available Funds	Available Funds Minus Proposed Mitig. Cost (Surplus Funds)	
Ledwith Lake	**SW 58**	5113632	2387621	0.02	0.20	98	$ 500.00	$ 500.00	Impact Increase	$ 16,990.00	$ 16,490.00	
(Alachua County)		5113511	2386411	2.49	2.37	97	$ 66,000.00	$ 66,000.00	Impact Decrease	$ 201,301.00	$ 135,301.00	
		5113549	2386791	1.09	1.09	97	$ 29,000.00	$ 29,000.00	No Revisions	$ 92,581.00	$ 63,581.00	
		5113589	2387191	0.08	0.08	^01	$ 4,500.00	$ 4,500.00	No Revisions	$ 6,795.00	$ 2,295.00	
Project Total				**3.68**	**3.74**		**$ 100,000.00**	**$ 100,000.00**	**$ -**	**$ 317,667.00**	**$ 217,667.00**	$ 217,667.00
Hampton Tract	**SW 59**	NA	2012092	17.80	18.95	98	$ 900,000.00	$ 1,200,000.00	Impact Increase	$ 1,609,556.00	$ 409,556.00	
(WMD-LAND)		NA	2012041	8.85	3.55	98	$ 500,000.00	$ 200,000.00	Impact Decrease	$ 301,526.00	$ 101,526.00	
Project Total				**26.65**	**22.50**		**$ 1,400,000.00**	**$ 1,400,000.00**	**$ -**	**$ 1,911,082.00**	**$ 511,082.00**	$ 511,082.00
Serenova Ext. (WMD-LND)	**SW 60**	7155806	2589581	11.82	11.82	^00	$ 1,003,955.00	$ 1,017,678.00	Addit. Acquis.Costs	$ 1,017,678.00	$ -	
Project Total				**11.82**	**11.82**		**$ 1,003,955.00**	**$ 1,017,678.00**	**$ (13,723.00)**	**$ 1,017,678.00**	**$ -**	$ -
Cypress Ck. Preserve	**SW 61**	7123606	2578071	0.50	0.50	98	$ 21,204.00	$ 20,000.00	Reapportion Costs	$ 38,502.00	$ 18,502.00	
Jennings Tract		NA	2012172	8.10	4.11	98	$ 88,210.00	$ 130,000.00	Impact Decrease	$ 349,091.00	$ 219,091.00	
(Hills. County Parks)		7113773	2555361	2.10	2.10	99	$ 89,059.00	$ 110,000.00	Reapportion Costs	$ 167,504.00	$ 57,504.00	
		7147617	2587341	5.30	5.30	^00	$ 224,766.00	$ 280,000.00	Reapportion Costs	$ 436,088.00	$ 156,088.00	
		NA	2578072	0.20	0.20	^00	$ 8,482.00	$ 10,000.00	Reapportion Costs	$ 16,456.00	$ 6,456.00	
		NA	2558591	0.10	0.10	^00	$ 4,240.00	$ 5,000.00	Reapportion Costs	$ 8,228.00	$ 3,228.00	
		NA	2578391	2.60	2.60	^00	$ 131,467.00	$ 230,000.00	Reapportion Costs	$ 394,949.00	$ 164,949.00	
		NA	2584491	1.70	1.70	^00	$ 72,095.00	$ 100,000.00	Reapportion Costs	$ 139,877.00	$ 39,877.00	
		NA	2584131	8.10	7.60	^00	$ 339,271.00	$ 500,000.00	Impact Decrease	$ 645,521.00	$ 145,521.00	
		NA	4084602	0.50	0.50	^01	$ 21,206.00	$ 25,000.00	Reapportion Costs	$ 41,141.00	$ 16,141.00	
Project Total				**29.20**	**24.71**		**$ 1,000,000.00**	**$ 1,410,000.00**	**$ (410,000.00)**	**$ 2,237,357.00**	**$ 827,357.00**	$ 827,357.00
Tappan Tract - SWIM	**SW 62**	7113944	2557031	6.40	5.10	^00	$ 460,000.00	$ 400,000.00	Partial Mit. @ SW 67	$ 433,179.00	$ 33,179.00	
Project Total				**6.40**	**5.10**		**$ 460,000.00**	**$ 400,000.00**	**$ 60,000.00**	**$ 433,179.00**	**$ 33,179.00**	$ 33,179.00
Hills. River Corridor (LND)	**SW 63**	7115951	2563151	1.10	1.10	97	$ 14,457.00	$ 14,457.00	No Revisions	$ 87,740.00	$ 73,283.00	
Project Total				**1.10**	**1.10**		**$ 14,457.00**	**$ 14,457.00**	**$ -**	**$ 87,740.00**	**$ 73,283.00**	$ 73,283.00
Baird Tract	**SW 64**	7119003	2571641	13.90	13.90	98	$ 795,522.00	$ 795,000.00	Reapportion Costs	$ 1,143,706.00	$ 348,706.00	
(FDOF, FDEP)		2571631	7119002	7.90	7.90	99	$ 500,478.00	$ 500,000.00	Reapportion Costs	$ 650,020.00	$ 150,020.00	
		2571841	7119013	0.10	0.10	^01	$ 1,000.00	$ 1,000.00	Reapportion Costs	$ 8,228.00	$ 7,228.00	
		4092071	NA	0.10	0.20	^02	$ 1,000.00	$ 1,000.00	Reapportion Costs	$ 8,493.00	$ 7,493.00	
		2571651	NA	0.70	0.70	^02	$ 2,000.00	$ 2,000.00	Reapportion Costs	$ 60,269.00	$ 58,269.00	
		4037811	NA	0.00	0.40	^03	$ -	$ 1,000.00	New Project	$ 33,975.00	$ 32,975.00	
Project Total				**22.70**	**23.20**		**$ 1,300,000.00**	**$ 1,300,000.00**	**$ -**	**$ 1,904,691.00**	**$ 604,691.00**	$ 604,691.00
Rutland Ranch (WMD-LND)	**SW 65**	NA	1960221	2.42	2.42	^01	$ 50,000.00	$ 50,000.00	No Revisions	$ 205,548.00	$ 155,548.00	
		NA	1960223	1.11	1.94	^02	$ 15,000.00	$ 30,000.00	Impact Increase	$ 94,280.00	$ 64,280.00	
		NA	1961211	1.50	2.24	^02	$ 20,000.00	$ 30,000.00	Impact Increase	$ 127,405.00	$ 97,405.00	
		NA	4043232	4.87	4.87	^02	$ 70,000.00	$ 70,000.00	No Revisions	$ 413,643.00	$ 343,643.00	
Project Total				**9.90**	**11.47**		**$ 155,000.00**	**$ 180,000.00**	**$ (25,000.00)**	**$ 840,876.00**	**$ 660,876.00**	$ 660,876.00
Lk. Hancock Reserve	**SW 66**	1118425	1975331	7.00	3.46	^01	$ 300,000.00	$ 290,000.00	Impact Decrease	$ 293,882.00	$ 3,882.00	
(Polk Co. / WMD-LND)		1111277	1940931	4.42	4.42	^01	$ 150,000.00	$ 360,000.00	Reapportion Costs	$ 363,682.00	$ 3,682.00	
		1110467	1938991	11.59	11.59	^01	$ 450,000.00	$ 950,000.00	Reapportion Costs	$ 953,637.00	$ 3,637.00	
		1118059	1971681	0.46	0.46	^01	$ 20,000.00	$ 35,000.00	Reapportion Costs	$ 39,071.00	$ 4,071.00	
		1118571	1976791	1.45	1.48	^01	$ 70,000.00	$ 80,000.00	Inc. Impacts, Reapportion Costs	$ 121,776.00	$ 41,776.00	
		1118494	1977061	16.98	16.98	^02	$ 600,000.00	$ 160,000.00	No Revisions	$ 1,442,230.00	$ 1,282,230.00	
		1118564	1977071	4.76	4.76	^02	$ 150,000.00	$ 40,000.00	No Revisions	$ 404,300.00	$ 364,300.00	
		1118530	1976381	0.20	0.09	^02	$ 10,000.00	$ 5,000.00	Impact Decrease	$ 7,749.00	$ 2,749.00	
		NA	4084411	0.00	1.00	^03	$ -	$ 5,000.00	New Project	$ 84,937.00	$ 79,937.00	
		1118597	1977051	0.00	1.08	^03	$ -	$ 5,000.00	New Project	$ 84,937.00	$ 79,937.00	
Project Total				**46.86**	**45.32**		**$ 990,000.00**	**$ 1,930,000.00**	**$ (940,000.00)**	**$ 3,796,201.00**	**$ 1,866,201.00**	$ 1,866,201.00
Apollo Bch. (Hills. / SWIM)	**SW 67**	7113944	2557031	5.90	5.30	^00	$ 422,740.00	$ 450,000.00	Mitigation Transfer	$ 450,166.00	166.00	
Project Total				**5.90**	**5.30**		**$ 422,740.00**	**$ 450,000.00**	**$ (27,260.00)**	**$ 450,166.00**	**$ 166.00**	$ 166.00
Brooker-Starkey Corridor	**SW 68**	7119013	2571741	1.40	1.40	^00	$ 115,193.00	$ 115,193.00	No Revisions	$ 115,193.00	$ -	
(Pasco Co. / WMD-Land)		7117138	2570501	2.00	0.20	^00	$ 159,528.00	$ 16,456.00	Impact Decrease	$ 16,456.00	$ -	
		NA	4037711	0.10	0.10	^00	$ 7,979.00	$ 8,228.00	No Revisions	$ 8,228.00	$ -	
		7115970	2563221	6.90	6.30	^00	$ 574,301.00	$ 535,103.00	Impact Decrease	$ 535,103.00	$ -	
		7115970	2563321	3.60	3.60	^01	$ 287,150.00	$ 302,794.00	No Revisions	$ 302,794.00	$ -	
		7116901	2568151	0.10	0.10	^01	$ 7,976.00	$ 8,494.00	No Revisions	$ 8,494.00	$ -	
Project Total				**14.10**	**11.70**		**$ 1,152,127.00**	**$ 986,268.00**	**$ 165,859.00**	**$ 986,268.00**	**$ -**	$ -
Peace River Bridge (WMD)	**SW 69**	NA	4046971	0.80	0.80	^01	$ 60,000.00	$ 60,000.00	No Revisions	$ 63,811.00	$ 3,811.00	
Project Total				**0.80**	**0.80**		**$ 60,000.00**	**$ 60,000.00**	**$ -**	**$ 63,811.00**	$ 3,811.00	$ 3,811.00

Table 2. Net funding requested by mitigation project, including all modifications and new projects. **Sept., 2003**

Mitig. Project Name	Mitig. Project	WPI #	FM #	Impacts (Prev.)	Impacts (Current)	Plan Year	Previous Cost Estimate	Proposed Requested Funds	Remarks/Fund Allocation (Fund Shortage-Parenth.)	Available Funds	Available Funds Minus Proposed Mitig. Cost (Surplus Funds)	
Ft. DeSoto Park	**SW 70**	7116989	2569031	0.80	0.80	^02	$ 67,950.00	$ 67,950.00	No Revisions	$ 67,950.00	$ -	
(Pinellas Co./ WMD-SWIM)		NA	4064741	0.10	0.10	^02	$ 8,494.00	$ 8,494.00	No Revisions	$ 8,494.00	$ -	
		7117243	2571551	0.20	0.20	^02	$ 16,987.00	$ 16,987.00	No Revisions	$ 16,987.00	$ -	
		7117242	2571541	0.10	0.10	^02	$ 8,494.00	$ 8,494.00	No Revisions	$ 8,494.00	$ -	
		7117240	2571521	0.30	0.30	^02	$ 25,481.00	$ 25,481.00	No Revisions	$ 25,481.00	$ -	
		7117225	2571371	0.20	0.20	^02	$ 16,987.00	$ 16,987.00	No Revisions	$ 16,987.00	$ -	
		NA	2570831	0.00	0.10	^03	$ -	$ 8,494.00	New Project	$ 8,494.00	$ -	
		NA	4091541	0.00	0.20	^03	$ -	$ 16,987.00	New Project	$ 16,987.00	$ -	
		NA	2570781	0.00	0.10	^03	$ -	$ 8,494.00	New Project	$ 8,494.00	$ -	
		NA	4037661	0.00	0.30	^03	$ -	$25,482.00	New Project	$ 25,482.00	$ -	
Project Total				**1.70**	**2.40**		**$ 144,393.00**	**$ 203,850.00**	**$ (59,457.00)**	**$ 203,850.00**	$ -	$ -
Boyd Hill Nature Park	**SW 71**	NA	4037701	0.10	0.10	^00	$ 8,228.00	$ 8,228.00	No Revisions	$ 8,228.00	$ -	
(St. Petersburg)		7116974	2568881	0.40	0.50	^00	$ 33,735.00	$ 33,735.00	Impact Increase	$ 33,735.00	$ -	
		NA	4082011	0.10	0.10	^01	$ 8,228.00	$ 8,228.00	No Revisions	$ 8,228.00	$ -	
		NA	4062561	0.10	0.10	^02	$ 8,494.00	$ 8,494.00	No Revisions	$ 8,494.00	$ -	
		7117158	2570701	0.10	0.10	^02	$ 8,494.00	$ 8,494.00	No Revisions	$ 8,494.00	$ -	
		7117082	2569941	2.00	-	^02	$ 169,874.00	$ -	Impact Decrease, Mit.-SW56	$ -	$ -	
		7117086	2569981	2.00	-	^02	$ 169,874.00	$ -	Impact Decrease, Mit.-SW56	$ -	$ -	
		7114129	2558881	9.30	9.30	^02	$ 573,438.00	$ 750,000.00	Reapportion Funding	$ 789,914.00	$ 39,914.00	
		7117019	2569311	5.00	5.00	^02	$ 324,685.00	$ 350,000.00	Reapportion Funding	$ 430,490.00	$ 80,490.00	
		7113840	2555991	0.80	0.80	^02	$ 50,000.00	$ 50,000.00	No Revisions	$ 67,950.00	$ 17,950.00	
		NA	2569951	0.00	2.10	^03	$ -	$ 140,000.00	New Project	$ 178,368.00	$ 38,368.00	
		NA	2558932	0.00	0.40	^03	$ -	$ 20,000.00	New Project	$ 33,735.00	$ 13,735.00	
Project Total				**23.30**	**18.50**		**$ 1,355,050.00**	**$ 1,377,179.00**	**$ (22,129.00)**	**$ 1,567,636.00**	**$ 190,457.00**	$ 190,457.00
Greer Tract (Hills.)	**SW 72**	NA	4054921	6.80	6.50	^02	$ 100,000.00	$ 100,000.00	Impact Decrease	$ 552,090.00	$ 452,090.00	
			4037801	0.00	0.20	^03	$ -	$ 5,000.00	New Project	$ 16,987.00	$ 11,987.00	
			4112771	0.00	0.20	^03	$ -	$ 5,000.00	New Project	$ 16,987.00	$ 11,987.00	
Project Total				**6.80**	**6.90**		**$ 100,000.00**	**$ 110,000.00**	**$ (10,000.00)**	**$ 586,064.00**	**$ 476,064.00**	$ 476,064.00
Hills. R.S.P. (DEP/WMD)	**SW 73**	NA	4037601	0.40	0.40	^02	$ 33,974.00	$ 100,000.00	Increase Costs	$ 33,974.00	$ (66,026.00)	
Project Total				**0.40**	**0.40**		**$ 33,974.00**	**$ 100,000.00**	**$ (66,026.00)**	**$ 33,974.00**	**$ (66,026.00)**	$ (66,026.00)
Serenova 2,3,4,8 (LAND)	**SW 74**	7115952	2563161	1.60	1.60	^02	$ 130,000.00	$ 130,000.00	No Revisions	$ 135,899.00	$ 5,899.00	
Project Total				**1.60**	**1.60**		**$ 130,000.00**	**$ 130,000.00**	**$ -**	**$ 135,899.00**	**$ 5,899.00**	$ 5,899.00
Cockroach Bay - Saltwater	**SW 75**	7113944	2557031	5.40	5.40	^01	$ 410,000.00	$ 410,000.00	Reapportion Funding	$ 458,660.00	$ 48,660.00	
(Hills. Co. / WMD- SWIM)		7117227	2571391	0.20	0.20	^01	$ 10,000.00	$ 10,000.00	Reapportion Funding	$ 16,987.00	$ 6,987.00	
Project Total				**5.60**	**5.60**		**$ 420,000.00**	**$ 420,000.00**	**$ -**	**$ 475,647.00**	**$ 55,647.00**	$ 55,647.00
Lake Lowery (LAND)	**SW 76**	1118571	197691	1.24	0.45	^03	$ -	$ -	SJRWMD- Mitig. Transfer	$ 37,030.00	$ 37,030.00	
		NA	4038901	1.10	0.45	^03	$ -	$ -	SJRWMD- Mitig. Transfer	$ 37,030.00	$ 37,030.00	
		1147942	2012041	9.70	4.32	^03	$ 255,436.00	$ 255,436.00	SJRWMD- Mitig. Transfer	$ 366,928.00	$ 111,492.00	
Project Total				**12.04**	**5.22**		**$ 255,436.00**	**$ 255,436.00**	**$ -**	**$ 403,958.00**	**$ 148,522.00**	$ 148,522.00
Bahia Beach (SWIM)	**SW 78**	NA	4143481	0.00	20.10	^03	$ -	$ 1,698,740.00	New Project	$ 1,698,740.00	$ -	
(Hills. Co. / SWIM)			2583982	0.00	0.40	^03	$ -	$ 33,975.00	New Project	$ 33,975.00	$ -	
				0.00	**20.50**		**$ -**	**$ 1,732,715.00**	**$ (1,732,715.00)**	**$ 1,732,715.00**	**$ -**	$ -
GRAND TOTAL				**363.64**	**363.53**		**$ 17,544,005.00**	**$ 20,308,231.00**	**$ (2,764,226.00)**	**$ 30,111,139.00**	**$ 9,802,908.00**	**$ 9,802,908.00**

Avg. Mit. Cost / Impact Ac.
$ 55,863.98

Southwest Florida Water Management District
FY 2002-2003 DOT Regional Mitigation Plan

Table 3 - Amended DOT Impacts and Associated Mitigation 09/25/2002

DOT WPI	Prev. Ac.	Curr. Ac.	Mitigation Project	Cost Estimate (Previous)	Cost Estimate (Current)	Mitig. Type	Prev. Mitig.	Curr. Mitig.	Mitig. Credits
7115981	14.14	14.20	SW 34-Lk. Thonotasassa	$ 611,349.00	$ 556,349.00	Marsh Rest.	59.0	59.0	
1119232	0.27	0.27	SW 38-Quick Point	$ 21,536.00	$ 21,131.00	S. Wetland Enh./Rest.	1.5	1.0	
2570931	0.50	1.50	SW 45-Gateway	$ 41,140.00	$ 41,140.00	S. Wetland Enh./Rest.	1.0	4.0	
4062531	0.10	0.20	SW 45-Gateway	$ 6,600.00	$ 8,228.00	S.Wetland Enh./Rest.	0.4	0.4	
2556301	10.50	12.13	SW 45-Gateway	$ 887,754.00	$ 887,754.00	S.Wetland Enh./Rest.	39.3	42.3	
1147952	0.43	1.50	SW 47-Tenoroc	$ 33,000.00	$ 127,405.00	Forest / Marsh Creation	2.0	4.4	
1118363	0.41	0.41	SW 47-Tenoroc	$ 30,750.00	$ 32,088.00	Forest / Marsh Creation	1.2	1.2	
1112576	0.39	0.39	SW 49-Reedy Ck. Mit. Bank	$ 13,650.00	$ 18,650.00	Wet.& Upl.Rest./Enhance.	-	-	0.4
1147943	0.79	2.20	SW 49-Reedy Ck. Mit. Bank	$ 35,020.00	$ 72,380.00	Wet. & Upl.Rest./Enhance.	-	-	2.2
1115399	0.59	0.59	SW 50-Terra Ceia	$ 47,060.00	$ 46,175.00	S.Wetland Enh./Rest.	7.0	7.0	
1110167	0.25	-	SW 51-Myakka River S.P.	$ 10,000.00	$ -	N/A	-	-	
1119215	1.49	1.49	SW 51-Myakka River S.P.	$ 56,000.00	$ 66,000.00	F.Wetland Enhance.	22.4	22.4	
1121256	5.23	5.82	SW 53-Boran Ranch Mit. Bank	$ 156,900.00	$ 174,600.00	Wet. & Upl.Rest./Enhance.	-	-	5.8
7115974	9.40	6.60	SW 54-Anclote Parcel	$ 410,236.00	$ 375,868.00	Acquis./Enhance.	82.0	82.0	
1147946	13.55	13.55	SW 55-UH 4&5	$ 290,000.00	$ 160,000.00	Wetland Enhance.	120.0	120.0	
2569571	0.60	0.50	SW 56-Cockroach Bay (Fresh)	$ 46,200.00	$ 38,500.00	F. Marsh Creation	1.0	1.0	
2557031	0.80	0.80	SW 56-Cockroach Bay (Fresh)	$ 63,811.00	$ 63,811.00	F. Marsh Creation	2.0	2.0	
	6.20	6.40	SW 62-Tappan Tract	$ 460,000.00	$ 460,000.00	S. Wetland Enh./Rest.	8.4	8.4	
	5.90	5.90	SW 67-Apollo Beach	$ 422,740.00	$ 450,000.00	S. Wetland Enh./Rest.	8.0	13.8	
	5.00	5.00	SW 75-Cockroach Bay (Salt)	$ 422,740.00	$ 400,000.00	S.Wetland Creation	7.0	10.0	
2558881	2.00	2.40	SW 56-Cockroach Bay (Fresh)	$ 197,474.00	$ 197,474.00	F.Marsh Creation	3.0	5.0	
2012092	8.29	17.80	SW 59-Hampton Tract	$ 412,000.00	$ 900,000.00	Wetland Enhance.	708.0	712.0	
2012041	16.47	8.85	SW 59-Hampton Tract	$ 798,700.00	$ 500,000.00	Wetland Enhance.	367.0	354.0	
1147955	2.08	8.10	SW 61-Cypress Ck. Preserve	$ 88,210.00	$ 88,210.00	Acquis./ Upl.Enhance.	12.5	42.5	
2578391	3.10	2.60	SW 61-Cypress Ck. Preserve	$ 131,467.00	$ 131,467.00	Acquis./ Upl.Enhance.	32.0	32.0	
2584491	2.30	1.70	SW 61-Cypress Ck. Preserve	$ 72,095.00	$ 72,095.00	Acquis./ Upl.Enhance.	15.5	15.5	
2584131	7.30	8.10	SW 61-Cypress Ck. Preserve	$ 339,271.00	$ 339,271.00	Acquis./ Upl.Enhance.	106.0	76.0	
7115951	0.50	0.50	SW 63-Hills River Corridor	$ 20,000.00	$ 14,000.00	Acquis./Enhance.	10.0	10.0	
2571641	12.30	13.90	SW 64-Baird Tract	$ 795,522.00	$ 795,522.00	Wetland Enhance.	933.0	929.0	
2571631	7.80	7.90	SW 64-Baird Tract	$ 340,000.00	$ 504,478.00	Wetland Enhance.	580.0	528.0	
2571841	0.10	0.10	SW 64-Baird Tract	$ 6,468.00	$ 1,000.00	Wetland Enhance.	6.6	6.6	

Southwest Florida Water Management District
FY 2002-2003 DOT Regional Mitigation Plan

Table 3 - Amended DOT Impacts and Associated Mitigation

DOT WPI	Prev. Ac.	Curr. Ac.	Mitigation Project	Cost Estimate (Previous)	Cost Estimate (Current)	Mitig. Type	Prev. Mitig.	Curr. Mitig.	Mitig. Credits
1960221	2.42	2.42	SW 65-Rutland Ranch	$ 190,000.00	$ 50,000.00	Wet.& Up. Enh. / Rest.	23.1	23.7	
1975331	7.00	5.46	SW 66-Lk. Hancock	$ 216,292.00	$ 300,000.00	Wet.& Up. Enh. / Rest.	57.0	57.0	
1940931	4.42	4.42	SW 66-Lk. Hancock	$ 136,573.00	$ 150,000.00	Wet.& Up. Enh. / Rest.	35.0	35.0	
1938991	11.59	11.59	SW 66-Lk. Hancock	$ 358,118.00	$ 450,000.00	Wet.& Up. Enh. / Rest.	82.0	82.0	
1971681	0.46	0.46	SW 66-Lk. Hancock	$ 14,213.00	$ 20,000.00	Wet.& Up. Enh. / Rest.	12.0	12.0	
1976791	1.45	1.46	SW 66-Lk. Hancock	$ 44,804.00	$ 70,000.00	Wet.& Up. Enh. / Rest.	18.0	15.0	
2571741	1.50	1.40	SW 68-Brooker-Starkey	$ 119,646.00	$ 119,646.00	Wet.& Up. Acquis./Enh.	3.0	3.0	
2563221	7.20	6.90	SW 68-Brooker-Starkey	$ 574,301.00	$ 574,301.00	Wet.& Up. Acquis./Enh.	15.2	15.2	
2568881	0.40	0.40	SW 71-Boyd Hill Park	$ 32,887.00	$ 33,735.00	Forest Wetland Enh.	9.3	1.8	
2571391	0.20	0.20	SW 75-Cockroach Bay (Salt)	$ 16,909.00	$ 16,000.00	S. Wetland Creation	2.0	0.6	
TOTALS	**175.22**	**185.91**		**$ 8,954,527.00**	**$ 9,311,278.00**		**3390.4**	**3334.2**	**8.40**
NET DIFF.		**10.69**			**$ 356,751.00**		**Acres**	**Acres**	**Credits**

Average Mitig. Ratio: 18 mitigation acres : 1 impact acre

Average Mitig. Cost: $50,087 per impact acre, $2793 per mitigation acre

Southwest Florida Water Management District
FY 2003-2004 DOT Regional Mitigation Plan

Table 4 - New DOT Impacts and Associated Mitigation **Sept. 2003**

DOT - WPI	DOT - FM	Const. Date	FLUCCS	Acres	Total Acres	Mitigation Project	Cost Estimate (Current)	Mitig. Type	Mitig. Acres	Mitig. Bank Credits
NA	2569491	Nov.-'07	615	0.10	0.10	SW 56-Cockroach Bay (F)	$ 4,000.00	F. Marsh Creation	0.3	
NA	4052141	Jun-'04	640	0.50	0.50	SW 56-Cockroach Bay (F)	$ 10,000.00	F. Marsh Creation	1.5	
NA	4037811	Nov.-'05	641	0.10	0.10	SW 65- Baird Tract	$ 1,000.00	F. Marsh Enhance.	6.5	
NA	4084411	Feb.-'07	615	1.00	1.00	SW 66-Lk. Hancock Res.	$ 5,000.00	Forest Wet. Rest.	3.9	
								Upland Preserv.	2.0	
1118597	1977051	July-'06	641	1.08	1.08	SW 66-Lk. Hancock Res.	$ 5,000.00	Marsh Enhance.	3.0	
NA	2570831	Nov.-'08	612	0.10	0.10	SW 70-Ft. DeSoto Park	$ 8,494.00	S.Wet.Enhance.	1.0	
NA	4091541	Nov.-'08	510	0.20	0.20	SW 70-Ft. DeSoto Park	$ 16,987.00	S.Wet.Enhance.	2.0	
NA	2570781	Nov.-'05	618	0.10	0.10	SW 70-Ft. DeSoto Park	$ 8,494.00	S.Wet.Enhance.	1.0	
NA	4037661	Nov.-'08	640	0.10	0.30	SW 70-Ft. DeSoto Park	$ 25,482.00	S.Wet.Enhance.	3.0	
			641	0.20		SW 70-Ft. DeSoto Park				
NA	2569951	Jun-'11	510	0.50	2.10	SW 71-Boyd Hill Park	$ 140,000.00	F.Forest Enhance.	10.5	
			530	0.30						
			618	0.40						
			619	0.10						
			641	0.60						
			641x	0.20						
NA	2558932	April-'11	610	0.40	0.40	SW 71-Boyd Hill Park	$ 20,000.00	F.Forest Enhance.	2.0	
NA	4037801	Mar.-'05	510	0.10	0.20	SW 72-Greer Tract	$ 5,000.00	F.Forest Wet. &	1.5	
			641	0.10				Upland Preserv.		
NA	4112771	Oct.-'05	641	0.20	0.20	SW 72-Greer Tract	$ 5,000.00	" " "	1.5	
NA	4143481	Nov.-'07	510	3.40	20.10	SW 78-Bahia Beach	$ 1,698,740.00	F&S Wet. Creation,	100.0	
			610	0.10				Rest., & Enhance.		
			612	0.40				Upland Restor.		
			617	0.70				Forest Wet. Enh.		
			619	2.80						
			621	0.30						
			630	1.50						
			640	3.40						
			641	0.40						
			641x	6.30						
			642	0.80						
NA	2583982	Nov.-'08	612	0.40	0.40	SW 78-Bahia Beach	$ 33,975.00	Mangrove Enhance.	2.0	
TOTALS				**26.88**	**26.88**		**$ 1,987,172.00**		**141.7**	**0.0**

Average Mitig. Ratio: 5.3 mitigation acres : 1 impact acre
Average Mitig. Cost: $73,968 per impact acre, $13,985 per mitigation acre

Table 5 - DOT Mitigation Projects - Compensation Summaries, Updated September, 2003

Mitigation Project Agency Representative Watershed Basin, County	DOT Impacts Wetland Locations, Type & Acreage	Proposed Mitigation Type & Acreage	Remarks
Cattle Dock Point (SW 31) (DEP / WMD-SWIM) Myakka Basin - Charlotte Co.	Charlotte Co. Mangrove - 1.93 ac. Marsh (Fresh) - 3.66 ac. Marsh (Salt) - 3.33 ac. **Total - 8.92 acres**	Mangrove (Creation) - 1.3 ac. Marsh (Fresh) Enhancement – 0.1 ac. Open Water / Bay Enhance – 1.1 ac. Marsh (Salt) Creation - 9.5 ac. Upland Habitat (Creation) - 4.6 ac. **Total – 16.6 acres**	Cattle Dock Point (Phase II) is an expansion of adjacent restoration phase covering over 10 acres.
Lake Thonotasassa (SW 34) (WMD-SWIM / Hills. Co. Parks) Hillsborough Basin –Hillsborough Co.	Pasco Co. Inland Pond - 0.8 ac. Scrub-Shrub - 4.1 ac. Cypress - 4.6 ac. Marsh (Fresh) – 4.7 ac. **Total - 14.20 acres**	Marsh (Fresh) Enhance - 14 ac. Marsh Restoration - 45 ac. Cypress Plantings Throughout **Total - 59 acres**	The Lk. Thonotasassa project is a large-scale habitat restoration project that also provides water quality treatment & attenuation of contributing watershed flow into the lake.
Quick Point (SW 38) (Longboat Key) Lower Coastal - Sarasota Co.	Sarasota Co. Seagrass - 0.27 ac. Mangrove - 0.32 ac. **Total - 0.59 acre**	Seagrass Restoration - 1.5 ac. Inland Pond - 0.3 ac. Mangrove Enhancement - 1.0 ac. **Total - 2.8 acres**	Quick Point Preserve is a 34-acre tract with other restoration activities funded by various sources.
Gateway Restoration (SW 45) (Pinellas Co. / WMD-SWIM) Tampa Bay Drainage Basin - Pinellas Co.	Hillsborough & Pinellas Co. Mangrove - 13.3 ac. Exotic Hardwood - 3.7 ac. Marsh (Salt) - 5.1 ac. Bay & Estuary - 4.0 ac. Marsh (Fresh) - 0.5 ac. Ditch - 0.3 ac. **Total - 26.9 acres**	Mangrove Enhancement - 42.5 ac. Marsh (Salt) Restoration - 42.9 ac. Bay & Estuary - 7.8 ac. Upland Habitat Restoration - 3.6 ac. **Total - 96.8 acres**	This phase of Gateway covers a total 176-acres, portion of adjacent several hundred acres of proposed estuary restoration & enhancement.
Tenoroc / Saddle Ck. (SW 47) (DEP / FFWCC) Peace River - Polk Co.	Polk Co. Forest (Fresh) - 6.33 ac. Marsh (Fresh) - 1.25 ac. **Total - 8.17 acres**	Forested Wetland Creation – 21.4 ac. Marsh (Fresh) Creation – 3.7 ac. **Total – 25.1 acres**	The creation & restoration of wetland habitat at Tenoroc is part of an overall habitat & watershed management plan that covers over 6,000 acres.

Table 5 - DOT Mitigation Projects - Compensation Summaries, Updated September, 2003

Mitigation Project Agency Representative Watershed Basin, County	DOT Impacts Wetland Locations, Type & Acreage	Proposed Mitigation Type & Acreage	Remarks
Reedy Creek **Mitigation Bank (SW 49)** (Private Mitigation Bank) Kissimmee River Basin - Polk & Osceola Co.	Polk Co. Marsh (Fresh) - 0.39 ac. Hardwood Forest - 1.99 ac. **Total - 2.38 acres**	Forested Wetland Enhancement & Upland Habitat Restoration **Total – purchase 2.38 credits**	The mitigation bank covers over 3,500-acres of wetland and upland enhancement & restoration.
Terra Ceia Restoration (SW 50) (DEP / WMD - SWIM) Manatee River Basin – Manatee Co.	Manatee Co. Mangrove - 0.18 ac. Shrub – 0.41 ac. **Total - 0.59 acre**	Mangrove Enhancement - 4.0 ac. Upland Habitat Enhancement - 3.0 ac. **Total – 7.0 acres**	This mitigation is part of a 1,700-acre tract proposed for major wetland & upland enhancement & restoration activities.
Myakka River State Park (SW 51) (DEP - Parks) Myakka Basin - Sarasota Co.	Sarasota Co. Stream Swamp – 0.30 ac. Marsh (Fresh) - 2.06 ac. **Total - 2.36 acres**	Stream Swamp Enhancement - 7.0 ac. Marsh (Fresh) Enhancement - 27.0 ac. Marsh (Fresh) Restoration - 1.5 ac. **Total - 35.5 acres**	The project includes removal of a railroad grade berm that restores the hydrology of substantial wetland acreage.
Little Pine Island **Mitigation Bank (SW 52)** (Private Mitgation Bank) Charlotte Harbor - Lee Co.	Charlotte Co. Forest (Fresh) – 0.5 ac. Bay & Estuary - 2.24 ac. Mangrove – 2.75 **Total - 5.49 acres**	Saltwater Marsh Restoration & Mangrove Enhancement **Total - purchase 5.49 credits**	The mitigation bank includes eradication of exotic vegetation from 1,565 wetland acres on state-owned property.
Boran Ranch **Mitigation Bank (SW 53)** (Private Mitigation Bank) Peace River Basin - DeSoto Co.	Hardee & DeSoto Co. Hardwood Forest - 9.96 ac. Marsh (Fresh) – 11.80 ac. **Total - 21.76 acres**	Freshwater wetland & upland restoration & enhancement **Total - 21.76 credits**	The mitigation bank includes 132 wetland acres and 272 upland acres (total 404 acres), construction complete, currently maintenance & monitoring.

Table 5 - DOT Mitigation Projects - Compensation Summaries, Updated September, 2003

Mitigation Project Agency Representative Watershed Basin, County	DOT Impacts Wetland Locations, Type & Acreage	Proposed Mitigation Type & Acreage	Remarks
Anclote Parcel (SW 54) (WMD - Land Resources) Upper Coastal Basin - Pasco Co.	Pasco Co. Mixed Hardwood - 4.1 ac. Scrub-Shrub - 0.8 ac. Cypress - 4.6 ac. Marsh (Fresh) - 2.7 ac. Ditch – 1.4 ac. **Total - 13.6 acres**	Acquisition & enhancement of 185-acres that includes mixed hardwood swamp, cypress, pine flatwoods, and oak hammocks. Creation of a 6-acre marsh from an existing borrow pit. **Total - 185 acres**	The acquired tract is adjacent to over 25,000-acres of publicly-owned native habitat, majority deeded to WMD/Pasco Co. as mitigation for other projects' wetland impacts.
Upper Hills. – 4 & 5 (SW 55) (WMD - Land Resources) Hillsborough Basin - Pasco Co.	Polk Co. Mixed Hardwood - 6.57 ac. Marsh (Fresh) - 6.98 ac. **Total - 13.55 acres**	Cypress & Mixed Hardwood Enhancement & Restorat. - 101.3 ac. Forested & Marsh Restorat. – 10 ac. Marsh & Shrub Enhance.- 8.7 ac. **Total - 120 acres**	Backfill 1.3 miles of ditch to hydrologically enhance 12 forested and 3 non-forested wetlands, portion of WMD property covering several thousand acres.
Cockroach Bay – Fresh (SW 56) (Hills. Parks / WMD – SWIM) Tampa Bay Basin - Hills. Co.	Pinellas Co. Canal – 0.8 ac. Shrub - 0.2 ac. Marsh (Fresh) - 10 ac. **Total - 11 acres**	Marsh (Fresh) Creation – 26 ac. Upl. Hardwood Hamm. Enhance – 7 ac. **Total – 33 acres**	Entire site covers 651 acres of various fresh & saltwater wetland creation & restoration, along with upland habitat restoration
Lk. Panasoffkee Restorat. (SW 57) (WMD - SWIM) Withlacoochee Basin - Sumter Co.	Sumter Co. Open Water - 5.93 ac. (Bridge impact over Lk. Panasoff.) **Total - 5.93 acres**	Lake Enhancement - 75 ac. **Total - 75 acres**	Mitigation includes portion of lake bottom dredging to remove 5 million cub.yds. of sediment from 1,010 acres of the lake.
Ledwith Lake (SW 58) (Alachua Co./ FDEP / SJRWMD) Ocklawaha Basin – Alachua Co.	Marion Co. Marsh (Fresh) - 3.66 ac. Mixed Hardwood - 0.02 ac. **Total - 3.68 acres**	Acquisition & enhance 160-acre marsh **Total - 160 acres**	Site is a 2200-acre marsh proposed for public acquisition, within a proposed east-west corridor from Ocala Nat. Forest to Wacasassa River.

Table 5 - DOT Mitigation Projects - Compensation Summaries, Updated September, 2003

Mitigation Project Agency Representative Watershed Basin, County	DOT Impacts Wetland Locations, Type & Acreage	Proposed Mitigation Type & Acreage	Remarks
Hampton Tract (SW 59) (WMD - Land Resources) Withlacoochee Basin - Polk Co.	Polk Co. Forested Hardwood – 8.5 ac. Marsh - 4.6 ac. Cypress – 3.5 ac. Shrub – 2.3 ac. Open Water / Ditches – 2.4 **Total - 21.35 acres**	Mixed Forest Enhancement – 684 ac. Cypress Enhancement – 309 ac. Wet Prairie Enhancement – 60 ac. Hydric Pine Flatwood Enhance - 19 ac. Marsh Enhancement - 4 ac. **Total – 1076 acres**	Entire tract is 7,640 acres, adjacent to Green Swamp Wilderness Preserve (99,775 acres). Backfill over 4.5 miles of wetland ditches, install over 90 ditchblocks to restore wetland hydrology.
Serenova Extension (SW 60) (WMD - Land Resources) Upper Coastal – Pasco Co.	Pasco Open Water - 0.15 ac. Cypress - 8.19 ac. Marsh (Fresh) - 3.48 ac. **Total - 11.82 acres**	Acquisition, Enhancement, Management Oak Hammocks – 38 ac. Pine Flatwoods – 98 ac. Mixed Forested Wetlands - 44 ac. Cypress - 15 ac. Marsh (Fresh) - 2 ac. Open Water - 7 ac. Marsh Creation – 11 ac. **Total – 215 acres**	This tract is adjacent to the Serenova Tract & Starkey Wilderness Area, a 15,000-acre parcel of native habitat owned by the WMD.
Cypress Ck. Preserve, West Jennings Tract (SW 61) (Hillsb. Parks / WMD-Land) Hillsborough Basin – Hillsbor. Co.	Hillsborough, Pasco, Polk Co. Forested – 18.1 ac. Ditch (Forest) – 1.84 ac. Marsh (Fresh) – 3.6 ac. Willow – 0.5 ac. Cypress – 0.7 ac. **Total - 24.7 acres**	Acquisition, Enhancement, Management Mixed Forest Wetland – 146 ac. Upland Hardwood Hammock – 98 ac. Pine Flatwoods – 19 ac. Palmetto Prairie – 15 ac. Pine Flatwood Restoration - 20 ac. **Total - 298 acres**	This parcel acquisition is adjacent to several hundred acres of native habitat owned and managed by Hills. Co. Parks (ELAPP).

Table 5 - DOT Mitigation Projects - Compensation Summaries, Updated September, 2003

Mitigation Project Agency Representative Watershed Basin, County	DOT Impacts Wetland Locations, Type & Acreage	Proposed Mitigation Type & Acreage	Remarks
Tappan Tract (SW 62) (City of Tampa / WMD – SWIM) Tampa Bay Drainage Basin - Hillsborough County	Hillsborough Co. Mangrove – 0.3 ac. Ditch (Salt) - 3.5 ac. Ditch (Fresh) - 0.6 ac. Pond – 0.1 ac. Canal – 0.6 ac. **Total - 5.1 acres**	Mangrove Enhancement - 0.77 ac. Marsh (Salt) Create & Enhance - 5.9 ac. Marsh (Fresh) Create - 0.55 ac. Hardwood Hammock Restore - 1.2 ac. **Total - 8.4 acres**	One of several tracts along Old Tampa Bay proposed for acquisition and restoration.
Hillsbor. River Corridor (SW 63) (WMD - Land Resources) Hillsborough Basin – Pasco Co.	Pasco Co. Cypress - 1.1 ac. **Total - 1.1 acre**	Acquisition & Preservation - Forest Wetland Floodplain - 10.0 ac. **Total - 10 acres**	Acquiring this parcel will almost connect separate WMD-owned parcels covering several thousand acres along the Hillsborough River.
Baird Tract (SW 64) (DEP / DOF) Withlacoochee Basin – Sumter Co.	Citrus, Hernando Co. Forest - 12.7 ac. Shrub – 3.4 ac. Marsh (Fresh) - 6.7 ac. Waterway & Ditch – 0.4 **Total - 23.2 acres**	Marsh Enhancement - 970 ac. Forested Wetland Enhance. - 548 ac. **Total - 1518 acres**	The Baird Tract covers over 11,000 acres within the Withlacoochee State Forest.
Rutland Ranch (SW 65) (WMD-Land Resources) Manatee River Basin – Manatee Co.	Manatee Co. Forest - 4.75 ac. Marsh - 5.75 ac. Ditches - 0.9 ac. **Total – 11. 47 acres**	Marsh Enhancement – 75 ac. Marsh Restoration – 5 ac. Upland Restoration – 10 ac. Upland Enhancement – 25 ac. **Total - 115 acres**	The South Tract of Rutland Ranch covers 900 acres, enhancement includes hydrologic restoration of several heavily drained marshes, and upland habitat corridors.

Table 5 - DOT Mitigation Projects - Compensation Summaries, Updated September, 2003

Mitigation Project **Agency Representative** **Watershed Basin, County**	**DOT Impacts** **Wetland Locations, Type & Acreage**	**Proposed Mitigation** **Type & Acreage**	**Remarks**
Lk. Hancock Reserve (SW 66) (Polk Co. Nat. Res./WMD-Land Res.) Peace River, Polk County	Polk Co. Forest - 11.0 ac. Shrub -4.4 ac. Marsh - 14.2 ac. Pond – 0.3 ac. **Total - 45.3 acres**	Mixed Forested Restore - 50 ac. Mixed Forest Enhance – 40 ac. Marsh Enhance – 339 ac. Upland Restore - 24 ac. Upland Preservation – 19 acres **Total – 472 acres**	The entire Lake Hancock Reserve covers 1256 acres. Restoring wet pastures to marsh and forested wetland habitat within the core of the property. Adjacent upland and wetland habitat will be restored by Polk Co.
Apollo Beach Nature Pres. (SW 67) (Hills. Co. Parks / WMD-SWIM) Tampa Bay Drainage, Hills. Co.	Hillsborough Co. Marsh (Salt) – 5.3 ac. **Total - 5.3 acres**	Marsh (Salt) Create - 13.8 ac. **Total – 13.8 acres**	The site includes a total of 33 acres of saltwater wetland creation and 5 acres of upland preservation and enhancement.
Brooker Creek Corridor to Starkey Wilderness Area (SW 68) (Pinellas, Hills., Pasco Co., WMD-Land Resources) Upper Coastal Basin, Pasco Co.	Pasco, Hernando, & Pinellas Co. Hardwood Forest – 3.5 ac. Marsh - 3.4 ac. Shrub - 1.3 ac. Cypress – 3.5 ac. **Total - 11.7 acres**	Acquisition, Restoration, Management Upland Restoration & Wetland Preservation – **Total 30 acres**	The acquisition is part of an overall plan of multiple public & private entities to acquire property to construct a corridor between Brooker Ck. Preserve (5,000 ac.) & the Starkey Wilderness Area/ Serenova (15,000 ac.)
Peace River Bridge Rest. (SW 69) (DOT & WMD) Peace River Basin, Charlotte Co.	Charlotte Co. Mangrove & Salt-marsh Impacts **Total - 3.31 acres**	Restore Temporary Impacts to Mangrove & Saltmarsh - 2.51 ac. Enhance non-vegetated area under existing bridge span after removal, Mangrove & Saltmarsh - 2.06 ac. **Total - 4.57 acres**	A joint sponsorship between DOT and the WMD at the bridge construction site. Bridge Contractor responsible for the earthwork, WMD responsible for post-const. activities.

Table 5 - DOT Mitigation Projects - Compensation Summaries, Updated September, 2003

Mitigation Project Agency Representative Watershed Basin, County	DOT Impacts Wetland Locations, Type & Acreage	Proposed Mitigation Type & Acreage	Remarks
Ft. DeSoto Park (SW 70) (Pinellas County / WMD – SWIM) Upper Coastal Basin, Pinellas Co.	Pinellas Co. Open Water – 0.5 ac. Marsh – 0.4 ac. Ditch – 0.6 ac. Mangrove – 0.2 ac. Seagrass – 0.4 ac. Shrub – 0.1 ac. **Total – 2.4 acres**	Seagrass Enhancement – 24 ac. **Total – 24 acres**	The proposed bridge (2) construction will restore tidal flow connections to interbay areas within the Park, resulting in a minimum 200 acres of seagrass enhancement, with additional enhancement to mangrove and other tidal ecosystems.
Boyd Hill Nature Park (SW 71) (City of St. Petersburg) Tampa Bay Drainage Basin, Pinellas County	Pinellas & Hillsborough Counties Open Water – 0.8 ac. Mixed Forest – 9.5 ac. Shrub – 6.6 ac. Marsh – 0.8 ac. Canals & Ditches – 0.7 ac. **Total – 18.5 acres**	Hardwood Wet. Enhancement – 69.6 ac. Upland Habitat Enhancement – 21.4 ac. Pond Enhancement – 1.0 ac. **Total – 92.0 acres**	The 300-acre park of upland and wetland habitat borders Lk. Maggiorie, a rare and unique mosaic island of habitat communities for southern Pinellas County.
Cypress Ck. Preserve, West Greer Tract (SW 72) (Hillsb. Parks / WMD-Land) Hillsborough Basin – Hillsbor. Co.	Hillsborough County Mixed Forest – 6.5 ac. Marsh 0.3 ac. Stream – 0.1 ac. **Total – 6.8 acres**	Forest Wet. Preservation – 61.5 ac. Upl. Forested Enhance. – 38.0 ac. **Total – 99.5 acres**	This parcel acquisition is adjacent to several hundred acres of native habitat owned and managed by Hills. Co. Parks (ELAPP).
Hillsborough River State Park, Bulkhead Removal (SW 73) (FDEP – Parks / WMD) Hillsborough Basin – Hillsbor. Co.	Hillsborough County Mixed Forest – 0.3 ac. Marsh – 0.1 ac. **Total – 0.4 acres**	Forest Wet. Restoration – 0.5 ac. **Total – 0.5 acres**	This project includes removal of a concrete bulkhead and forested wetland restoration along the Hillsborough River.
Serenova Pres. - 2,3,4,8 (SW 74) (WMD-Land) Upper Coastal Basin – Pasco County	Pasco County Mixed Forest – 1.6 ac. **Total – 1.6 acres**	Forested Wet. Enhancement – 26 ac. **Total – 26 acres**	Hydrologic enhancement of the Pithlac. River and Five Mile Creek within the Serenova Preserve (7,000 acres)

Table 5 - DOT Mitigation Projects - Compensation Summaries, Updated September, 2003

Mitigation Project Agency Representative Watershed Basin, County	DOT Impacts Wetland Locations, Type & Acreage	Proposed Mitigation Type & Acreage	Remarks
Cockroach Bay – Saltwater (SW 75) (Hills. Parks / WMD – SWIM) Tampa Bay Drain. Basin – Hills. Co.	Hillsborough County Marsh (Salt) – 5.4 ac. Mangrove – 0.2 ac. **Total – 5.4 acres**	Marsh (salt) creation – 15.1 acres **Total – 15.1 acres**	Entire site covers 651 acres of various fresh & saltwater wetland creation & restoration, along with upland habitat restoration.
Lake Lowery Tract (SW 76) (Polk Co. Nat. Res. / WMD – Land) Ocklawaha River Basin – Polk Co.	Polk County Cypress - 2.32 ac. Marsh (Fresh) – 2.00 ac. Mixed Forest – 0.88 ac. Stream – 0.02 ac. **Total – 5.22 acres**	Marsh Preservation – 198 acres	Entire site includes joint-acquisition and preservation of 397 acres, predominantly forested and marsh wetland habitat. Adjacent to 5700-acres of FFWCC property (Hilochee Wildlife Mgmt. Area).
Bahia Beach Tract (SW 78) (Hills. Co. Parks / WMD – SWIM) Tampa Bay Basin – Hills. Co.	Hillsborough County Canal & Waterway – 3.4 ac. Pond – 0.3 ac. Shrub – 3.2 ac. Cypress – 0.3 ac. Forested Wet. – 2.2 ac. Marsh (Fresh) – 3.8 ac. Marsh (Salt) - 0.8 ac. Ditch – 6.3 ac. Mangrove – 0.4 ac. **Total – 20.5 acres**	Forested & Marsh Wetland Creation - 30 acres Upland Habitat Restorat. – 20-30 acres Coastal Wet. Hammock Enh. – 17 ac. Marsh (salt) Restoration – 15 acres Mangrove & Salt-marsh Enhance. – 27 ac. **Total – 110-120 acres**	The Bahia Beach Tract is adjacent to several thousand acres of other Hills. County tracts that have been acquired, enhanced and restored with assistance through the WMD.

Table 6 - Mitigation Projects - Habitat Types & Acreages

Updated Sept., 2003

Mitigation Projects	DOT Impact Acreage	Forest Wetland Enhance (Fresh)	Forest Wetland Restore & Create (Fresh)	Forest Wetland Preserve (Fresh)	Non-Forest Wetland Enhance (Fresh)	Non-Forest Wetland Restore & Create (Fresh)	Non-Forest Wetland Preserve (Fresh)	Mangrove Wetland Enhance (Salt)	Mangrove Wetland Restore & Create (Salt)	Non-Forest Wetland Restore & Create (Salt)	Forest Upland Enhance	Forest Upland Restore	MITIG. BANK CREDITS	PROJ.'s MITIG. ACREAGE
SW 31-Cattle Dock	8.92				0.1				1.3	10.6		4.6		16.6
SW 34-Lk. Thono	14.2				14.0	45.0								59.0
SW 38-Quick Point	0.59							1.0		1.8				2.8
SW 45-Gateway	26.9							42.5		50.7		3.6		98.8
SW 47-Teneroc	8.17		21.4			3.7								25.1
SW 49-Reedy Ck.	2.38												2.38	0.0
SW 50-Terra Ceia	0.59							4.0			3.0			7.0
SW 51-Myakka S.P.	2.36	7.0			27.0	1.5								35.5
SW 52-LPI Mit. Bk.	5.49												5.49	0.0
SW 53-Boran Ranch	21.76												21.76	0.0
SW 54-Anclote	13.6			139.0		6.0					40.0			185.0
SW 55-UH 4&5	13.55	101.0	10.3		8.7									120.0
SW 56-C.R.Bay-Fresh	11.0					26.0					7.0			33.0
SW 57-Lk. Panas.	5.93				75.0									75.0
SW 58 - Ledwith Lk.	3.54						160.0							160.0
SW 59-Hampton	21.35	993.0			83.0									1076.0
SW 60-Serenova Ext.	11.82			59.0	11.0		9.0				136.0			215.0
SW 61-Jennings	24.71			146.0							132.0	20.0		298.0
SW 62-Tappan	5.1					0.55		0.77		5.9		1.20		8.42

Table 6 - Mitigation Projects - Habitat Types & Acreages **Updated Sept., 2003**

Mitigation Projects	DOT Impact Acreage	Forest Wetland Enhance (Fresh)	Forest Wetland Restore & Create (Fresh)	Forest Wetland Preserve (Fresh)	Non-Forest Wetland Enhance (Fresh)	Non-Forest Wetland Restore & Create (Fresh)	Non-Forest Wetland Preserve (Fresh)	Mangrove Wetland Enhance (Salt)	Mangrove Wetland Restore & Create (Salt)	Non-Forest Wetland Restore & Create (Salt)	Forest Upland Enhance	Forest Upland Restore	MITIG. BANK CREDITS	PROJECT's MITIG. ACREAGE
SW 63-Hills. Corrid.	1.1			10.0										10.0
SW 64-Baird Tract	23.2	548.0			970.0									1518.0
SW 65-Rutland Ranch	11.47				75.0	5.0					10.0	25.0		115.0
SW 66-Lk. Hancock	45.3	40.0	50.0		339.0						19.0	24.0		472.0
SW 67-Apollo Beach	5.3									13.8				13.8
SW 68-Brooker-Starkey	11.7			10.0								20.0		30.0
SW 69-Peace River	3.31							2.06	2.51					4.57
SW 70-Ft. DeSoto	2.4									24.0				24.0
SW 71-Boyd Hill	19.9	69.6				1.0					21.4			92.0
SW 72-Greer	6.8			61.5							38.5			100.0
SW 73-Hills. R.S.P	0.4		0.5											0.5
SW 74-Serenova, 2-4,8	1.6	26.0												26.0
SW 75-C.R.Bay-Salt	5.6									15.1				15.1
SW 76-Lk. Lowery	5.2						198.0							198.0
SW 78-Bahia Beach	20.2	17.0	10.0			20.0		15.0		35.0				97.0
TOTALS	**365.5**	**1801.6**	**92.2**	**425.5**	**1602.8**	**108.8**	**367.0**	**65.3**	**3.8**	**156.9**	**406.9**	**98.4**	**29.6**	**5131.2**
	Cumulative Impact Acreage		Average Mitigation Ratio:		14-to-1								Cumul. Mit. Bank Credits	Cumulative Mitigation Acreage

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management District
Mitigation Project Name: **Cattle Dock Point** Project Number: **SW 31**
Project Manager: Mark A. Hammond, SWIM Manager Phone No: (813) 985-7481 ext. 2200
County(ies): Charlotte Location: Section 3, T41S, R21E

IMPACT INFORMATION

DOT WPI 1110148, FM 1937941, SR 776 - CR 771 to Willow Bend Rd. ERP #:4316676.00 COE:199601986
Drainage Basin(s): Myakka River Water Body(s): Myakka River/Charlotte Harbor SWIM water body? Y

Impact Acres/Types: WPI 1110148 1.93 ac. 612 (Fluccs code)
3.66 ac. 641 (Fluccs code)
3.33 ac. 642 (Fluccs code)

TOTAL: 8.92 Acres

Note: This project has an additional 2.08 acres of open water impact being mitgated through the purchase of 2.08 credits from the Little Pine Island Mitigation Bank (SW 52).

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: X Creation X Restoration X Enhancement Mitigation Area: **16.6 Acres**
SWIM project? Y Aquatic Plant Control project? N Exotic Plant Control Project? Y
Mitigation Bank? N Drainage Basin(s): Myakka River Drainage Basin Water Body(s): Myakka River and Charlotte Harbor SWIM water body? Y

Project Description

A. Overall project goals: The purpose of the project is to restore the intertidal habitat on property jointly owned by the FDEP and the SWFWMD. The project will remove extensive exotic vegetation that has invaded the site, regrade the site to create a habitat mosaic of upland (hammocks, cabbage palm) and wetland (transitional, intertidal, and freshwater) communities (Figs. C,D,E).

B. Brief description of current condition: The area has been disturbed by fill from a now abandoned constructed boat basin. The site has been heavily invaded by nuisance/exotic vegetation, particularly Brazilian pepper and Australian Pine. The freshwater marsh is dominated by cattails and sesbania (photos).

C. Brief description of proposed work: Characterize the existing vegetation, hydrology and soil conditions; coordinate the design with the appropriate agencies; prepare the site design and permit applications. The disturbed uplands will have the nuisance/exotic vegetation removed and regraded to create appropriate intertidal elevations. Once the grades are established, the intertidal area will be planted with low marsh, high marsh, mangrove, and transitional native vegetation. The freshwater marsh will be enhanced (exotics removal), enlarged, and planted with suitable desirable species. The remaining upland area not lowered to wetland grade will be planted with appropriate upland coastal species to create live oak/cabbage palm hammocks. Implementation of the final design will result in the creation of tidal marsh (5.25 acres), open water channels (1.14 acres), enhancement of freshwater marsh (0.10 acre), mangrove forest (1.25 acres), high marsh (4.25 acres), upland islands / observation mound (3.01 acres), and the live oak/cabbage palm hammocks (1.56 acres). If the contractor decides to fill the bay with the excavated material rather than haul off-site, there will be an additional 18.5 acres of bay bottom platform creation, an area not necessary or accounted for as mitigation credit.

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): The created intertidal marsh and open water channels **(6.39 mit. acres)** will compensate for the saltwater marsh impact **(3.33 impact acres)**. The freshwater marsh (actually oligohaline) impacts **(3.66 impact acres)** will be compensated with the enhancement of freshwater marsh and high marsh **(4.35 mit. acres)**. The mangrove impacts **(1.93 impact acres)** will be compensated with the enhancement of mangrove habitat **(1.25 mit. acres)** and much of the 5.3 acres of intertidal marsh will transition to mangrove habitat following the typical successional stages. In addition, upland habitat **(4.57 mit. acres)** will be enhanced (Fig. E).This project is located adjacent to the mitigation area for other FDOT wetland impacts from a different segment of the same roadway (SR 776) in the same basin (Fig. C- Phase I area). Construction of that restoration area was completed in the summer, 2001. The open water impacts **(2.08 impact acres)** will be mitigated with similar habitat credit purchased from the Little Pine Island Mit. Bank (refer to SW 52).

E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: The proposed mitigation project for the impacts to estuarine marsh and mangrove habitat includes creation of similar habitat, close proximity to the proposed impacts, located on publicly-owned land in need of major restoration, and adjacent to mitigation for impacts associated with another FDOT roadway project. The loss of each wetland habitat type will be compensated with similar habitat at a cumulative ratio of 2 mitigation acres to 1 impact acre. The open water impacts will be mitigated through credit purchase from Little Pine Island Mitigation Bank.

F. Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body: This SWIM project site is adjacent to another SWIM project (Cattle Dock - Phase I) funded by FDOT prior to the legislation formalizing the FDOT mitigation program (Section 373.4137). The project site is jointly owned by the FDEP and WMD, managed by the FDEP (Charlotte Harbor Buffer Preserve) and is in dire need of substantial habitat restoration.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: Southwest Florida Water Management District or designee
Contact Name: Mark A. Hammond, SWIM Manager Phone Number: (813) 985-7481ext. 2200
Entity responsible for monitoring and maintenance: Southwest Florida Water Management District or designee
Proposed time frame for implementation: Commence: July, 1999 Complete: February, 2002-Construction
Project cost: $ 669,250 (total); attach itemized cost estimate
$ 100,000 design, permitting and construction management
$ 569,250 construction, maintenance, revegetation and monitoring

Attachments

x 1. Detailed description of existing site and proposed work. Refer to Figs. C & D for existing site conditions, Fig. E for proposed habitat plan, site photographs.

x 2. Recent aerial photograph with date and scale. Figure C - 1995 Infrared Aerial.

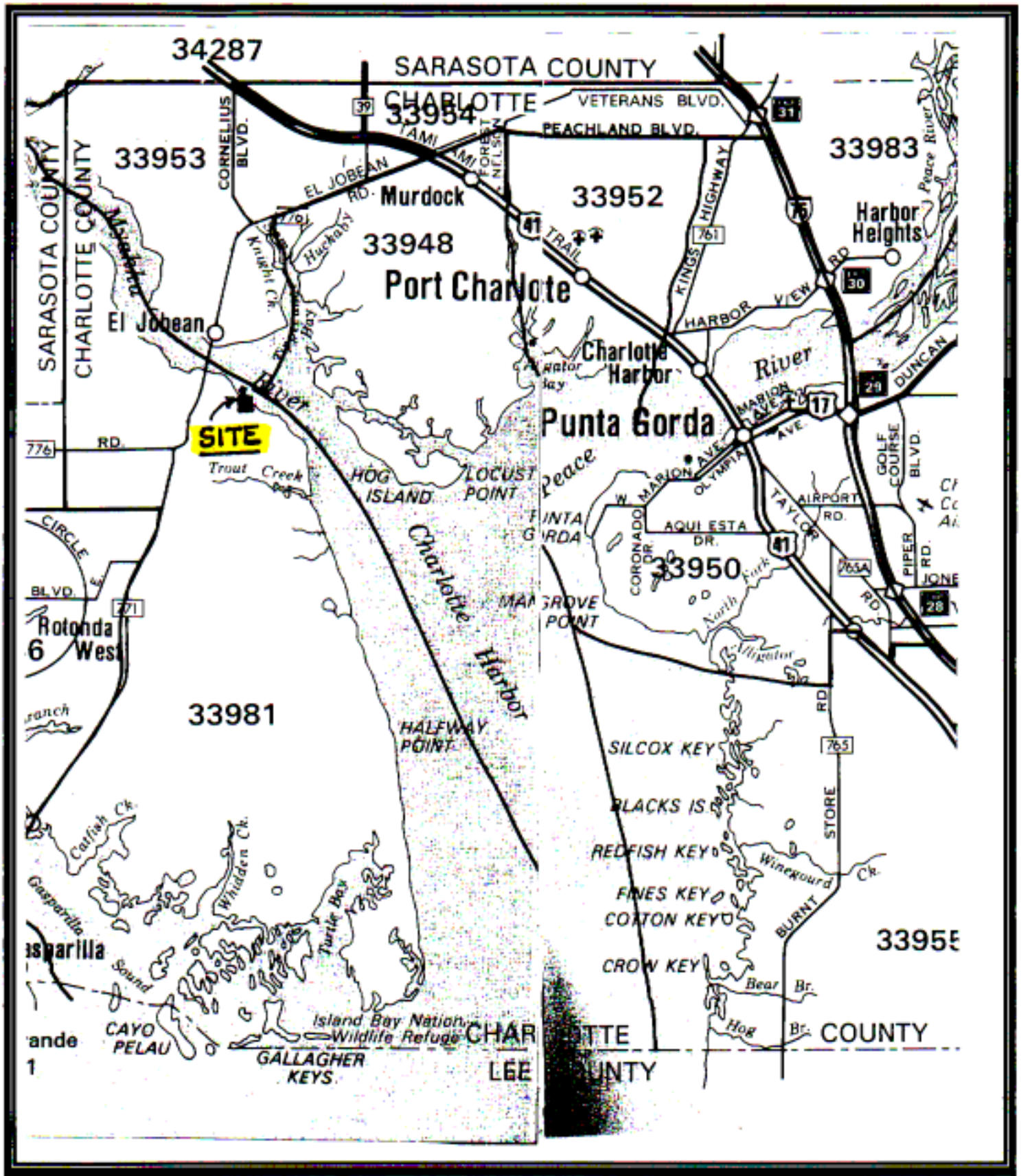
x 3. Location map and design drawings of existing and proposed conditions. Figs. A & B - Location Map, Fig. E for proposed conditions.

x 4. Detailed schedule for work implementation, including any and all phases. Construction of Phase I was completed in the summer, 2001. Contractor selection for Phase II is being conducted in the fall, 2003. Construction will be completed by summer 2004, followed by a minimum 3 years of maintenance & monitoring.

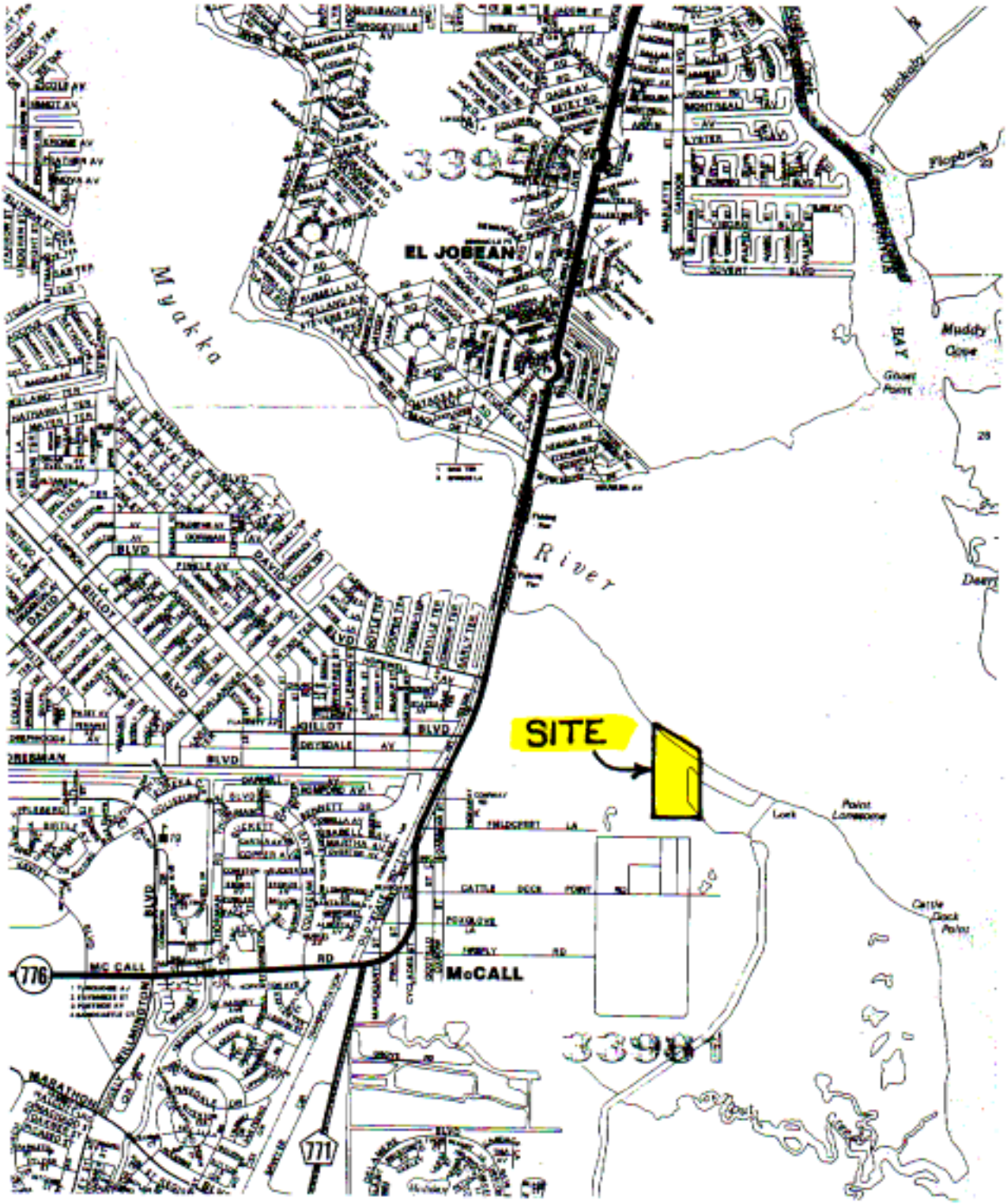
x 5. Proposed success criteria and associated monitoring plan. The success criteria will reflect a minimum 70% coverage of desirable species in the project area. The monitoring is expected to be semi-annual for three years to evaluate species survival, percent cover, invasive exotic plants, and recommend maintenance activities needed to ensure or enhance success.

x 6. Long term maintenance plan. The mitigation is associated with a larger restoration objective for land purchased jointly by the District and FDEP. The maintenance of the project is expected to be minimal. History with estuarine mitigation projects suggests that if the elevations are constructed correctly to allow for a sufficient tidal action, the vegetation will survive and recruit. Maintenance will be primarily related to control of debris from the site, replacement of plants that may not have survived the initial planting. Salt water will limit the regeneration of exotic vegetation, however herbicide control to eliminate regeneration of exotics within the freshwater marsh and restored upland habitat will be required on a routine basis.

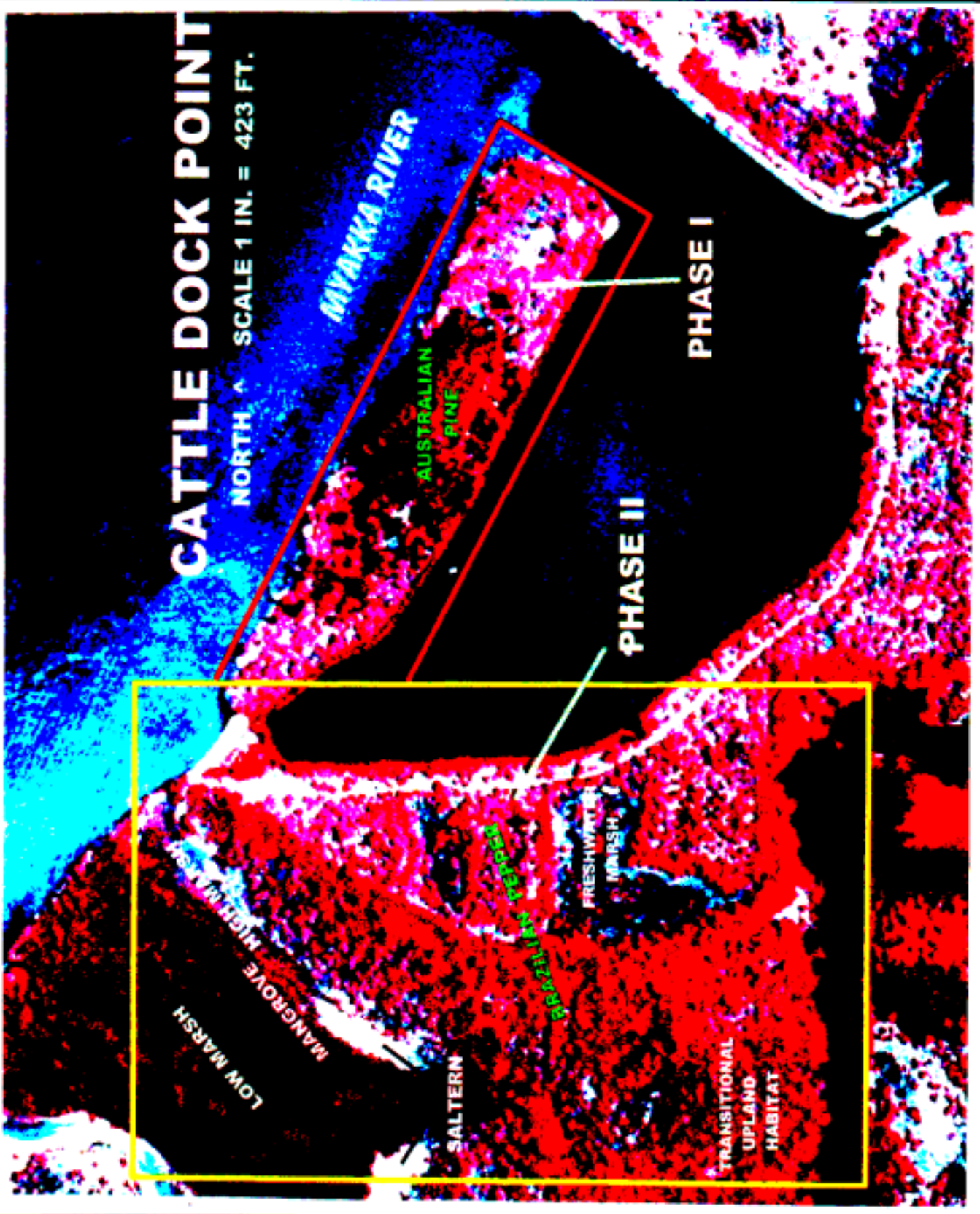
x 7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). Refer to response to Comment D.



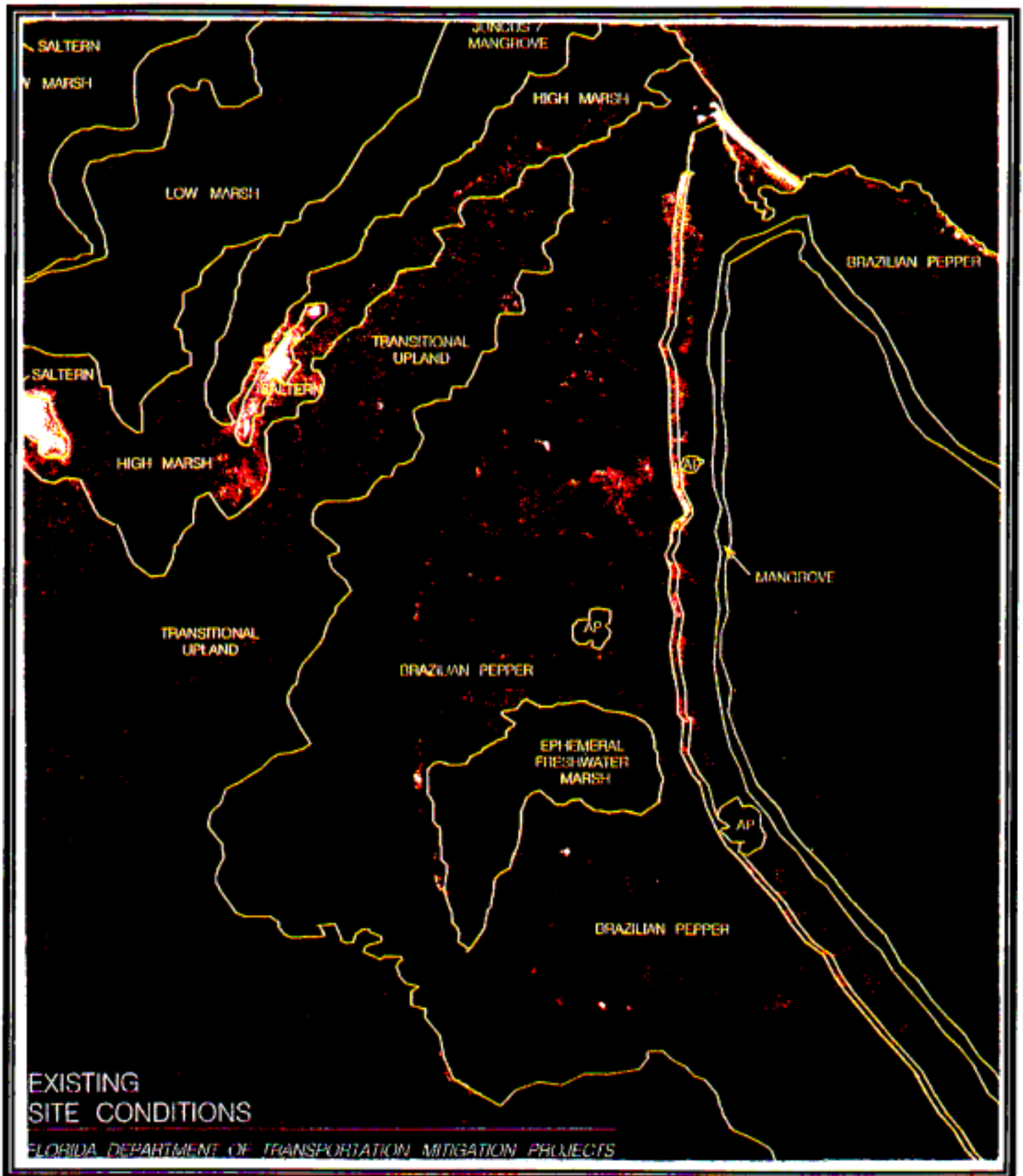
FDOT - District 1 **MITIGATION SITE** **(Myakka River Basin)**	**CATTLE DOCK POINT** **RESTORATION** **(SW31)**	**FIGURE A** **VICINITY MAP**



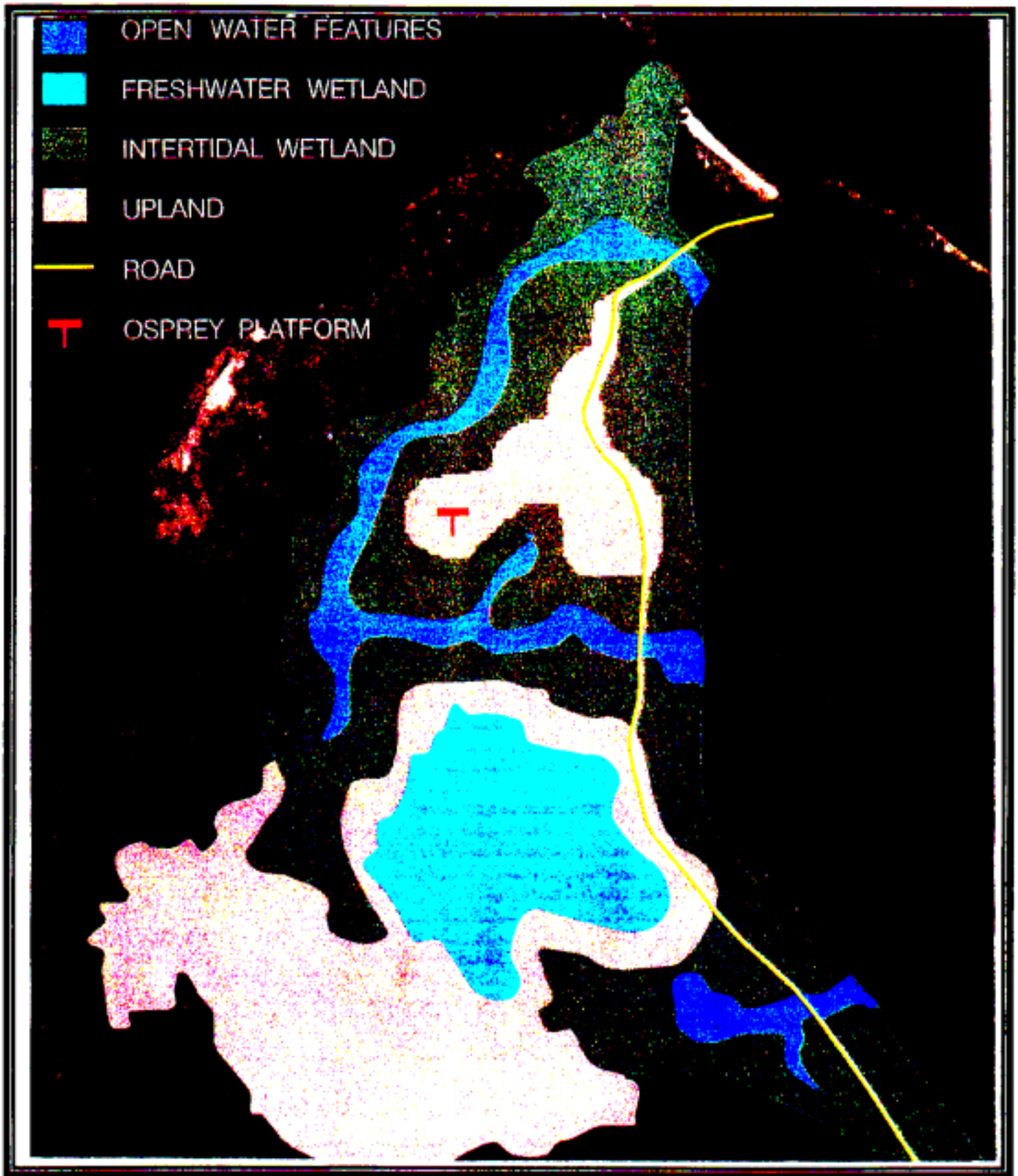
FDOT - District 1 **MITIGATION SITE** **(Myakka River Basin)**	**CATTLE DOCK POINT** **RESTORATION** **(SW 31)**	**FIGURE B** **PROJECT LOCATION**



FDOT - District 1 MITIGATION SITE (Myakka River Basin)	CATTLE DOCK POINT RESTORATION (SW 31)	FIGURE C INFRARED AERIAL (1995)



FDOT - District 1 MITIGATION SITE (Myakka River Basin)	**CATTLE DOCK POINT RESTORATION (SW31)**	**FIGURE D PHASE II - EXISTING VEGETATION**



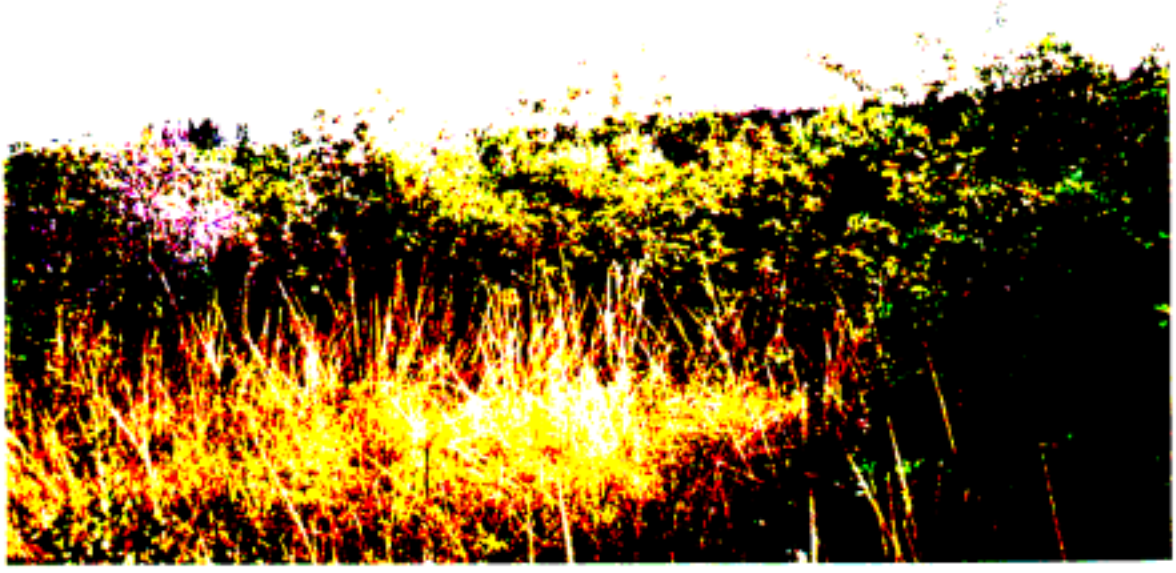
FDOT - District 1 **MITIGATION SITE** **(Myakka River Basin)**	**CATTLE DOCK POINT** **RESTORATION** **(SW 31)**	**FIGURE E** **PHASE II - CONCEPTUAL** **HABITAT PLAN**

View from the southern shoreline of the Cattle Dock bayou area, looking north at the Brazilian pepper and Australian pine dominating the peninsula of the Phase I area.

View along the access road located along the eastern boundary of the Phase II construction area, access road is one of the few upland areas not dominated by B. pepper.

FDOT - District 1 Mitigation Site (Myakka River Basin)	**CATTLE DOCK POINT (SW 31)**

The freshwater marsh has cattails, willows, and a recent invasion of sesbania species.



Additional view along the access road, looking over dense B. pepper coverage and A. pine (background) along the southern Phase II boundary.

FDOT - District 1 Mitigation Site (Myakka River Basin)	**CATTLE DOCK POINT (SW 31)**

REGIONAL MITIGATION PLAN

BASIC INFORMATION

Water Management District : Southwest Florida Water Management District

Project Name: **Lake Thonotosassa Shoreline Restoration** Project Number: **SW 34**

Project Manager: Amy Remley, SWIM Env. Scientist Phone Number: (813) 985-7481 ext. 2083

County(ies): Hillsborough Location : Sec. 11, 12, 13, 14, T28S, R20E

DOT: WPI 7115981, FM 2563431, SR 54 - US 41 to Cypress Ck. ERP #200590.04 ACOE# 19950145

Impact Acres / Types:
- 0.80 ac. 616 (Fluccs code)
- 4.10 ac. 618 (Fluccs code)
- 4.60 ac. 621 (Fluccs code)
- 4.70 ac. 641 (Fluccs code)

Total: 14.20 ac.

ENVIRONMENTAL INFORMATION

Type(s) of Mitigation: Enhancement: **14 ac.** Restoration**: 45 ac.** **Total: 59 ac.**

SWIM project? Y Aquatic Plant Control project? N Exotic Plant Control Project? N

Mitigation Bank? N Drainage Basin: Hillsborough River Water Body: Lake Thonotosassa, Baker Creek

Project Description

A. Overall project goals: The purpose of the project is to improve and enhance the water quality and the fish and wildlife values of Lake Thonotosassa through a restoration plan that involves enhancement and restoration of 59 wetland acres.

B. Brief description of current condition: The southeast shoreline of the lake was historically filled and separated from the lake with a berm and seawall. The filled area was converted to a bahia pasture which was ditched to provide drainage to a collection area. The collection area was periodically pumped to maintain a dry pasture, however a small percentage (14 acres) of wetland enhancement (Figures D & E) of disturbed soft rush marsh regenerated in the pasture.

C. Brief description of proposed work: Enhancement of the historical lake bottom occurs within the north and south cells of the project and incorporates the following elements (refer to Figure E): (1) A structure was installed in Baker Creek which diverts up to the mean annual flow of the creek into the restoration area with sediments removed by a sump; (2) A low flow channel carries water from the sediment sump through the marsh planting area; (3) Planted upland islands bracket the low flow islands; (4) The marsh restoration area was graded to proper elevation and planted with herbaceous vegetation & scattered cypress; (5) The existing hydrologic connection of Otter Lake to Lake Thonotosassa was enhanced via the construction of an open water slough system; (6) an additional marsh planting was conducted adjacent to and surrounding the existing Otter Lake; (7) The berms separating the north and south cells from Lake Thonotosassa were excavated to allow the enhancement area and the lake to merge during periods of high water. The resulting fill material was used to cover seawall demolition areas and fill ditches.

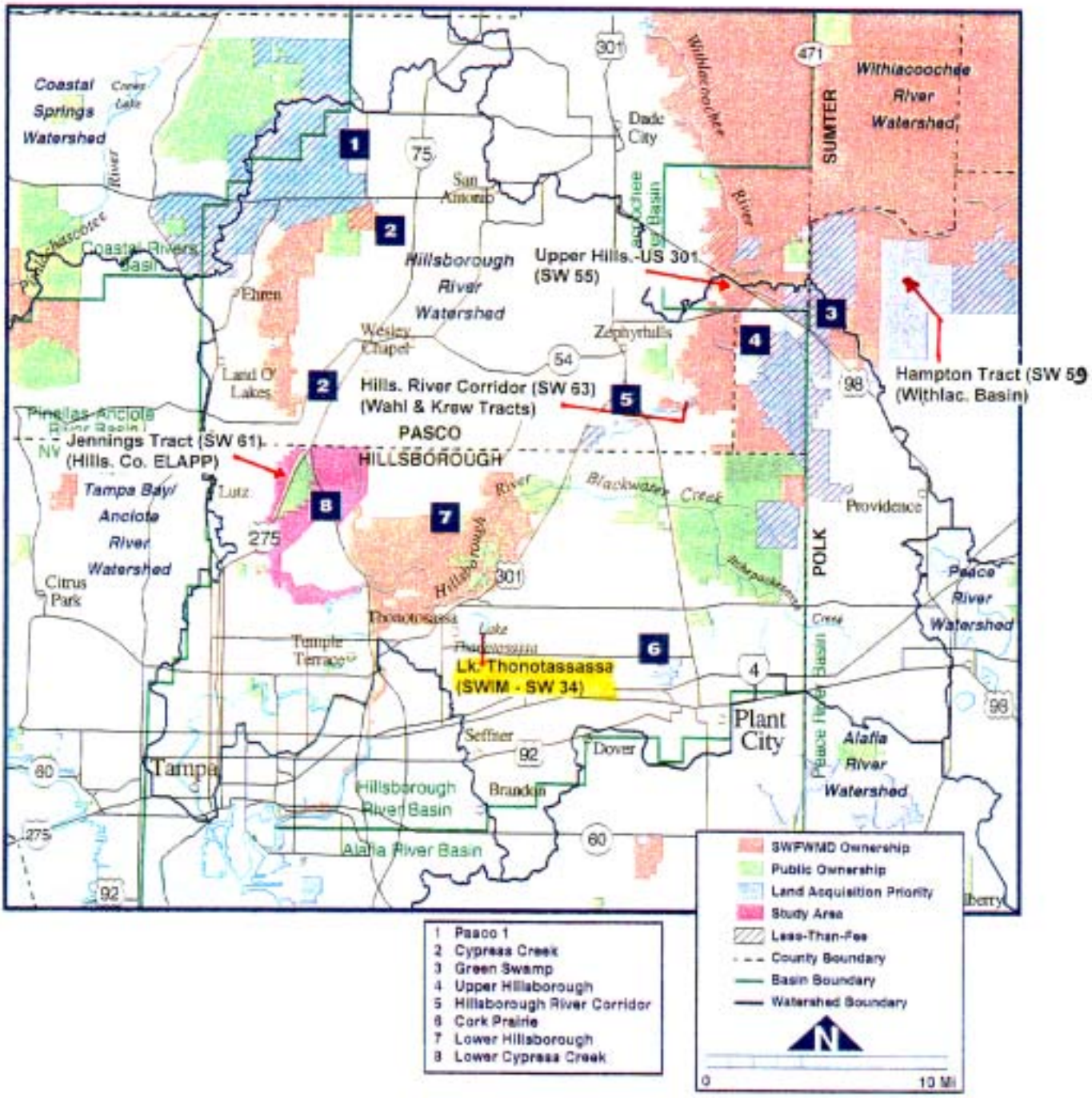
D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): The created herbaceous marsh and planted cypress will replace the acreage and function of the marsh, open water, and cypress wetlands proposed for impact along SR 54 in conjunction with a larger restoration project, allowing for a greater chance of success and provide the desired fish and wildlife benefits.

PROJECT IMPLEMENTATION

Entity responsible for construction: Construction Complete in 1999
Contact Name: Amy Remley, SWIM Environmental Scientist Phone Number: (813) 985-7481 ext. 2083
Entity responsible for monitoring and maintenance: SWFWMD-SWIM and Hillsborough County Parks
Proposed timeframe for implementation: Commence: January, 1998 Complete: Construction completed in 1999, supplemental planting in the fall, 2003 ; minimum of three years of maintenance & monitoring.
Project cost: $635,349 (total)

Attachments:

X 1. Detailed description of existing site and proposed work. Refer to text under Comment C, site photographs.
X 2. Recent aerial photograph with date and scale. Figure D-1995 Infrared Aerial, Figure E - Summer, 1999, aerial photograph during site construction.
X 3. Location map and design drawings of existing and proposed conditions. Figs. A, B, C.
X 4. Detailed schedule for work implementation, including any and all phases. Refer to text under Comment C.
X 5. Proposed success criteria and associated monitoring plan. Success criteria includes a minimum 85% coverage of desirable species and less than 10% exotic / nuisance species, determined by qualitative assessment methods. Supplemental planting will occur in the fall, 2003 to guarantee the percent coverage of desirable species.
X 6. Long term maintenance plan. Maintenance is currently being conducted and will continue for an additional 3 years and/or until success criteria is met. Since the mitigation area also provides a good containment area for any exotic and nuisance species that historically flowed directly in Lake Thono from the Baker Creek Canal, Hills. County is providing additional assistance with herbicide treatment of these species within the mitigation area.
X 7. Itemized cost estimate. Design & Permitting - $90,000, Construction - $240,122, Planting - $181, 227, Supplemental Planting - $84,000, Maintenance & Monitoring - $40,000
X 8. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). Refer to text under Comment D.

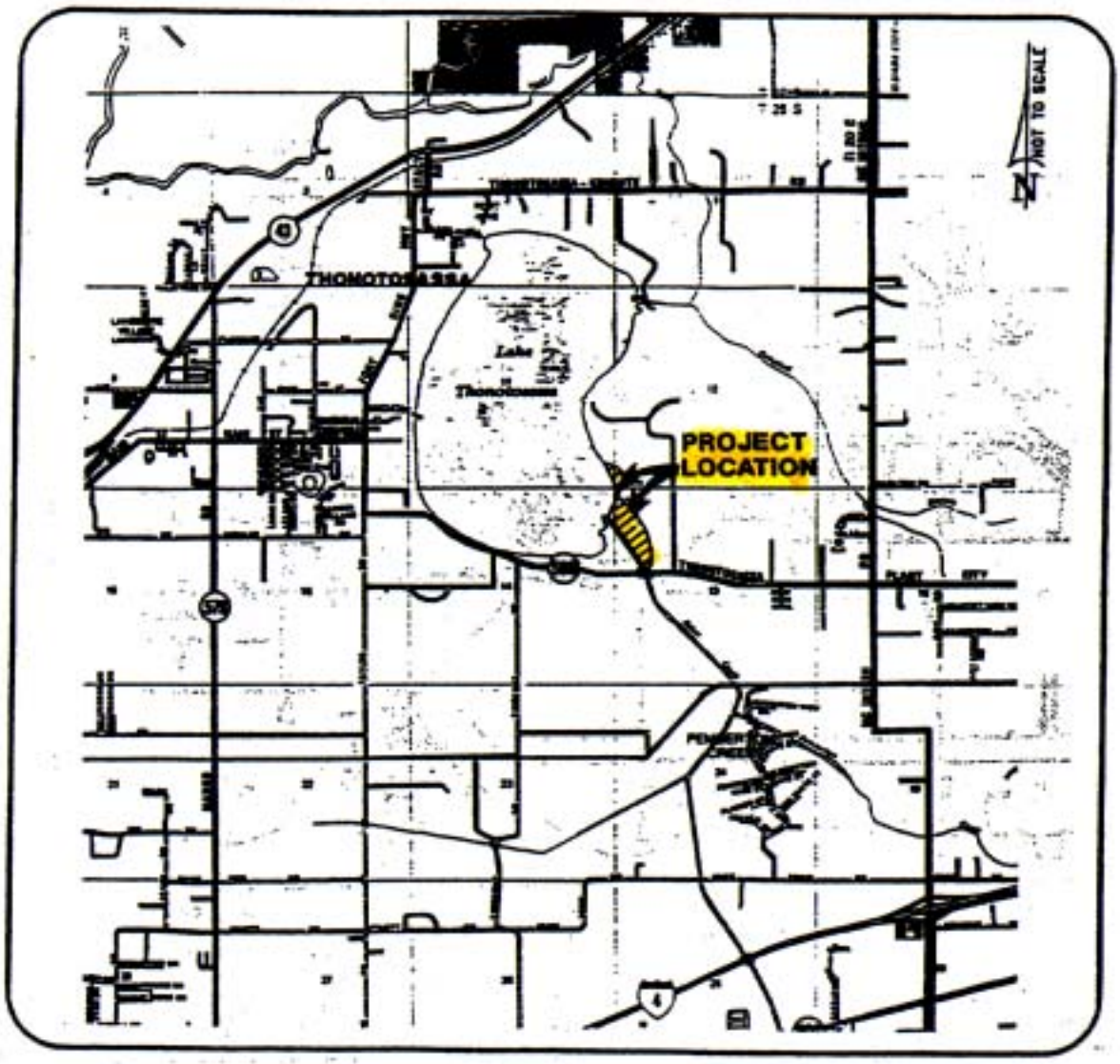


FDOT - District 7 MITIGATION SITE (Hillsborough River Basin)	**LAKE THONOTOSASSA SHORELINE RESTORATION (SW 34)**	**FIGURE A WATERSHED BASIN MAP**

WETLAND RESTORATION IN THE LAKE THONOTOSASSA WATERSHED

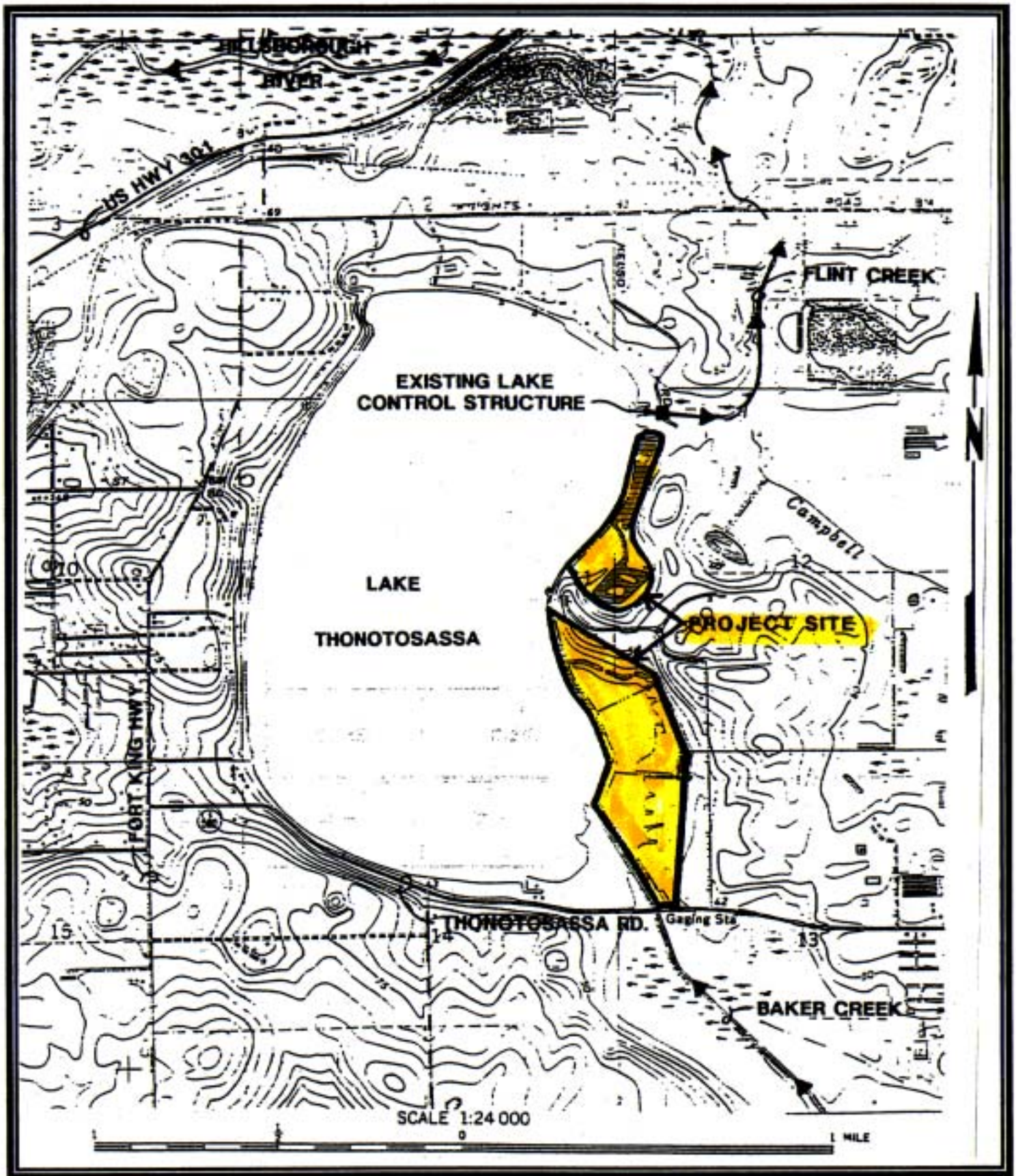
SECTION 11, 12, 13 and 14, TOWNSHIP 28 S, RANGE 20 E
HILLSBOROUGH COUNTY, FLORIDA

PROJECT CONSTRUCTION PLANS

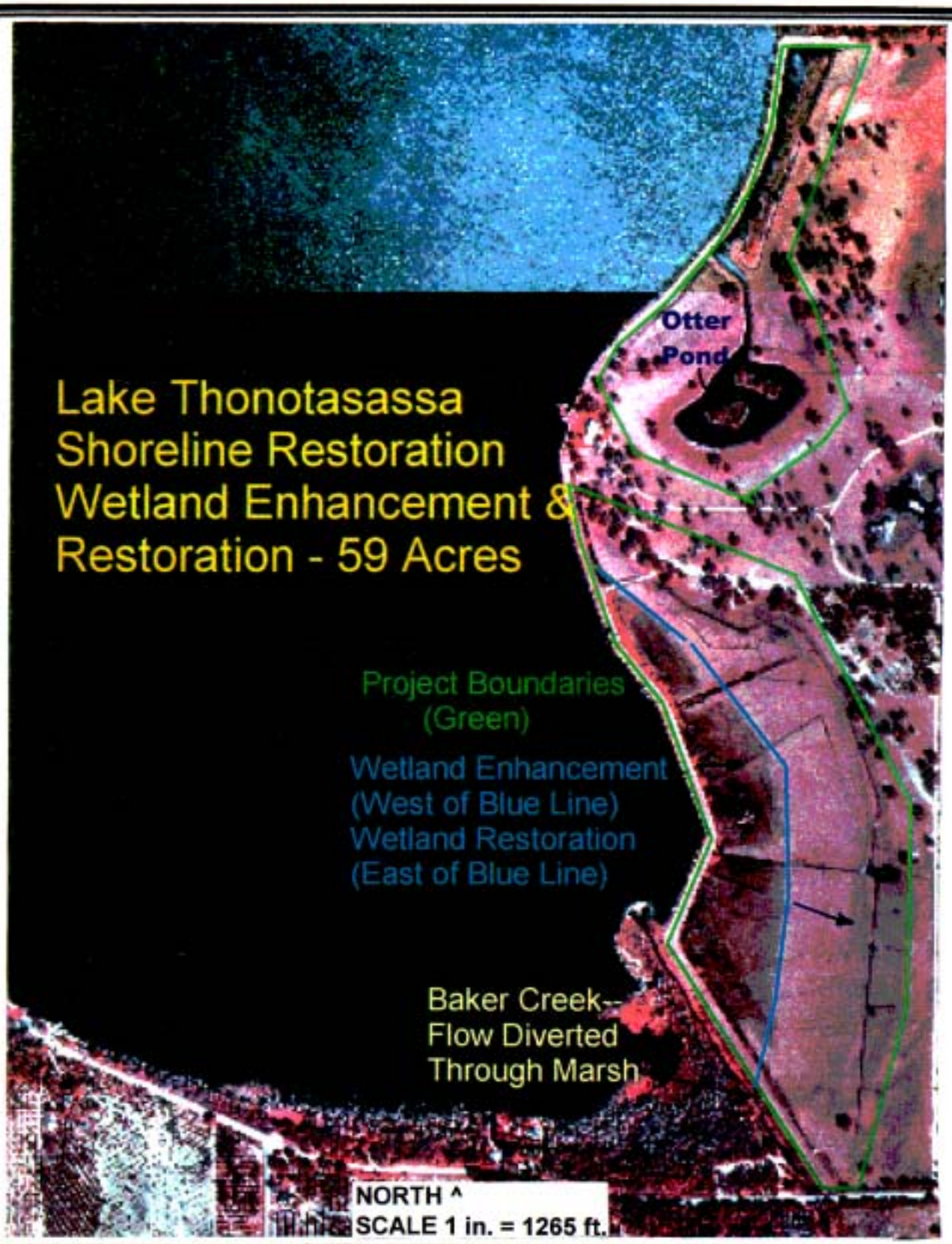


VICINITY MAP

FDOT - District 7 MITIGATION SITE (Hillsborough River Basin)	LAKE THONOTOSASSA SHORELINE RESTORATION (SW 34)	FIGURE B LOCATION MAP



FDOT - District 7 MITIGATION SITE (Hillsborough River Basin)	LAKE THONOTOSASSA SHORELINE RESTORATION (SW 34)	FIGURE C PROJECT SITE



FDOT - District 7 MITIGATION SITE (Hillsborough River Basin)	**LAKE THONOTOSASSA SHORELINE RESTORATION (SW 34)**	**FIGURE D INFRARED AERIAL (1995)**

FDOT - District 7 MITIGATION SITE (Hillsborough River Basin)	LAKE THONOTOSASSA SHORELINE RESTORATION (SW 34)	FIGURE E SUMMER, 1999 AERIAL DURING CONSTRUCTION

View from the upland fringe, with the deep water flow-way in the foreground, followed in sequence by planted cypress and fireflag, an upland peninsula with planted oaks, and the enhanced marsh and additional planted cypress in the background. The shoreline of Lake Thonotasassa is located along the tall cypress in the left background.

North of Otter Pond, view of the constructed deep water flow-way, marsh, and cypress along the lake shoreline.

FDOT - District 7 Mitigation Site
(Hillsborough River Basin)

LAKE THONOTASASSA
SHORELINE RESTORATION (SW 34)

Wildlife activity has substantially increased since completing construction. The deep water habitats are used by otters and alligators, with many of the gators using the shoreline banks for resting. Wading birds forage within the shallow waters and even a few Canadian geese (shown above) have decided to establish residency.

The islands within Otter Pond have become refuge for nesting snowy egrets.

FDOT - District 7 Mitigation Site (Hillsborough River Basin)	**LAKE THONOTASASSA SHORELINE RESTORATION (SW 34)**

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management District
Mitigation Project Name**: Quick Point Nature Preserve** Project Number**: SW 38**
Project Manager: Steve Schield, Environmental Officer Phone No: 941-316-1999
610 General Harris St., Longboat Key, FL 34228-3196
County: Sarasota Location :Sec./T/R: 24,25/36S/17E

IMPACT INFORMATION

WPI: 1119232 FM: 1979421, SR 789-Ringling Causeway Bridge ERP #: 4418555.01 COE #: 199500210 (IP-TF)
WPI: 1119295 FM: 1980051, US 41-Venice Ave. to US 41 Bypass ERP #: 44020099.02 COE #: 199905145 (IP-PB)
Drainage Basin(s): Lower Coastal Water Body(s) :Sarasota Bay SWIM water body? Y

Impact Acres: WPI: 1119232 - 0.07 ac. 911 (Fluccs code- seagrass - fill impacts)
0.20 ac. 911 (Fluccs code - seagrass - shading impacts)
WPI: 1119295 - 0.32 ac. 612 (Fluccs code – mangrove)
TOTAL 0.59 ac.

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: ___ Creation _X_ Restoration _X_ Enhancement ___ Preservation Mitigation Area: **2.8 ac.**
SWIM project?N Aquatic Plant Control project?N Exotic Plant Control Project? Y
Mitigation Bank? N Drainage Basin(s): Lower Coastal Water Body(s): Sarasota Bay SWIM water body? Y

Project Description{tc "Project Description"}

A. Overall project goal: Restore mangrove, seagrass, upland habitat areas on and adjacent to the 34-acre Quick Point Preserve located on the southern end of Longboat Key.

B. Brief description of current condition: The 34-acre site has an existing 20-acres of mangrove (the majority disturbed by mosquito ditches, spoil mounds, and exotic vegetation), 5 acres of restored wetland, and 9-acres of fill area that will be used to create upland habitat. The original plan proposed removal of the 9-acres of fill to create wetland habitat, but it was determined that construction limitations would lead to wetland disturbance. The disturbed upland fill will have exotic species removed and used to create upland habitat. The upland habitat creation is not proposed as mitigation for the DOT impacts.

C. Brief description of proposed work: The disturbed mangrove area will have the exotic species removed (primarily Brazilian pepper, Australian pine), minor grading has been conducted to construct a tidal pond. Due to the loss of seagrass from decreased salinity levels during El Nino, seagrass will be planted within existing sandy bottom areas at Quick Point and, if additional acreage is needed, within appropriate areas under the existing Ringling Bridge proposed for removal or other areas within Sarasota Bay. Seagrass planting will be conducted with a rotary plugging apparatus operated on a pontoon boat. The combination of these activities with other enhancement & restoration activities at Quick Point provide a diverse relationship of various habitats.**{tc "Mitigation Project – Quick Point Nature Preserve " \l 2}**

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): For the 0.27 acre of seagrass impacts associated with the Ringling Causeway Bridge (located 2 miles from Quick Point),**1.5 acres** of seagrass planting will occur in the area adjacent to Quick Point and, if additional area is required, within the shaded area under the existing Ringling Bridge span that will be removed in association with the new bridge construction. For the 0.32 acre of mangrove impact, a minimum **1.0 acre** of the disturbed mangrove area will be enhanced with eradication of exotic vegetation.

E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: There are currently no existing or proposed mitigation banks in the Lower Coastal Basin.

F. Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body : This project is a coordinated effort between the Town of Longboat Key, FDEP, SWFWMD-SWIM and the National Estuary Program. Sarasota Bay is one of the few water bodies within the state that is nationally considered of such importance to receive priority and partial funding for enhancement through the "National Estuary Program (NEP)."

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: Contractor selected by the Town of Longboat Key and/or public agency staff.
Contact Name: Steve Schield (Longboat Key- 941-316-1999)
Entity responsible for monitoring and maintenance: Town of Longboat Key
Proposed timeframe for implementation: Commence: October, 1998 Complete: Winter, 2002 (Mangrove Enhancement), Summer, 2003 (Seagrass Planting)

Project cost: $46,580 (total); attach itemized cost estimate
Design - $1,000
Enhancement (Mangrove Area, 1.0 acres) - $4,000
Planting (Seagrass Area, 1.5 acres) - $37,080
Maintenance & Monitoring - $4,500

Attachments

__X_ 1. Detailed description of existing site and proposed work. Attached description of existing vegetative conditions, refer to the following response to Question #4 for details on the proposed work.

__X__2. Recent aerial photograph with date and scale. Figure D - 1995 infrared aerial of Quick Point.

__X_ 3. Location map and design drawings of existing and proposed conditions. Figures A&B- Location Map, Figure C restoration plan view depicting the work areas relative to the mitigation proposed for the three DOT projects.

__X__4. Detailed schedule for work implementation, including any and all phases. The proposed schedule for work implementation includes finalizing the design by end of 2004. The mangrove enhancement activities will be conducted during winter 2004 by the Longboat Key Parks Dept. Seagrass planting will be conducted in the Spring--Summer, 2004. If areas under the existing Ringling Bridge span require planting in order to achieve the total 1.5 acres, the seagrass planting may be deferred and/or extended until after the new bridge has completed construction. Other areas within Sarasota Bay will be evaluated for seagrass planting. A local nursery contractor specifically grows seagrass plugs and pallets that are planted using a stainless steel rotary drum mounted on a pontoon boat. The drum rotates and installs the seagrass directly into the sand bottom grades.

__X__5. Proposed success criteria and associated monitoring plan. The success criteria for the mangrove area will include greater than 85% cover of desirable species, and less than 10% exotic/nuisance species. Monitoring will be conducted semi-annually the first year after planting, and annually thereafter for a minimum three years and until success criteria is met. In the past, seagrass planting by various methods and locations have variable results. The use of the rotary drum planting method has exhibited the same or better success rates, but at the same time can plant much larger areas in less time than manual planting. Due to the past success of seagrass planting, the proposed mitigation plan includes planting 1.5 acres of bay bottom, compared to 0.27 acres of proposed seagrass impacts (0.07 ac. from fill, 0.20 ac. from shading) at the Ringling Causeway or other designated area in Sarasota Bay. The proposed planting rate compared to the impact is a ratio of 5.6-to-1. With a success criteria requiring a minimum 30% survivorship for at least three years, that results in a minimum 0.45 acres of total survivorship area, which is a 2-to-1 ratio compared to the impact area. Monitoring will be conducted annually for three years to evaluate the survivorship. The proposed planting area is a site known to have supported seagrass in the past, and survivorship is anticipated to be much higher than planting in an area where seagrasses haven't been documented (refer to Figure C and site photographs). However, if additional opportunities are available at the area under the existing Ringling Bridge span to be removed or other areas within Sarasota Bay, those areas will also be evaluated for potential seagrass planting in lieu of Quick Point.

__X__6. Long-term maintenance plan. Maintenance will be conducted as needed during the first three years, proposed quarterly inspections to control exotics/nuisance species during the first year, and semi-annually afterward for the minimum three years of monitoring. Maintenance will continue as necessary by the City of Longboat Key Parks Dept. to minimize regeneration of exotic and nuisance species.

_X__7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). Refer to previous response to Issue D and Question 4. The quantity of DOT projects to be mitigated at Quick Point has decreased from several projects with a cumulative 5 acres of impacts to the proposed 0.59 acres associated with the two aforementioned DOT projects. Other restoration aspects associated with Quick Point will be funded by different sources. If some time in the future, restoration opportunities are still available at Quick Point and a DOT project has proposed saltwater wetland impacts that could possibly be mitigated at the site, the WMD and City of Longboat Key will coordinate with the ACOE and other agencies toward evaluating those opportunities.

Quick Point Nature Preserve
100 Gulf of Mexico Drive
Longboat Key, Florida 34228

For more information contact:
TOWN OF LONGBOAT KEY
501 Bay Isles Road
Longboat Key, Florida 34228
941-316-1999

The Quick Point Nature Preserve restoration was made possible through a cooperative effort of:

WHAT YOU CAN DO TO HELP

Motorboats can also damage grass beds. Surveys show almost half of local motorboaters run aground in grass beds, spinning their propellers and carving out bare, mucky trenches that cause irreversible damage.

What you can do to avoid running through grass beds with your motorboat:

- Keep track of the tides.
  even at high tides some beds are vulnerable.
- Look for buoys.
  which mark the edge of some grass beds.
- Read navigation charts.
  Seagrass is shown as light green or with "Gm."
- Read the water.
  A grass bed may appear as a large dark area underwater.

If you do run into a grass bed, you'll be leaving behind a mud trail where your prop has churned up the bay bottom, clouded the water, and likely cut seagrass roots. It's what you do next that counts:

- Stop the engine.
- Tilt the motor
  then, pole or walk out of the shallow grass flat.

Be a part of the restoration process of Sarasota Bay by helping to protect this vital seagrass habitat.

SARASOTA BAY OVERVIEW

Sarasota Bay is a highly productive estuary, but because of rapid population growth since the 1940's and beyond, substantial negative impacts have occurred to the bay and its natural resources.

Certain measures have been having a significant beneficial impact for the restoration of Sarasota Bay, for example wastewater and stormwater treatment technologies. But furthering the restoration goals depends on each one of you making a difference.

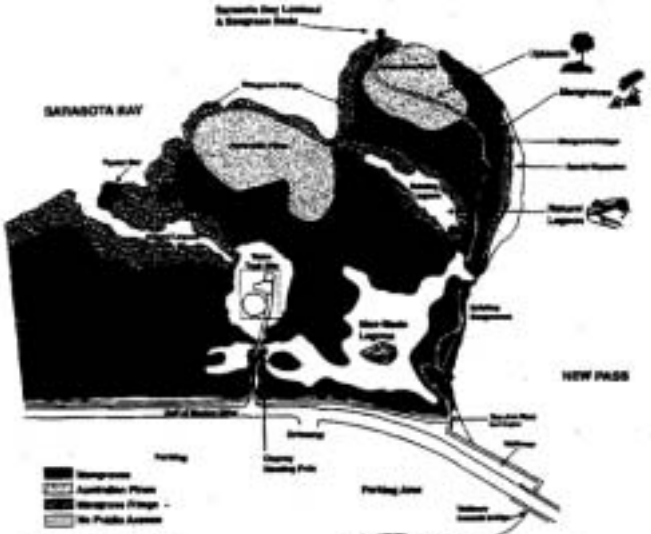
Here's a couple suggestions to get you started:

- Get involved in community plantings and exotic removal projects.
- Get involved in Adopt-a-Beach or community coastal cleanup projects to remove harmful marine debris from our waterways.
- Reduce, recycle and reuse paper, glass, aluminum and plastic materials.
- Learn about environmentally-friendly ways to landscape your Florida Yard so as to reduce stormwater runoff pollution from entering the bay.

And, here is where to go for further information and assistance for environmental education:

Town of Longboat Key
(941) 316-1999
Sarasota Bay National Estuary Program
(941) 359-5841
Keep Sarasota Beautiful
(941) 364-4667
Keep Manatee Beautiful
(941) 795-8272
Florida Department of Environmental Protection
(813) 744-6100

QUICK POINT
NATURE PRESERVE



MAN-MADE LAGOON

The man-made tidal lagoon area was excavated to different elevations and depths to attract different kinds of animals. You may see whelks, conchs, juvenile crabs and many kinds of small fish, including mullet, black drum, and others. The pond may also contain blue-green and brown algae, an important food chain for some of the lagoon's residents. Make sure to be on the look out for wading birds within the lagoon area such as the Snowy Egret, White Ibis, Herring Gull, Great Blue Heron, Great American Egret and Osprey.

NATURAL LAGOON

This pristine mangrove lagoon area was present 100 years ago and still serves today as a serene natural setting of mangroves for utilization by shore birds and human enjoyment. The natural lagoon area also serves as vital habitat for juvenile fish and crabs just like the new man made lagoon.

MANGROVES

During the 1950's and 1960's extensive ditching of the mangroves occurred, for mosquito control purposes. Connecting low marshy areas with a series of criss-crossing ditches was the method used to drain lowlands and allow fish into ditches. The fish would feed on the mosquito larvae thereby effecting biological control of this problem. The ditches were dug by the use of a mechanical dragline, with the spoil being placed on the mangroves.

Today we know the beauty, wildlife value, erosion prevention, and importance in estuary ecology that make mangroves an important natural resource, which all Floridians should strive to protect.

Here is identification tips on the four different mangrove species found throughout the Quick Point Nature Preserve. Red mangroves will be found closest to open water. They have arching prop roots and their seeds, or propagules, look something like green cigars. Their leaves are large and bright green. Black mangroves will usually be found growing landward of red mangroves. Black mangroves "sweat" salt from their leaves and send up soggy projections from their roots called pneumatophores, which provide oxygen to the root's roots. Their leaves are dull green with silver undersides. White mangroves usually grow landward of the are in-correspersed with black mangroves.

UPLANDS

There are two large areas at the Quick Point site that are the result of previous dredge spoil deposition. Australian pine has heavily colonized these areas. Removal of the Australian pine is part of the overall restoration plan for Quick Point. Australian pine and Brazilian Pepper are invasive exotics which spread easily and take over the indigenous or native beneficial vegetation. Other upland canopy species, which are beneficial to the Quick Point ecosystem, include the Cabbage Palm and Red Bay. Shrubs include the Myrtle Oak, Seagrape, Sea Myrtle and White Stopper. The understory includes herbs such as the Arrow leaf Morning Glory, Narrow-leafed Sunflower and Seaside Goldenrod to name a few.

SARASOTA BAY LOOKOUT

Seagrass beds enrich our bay life and are prevalent along the entire Quick Point shoreline.

For centuries the grandbass of Sarasota Bay have supported a rich array of wildlife. Unfortunately, though, the bay has lost almost 50 percent of its seagrass since the 1940's and 1950's due to stormwater and wastewater discharge. Wastewater and stormwater have high levels of nitrogen, that cause algae to grow in the bay and ultimately kill the seagrass. Recently, however, improvements in wastewater and stormwater treatment and technologies have led to the recovery of seagrass beds, by 7 percent since 1988, within the central and northern portions of the bay.

HABITATS

For the purposes of this section, habitat will be described as an area of land having a set of vegetation types, animal species and internal biological relationships of a character separate and distinct from other areas within the boundary of the site. The Quick Point property contains a number of distinct habitats which reflect historical alterations to the site.

An accurate and extensive understanding of the native habitats which exist at Quick Point was essential to the development of the park design. The preservation of valuable marine habitat and the minimization of disturbance to other sensitive areas was a primary component of the design philosophy. With this in mind, a habitat mapping of the property was conducted to specifically identify the various distinct exo-systems which comprised the Quick Point area.

The following is a listing and brief introduction of the six habitats and a description of the fauna found on the Quick Point property.

Sandy Shoreline

The sandy shoreline spans 200 feet section on the southern section of the property adjacent to new Pass. The quartz sands do not support any vegetation due to salinity and wave action. The shoreline does support various marine wildlife, including ghost crabs, hermit crabs and various shorebirds.

Disturbed Uplands

This area is located adjacent to and east of Gulf of Mexico Drive in the southern portion of the property. since it has been previously disturbed, it is dominated mostly by ruderal vegetation. Canopy species include Australian Pine and Cabbage Palm. Brazilian Pepper and Seagrape are the dominant shrubs. Herbs include Flat Sedge (Cyperus striosus), Greenbriar (Smilax spp.), Guinea Grass (Panicum maxicum), Seaoxeye Daisy (Borrichia frutescens), Spiny Needles (Bidens pilosa), Wholly Mullein (Verbascum thapsus), and Woonbine (Parthenocissus quinquenervia).

Mangroves - General

Estuarine shoreline edges, such as Quick Point, provide important habitat to birds and invertebrates. With a few exceptions, all of the coastal breeding colonies of Heron, Ibis, Cormorant and Pelican are in mangroves. In addition, rails, ducks and numerous other shorebirds rely upon marsh habitat.

Mangroves thrive in low-engery intertidal areas. Each type of mangrove has special adaptations for growing in or near salt water and for being daily or seasonally inundated by tides. Sensitive to frost, they are tropical in their geographic distribution.

Four species of mangrove are found at Quick Point. The two common intertidal species are Red Mangrove (Rhizophora mangle) and Black Mangrove (Avicennia germinans). White Mangrove (Languncularia

racemosa) and the Buttonwood Mangrove (Conocarpus erectus) grow adjacent to those two species, but generally on higher ground. Two succulents commonly found growing as ground cover within the mangroves include saltwork (Batis Maritma and Glass Wort (Salicornia spp.).

Mangrove (Ditched with Spoil Mounds)

On the Quick Point property, the area designated on the habitat map as mangroves (ditched with spoil mounds) was most probably once a combination saltmarsh, sandy area and mangrove swamp which was subsequently ditched for mosquito control purposes. Generally, the dominant species include red mangrove, black mangrove and white mangrove. In addition, Brazilian Pepper (Schinus terbinthifolius) and Australian Pine (Casuarina equistifolia are found extensively on the associated spoil mounds adjacent to the mosquito ditches.

Australian Pine Spoil Areas

There are two large areas at the Quick Point site which are probably the result of previous dredge spoil deposition. Australian pine has heavily colonized these areas. Other canopy species include Cabbage Palm (Sabal palmetto) and Red Bay (Persea borbonia). Shrubs include Brazilian Pepper, Marlbery (Ardesia escallonoides), Myrtle Oak (Quercus myrtifolia), Prickly Pear Cactus (Opuntia humifusa), Seagrape (Coccoloba uvifera), Spanish Bayonet (Yucca aliofolia), Sea Myrtle (Baccharis spp.), and White Stopper (Eugenia axillaris). The understory includes herbs such as Arrow-leaf Morning Glory (Ipomeoea sagitara), Coastal Panic Grass (Panicum amarulum), St. Augustine Grass (Stenotaphrum secundatum), Coastal Sanbur (Cenchrus incertus), Glasswort (Salicornia spp.), Narrow-leaved Sunflower (Helianthus augustifolus), Seaside Goldenrod (Solidago sempervirens), Sea Lavender (Limonium carolinianum), Sea Oxeye (Borrichia frutescens) and Sea Purslane (Sesuviam portulacastrum).

Seagrass Beds

Seagrass beds are prevalent along the entire quick Point shoreline. Turtle Grass (Thalassia testudinum) and Shoal Grass (Halodule beaudettei) are the dominant grasses. Intermittent wading birds were noted feeding in the seagrass beds along the entire periphery.

Mangrove (Shoreline Fringe)

Mature and healthy red and black mangroves constitute the majority of the Sarasota Bay shoreline and the inner fringe of the two estuarine lagoons. The eastern shoreline is dominated by all three species of mangroves in addition to buttonwood and some Australian Pine. The eastern lobe of the northerly shoreline is also dominated by all three species of mangroves, with Australian Pine being more prevalent. The remainder of the northern shoreline consists of mature red and black mangroves with the exception of an area of Australian Pines in the central portion. These Australian Pines are associated with a large inland spoil area.

LAND MANAGEMENT RECOMMENDATION

The proper management of publicly held lands can serve as an important example to other residents. The management of the Quick Point property provides and excellent opportunity to demonstrate proper ecological management techniques especially in and around estuarine systems, especially those with a history of previous alteration.

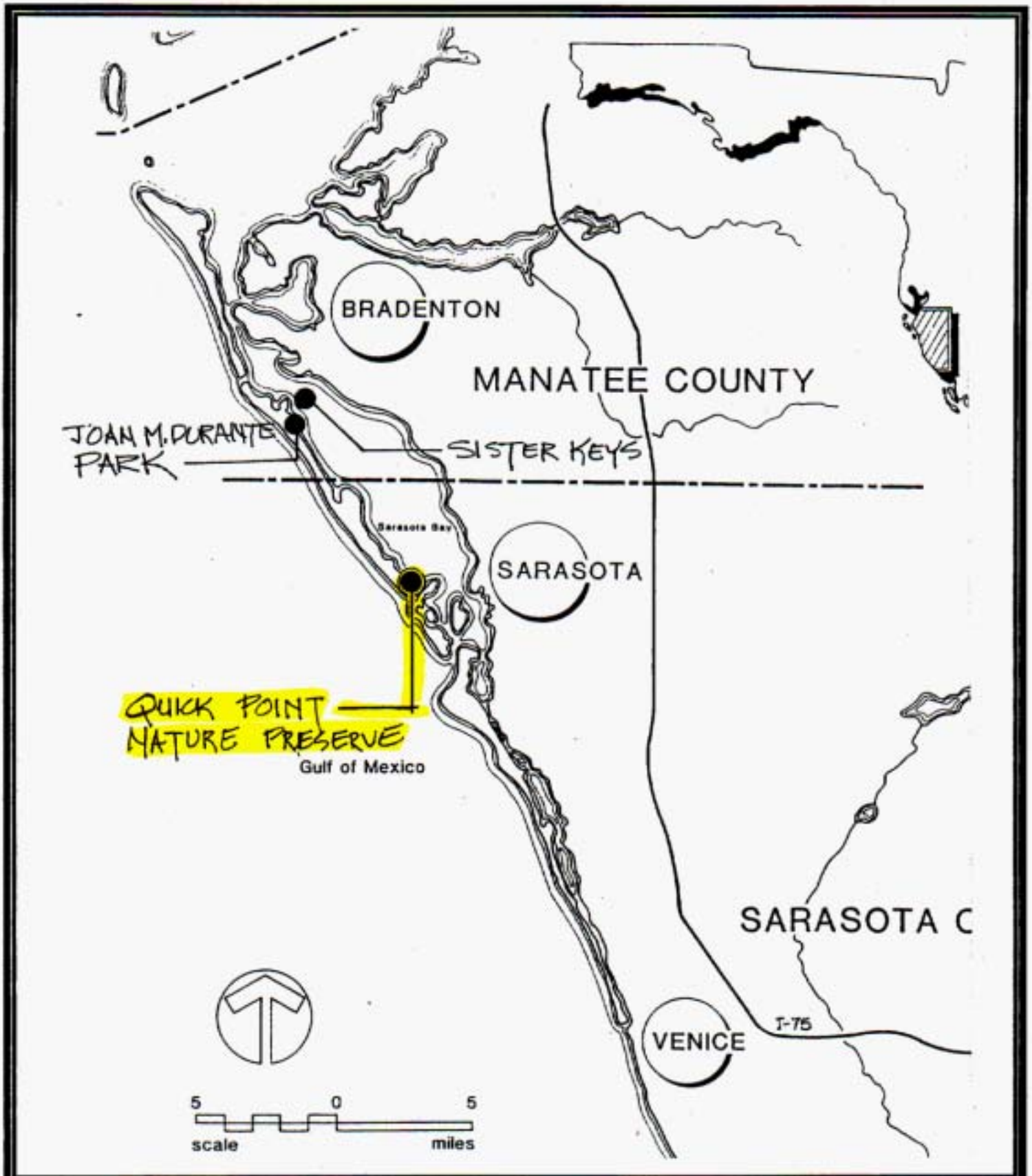
Because of its high environmental value and importance to the Sarasota Bay ecosystem, management of the land should emphasize preservation of valuable habitat and improvement and protection of altered habitat. Areas where we would recommend that specific land management techniques be applied are:

1. Mangrove/Spoil Mound System While the mangrove-lined ditches create an environmental system with important ecological value to the bay and marine life, the subsequent spoil mounds which were created as a result of the ditching need to be properly managed. In time, it is possible that the exotic vegetation will out-compete the mangrove areas and eventually cause a decline in growth and productivity of the mangroves. A phased longterm maintenance program should be in place which addresses the removal of the exotic vegetation (such as the Australian Pine and Brazilian Pepper) while preserving the mangrove fringe. A management program for this area must be very specific and selective as traditional horticultural techniques do not work well in such a sensitive location.

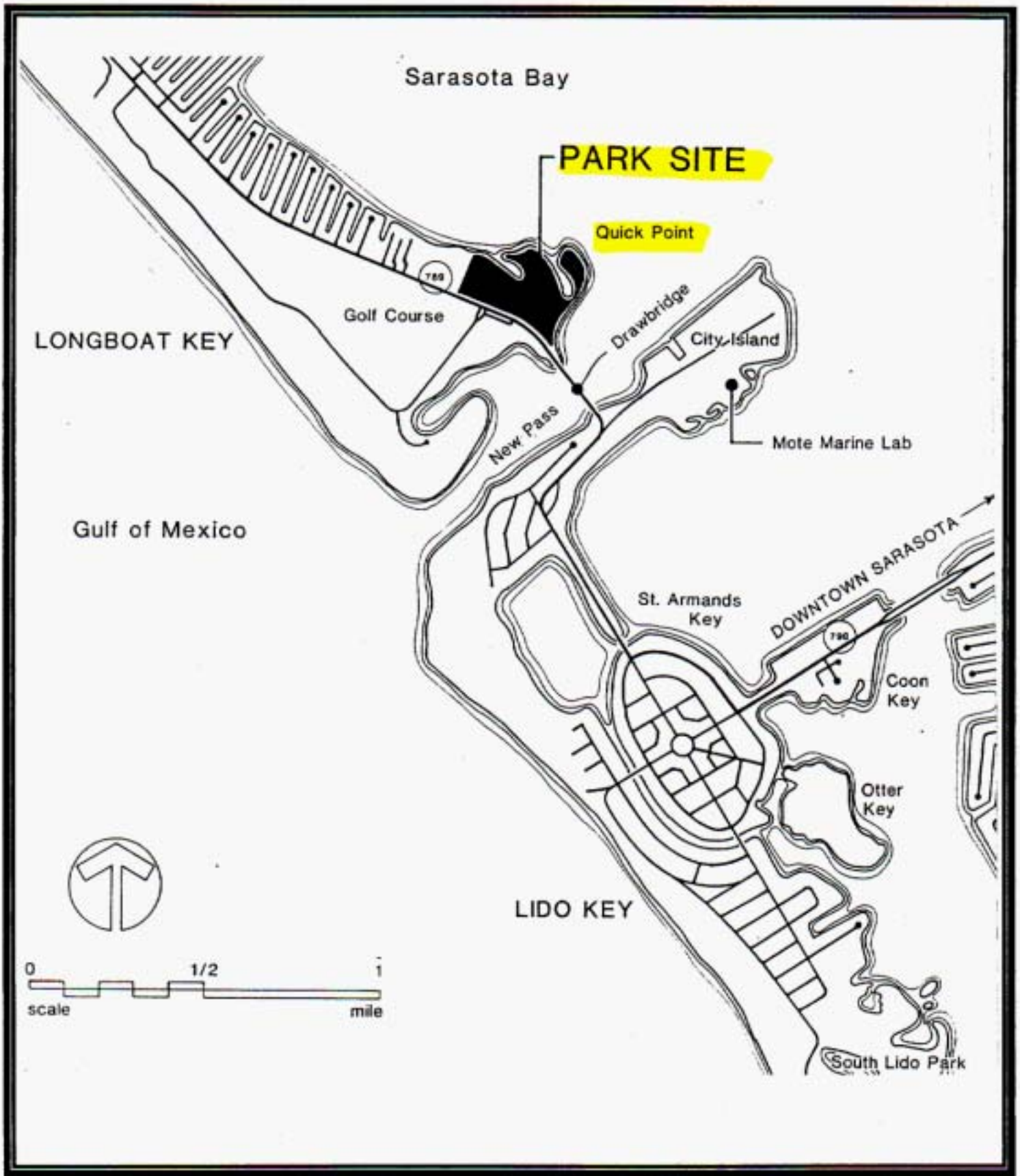
2. Bay Shoreline Much of the Quick Point property is naturally stabilized and protected through a mature mangrove growth fringe. However, portions of the eastern shoreline have experienced sever erosion, probably due to boat wake. This area should be re-established with mangroves and salt marsh grasses at appropriate locations and elevations. The use of some low level wave protection may be necessary, though we would not recommend considering a revetment or any other shoreline hardening techniques. In general, the entire Quick Point shoreline should be managed for the continued growth and health of the mangrove fringe. Australian Pines and other exotic vegetation which compromises the health, vigor and future growth of this fringe should be removed and natives replanted, if necessary.

3. Seagrass Beds The extensive seagrass beds in the northern lagoon shows signs of some damage, probably caused by propeller scar. These seagrass beds are particularly vulnerable at low tide and should be protected from further damage. Propeller scars in seagrass beds are particularly damaging as most destroyed areas will not naturally recolonize for a very long time.

4. Mixed Uplands A program of phased removal of Australian Pines should be considered in this area, along with the introduction of native coastal hammock species. This program would also facilitate the eventual recolonization of the shoreline by mangroves and would eliminate maintenance and safety problems associated with dead Australian Pines.



FDOT - District 1 MITIGATION SITE (Lower Coastal Basin)	**QUICK POINT NATURE PRESERVE (SW 38)**	**FIGURE A REGIONAL LOCATION**



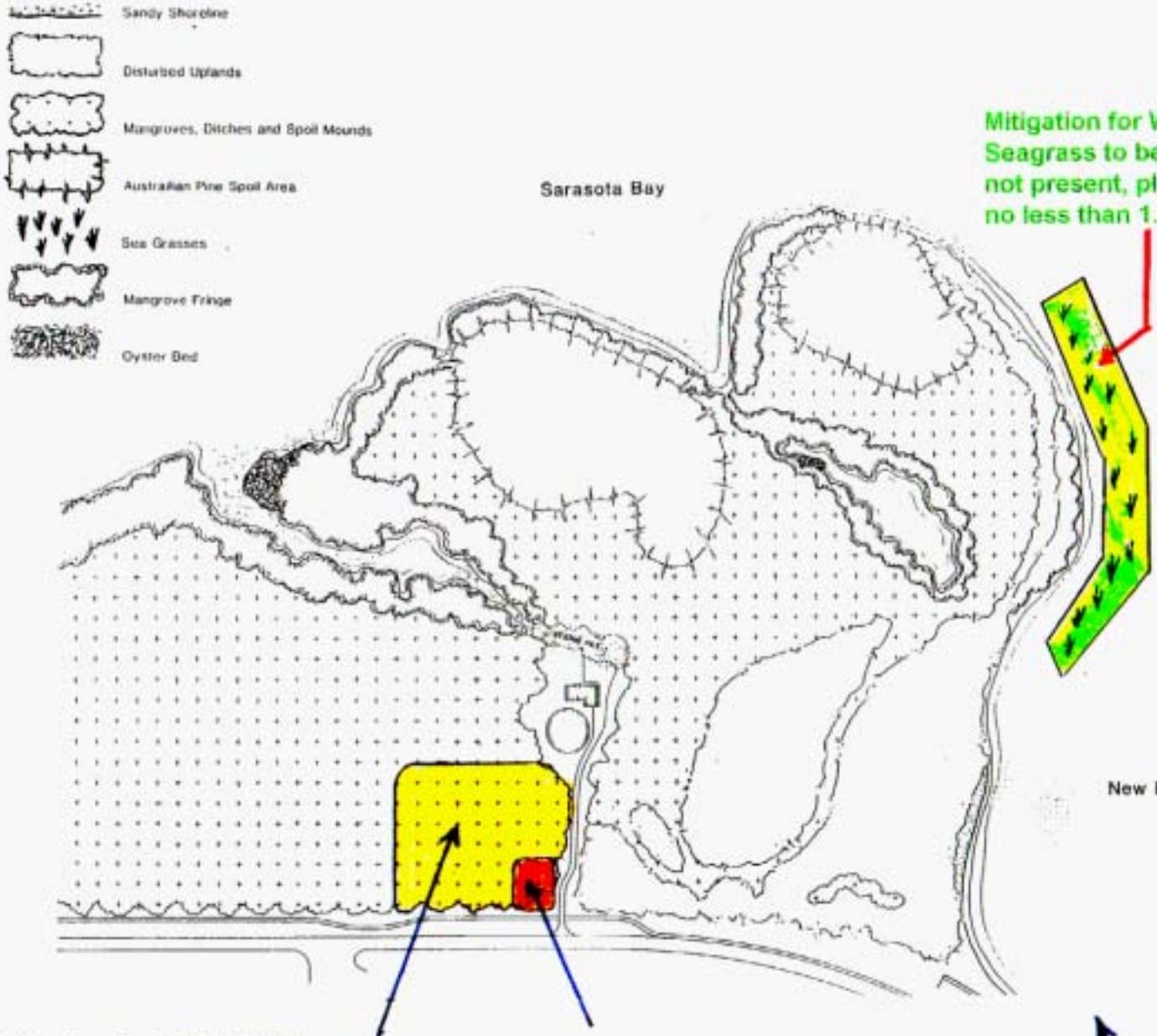
FDOT - District 1 MITIGATION SITE (Lower Coastal Basin)	**QUICK POINT NATURE PRESERVE (SW 38)**	**FIGURE B SITE LOCATION**

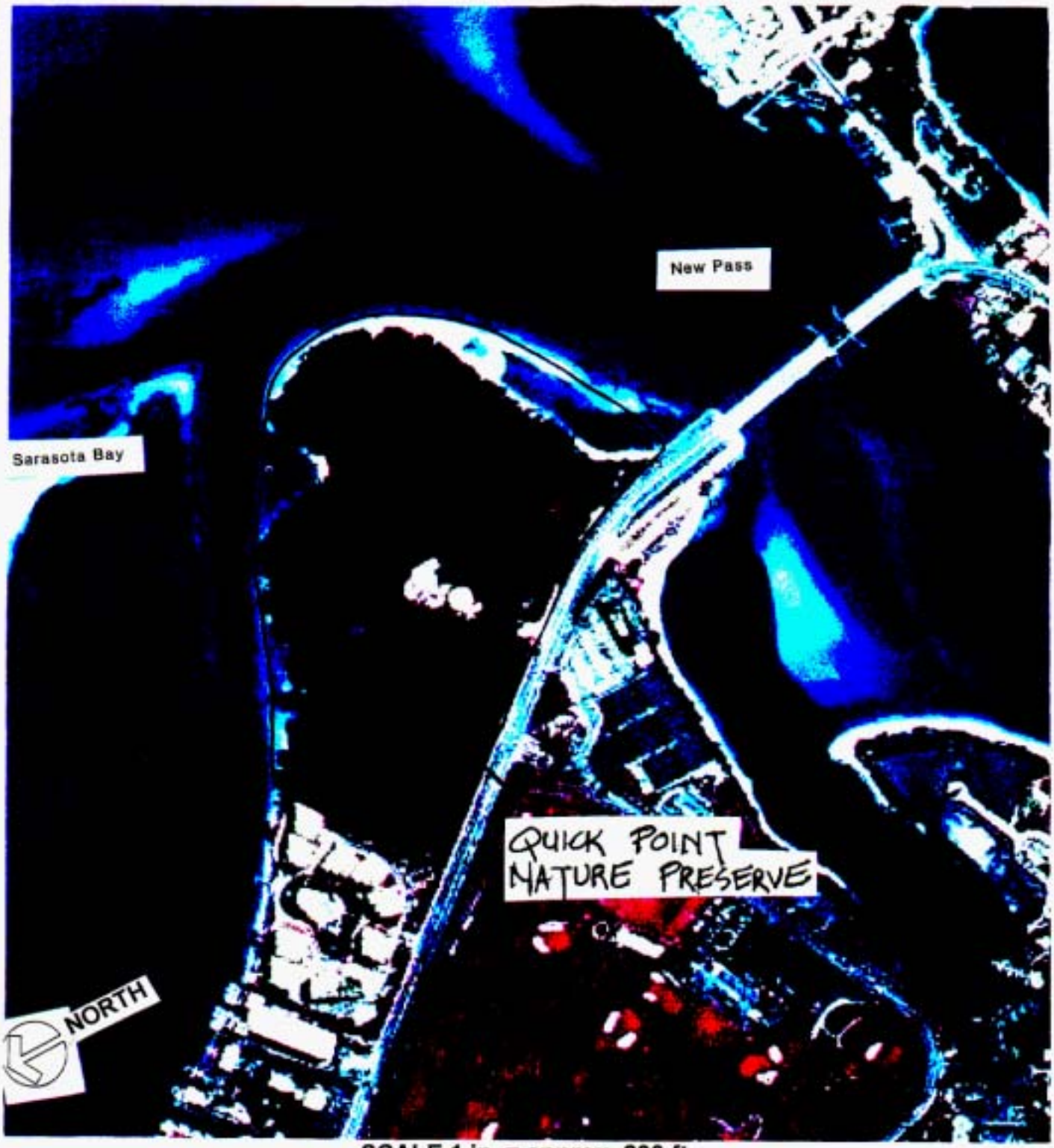
FDOT - District 1
MITIGATION SITE
(Lower Coastal Basin)

QUICK POINT
NATURE PRESERVE
(SW 38)

FIGURE C
HABITAT & PROPOSED
RESTORATION

HABITAT MAP





SCALE 1 in. = approx. 200 ft.

FDOT - District 1 MITIGATION SITE (Lower Coastal Basin)	QUICK POINT NATURE PRESERVE (SW 38)	FIGURE D INFRARED AERIAL (1995)

Restoration effort is a joint project with funding, design, and construction provided by partnering between local, state, and federal programs.

The 0.3 acre intertidal pond has been constructed by removing exotic vegetation and fill material. Mangroves have naturally recruited around the perimeter and there is substantial wildlife use of the lagoons at the Preserve.

FDOT - District 1 Mitigation Site (Lower Coastal Basin)	**Quick Point Nature Preserve (SW 38)**

Within the mangrove areas, spoil adjacent to mosquito ditches have coverage of Australian pine and Brazilian pepper that will be eradicated; once removed, periodic maintenance will keep these species under control.

View from the bridge crossing over New Pass, along the northern perimeter of Quick Point. The light colored, sandy bottom areas depicted above were historically covered with seagrass
Since natural recruitment is so slow, these areas will be replanted with seagrass.

FDOT - District 1 Mitigation Site (Lower Coastal Basin)

Quick Point Nature Preserve (SW 38)

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management District
Mitigation Project Name: **Gateway Restoration** Project Number: **SW 45**
Project Manager: Lizanne Garcia, SWIM Environmental Scientist Phone No: (813) 985-7481 ext. 2204
County(ies): Pinellas Location: Sec. 12, T30S, R16E

IMPACT INFORMATION

(1) FM: 2569051, SR 679 (Bayway), Bunces Bridge	DEP #:52-0148752-001	COE #:199100289 (IP-AM)
(2) FM: 2569571, I-275-Roosevelt to Big Island Gap	ERP #: 43001034.001	COE #:199402523 (IP-ES)
(3) FM: 2556301, SR 60, Courtney Campbell to Fish Creek	ERP #: 43000920.005	COE #:200105084 (IP-MN)
(4) FM: 2570931, SR 60, Clearwater Harbor Bridge Replace.	ERP #: 44021540.001	COE #: 200024966 (IP-TF)
(5) FM: 4062531, SR 686 (Roosevelt) at 49th Street	ERP #:_____	COE #:_____
(6) FM: 2557341, SR 676-Maritime Blvd. to SR 60	ERP #: 4413736.003	COE #:199502501 (IP-ES)
(7) FM: 2583981, I-275, Howard Franklin to Himes Ave.	ERP #:_____	COE #:_____

Drainage Basin: Tampa Bay Drainage Water Body(s): McKay Bay, Bunces Pass, Clearwater Harbor, Boca Ciega Bay, Anclote River, Lake Tarpon, Curlew Creek, Cross Bayou Canal, Fish Creek, Tampa Bay SWIM water body? Y, all referenced water bodies connect to Tampa Bay

Impact Acres/ Type:

(1) FM 2569051
0.10 ac. 540 (Fluccs code)
0.50 ac. 642 (Fluccs code)
TOTAL 0.60 acres

(2) FM 2569571
4.82 ac. 612 (Fluccs code)
3.22 ac. 619 (Fluccs code)
0.53 ac. 641 (Fluccs code)
0.50 ac. 642 (Fluccs code)
0.02 ac. 642x (Fluccs code)
TOTAL 9.09 acres

(3) WPI 2556301
3.70 ac. 540 (Fluccs code)
4.40 ac. 612 (Fluccs code)
4.10 ac. 642 (Fluccs code)
TOTAL 12.20 acres

(4) FM 2570931 1.30 ac. 612 (Fluccs code)
0.20 ac. 642 (Fluccs code)
TOTAL 1.50 acres

(5) FM 4062531 TOTAL 0.20 ac. 612 (Fluccs code)

(6) FM 2557341 1.00 ac. 612 (Fluccs code)
0.50 ac. 619 (Fluccs code)
TOTAL 1.50 ac.

(7) FM 2583981 1.60 ac. 612 (Fluccs code)
0.30 ac. 641x (Fluccs code)
TOTAL 1.90 ac.

TOTAL 26.99 acres

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: ___ Creation X Restoration X Enhancement ___ Preservation Mitigation Area: **96.8 ac.**
Project Site: 176 Acres - Preservation of mangroves (42 acres) not included in the mitigation acreage.

Mitigation:	Saltwater Marsh Restoration	42.93 Acres (Fluccs 642)
	Open Water Inlets & Lagoons	7.78 Acres (Fluccs 540)
	Mangrove Enhancement	42.48 Acres (Fluccs 612)
	Upland Enhancement	3.60 Acres
	Mitigation Area	**96.8 Acres**

SWIM project? Y Aquatic Plant Control project? N Exotic Plant Control Project? Y Mitigation Bank? N
Drainage Basin(s): Tampa Bay Drainage Basin SWIM water body? Y

Project Description

A. Overall project goal: To restore and enhance coastal habitats along publicly-owned (Pinellas County) parcels within the Gateway corridor south of the Howard Franklin Bridge in Pinellas County. The project will remove extensive exotic vegetation that have invaded the entire site, restore the grade of filled wetlands to the appropriate wetland marsh

elevations and plant with native intertidal and estuarine species. This will restore the lost estuarine habitat historically located on the site. The uplands will have eradication of the extensive exotic species and planted with native coastal upland species. Over a third (35.0 acres) of the existing 92-acres of mangrove habitat will be enhanced with initial herbicide treatment (Garlon) of the Brazilian pepper, then backfilling of the mosquito ditches to eliminate the potential for B. pepper regeneration. Mangrove seedlings will naturally recruit and generate within the filled mosquito ditches and adjacent spoil removal areas. Open water and lagoon components will reconnect the estuarine habitat and improve tidal flushing, increasing access for aquatic micro-organisms, fish, and invertebrates throughout the Gateway habitat area.

B. Brief description of current condition: Large portions of the historically pristine mangrove forest and intertidal marsh within the project area have been adversely impacted by dredge & fill activities associated with extensive mosquito ditching, urban development, and highway construction (Figures B & C). The filled upland, transitional wetland habitat, and spoil mounds adjacent to the mosquito ditches have been heavily invaded by exotic vegetation including Brazilian pepper, Melaleuca, and Australian pine.

C. Brief description of proposed work: The site evaluation and design has been completed and construction is scheduled to commence during the summer, 2003. Removal of exotic vegetation from the uplands will be followed by herbicide treatment of the B. pepper on the spoil ridges adjacent to the mosquito ditches. The spoil backfill method will include utilizing high-pressure water hoses to spray and displace the soil back into the mosquito ditches. Proper erosion control measures will be implemented throughout this process to allow grade stabilization. Once the mangrove areas are enhanced, the historic salt-marsh and intertidal zones will be graded and planted to restore those habitats. Then the upland habitat will be enhanced with planting as well.

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): The created intertidal salt-marsh, enhancing existing mangroves, and naturally-generating mangroves will compensate with a substantially larger acreage than the similar proposed habitat impacts. This activity is conducted in conjunction with a larger restoration project, allowing for a greater chance of success and provide the desired fish and wildlife benefits. The total DOT wetland impacts (27 acres) are proposed to be mitigated with habitat enhancement and restoration covering 96.8 acres, a cumulative mitigation ratio of 3.6-to-1 (refer to mitigation table). Approximately 30% (9.1 acres) of the total proposed impact will occur in association with the I-275 project adjacent to the mitigation area, essentially resulting in an on-site mitigation option. There will also be an additional 10 acres of habitat improvements that have not been designated for DOT mitigation purposes as of 2003. These enhancement activities are associated with any additional impacts for the permitted FDOT projects and any additional impacts and associated mitigation required for the remaining two projects to be permitted in the future. No additional DOT projects will be proposed to be mitigated within this first phase of Gateway.

E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: The Tampa Bay Mitigation Bank (TBMB) is located within the Tampa Bay Drainage basin, but had not received permits at the time mitigation selection was conducted. TBMB is not expected to commence selling mitigation credits until at least 2005, after construction of the Gateway project.

F. Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body : Gateway Restoration is a SWIM project.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: A designated Contractor selected by the SWFWMD
Contact Name: Lizanne Garcia, SWFWMD-SWIM, Environmental Scientist Phone Number: (813) 985-7481, ext. 2204
Entity responsible for monitoring and maintenance: SWFWMD or designee

Proposed timeframe for implementation: Commence: Design Complete, 2002 Complete: Construction Summer, 2003 until early 2004; followed by minimimum 3 years maintenance and monitoring.

Project cost: $1,966,785 (total); attach itemized cost estimate
$ 92,000 Design, permitting, and construction monitoring
$1,814,785 Construction & Planting
$ 60,000 Maintenance & Monitoring

Attachments

X 1. Detailed description of existing site and proposed work. Refer to Attach. A - Existing Site & Proposed Work Attachment D - Design Drawings

X 2. Recent aerial photograph with date and scale. Figure B - 1995 infrared aerial.

X 3. Location map and design drawings of existing and proposed conditions. Figure A (Location Map) and Attachment D - Design Drawings

X 4. Detailed schedule for work implementation, including any and all phases. Refer to Attachment B – Schedule

X 5. Proposed success criteria and associated monitoring plan. Refer to Attachment C -Maintenance & Monitoring Plan, Success Criteria.

X 6. Long term maintenance plan. Refer to Attachment C - Maintenance & Monitoring Plan, Success Criteria

X 7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). The attached mitigation table and design plans depict each of the proposed wetland impacts and associated designated mitigation portion at Gateway.

ATTACHMENT A - Existing Site & Proposed Work

The existing first phase of Gateway is 176-acres, covered with 92 acres of mangrove that were historically ditched and drained for mosquito control. As depicted on the 1970 aerial (Figure C - Pinellas Co. Soil Survey), the mangroves were bordered by salt-marsh habitat in the northwest quadrant. The marsh was predominantly filled, as was approximately 11 acres of historic upland habitat in the northwest and southeast quadrants. The filled areas presently have extensive and dense coverage of exotic species, primarily Brazilian pepper and Melaleuca (refer to site photos). Some scattered saw palmetto are still present which will be preserved.

As depicted on the attached design plans, the salt-marsh, open water, and upland habitats are proposed for restoration with a combination of exotics removal, appropriate grading, and planting with native species. The dominant proposed wetland plantings include smooth cordgrass, marshhay cordgrass, sand cordgrass, seaside paspalum, and needle rush. As part of the proposed DOT mitigation requirements, a minimum 35-acres of the 92-acre mangrove habitat will also be enhanced. Historically, enhancing and restoring mangrove habitat with mosquito ditching has been a very problematic procedure. Unless continuously maintained, cutting Brazilian pepper from the spoil mounds is only a temporary solution since they will regenerate as long as the spoil is still

present. To rid a mangrove area of exotics without continuous maintenance, the spoil mounds have to be removed by regrading back into the mosquito ditches. However, utilizing construction equipment can often result in mangrove impacts due to the entangled pepper and mangrove. The pepper roots also firmly hold the spoil material, made up of shell, sand, and limerock. This limits the use of small grader equipment. As a result of these problems, the agencies associated with saltwater habitat enhancement have essentially avoided attempting to restore mosquito ditch systems in the last decade.

In recent years, a new method of spoil removal has been implemented with success in Texas. The 35-acres of mangrove habitat will have pressurized saltwater pumped through a fire hose to force out the majority of shell, sand, and rock into the ditches. As with the entire project, staked silt screens and/or hay bales will be used to control sedimentation. This grading method will allow tides to evenly sheet flow under the mangroves and eliminate the opportunity for pepper regeneration. In addition to herbicide application of pepper, the salt water will also reinforce pepper mortality, and the pepper debris will decay in place. The pepper mortality will allow sunlight to penetrate, and mangrove seedlings will generation in place of peppers.

This method of exotics removal has not been attempted before under the SWIM program. The use of pumps, access around the mangroves, water pressure requirements, and sedimentation control will be evaluated as part of this restoration method. If this method appears to be a viable ecological alternative to construction equipment within the mangroves, other areas at Gateway and additional SWIM projects will potentially use this method to enhance and restore mangrove habitat.

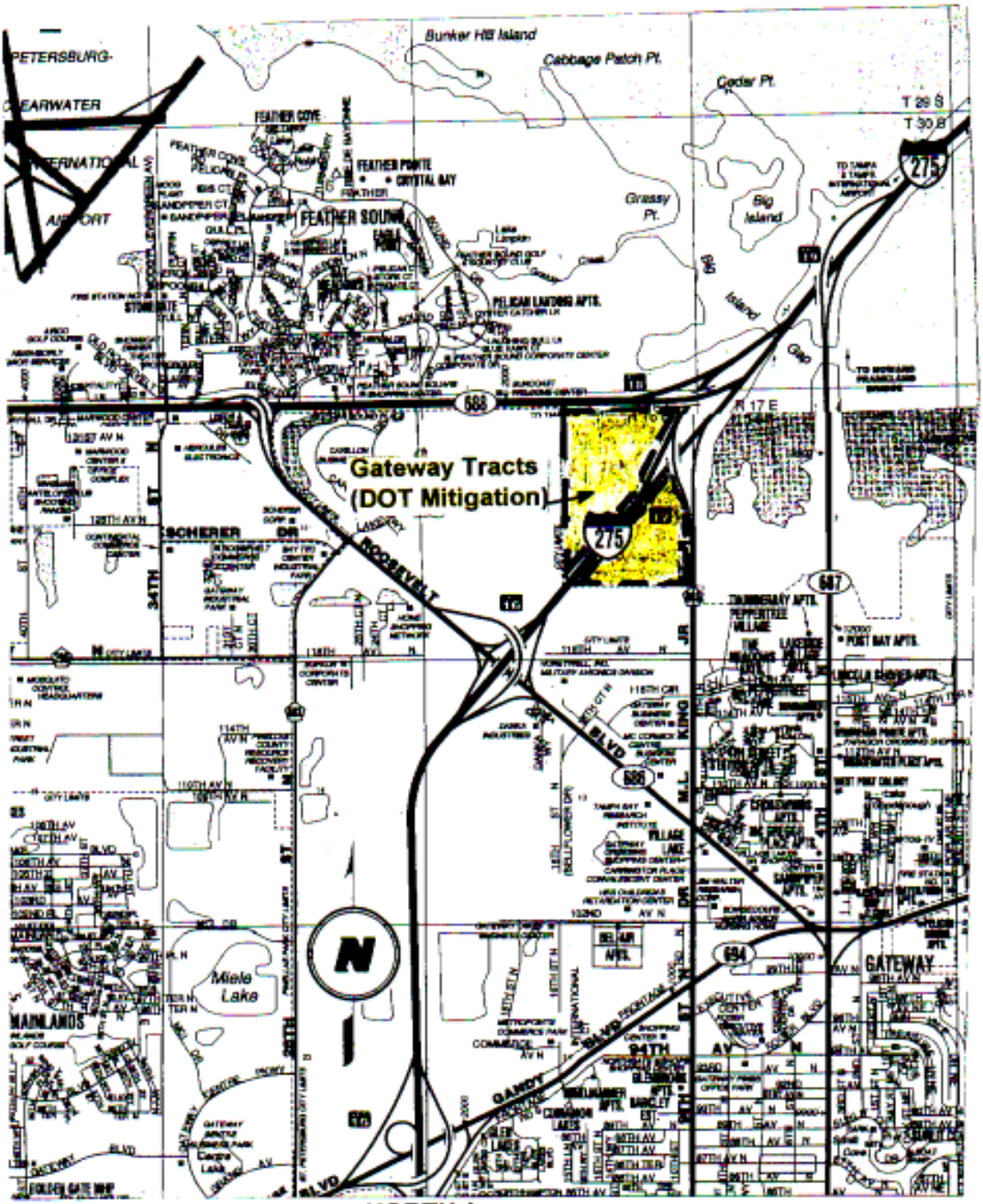
ATTACHMENT B - Schedule

The design is complete and a contractor who specializes in habitat restoration projects has been selected to conduct the construction, scheduled to commence during the summer, 2003, and be finished by mid 2004. A minimum 3-year period of maintenance & monitoring will extend beyond the construction period. Perpetual maintenance will be conducted as needed after the monitoring period.

ATTACHMENT C - Maintenance & Monitoring Plan, Success Criteria

The mitigation is associated with a larger restoration objective for the Gateway land jointly purchased by the WMD and Pinellas County (Figure B). The maintenance of the project is expected to be minimal. For estuary restoration projects, with proper construction of appropriate wetland grades to allow for sufficient tidal action, the planted vegetation will survive and recruit throughout the site. Maintenance will primarily be related to control of debris from the site and conducting supplemental planting. Salt water limits the re-establishment of exotic vegetation that is more of a concern with freshwater restoration projects. However, the control of nuisance/exotic vegetation within the restored upland area will be a concern and be maintained through use of herbicide application. Maintenance will be conducted as needed, expected to be quarterly for the first year after planting, and at least semi-annually thereafter for a minimum of three years. After three years, maintenance activities will be conducted as needed to maintain the success criteria. Inspections on a semi-annual basis are anticipated to evaluate vegetative conditions, debris, and any nuisance/exotic vegetation. After each inspection, proper maintenance activities will be conducted to correct any problems.

Monitoring will be conducted semi-annually for three years post-construction. Annual reports will be conducted to document habitat conditions and various activities implemented during the previous year. The first monitoring report will include documentation (qualitative information, site photos, etc.) of pre-construction habitat conditions. This report will also designate the monitoring station locations utilized for the entire monitoring period. However, site conditions will be annually documented for the entire site, not just for the monitoring station locations. The success criteria includes a minimum 90% survivorship for planted material for one year after planting and a total 85% cover of planted and recruited desirable species. The natural recruitment and generation of mangroves are anticipated to occur within portions of the planted salt marsh habitat.



NORTH ^

SCALE 1.7 in. = 1 mile

FDOT - District 7 MITIGATION SITE (Tampa Bay Drainage Basin)	GATEWAY TRACT (SW 45)	FIGURE A LOCATION MAP

FDOT Impacts and Mitigation

Gateway Tract Restoration Site
Tampa Bay Drainage Basin
SW 45 (Updated 7/15/03)

Project No.	Project Name	WPI	FM	USACOE Permit No.	Total Impact Acreage	Impact Acreage	Impact Habitat Type (FLUCFCS)	Mitigation Ratio	Mitigation Acreage	Mitigation Type
1	SR 679 (Bayway) - Bunces Pass Bridge #150	7116992	2569051	199100289	0.60	0.10	540 - Bays & Estuaries	2 to 1	0.20	Open Water Restoration
						0.50	642 - Saltwater Marsh	2 to 1	1.00	Saltwater Marsh Restoration
2	I-275 - Roosevelt to Big Island Gap	7147874	2588701	199402523	9.09	4.82	612 - Mangrove	4 to 1	17.28	Mangrove Enhancement
						3.22	619 - Exotic Hardwood	2 to 1	6.44	Saltwater Marsh Restoration
						0.50	642 - Saltwater Marsh	2 to 1	1.00	Saltwater Marsh Restoration
						0.02	642x - Saltwater Marsh	5 to 1	0.10	Upland Enhancement
						0.53	641 - Freshwater Marsh	2 to 1	1.06	Saltwater Marsh Restoration
3	SR 60, Courtney Campbell to Fish Creek		2556301	200205816	12.20	3.70	540 - Bays & Estuaries	2 to 1	6.60	Open Water Restoration
									0.90	Saltwater Marsh Restoration
						4.40	612 - Mangrove	5 to 1	11.60	Mangrove Enhancement
									9.70	Saltwater Marsh Restoration
						4.10	642 - Saltwater Marsh	3 to 1	11.53	Saltwater Marsh Restoration
									2.00	Upland Enhancement
4	SR 60, Clearwater Harbor Bridge Replacement		2570931	200004966	1.50	0.20	540 - Bays & Estuaries	2 to 1	0.98	Open Water Restoration
						1.30	612 - Mangrove	3 to 1	3.00	Mangrove Enhancement
5	SR 686 (Roosevelt) at 49th Street		4062531	-	0.20	0.20	612 - Mangrove	12 to 1	2.40	Mangrove Enhancement
6	SR 676 - Maritime Blvd. to SR 60	7113975	2557341	199502501	1.50	1.00	612 - Mangrove	4 to 1	4.00	Mangrove Enhancement
	(SR 45, Causeway Blvd & US 41, Licata Bridge)					0.50	619 - Exotic Hardwood	2 to 1	1.00	Saltwater Marsh Restoration
7	I-275 - Howard Franklin to Himes		2583981	-	1.90	1.60	612 - Mangrove	8 to 1	4.20	Mangrove Enhancement
									10.30	Saltwater Marsh Restoration
						0.30	641x - Freshwater Ditch	5 to 1	1.50	Upland Enhancement
TOTAL					26.99	26.99		3.6 to 1(avg.)	96.79	

FDOT Impacts by Habitat Type

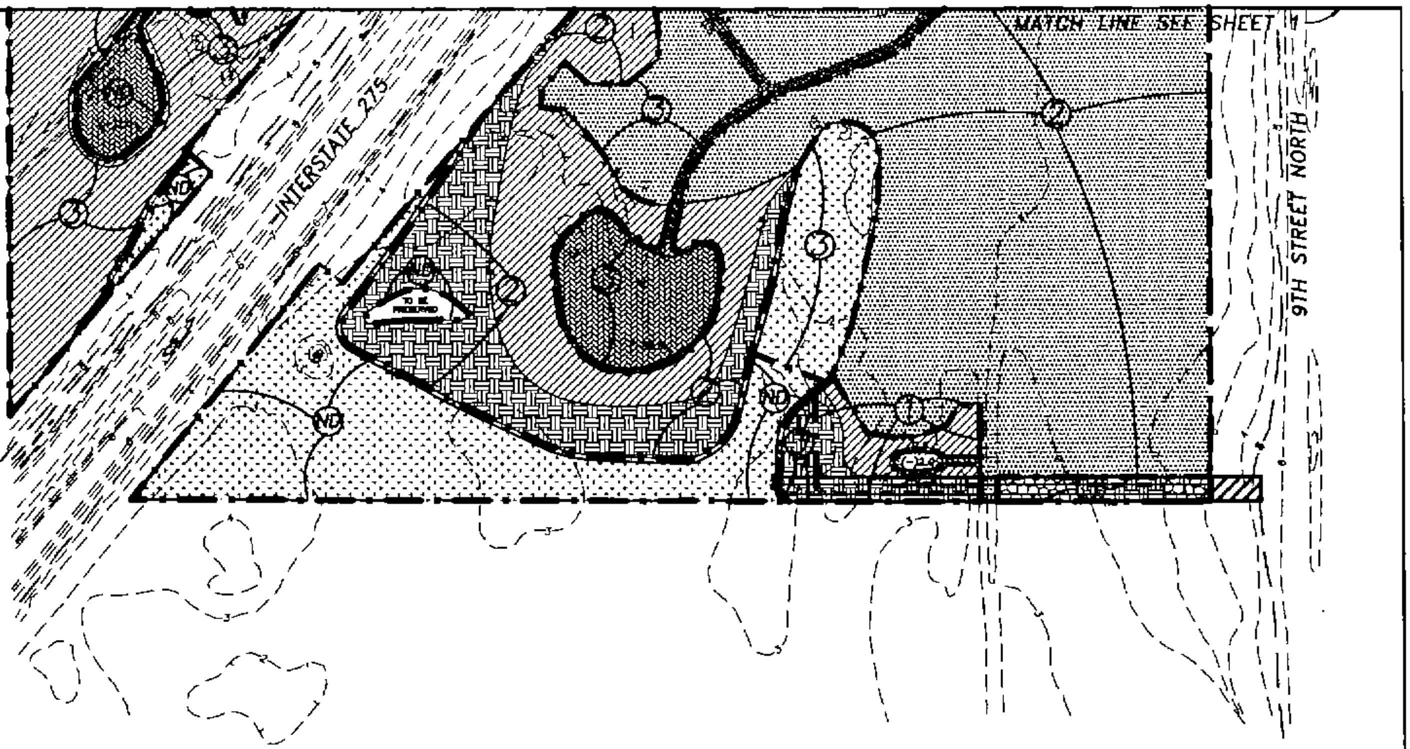
540 - Bays & Estuaries	4.00
612 - Mangrove	13.32
619 - Exotic Hardwood	3.72
641 - Freshwater Marsh	0.53
641x - Freshwater Ditch	0.30
642 - Saltwater Marsh	5.10
642x - Freshwater Ditch	0.02
TOTAL	26.99

Gateway Mitigation Acreage

Total Open Water	10.63
Total Mangrove Enhancement	42.50
Total Saltwater Marsh	42.93
Total Upland Enhancement	10.25
TOTAL	106.31

Mitigation Acreage Committed To FDOT

Total Open Water	7.78
Total Mangrove Enhancement	42.48
Total Saltwater Marsh	42.93
Total Upland Enhancement	3.60
TOTAL	96.79



FDOT MITIGATION APPROPRIATION		
FDOT PROJ. ID	FDOT PROJECT NAME	ACOE PERMIT NO.
1	SR 679 (BAYWAY) – BUNCES PASS BRIDGE #150	199100289
2	I–275, ROOSEVELT BLVD. TO BIG ISLAND GAP	199402523
3	SR 60, COURTNEY CAMPBELL TO FISH CREEK	–
4	SR 60, CLEARWATER HARBOR BRIDGE REPLACEMENT	200004966
5	SR 686 (ROOSEVELT BLVD.) AT 49TH STREET	–
6	SR 676, MARITIME BLVD. TO SR 60	199502501
7	I–275, HOWARD FRANKLIN TO HIMES	–

LEGEND

- — 2 — EXISTING 1 FOOT CONTOUR
- — 5 — EXISTING 5 FOOT CONTOUR
- PROPOSED CENTER LINE OF CHANNEL
- — 2.0 — PROPOSED CONTOUR
- EXISTING RIGHT OF WAY
- PROJECT ALLOCATION BOUNDRY
- (1) F.D.O.T. PROJECT I.D. NUMBER
- (ND) NOT DESIGNATED FOR F.D.O.T. MITIGATION

- MANGROVE SWAMP TO BE ENHANCED
- ZONE 1 (EL. (–)2.0 TO 0.5) OPEN WATER & WATER WAY
- ZONE 2 (EL. 0.5 TO 1.5) SALTWATER MARSH
- ZONE 3 (EL. 1.5 TO 2.0) SALTWATER MARSH
- ZONE 4 (EL. 2.0 TO 3.0) SALTWATER MARSH
- ZONE 5 (EL. 3.0 TO NG) UPLAND – SOD
- ZONE 6 UPLAND – NUISANCE SPECIES REMOVAL

0 100 200 400
Scale in feet

PURPOSE: MITIGATION/RESTORATION
DATUM: NGVD 1929

SWFWMD
GATEWAY TRACT

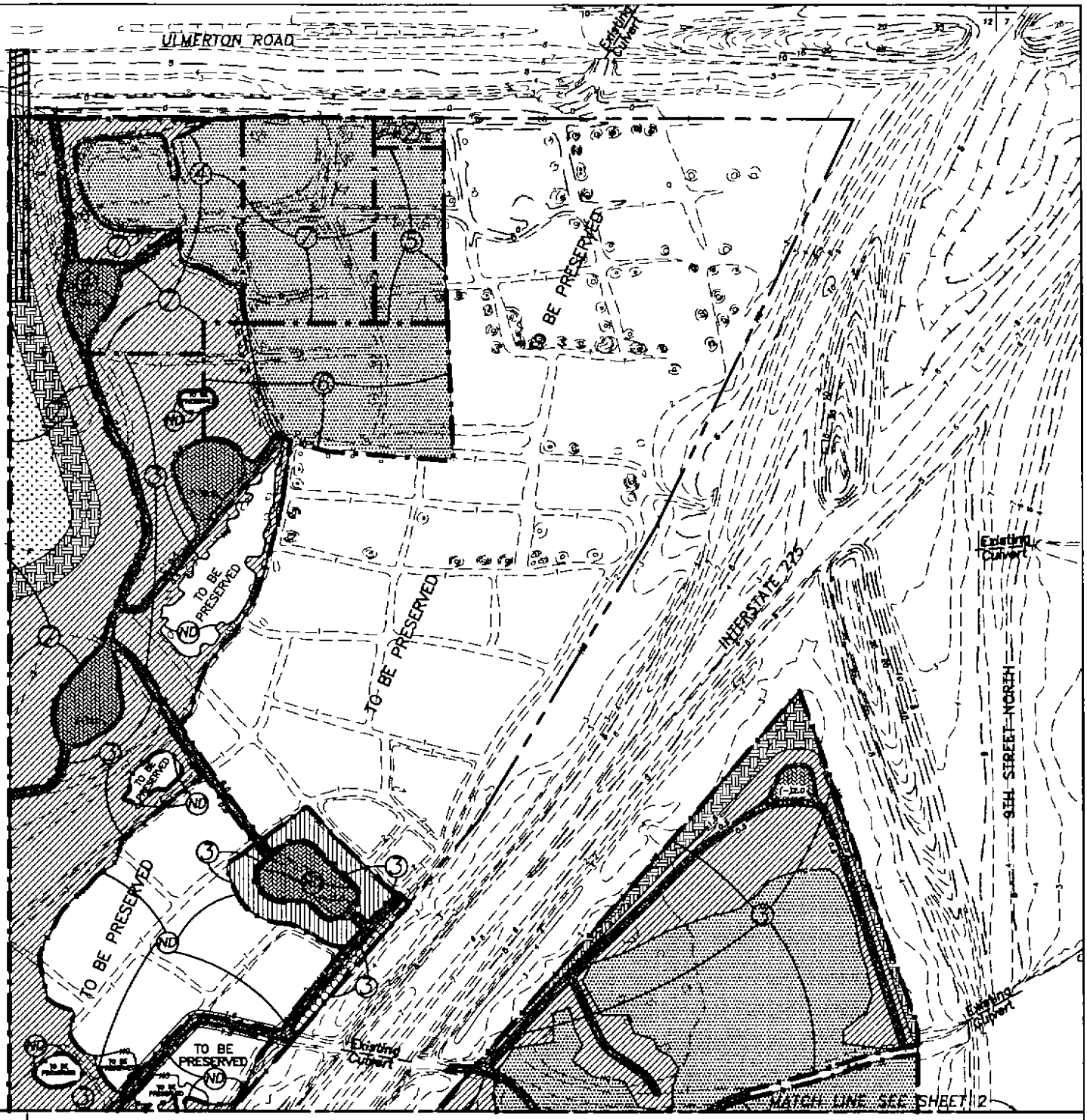
F.D.O.T.PROJECT APPROPRIATION MITIGATION PLAN

IN: TAMPA BAY
AT: ULMERTON ROAD & I–275
COUNTY OF: PINELLAS STATE OF: FLA.
APPLICATION BY: SWFWMD

SHEET 2 OF 2 DATE: JULY, 2002

FOR PERMIT PURPOSES ONLY

Prepared by: URS Corporation Southern



FOR LEGEND SEE SHEET 2

0 100 200 400
Scale in feet

PURPOSE: MITIGATION/RESTORATION
DATUM: NGVD 1929

SWFWMD
GATEWAY TRACT

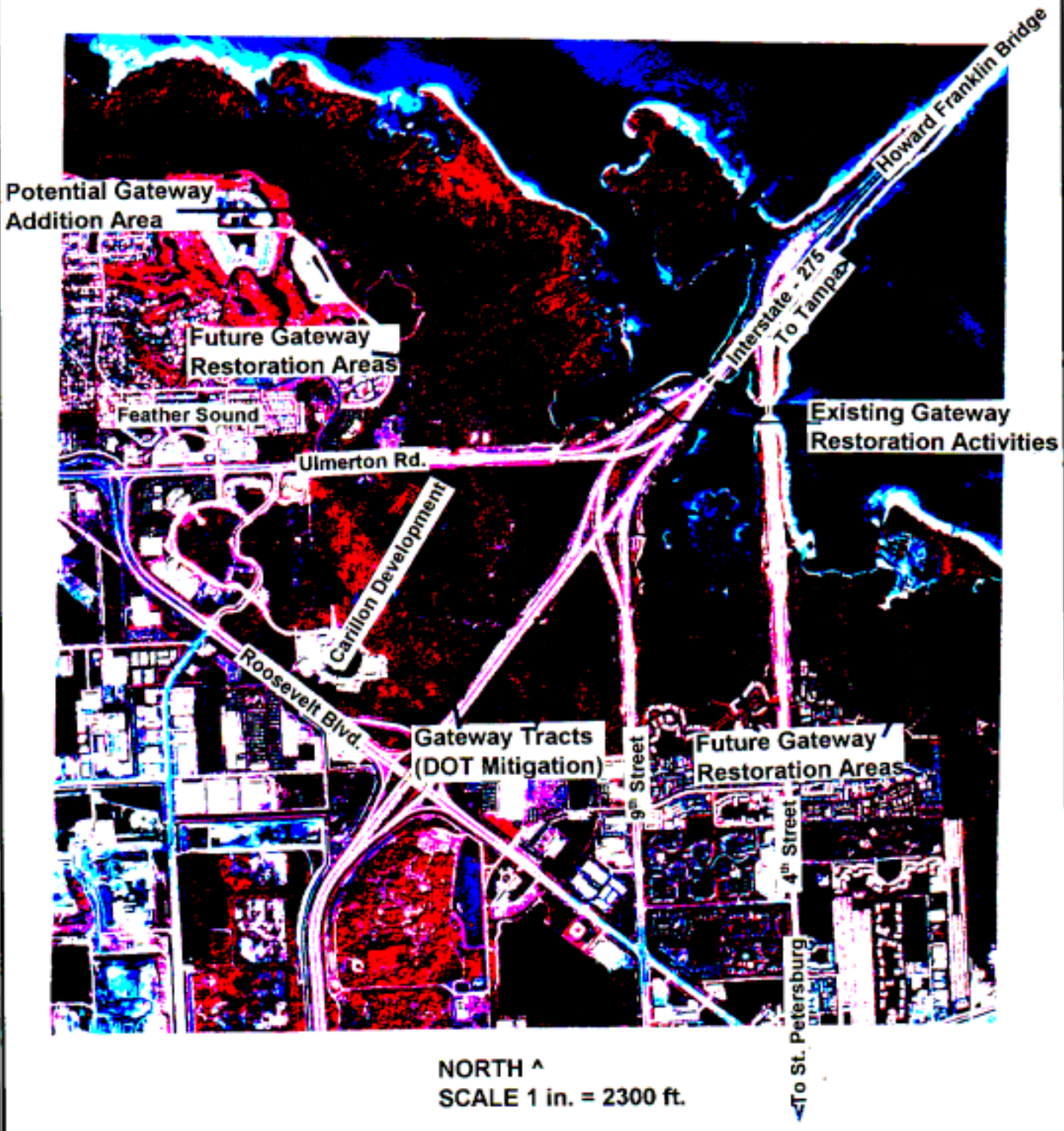
FOR PERMIT PURPOSES ONLY

F.D.O.T. PROJECT APPROPRIATION MITIGATION PLAN

IN: TAMPA BAY
AT: ULMERTON ROAD & I-275
COUNTY OF: PINELLAS STATE OF: FLA.
APPLICATION BY: SWFWMD

SHEET 1 OF 2 DATE: JULY, 2002

Prepared by: URS Corporation Southern



FDOT - District 7 MITIGATION SITE (Tampa Bay Drainage Basin)	GATEWAY TRACT (SW 45)	FIGURE B INFRARED AERIAL (1995)

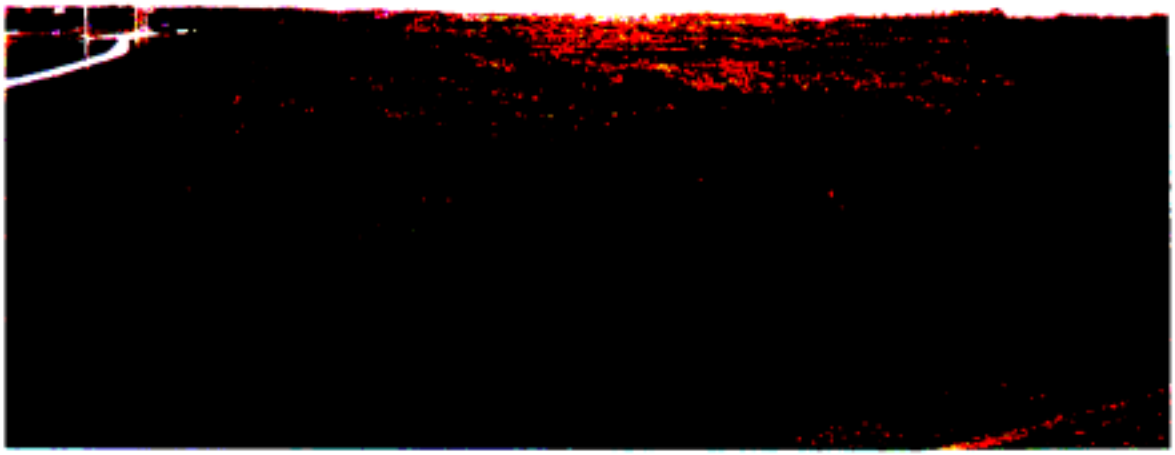
The remnant upland habitat at Gateway includes a dominance of Brazilian pepper and Melaleuca that will be removed as part of the enhancement plan.

Higher elevation view from the Carillon Development along the western boundary of the Gateway Tract. The western and southern perimeter of the two DOT mitigation tracts (Figure B) are uplands that still have saw palmetto and other native species interspersed with the exotic/nuisance vegetation.

FDOT - District 7 Mitigation Site
(Tampa Bay Drainage Basin)

GATEWAY TRACT (SW 45)

The major ditch that tidally connects the northern mitigation tract to the channel north of Ulmerton Road. Restored wetlands adjacent to the enhanced uplands will be tidally connected to this ditch with small channels.



View from the Ulmerton Rd. bridge of the northern mitigation tract. The tidal area has a dominance of B. pepper on the mosquito ditch spoil mounds, mangroves within the remaining area. The western boundary of the northern tract is located at the higher treeline and building to the right, eastern boundary at I-275 to the left.

FDOT - District 7 Mitigation Site (Tampa Bay Drainage Basin)	GATEWAY TRACT (SW 45)

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District: Southwest Florida Water Management District
Mitigation Project Name: **Tenoroc/Saddle Creek Restoration** Project Number: **SW47**
Project Manager: Bud Cates – DEP Program Administrator Phone No: (850) 488-8217
County(ies): Polk Location: Sections 29,30,31,32 T27S, R24E

IMPACT INFORMATION

(1) FM: 2012092, Int.- 4, US 98 to CR 557 (Seg. 3-5)* ERP #: 43011896.026 COE #: 200204891 (IP-MGH)
(2) FM: 1974751, SR 540, Thornhill Rd. to Recker Hwy. ERP #: 4401612.000 COE #: 199401950
(3) FM: 1974711, SR 540, 9th St. to Overlook Dr. ERP #: 4417859.000 COE #: 199403139

Drainage Basin(s): Peace River Water Body(s): None SWIM water body? N

Impact Acres / Types:

(1) FM 2012092
0.10 ac. – 510 (Fluccs code)
1.79 ac. – 611 (Fluccs code)
TOTAL 1.89 Acres

(2) FM 1974751
0.59 ac. – 610 (Fluccs code)
0.33 ac. – 611 (Fluccs code)
2.86 ac. – 615 (Fluccs code)
1.35 ac. – 617 (Fluccs code)
0.74 ac. – 641 (Fluccs code)
TOTAL 5.87 Acres

(3) FM 1974711
0.06 ac. -- 640 (Fluccs code)
0.35 ac. – 644 (Fluccs code)
TOTAL 0.41 Acres

TOTAL: 8.17 acres

*Note: The I-4 project also has 18.95 wetland impact acres within the Withlacoochee River Basin, those anticipated impacts are proposed to be mitigated at the Hampton Tract (SW 59).

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: X Creation _ Restoration __Enhancement ___ Preservation Mitigation Area: **25.1 acres**
SWIM project? N Aquatic Plant Control project? N Exotic Plant Control Project? N Mitigation Bank? N
Drainage Basin(s): Peace River Water body(s): Saddle Creek Headwaters SWIM water body? N

Project Description

A. Overall project goal: Restoration, enhancement, and creation of wetland & upland habitat on land previously altered by phosphate mining. Establishment of hydrologic, vegetative, and wildlife corridors through the Tenoroc Management Area and adjacent Bridgewater addition. Establishment of appropriate water quantity, flow regimes, and water quality improvements to Saddle Creek and Lake Parker, thus enhancing headwater flows to the Peace River. The watershed improvements and mitigation activities are being conducted through a joint ecosystem management initiative managed by the FFWCC and FDEP.

B.Brief description of current condition: Reclaimed phosphate mined land of various landscape features constructed by various clay/sand disposal and earthwork methods. In 2002, the southern portion of the Bridgewater property (Figures B & C) was publicly acquired by the FFWCC as an addition to Tenoroc. Tenoroc and Bridgewater contain numerous man-made lakes and substantial upland ruderal areas dominated by opportunistic species such as bahia grass, salt-bush, wax myrtle, and exotic species such as cogon grass and Brazilian pepper. The proposed DOT mitigation area is within the recently acquired portion of southern Bridgewater, adjacent to the western boundary of the property. The designated mitigation area is within an upland fallow field between a few man-made lakes, and minimal acreage of low quality marshes that naturally generated on top of the reclamation areas.

C. Brief description of proposed work: The mitigation is a 25.1acre wetland creation area to be constructed in 2004 and 2005 (refer to Fig. D). An outer facultative zone of forested wetland creation includes a planting plan dominated by red maple and bald cypress, with additional species including popash, sweetgum, laurel oak, water hickory, buttonbush and blackgum. An inner obligate forested zone includes a dominance of bald cypress, with additional coverage provided by popash, red maple, buttonbush, and blackgum. The ground coverage of the forested components will include a dominance of soft rush, pickerelweed, and arrowhead. Three obligate pockets of created marsh habitat will include a dominance of pickerelweed, arrowhead, bulrush, and fireflag. The marsh pockets will be connected with shallow creek tributaries that will maintain proper hydraulic flow throughout the wetland system. Herbs will be planted on three ft. centers, trees on ten ft. centers. Once wetland construction and planting is complete, there will be a minimum 5 years of maintenance & monitoring activities.

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): All the proposed DOT wetland impacts will occur within the upper watershed of the Peace River in Polk County. The majority of the proposed wetland impacts (6.33 acres, approx. 77%) will be to forested wetland systems. Those wetland impacts will be mitigated by the creation of forested wetlands (21.4 acres, 3.4-to-1 ratio). The non-forested wetland impacts (1.84 acres) will be mitigated with the creation of marshes (3.7 acres, 2-to-1 ratio). The 25.1 acres of wetland mitigation will occur within a larger habitat plan that will include upland and wetland creation, restoration, and enhancement .

E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: There is currently only one permitted mitigation bank selling credits within the Peace River Basin, Boran Ranch (DeSoto County) is located within the lower portion of the Peace Basin. To mitigate the hydrologic and vegetative characteristics of the proposed FDOT wetland impacts in the upper basin, the restoration plan associated with Tenoroc will more appropriately compensate for those impacts. The majority of the proposed FDOT impacts are associated with forested wetlands, whereas Boran Ranch is predominantly a non-forested wetland restoration project. As of 2003, Boran Ranch (SW 53) is providing mitigation for approximately 20 acres of FDOT wetland impacts, providing $670,500 to the mitigation bank.

F.Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body : There are currently no proposed SWIM projects in the Peace River Basin that are appropriate to mitigate for the proposed wetland impacts.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: Contractor selected by FDEP
Contact Name: Bud Cates (FDEP) Phone Number: (850) 488-8217
Entity responsible for monitoring and maintenance: DEP/FFWCC

Proposed timeframe for implementation: Commence: 1998 (evaluation & design) Complete: 2004-05 (construction, followed by minimum 5 years of maintenance & monitoring)

Project cost: $650,000 (total) Includes design, construction & planting, maintenance & monitoring for minimum five years. Perpetual management & maintenance to be conducted by the FFWCC.

Attachments

X 1. Detailed description of existing site and proposed work. Refer to previous description.

X 2. Recent aerial photograph with date and scale. Refer to attached 1995 infrared aerials (Figs. C & D).

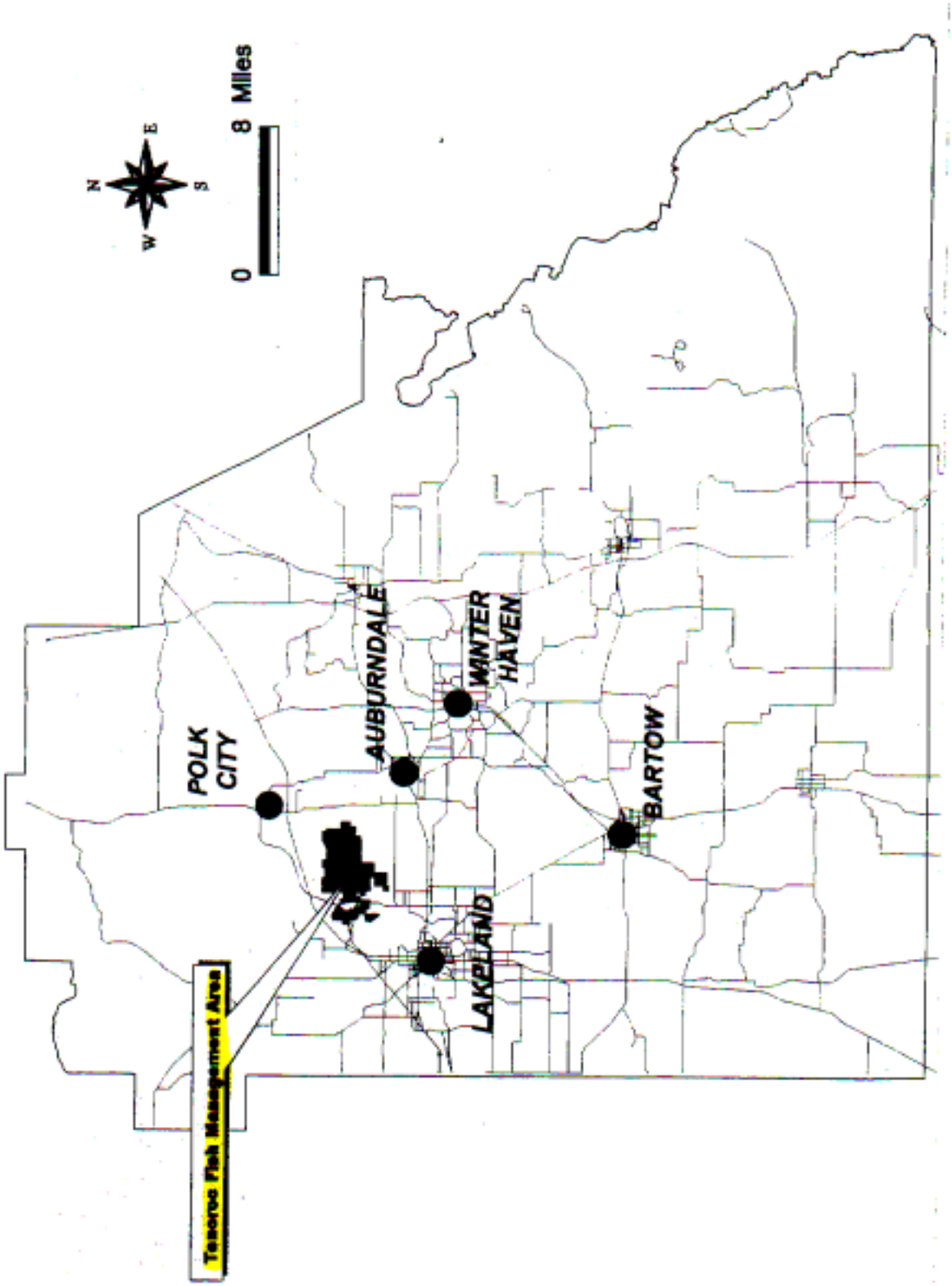
X 3. Location map and design drawings of existing and proposed conditions. Refer to Figs. A, B for location map, Figures C & D for proposed wetland creation area.

X 4. Detailed schedule for work implementation, including any and all phases. Design & permitting will be finalized in late 2003, construction conducted in 2004-2005, followed by a minimum 5-years maintenance & monitoring.

X 5. Proposed success criteria and associated monitoring plan. The monitoring will include qualitative habitat evaluations within the created wetland. Habitat evaluations will be conducted semi-annually for a minimum 5-years post construction. These evaluations will include documentation of vegetative, wildlife, and hydrologic conditions. Additional information on maintenance activities and success trends will also be reported. The two semi-annual evaluations each year will be compiled into annual monitoring reports for WMD and ACOE submittals. Success criteria will require a minimum 90% survivorship of planted stock. Maintenance activities (herbicide treatment) are required to maintain less than 10% cover of exotic, nuisance, and undesirable species. Vegetative cover of planted and naturally recruited vegetative cover will exceed 85% at the end of the 5-year monitoring period. Canopy cover of forested wetlands will exceed 30% by the end of the monitoring period, measuring only trees that exceed a height of 10 ft. It may be necessary to extend the monitoring periods beyond the 5-years to document that success criteria is met.

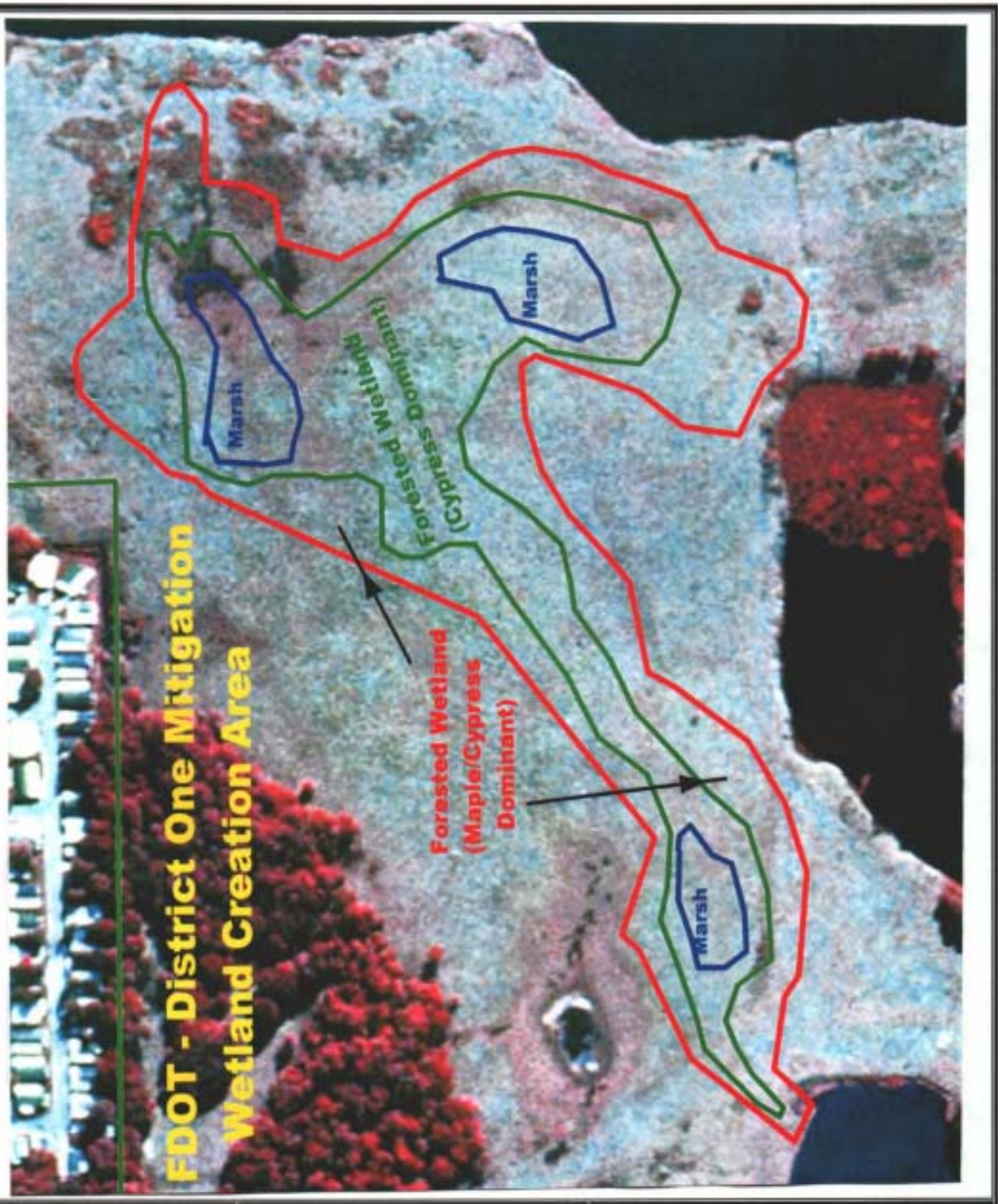
X 6. Long term maintenance plan. Maintenance will include herbicide control of nuisance, exotic, and undesirable species for a minimum 5 years and until the success criteria is met. After the 5 years, the FFWCC will be responsible to periodically conduct additional herbicide maintenance as necessary to guarantee these same success criteria are being met.

X 7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). Refer to the previous response under Comment D. Additional wetland habitat creation activities at Tenoroc and/or Bridgewater are proposed as mitigation for wetland impacts associated with the Turnpike construction of the Polk Parkway. This additional mitigation is separate from the FDOT mitigation program.



FDOT - District 1 MITIGATION SITE (Peace River Basin)	TENOROC / SADDLE CK. RESTORATION PROJECT (SW 47)	FIGURE A LOCATION MAP

FDOT – District 1 MITIGATION SITE (Peace River Basin)	TENOROC / SADDLE CREEK RESTORATION PROJECT (SW 47)	FIGURE B – Infrared Aerial (1995) Tenoroc Tract & Project Area Scale 1 in. = 6714 ft. < North



FDOT – District 1 MITIGATION SITE (Peace River Basin)	TENOROC / SADDLE CREEK RESTORATION PROJECT (SW 47)	FIGURE C – Infrared Aerial (1995) Wetland Creation Mitigation Scale 1 in. = 250 ft. < North

FDOT – District 1 MITIGATION SITE (Peace River Basin)	TENOROC / SADDLE CK. RESTORATION PROJECT (SW 47)	FIGURE D – 1995 Infrared Aerial Bridgewater Wetland Creation & Designated DOT Mitigation Locations Scale 1 in = 760 feet, <North

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management District
Mitigation Project Name: **Reedy Creek Mitigation Bank** Project Number: **SW 49**
Project Manager: Kathy Odom Phone No: 407-719-3194
County(ies): Polk, Osceola Location: Sec. 7,17,20,29,31,32 T26S, R28E

IMPACT INFORMATION

1 – FM 1945101, US 27-Lake Glenada to Hal McRae ERP #: 4412845.06 COE #: 199342314
2 - FM 2012092, I-4, CR 557 to Osceola County (Seg. 6, 7,9) * ERP #:_____ COE #: _____

Drainage Basin: Kissimmee Ridge Water Body(s): None SWIM water body? N
Impacts / Types:

1 - FM 1945101	0.34 ac. 640 (Fluccs)	2-FM 2012092	1.17 ac. 617 (Fluccs)
	0.05 ac. 611 (Fluccs)		0.82 ac. 630 (Fluccs)
TOTAL:	0.39 ac.		1.99 acres

TOTAL 2.38 Acres

* The majority of the proposed wetland impacts associated with I-4 are within the Ocklawaha basin (4.32 acres mitigated at SW 76-Lake Lowery Tract) and the Withlacoochee basin (3.55 acres mitigated at SW 59 – Hampton Tract).

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: ___ Creation _X_ Restoration _X_ Enhancement ___ Preservation Mitigation Area: **2.38 Credits**
SWIM project? N Aquatic Plant Control project? N Exotic Plant Control Project? N

Mitigation Bank? Y If yes, give DEP/WMD mitigation bank permit #: 970819-11 COE # 199507852 (IP-ME)
Drainage Basin(s) : Kissimmee Ridge Water Body(s): Reedy Creek SWIM water body? N

Project Description

A. Overall project goal: Hydrologic enhancement of forested floodplain wetlands associated with Reedy Creek, restore upland improved pastures into native flatwoods habitat.

B. Brief description of current condition: The Reedy Creek Mitigation Bank covers approximately 3500-acres in northeast Polk County and southwest Osceola County. Reedy Creek Swamp is a high quality wetland system, however, has been historically logged for cypress and some alterations to hydrologic conditions. The upland area along the eastern border of the swamp was converted to improved pasture, but being restored to pine flatwoods habitat to provide a habitat buffer to Reedy Creek Swamp.

C. Brief description of proposed work: Hydrologic connections to Reedy Creek Swamp have been restored and the upland pasture has been converted to flatwoods habitat with a combination of bahiagrass eradication and implementing a native species planting and seed relocation program.

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): The mitigation bank adequately compensates for the minor wetland impacts with the combination of wetland enhancement and upland restoration.

Mitigation Project – Reedy Creek Mitigation Bank, Page 2 of 2

E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: Reedy Creek is a cost-effective mitigation bank that appropriately compensates for the proposed wetland impacts.

F. Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body : There are no existing or proposed SWIM projects in this basin.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: Reedy Creek Mitigation Bank
Contact Name: Kathy Odom Phone No: 407-719-3194

Entity responsible for monitoring and maintenance: Reedy Creek Mitigation Bank
Proposed timeframe for implementation: Commence: _____Complete: Currently Maintenance & Monitoring

FM 1945101 - $ 13,650 ; ($35,000 cost/credit x 0.4 impact acres, Credits purchased Fall, 2001)
FM 2012092 - $ 65,471 ; ($32,900 cost/credit x 1.99 impact acres, Anticipated purchase, Winter, 2003)
TOTAL $ 79,121

Attachments

__X__1. Detailed description of existing site and proposed work. Refer to previous discussion.

__X__2. Recent aerial photograph with date and scale. Figure B – 1995 Infrared Aerial.

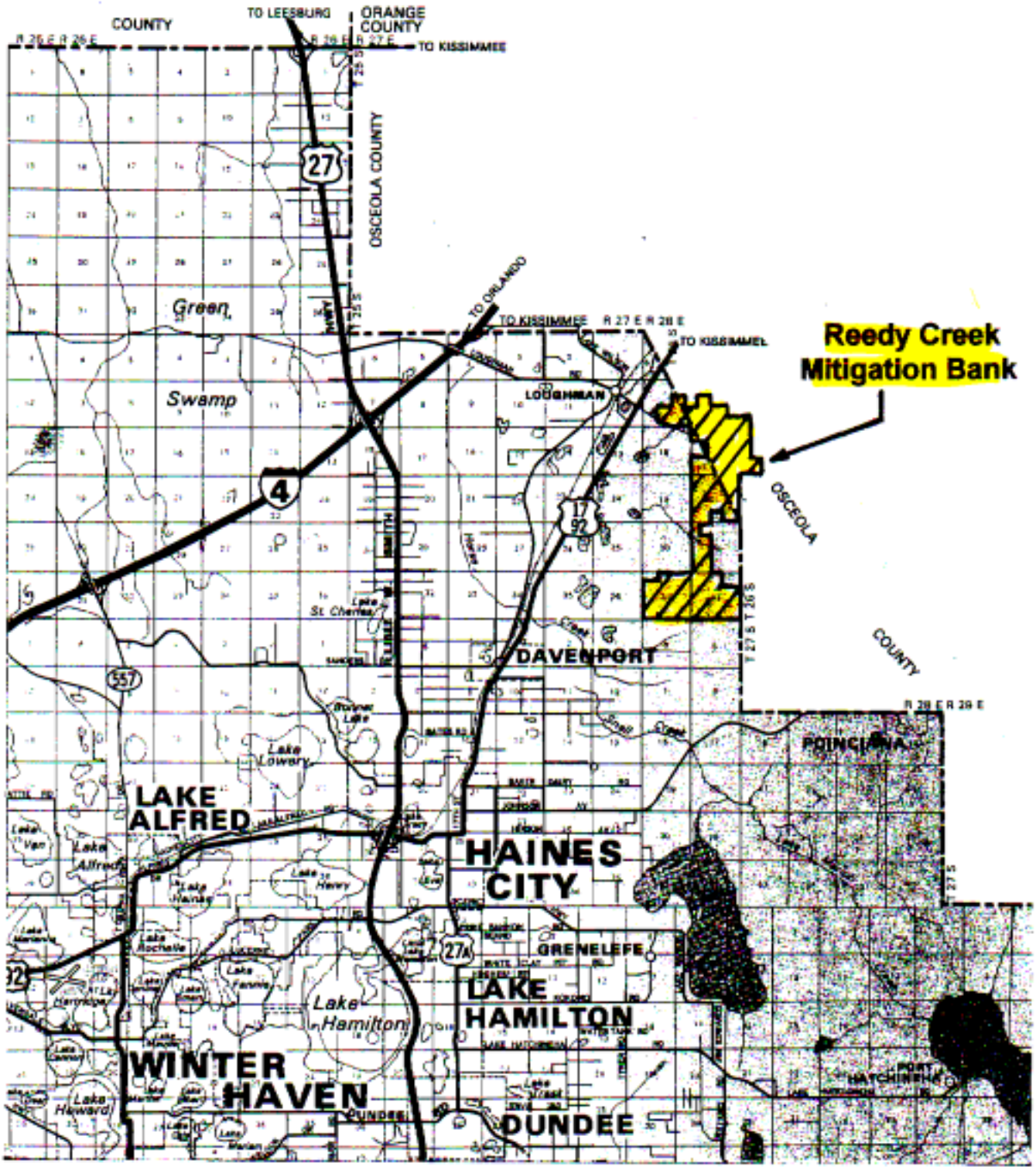
__X__3. Location map and design drawings of existing and proposed conditions. Figure A – Location Map, Figure B depicts wetland enhancement & preservation, upland restoration areas.

__X__ 4. Detailed schedule for work implementation, including any and all phases. Currently maintenance & monitoring activities.

__X__5. Proposed success criteria and associated monitoring plan. Reference permit conditions.

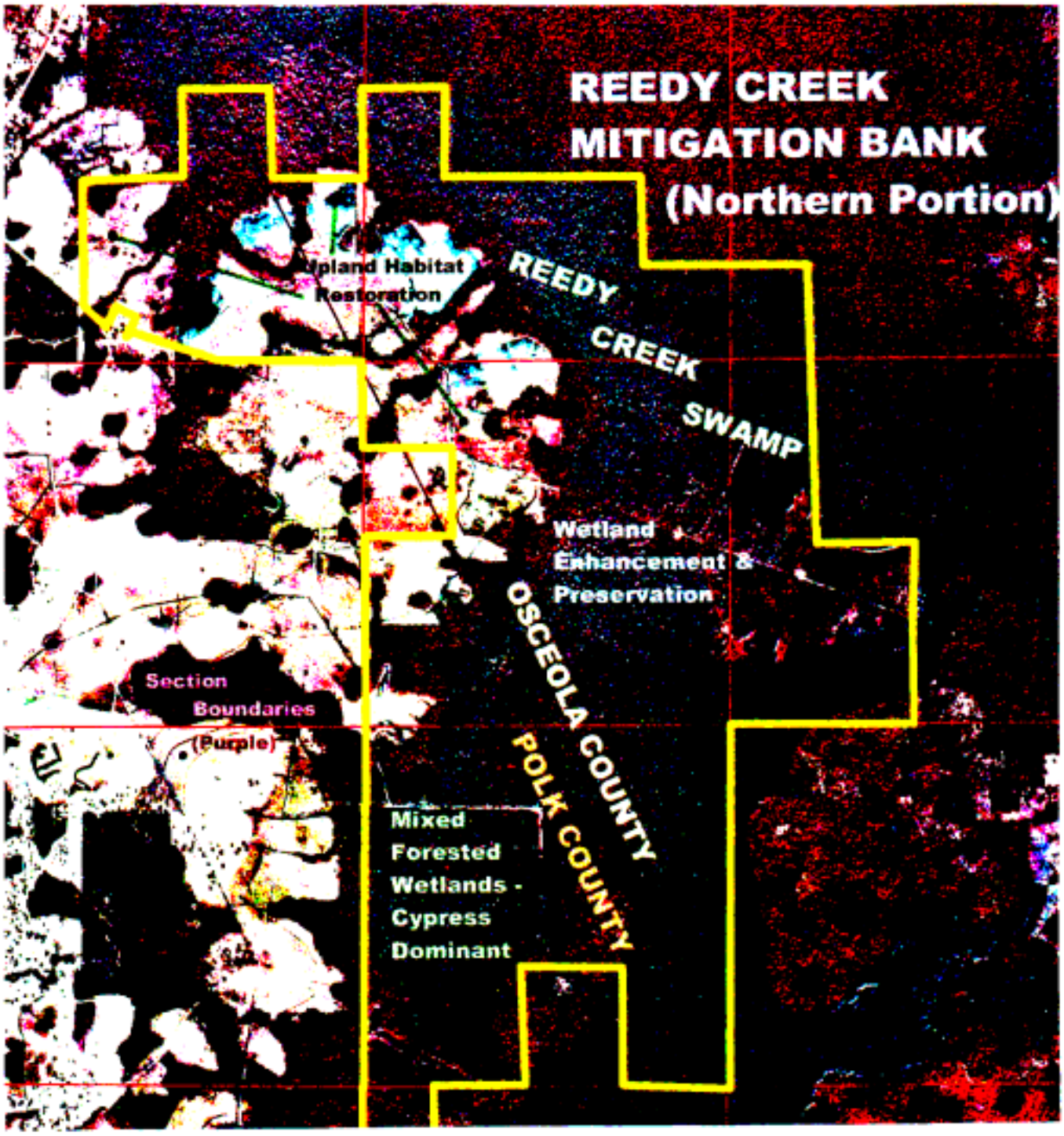
__X__6. Long term maintenance plan. Reference permit conditions.

__X__7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). Refer to previous discussion.



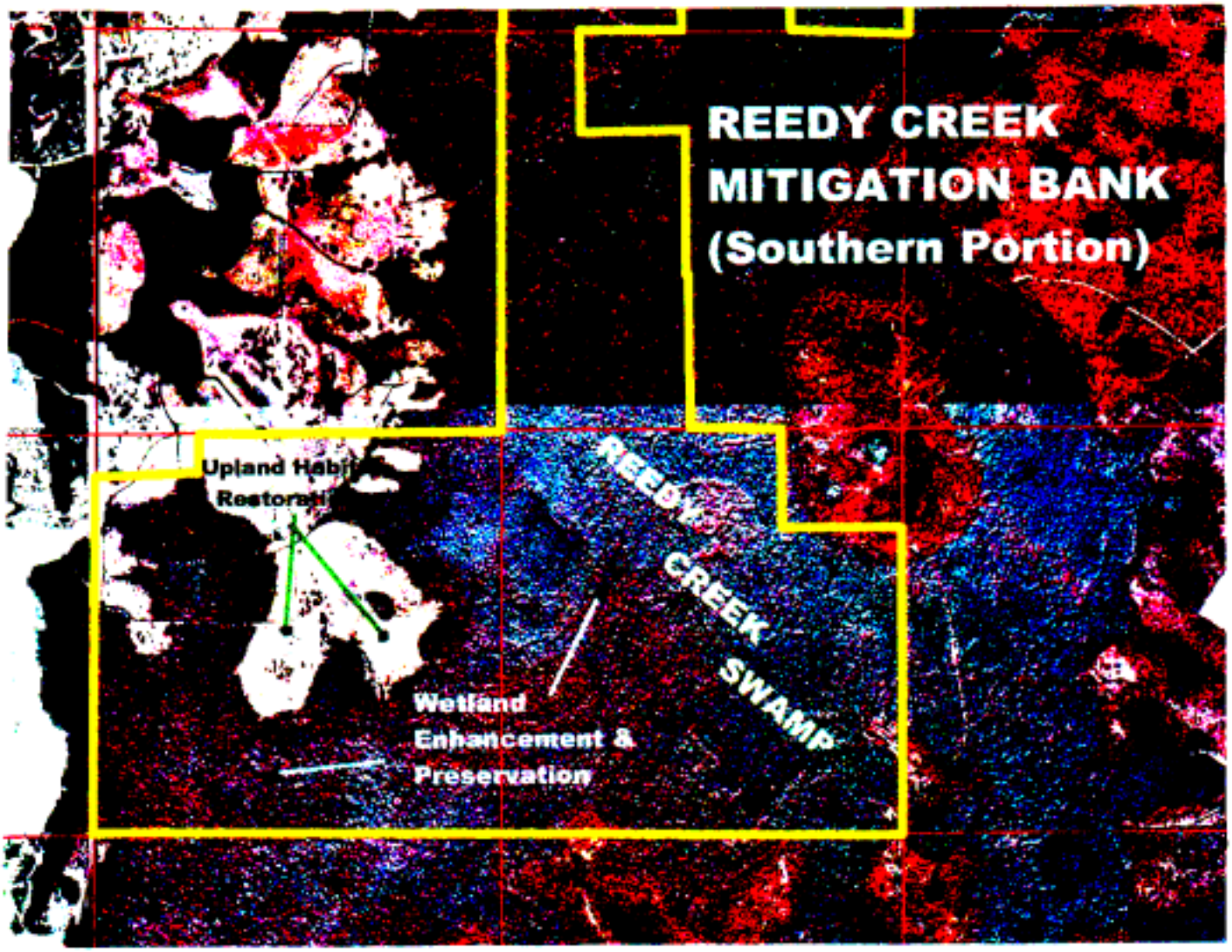
NORTH ^ SCALE 1 in. = 3 miles

FDOT - District 1 **MITIGATION SITE** **(Kissimmee River Basin)**	**REEDY CREEK** **MITIGATION BANK** **(SW 49)**	**FIGURE A** **LOCATION MAP**



NORTH ^ SCALE 2.4 in. = 1 mile

FDOT - District 1 MITIGATION SITE (Kissimmee River Basin)	REEDY CREEK MITIGATION BANK (SW 49)	FIGURE B INFRARED AERIAL (1995) (NORTHERN PORTION)



NORTH ^ SCALE 2.4 in. = 1 mile

FDOT - District 1 MITIGATION SITE (Kissimmee River Basin)	REEDY CREEK MITIGATION BANK (SW 49)	FIGURE B INFRARED AERIAL (1995) (SOUTHERN PORTION)

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management District
Mitigation Project Name: **Terra Ceia Restoration** Project Number: **SW 50**
Project Manager: Brandt F. Henningsen, Ph.D. , SWIM Sr. Env. Scientist Phone: (813) 985-7481 ext. 2202
County(ies): Manatee Location : Sec. 13, 14, 23, 24, 25,26, T33S, R17E

IMPACT INFORMATION

DOT: WPI 1115399, FM 1960581, US 301 (Ellenton)-60th Ave to Erie Road ERP #:4012295 COE#:199802683
Drainage Basin(s): Manatee River Basin Water Body(s) : Manatee River SWIM water body? Y
Impact Acres / Types: WPI 1115399 0.18 ac. 612 (Fluccs code)
0.41 ac. 618 (Fluccs code) **TOTAL - 0.59 Acres**

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: X Restoration X Enhancement Mitigation Area: **7 acres**
SWIM project? Y Aquatic Plant Control project? N Exotic Plant Control Project? Y Mitigation Bank? N
Drainage Basin(s): Manatee River Water Body(s): Manatee River, Tampa Bay, Terra Ceia Bay SWIM water body? Y

Project Description

A. Overall project goals: Restoration and enhancement of various types of saltwater wetlands and upland habitat within a 1700-acre DEP -owned tract (Terra Ceia Isles) in southeastern Tampa Bay (Figures A & B).

B. Brief description of current condition: Large tracts of once-pristine mangrove forest and intertidal wetlands within the project area have been adversely impacted by dredge and fill operations. Also, much of the existing upland and various wetland habitats have been infested by exotic vegetation including Brazilian pepper, Melaleuca, and Australian pines. These areas of infestation currently provide poor habitat value for the adjacent estuary (photos).

C. Brief description of proposed work: The disturbed uplands and wetlands will have exotic/nuisance vegetation removed, and the area planted with native species. For the area designated to provide the DOT mitigation (Figure D), the site will have 4 acres of mangrove enhancement by removing the perimeter of Brazilian pepper, and 3 acres of upland habitat enhancement and restoration south of the mangrove area.

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): The restored and enhanced uplands and mangroves will replace the acreage and function of the disturbed wetlands while increasing habitat diversity, further enhancing the habitat mosaic concept. For mitigating the proposed mangrove (0.18 acre) and willow & elderberry impact (0.41acre) (**total 0.59 impact acres**), **a minimum 4 acres of mangrove enhancement, and 3 acres of upland habitat enhancement & restoration** will be conducted by removing exotic/nuisance vegetation, followed with planting desirable species. Even though the existing 19 acres of mangrove interior will be enhanced by these surrounding activities, this enhancement has not been accounted for as mitigation credit. The cumulative ratio of enhancement and restoration activities will result in a cumulative ratio of 12:1 compared to the proposed impacts, and will appropriately compensate for those impacts.

E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: No mitigation banks currently exist in the Manatee River Drainage Basin.

F. Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body: The mitigation activities are in conjunction with a SWIM project located on DEP-owned land in need of major habitat restoration & enhancement.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: SWFWMD – Operations Dept.
Contact Name: Brandt F. Henningsen, Ph.D., Sr. Environmental Scientist Phone: (813) 985-7481 ext. 2202

Entity responsible for monitoring and maintenance: SWFWMD & DEP Proposed time frame for implementation:
Commence: Design in 2000-2001 Complete: Exotic/Nuisance Species Removal & Planting, 2002; followed by a minimum 3 years maintenance & monitoring

Project cost: $ 46,175 (total);
Mangrove Enhancement & Creation (exotics/nuisance species removal - 10 acres) - $26,175
Maintenance (minimum 5 years) - $15,000
Monitoring (minimum 3 years) - $5,000

Attachments

__x__ 1. Detailed description of existing site and proposed work. Project narratives and design concepts are currently being conducted and will be included in the 2002 DOT plan.

__x__ 2. Recent aerial photograph with date and scale. Figure B - 1995 Infrared Aerial

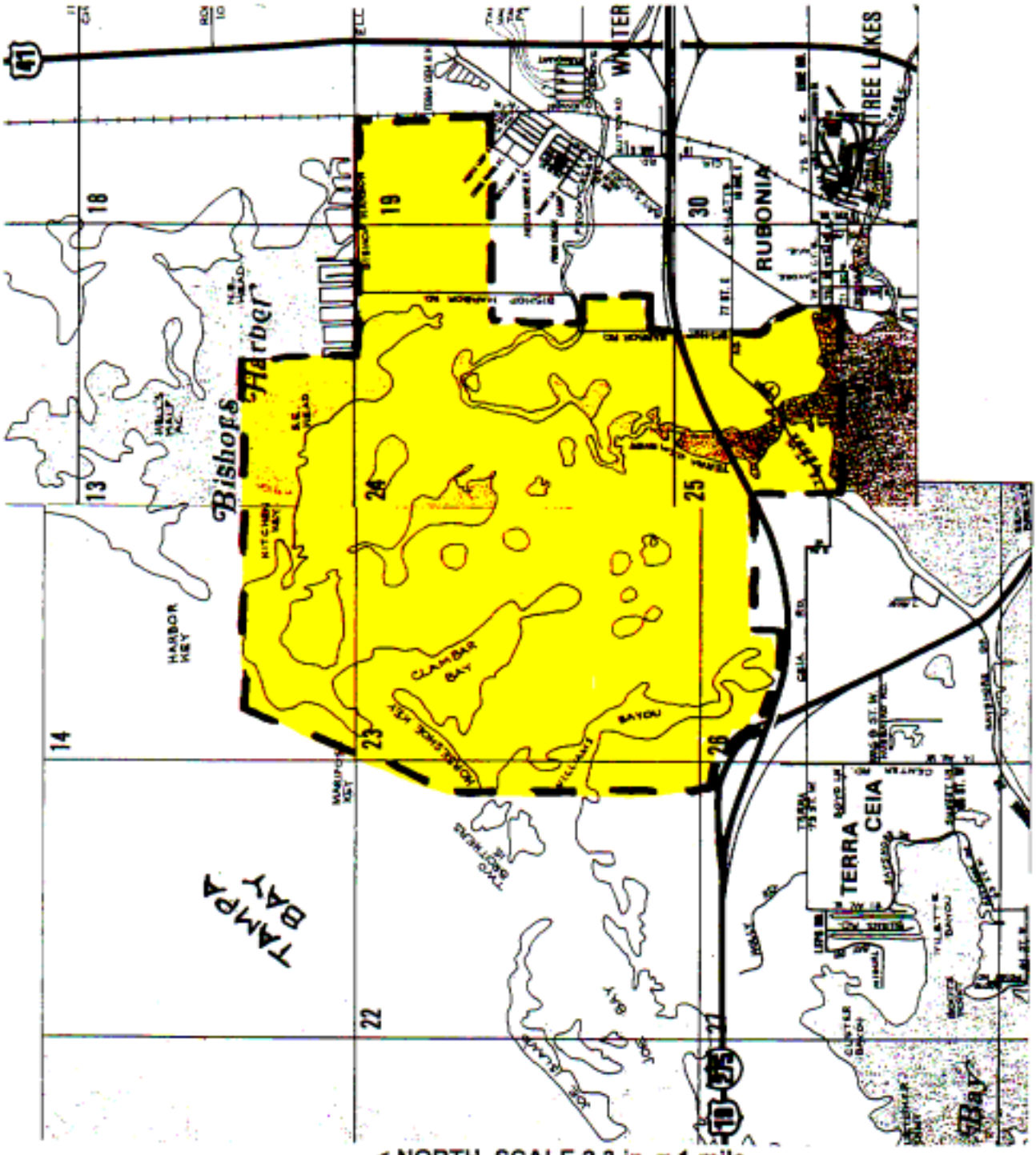
__x__ 3. Location map and design drawings of existing and proposed conditions. Fig. A - Location Map, Fig D - Design.

__x__ 4. Detailed schedule for work implementation, including any and all phases. The exotic species were eradicated and the area planted in 2002.

__x__ 5. Proposed success criteria and associated monitoring plan. The success criteria includes less than 10% cover of exotic/nuisance vegetation for the minimum 7- acre area providing mitigation for DOT wetland impacts. The monitoring will occur on an annual basis for 3 years, qualitative evaluation of species survival, cover, exotic/nuisance vegetation, hydrologic conditions, wildlife use, and recommended actions needed to ensure or enhance success.

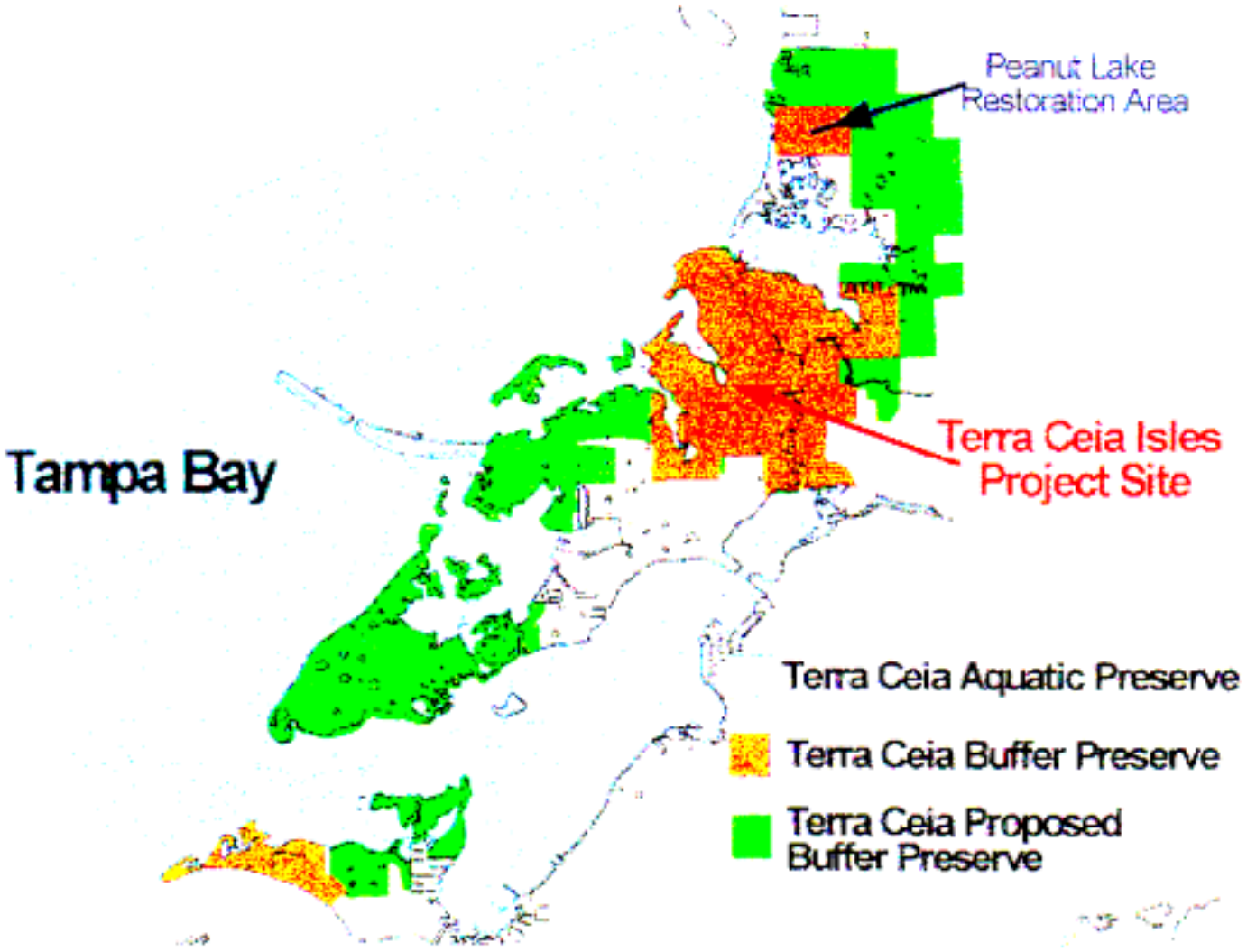
__x__ 6. Long term maintenance plan. The mitigation is associated within larger restoration objectives for land purchased by the DEP. The maintenance of the project will be conducted by a private contractor working for the SWFWMD. The maintenance will be primarily related to control of invasive exotic vegetation with a more intensive effort in the first year after planting to allow for the plants to become established, maintaining less than 10% nuisance/exotics, and less frequent maintenance as the project matures.

__x__ 7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). Please refer to previous discussion.

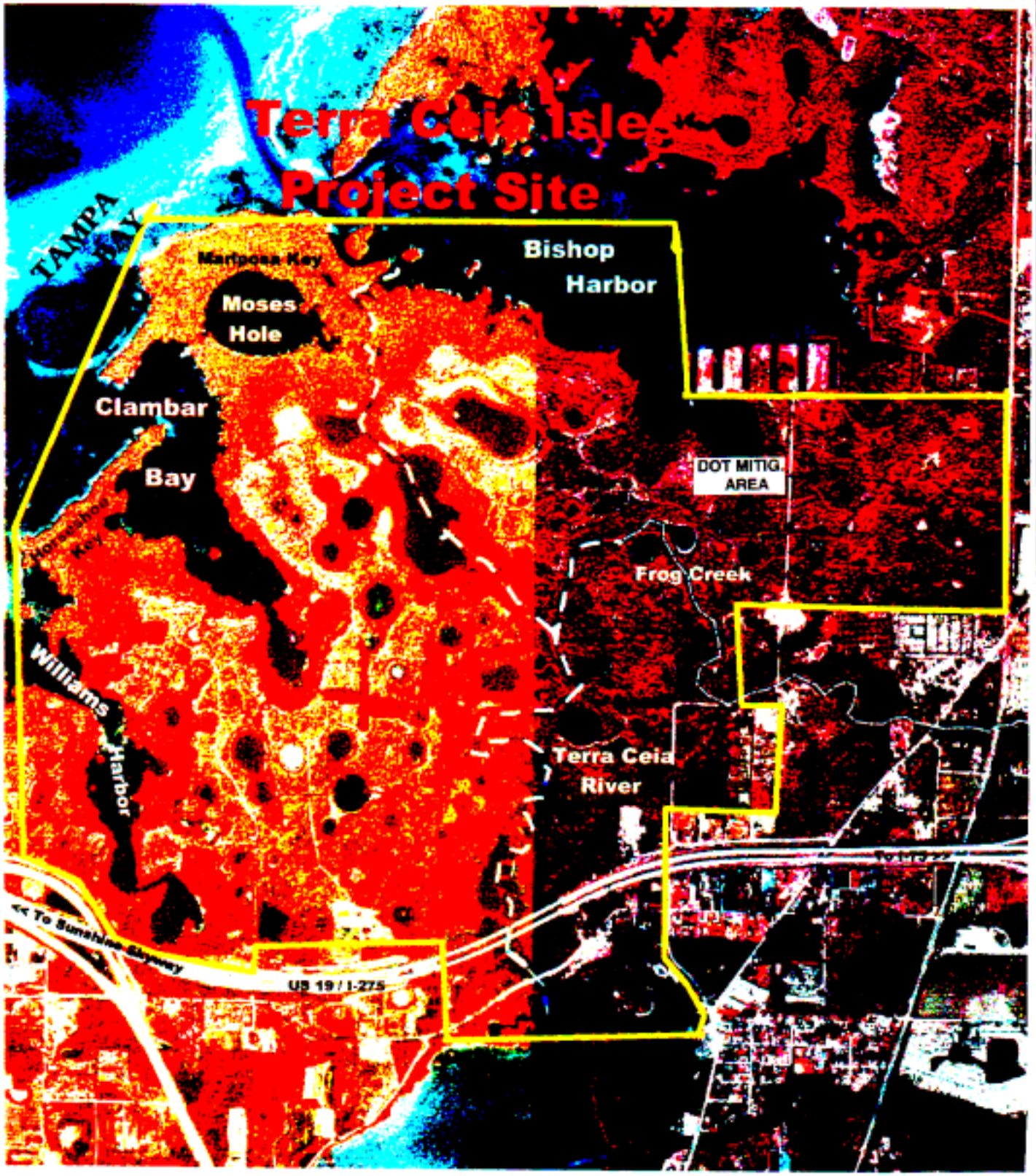


< NORTH, SCALE 2.3 in. = 1 mile

FDOT - District 1 MITIGATION SITE (Manatee River Basin)	TERRA CEIA RESTORATION (SW 50)	FIGURE A LOCATION MAP

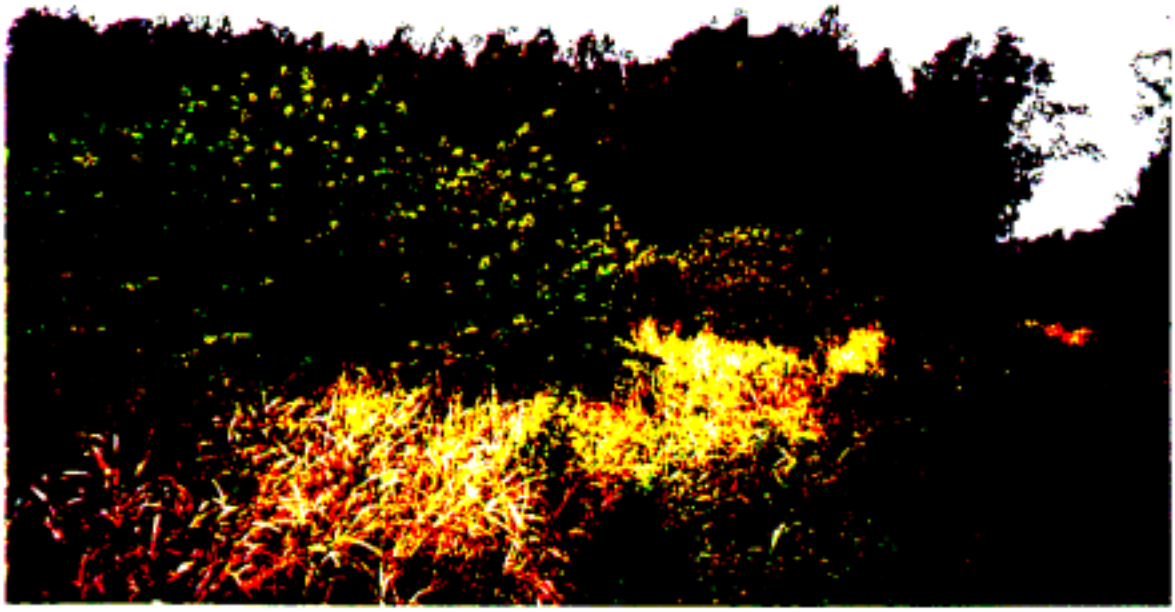


FDOT - District 1 MITIGATION SITE (Manatee River Basin)	TERRA CEIA RESTORATION (SW 50)	FIGURE B TERRA CEIA BUFFER PRESERVE



FDOT - District 1 MITIGATION SITE (Manatee River Basin)	TERRA CEIA RESTORATION (SW 50)	FIGURE C INFRARED AERIAL (1995)

FDOT - District 1 MITIGATION SITE (Manatee River Basin)	TERRA CEIA RESTORATION (SW 50)	FIGURE D PROPOSED MITIGATION ^North, Scale 1in. = 340 ft.



The upland areas are dominated by dense coverage of exotic/nuisance species such as Australian pine, Brazilian pepper, Johnson grass, ragweed, and dog fennel. Extensive efforts will be conducted to eradicate exotic/nuisance species, followed by a planting plan to include native upland species.

Small areas of live oak and cabbage palm hammocks are still present but are also heavily infested with Brazilian pepper that will require eradication to enhance and expand these remnant habitats.

FDOT - District 1 Mitigation Site (Manatee River Basin)	TERRA CEIA (SW 50)

Small, circular open water components at the site have been tidally connected by ditches to the various harbors and bays on the property, resulting in various salinity levels and species coverage. Black mangroves are common along the perimeter of these open water areas. Brazilian pepper dominates along the upland border of the mangroves.

Even though there is substantial opportunity for upland & wetland enhancement & restoration at Terra Ceia, there are still high quality saltwater wetlands and open water habitat associated with several harbors & bays. This view is located along the projects southern border where the Terra Ceia River connects with Terra Ceia Bayou.

FDOT - District 1 Mitigation Site (Manatee River Basin)	TERRA CEIA (SW 50)

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management District
Mitigation Project Name: **Myakka River State Park** Project Number: **SW51**
Project Manager: Robert Dye, Park Manager Phone No: (941) 366-6511; SC 516-1876
County(ies): Manatee Location: Sec. 19,26,28,29,30, T37S, R21E

IMPACT INFORMATION

(WPI): 1119215, FM 1979251, SR 72 (Big Slough – DeSoto C/L) ERP#: 4318471.00 COE #: 199802683
(WPI): 1119303, FM 1980131, SR 72 (Deer Prairie-Big Slough) ERP#: 4418399.00 COE #: 199802683

Drainage Basin(s): Myakka River Water Body(s):Big Slough Deer Prairie Slough SWIM water body? N

Impact Acres / Types : WPI 1119215 0.30 ac. 615 (Fluccs code)
1.19 ac. 641 (Fluccs code)
WPI 1119303 0.87 ac. 641 (Fluccs code)

TOTAL: 2.36 ac.

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: ___ Creation **1.5 ac.** Restoration **34 ac.** Enhancement Mitigation Area: **35.5 acres**

SWIM project? N Aquatic Plant Control project? N Exotic Plant Control Project? N Mitigation Bank? N
Drainage Basin(s): Myakka River Water Body(s):Myakka River / Deer Prairie Slough SWIM water body? N

Project Description

A. **Overall project goal:** By removing abandoned railroad grades, this project proposes to restore & enhance various functions (particularly hydrology & vegetation) of depressional marshes, portion of a forested wetland, and restore groundwater hydrology within palmetto prairies to enhance contributing hydrology to adjacent wetlands.

B. **Brief description of current condition:** An abandoned elevated railroad grade cuts through depressional marshes in a palmetto prairie (Figure D, site photos). A stream swamp within North Deer Prairie Slough has been bermed and channelized near the northern Park boundary. An elevated fenceline berm diverts surficial groundwater flow from historic palmetto prairie drainage patterns.

C. **Brief description of proposed work:** 1) Two miles of the railroad grade will be backfilled into the adjacent ditches to match adjacent upland and wetland elevations. This will **restore 1.5 acres of marsh habitat** directly lost due to half the fill material. The remaining half of the restored grade will still be used for vehicle access (site photo). This activity will also enhance the hydrologic functions of the associated 5 marshes crossed by the railroad grade (**total 27 marsh enhancement acres**). 2) Approximately 600 feet of existing ditch in the North Deer Prairie Slough will be filled with berm material to restore historical flow, hydrologically enhancing a minimum **7 forested wetland acres** within vicinity of the filled ditch. The removal of an elevated abandoned fenceline crossing of the prairie will restore hydrologic drainage patterns of the surficial groundwater which will also have a positive effect on the contributing groundwater flow to wetlands, minimize runoff, and enhance surface & ground water retention and recharge.

D. **Brief explanation of how this work serves to offset the impacts of the specified DOT project(s):** This restoration project will restore 1.5 acres and enhance 27 acres of marsh habitat that will compensate for the 2.06 acres of proposed marsh habitat impacts, a cumulative mitigation ratio of 14:1 for marsh restoration & enhancement. The ditch backfilling will enhance 7 acres of forested wetland within North Deer Prairie Slough, compensating for the 0.3 acres of proposed forested stream swamp impacts, a cumulative mitigation ratio of 23:1 for forested wetland enhancement.

E. **Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost:** No mitigation banks are currently available in the Myakka River Basin.

E. **Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body:** The impacts are not within a SWIM water body and there are no freshwater SWIM projects within the Myakka River basin.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: FDEP, Division of Recreation and Parks selection of a private contractor
Contact Name: Robert Dye, Park Manager or Belinda Perry, Park Biologist Phone Number: 941-361-6511

Entity responsible for monitoring and maintenance: Same
Proposed timeframe for implementation: Commence: Spring, 2003 Complete: Spring, 2003 (Construction)

Project cost: $99,000 (total) Construction, maintenance & monitoring conducted by Myakka River State Park staff.

Attachments

X 1. Detailed description of existing site and proposed work. Refer to previous discussion, Figs. C,D,E, site photographs

X 2. Recent aerial photograph with date and scale. Figs. D,E – 1995 Infrared Aerials

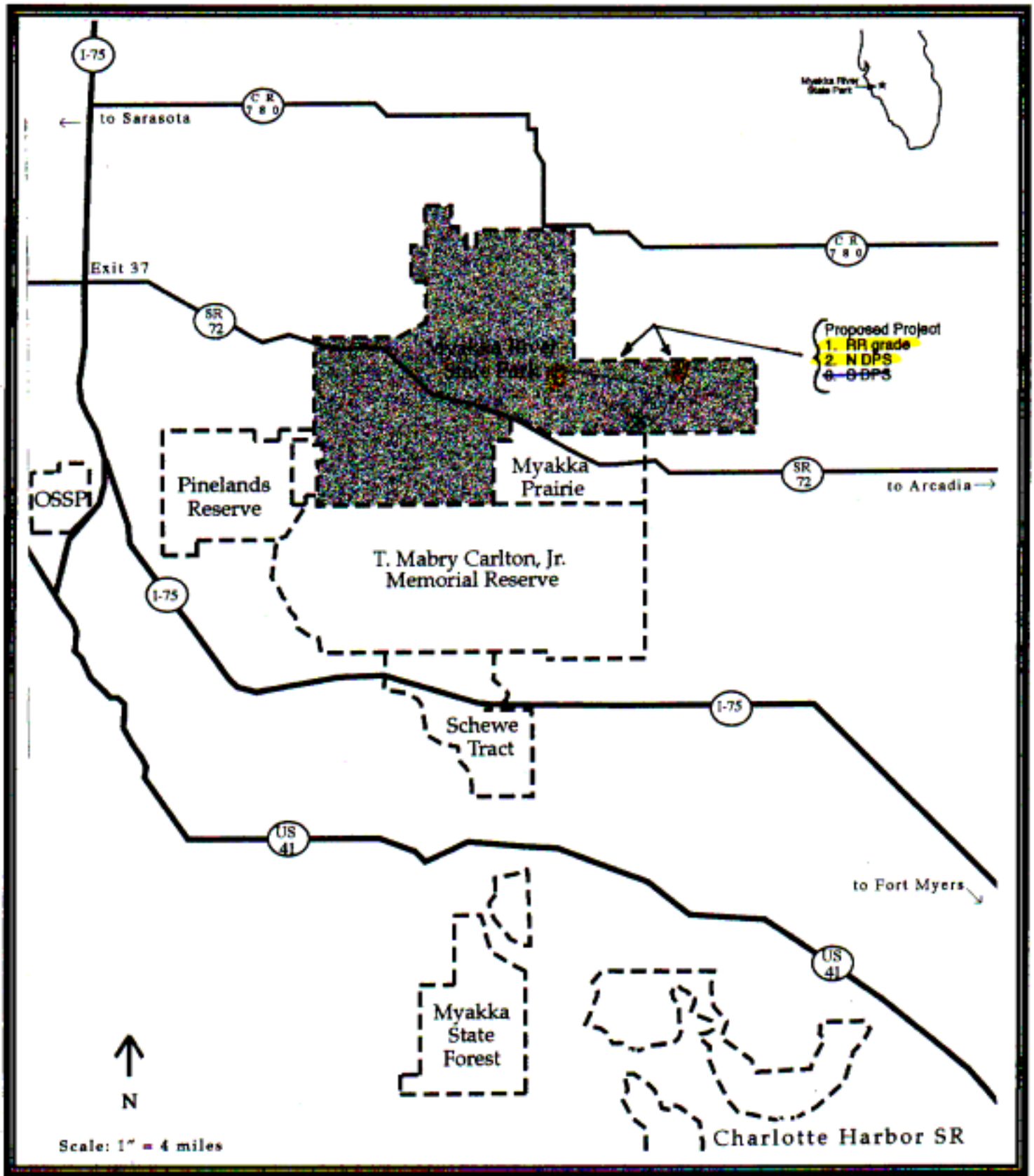
X 3. Location map and design drawings of existing and proposed conditions. Fig. C – Design Drawings

X 4. Detailed schedule for work implementation, including any and all phases. Construction, Spring 2003; followed by 2 years of annual monitoring reports to document site conditions.

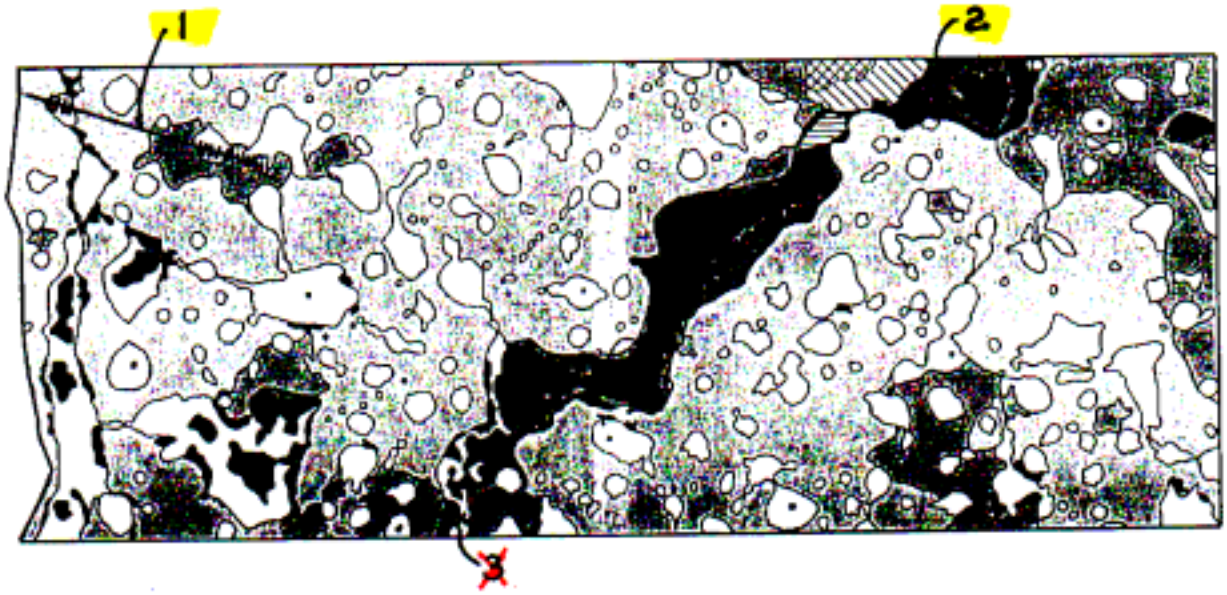
X 5. Proposed success criteria and associated monitoring plan. Success criteria for the marsh restoration, minimum of 70% vegetative coverage (outer 30 ft. adjacent to vehicular crossing area approx. 15 ft. wide) within 2 years after construction & less than 10% exotic/nuisance species. For the enhanced forested wetland, success criteria is achieved when surface grades are restored and stabilized to eliminate any potential of erosion/sedimentation conditions and historic drainage patterns are restored within the wetland. Monitoring will include qualitative photographic documentation of the five areas of restored marsh crossings and the backfilled ditch area within the forested wetland. An annual monitoring report will be prepared to document conditions during the summer rainy season, each of the two years after construction.

__X__6. Long term maintenance plan. Maintenance will be conducted as needed to ensure proper erosion control measures until vegetative cover is achieved in the wetlands and uplands. Maintenance to eliminate exotic/nuisance vegetative cover within the restored wetlands can be manually conducted or herbicide. It should be noted that recent railroad berm grade removal within other marshes at Myakka River State Park have shown extensive recruitment of native desirable vegetative species without the need for planting or maintenance due to minimal presence of existing exotic/nuisance seed sources (site photos).

__X__7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s).Refer to previous response under Comment D. Even though this restoration activity is extensive relative to the proposed wetland impacts, it has been determined that eliminating the entire railroad grade beyond the wetland boundaries is very important in restoring natural drainage patterns. Myakka River State Park is known for having a groundwater level at, and in many cases, above natural grade for extensive periods during the rainy season. By only restoring the natural grades within the wetlands, groundwater within the upland flatwoods and palmetto prairies will be diverted away from some wetlands while impounding water in others. Restoring surface grade elevations for the over 2 miles of railroad and the fence row grade is an important component for allowing the entire ecosystem and various habitat inter-relationships to naturally restore.



FDOT - District 1 MITIGATION SITE (Myakka River Basin)	**MYAKKA STATE PARK (SW 51)**	**FIGURE A LOCATION MAP**

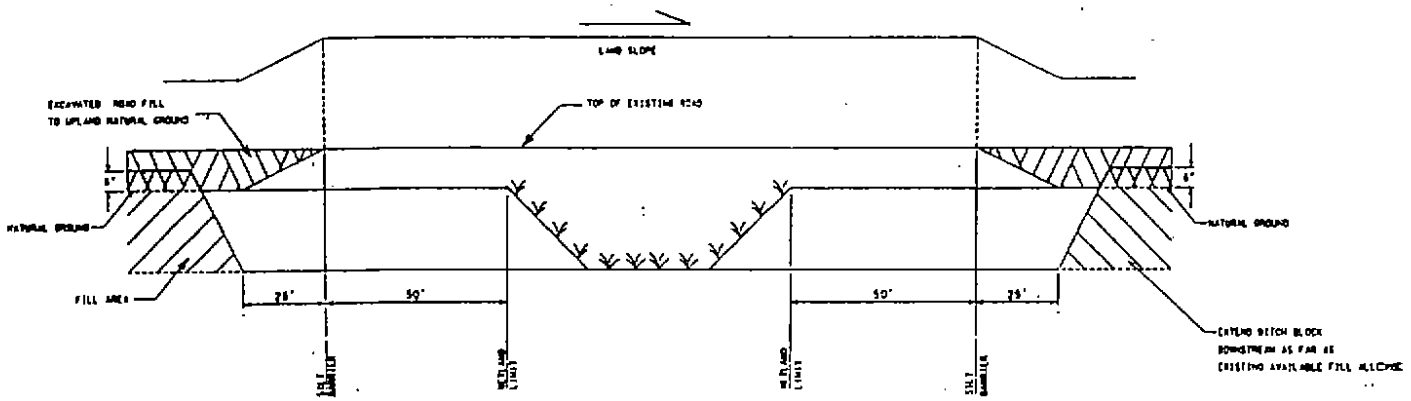


Dry Prairie
Pine Flatwoods
Scrubby Flatwoods
Oak-Palm Hammock
Disturbed Areas
Mesic Hammock
Seasonal Ponds & Sloughs
Forested Wetlands
Contiguous Floodplain Marsh

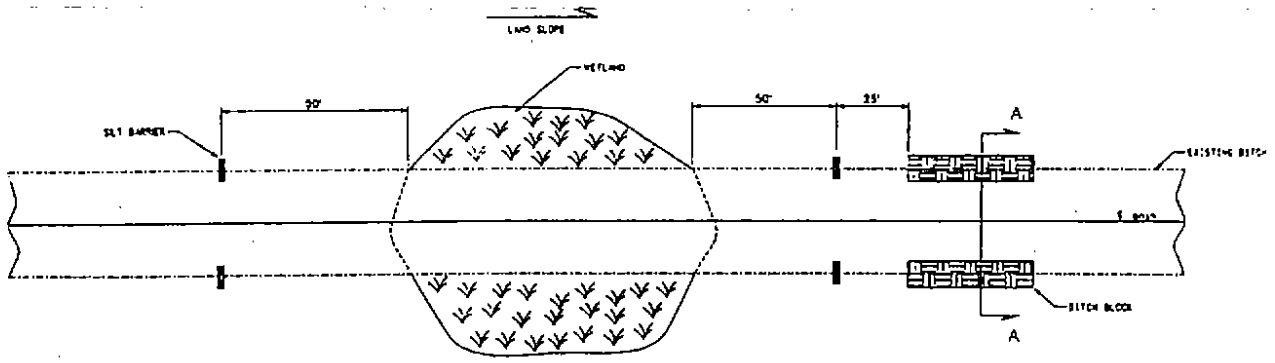
N

Scale 1 Mile

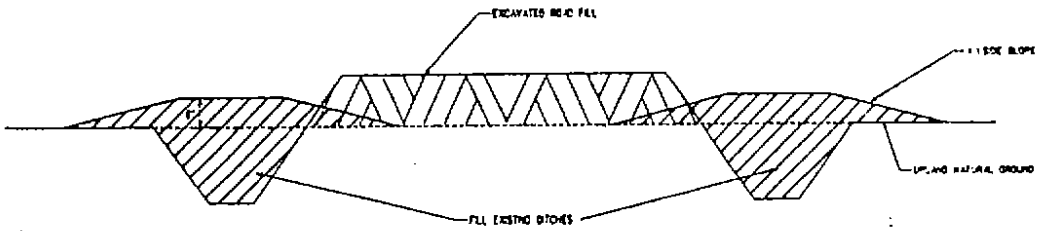
FDOT - District 1 MITIGATION SITE (Myakka River Basin)	**MYAKKA STATE PARK (SW 51)**	**FIGURE B HABITAT MAP & RESTORATION AREAS**



DITCH PROFILE N.T.S.

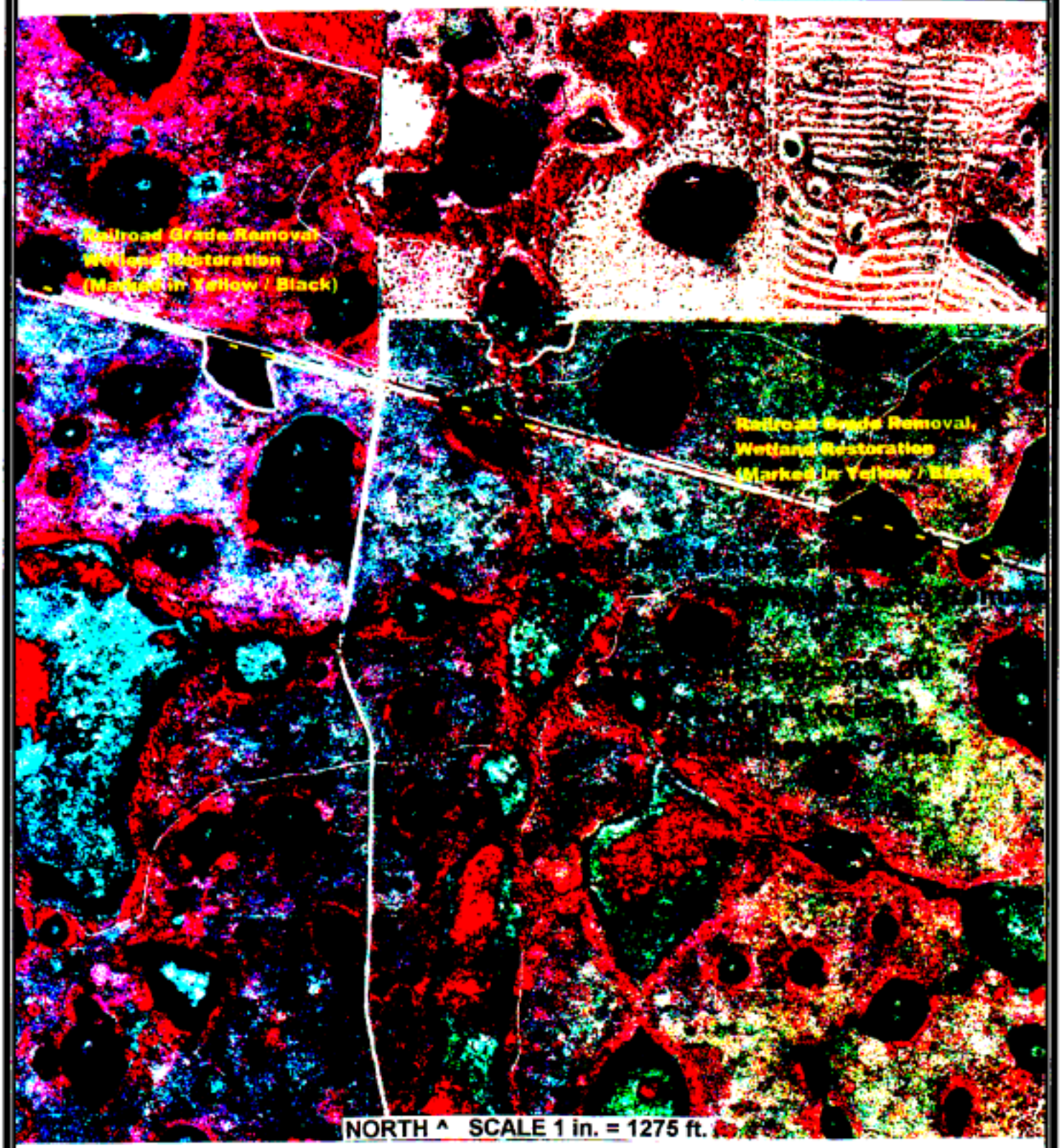


ROAD PLAN VIEW N.T.S.

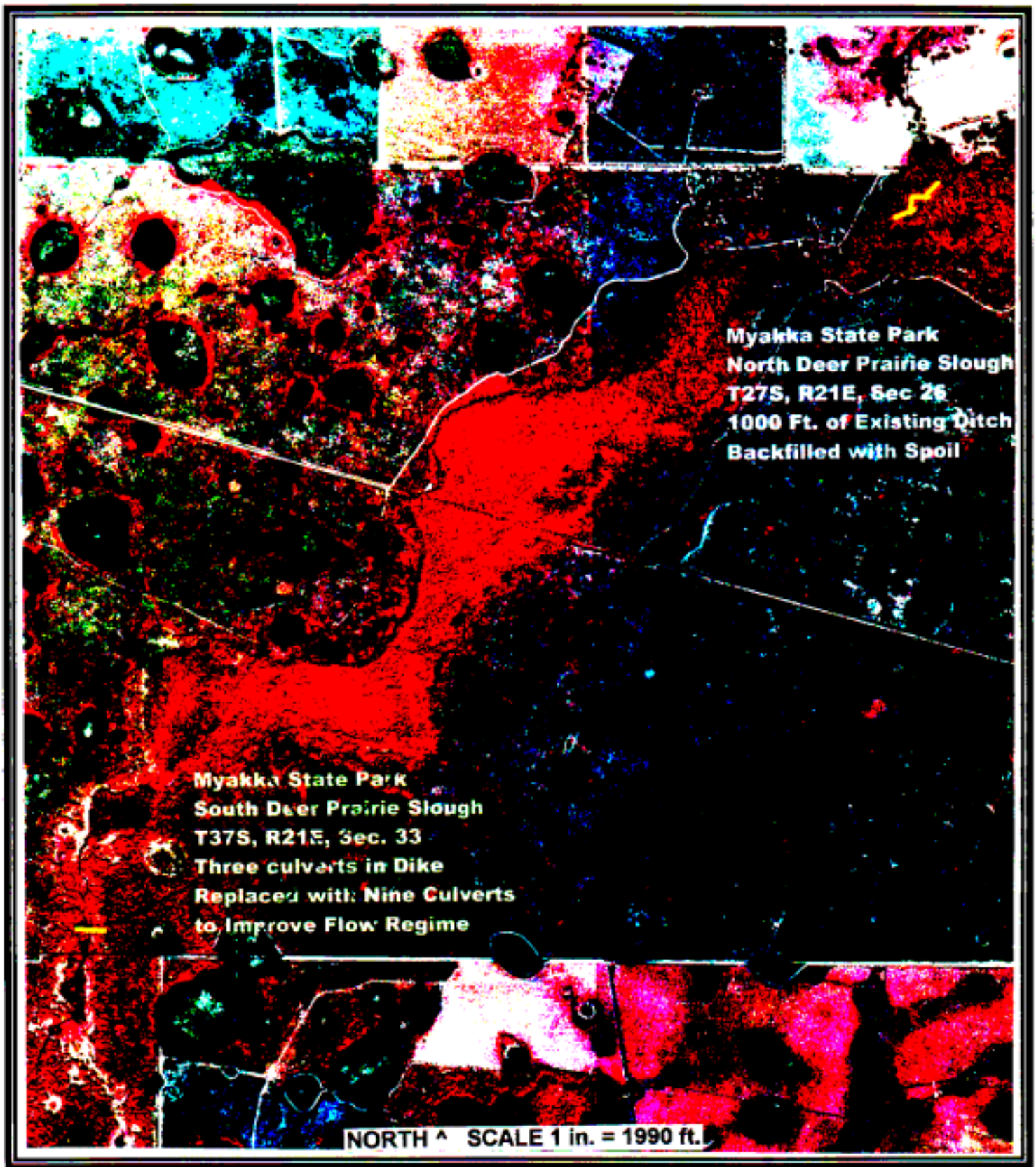


TYPICAL SECTION A-A N.T.S.

FDOT - District 1 **MITIGATION SITE** **(Myakka River Basin)**	**MYAKKA STATE PARK** **(SW 51)**	**FIGURE C** **RAILROAD GRADE** **RESTORATION PLANS**

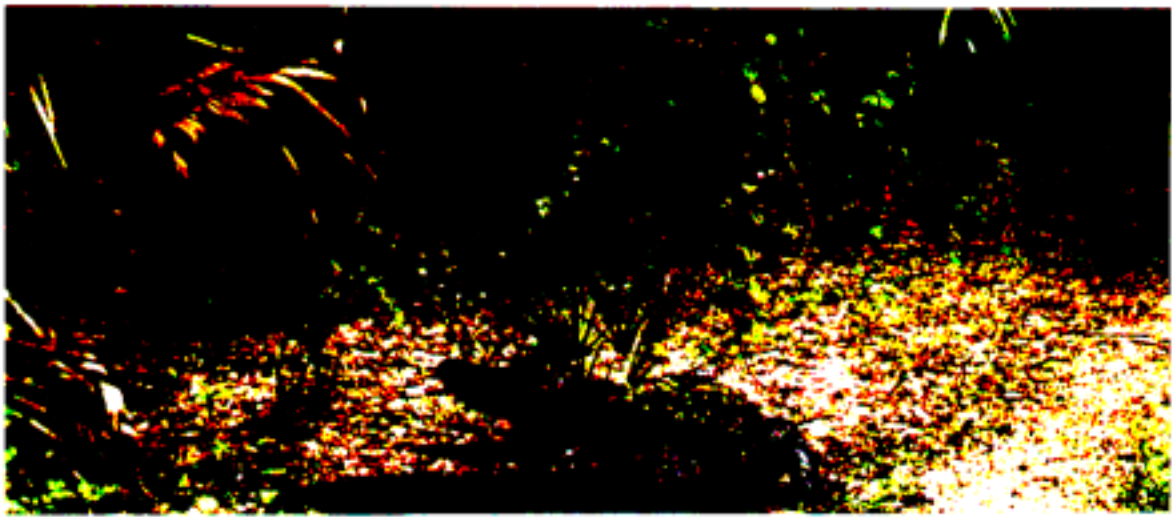


FDOT - District 1 MITIGATION SITE (Myakka River Basin)	MYAKKA STATE PARK (SW 51)	FIGURE D INFRARED AERIAL (1995) RAILROAD GRADE RESTORATION



FDOT - District 1 MITIGATION SITE (Myakka River Basin)	MYAKKA STATE PARK (SW 51)	FIGURE E INFRARED AERIAL (1995) DEER PRAIRIE SLOUGH RESTORATION

One of the largest state parks in Florida, Myakka River State Park has an extensive management plan to restore the palmetto prairies to "dry prairies" that were historically present at the site. Dry prairies are rare, unique ecosystems that include a combination of saw palmetto, various herbaceous species, and minimal shrub & tree cover.



Wildlife diversity is substantial at the park, including a high population of alligators. At approximately 6 ft. in length, this individual is considered small in comparison to many along the Myakka River.

FDOT - District 1 Mitigation Site (Myakka River Basin)	**MYAKKA RIVER STATE PARK (SW 51)**

The majority of the proposed mitigation at the Park includes removing two miles of the railroad grade shown above, backfilling the adjacent ditches and allowing the historic drainage patterns to return within the adjacent wetland and upland habitats.

This photo depicts another segment of the railroad grade that was recently backfilled into the adjacent ditches. As seen to the left of the road, vegetative recruitment from the adjacent marsh is naturally generating and the hydrologic connection has been restored. The filled ditches will continue to increase in plant density and the new road is still accessible through the shallow water. This road will also still provide a fire break for prescribed burns.

FDOT - District 1 Mitigation Site (Myakka River Basin)	**MYAKKA RIVER STATE PARK (SW 51)**

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management District
Mitigation Project Name: **Little Pine Island Mitigation Bank** Project Number: **SW 52**
Project Manager: Ray Pavelka Phone No: (941) 481-2011
County(ies): Lee Location: Sec. 14,15,16,21,22,23,24,25,26,27,34,35,36 T44S, R22E

IMPACT INFORMATION

WPI: 1110148, FM: 1937941, SR 776-CR 771 to Willow Bend Rd.*	ERP #: 4316676.00	COE#: 199601986
WPI: 1120075, FM 1984711, Trabue Harborwalk Bike Path	ERP #: 4417560.01	COE#: 199705303
FM: 4046971, I-75 Widen Bridge over Peace River**	ERP #: 43021917.00	COE#: NPR
FM: 1984781, CR 765A at Bridge #010005	ERP #: _____	COE#: _____

Drainage Basin(s): Myakka River (1110148), Peace River (1984711, 4046971) Charlotte (1984781)
Water Body(s):Peace River, Alligator Creek SWIM water body? Y

Impacts / Types: WPI 1110148 2.08 ac. 540 (Fluccs code)* FM 4046971 2.75 ac. 612 (Fluccs code)**
WPI 1120075 0.16 ac. 540 (Fluccs code) FM 1984781 0.50 ac. 615 (Fluccs code)
TOTAL: 5.49 Acres

* Note - This roadway project has an additional 8.92 acres of wetland impacts being mitigated through restoration activities at SW 31-Cattle Dock Point.
** Note - The bridge project has an additional 0.8 acres of proposed mangrove impacts that will be mitigated through on-site restoration activities, as noted under SW 69 - Peace River Bridge Restoration.

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: ___ Creation _x__ Restoration _x__ Enhancement ___ Preservation Mitigation Area: **5.49 Credits**
SWIM project? N Aquatic Plant Control project? N Exotic Plant Control Project? Y
Mitigation Bank? Y If yes, give DEP/WMD mit bank permit #: 362434779 COE # 199400037 (IP-GS)
Drainage Basin(s):Charlotte Harbor Water Body(s):Charlotte Harbor SWIM water body? Y

Project Description

A. Overall project goal: Little Pine Island is state-owned property that has extensive cover of exotic vegetation (melaleuca, Brazilian pepper, Australian pine). The goal of the mitigation bank is to eradicate exotic vegetation from approximately 1,565 acres of previously disturbed or impacted coastal marsh, salt flats, mangroves, and pine flatwoods; construct temporary haul roads, and restoring grades by backfilling and plugging 48.3 acres of mosquito ditches. The mitigation service area includes portions of the 100 year flood plain of Charlotte, Lee, Sarasota, and Collier counties.

B. Brief description of current condition: Mangrove species exist within undisturbed portions of the island, particularly within the perimeter (approx. 3500 of the total 5000 acres). However, prior to current restoration, the exotics (particularly melaleuca) has overwhelmed the native vegetation. As restoration activities have taken place, native estuarine herbaceous and shrub species have naturally regenerated with minimal need for additional planting.

C. Brief description of proposed work: Due to the fact a private entity has been conducting restoration on public lands, extensive construction conditions have been required and adopted by the mitigation bankers. In order to access and restore the site without turbidity, impermeable liners have been used to enclose fill roads used to haul cut exotic vegetation to a mulcher. The mulch quantity is too extensive to use as a restoration soil amendment because it would substantially limit regeneration of native vegetation. Instead, the mulch is burned as a fuel source in a sugar processing plant. Once the exotic vegetation is cut and removed from the site, herbicide treatment of the stumps and spraying of any regenerated exotic vegetation is conducted on a routine schedule.

Mitigation Project - Little Pine Island Mitigation Bank, Page 2

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): Little Pine Island Mitigation Bank is conducting restoration and enhancement of freshwater and saltwater herbaceous and forested wetland habitats. The proposed DOT wetland impacts are similar in habitat and function of the enhanced and restored wetlands at Little Pine Island.

E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: Little Pine Island is a private mitigation bank conducted on public property.

F. Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body : A SWIM project (Cattle Dock Point) is located in the Myakka River basin, and partially mitigates for WPI 1110148, a roadway project within a few miles and similar habitat impacts as the proposed restoration components of Cattle Dock Point.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: Mariner Properties, Inc.
Contact Name: Ray Pavelka, Richard Anderson Phone Number: (941) 481-2011
Entity responsible for monitoring and maintenance: Same
Proposed timeframe: Commence: 1996 Complete: When the seven phases meet permit success criteria

Project cost: $252,630 (total)
WPI 1110148 2.08 Ac. x $37,000/credit = $76,960 (Credits purchased Summer, 2001)
WPI 1120075 0.16 Ac. x $37,000/credit = $5,920 (Credits Purchased Summer, 2001)
FM 4046971 2.75 Ac. x $53,000/credit = $145,750 (Credits Purchased Summer, 2002)
FM 1984781 0.50 Ac. x $48,000/credit = $24,000

Attachments

__x__1. Detailed description of existing site and proposed work. Refer to previous discussion & mit. bank permits.

__x__2. Recent aerial photograph with date and scale. Attached aerial and site photographs.

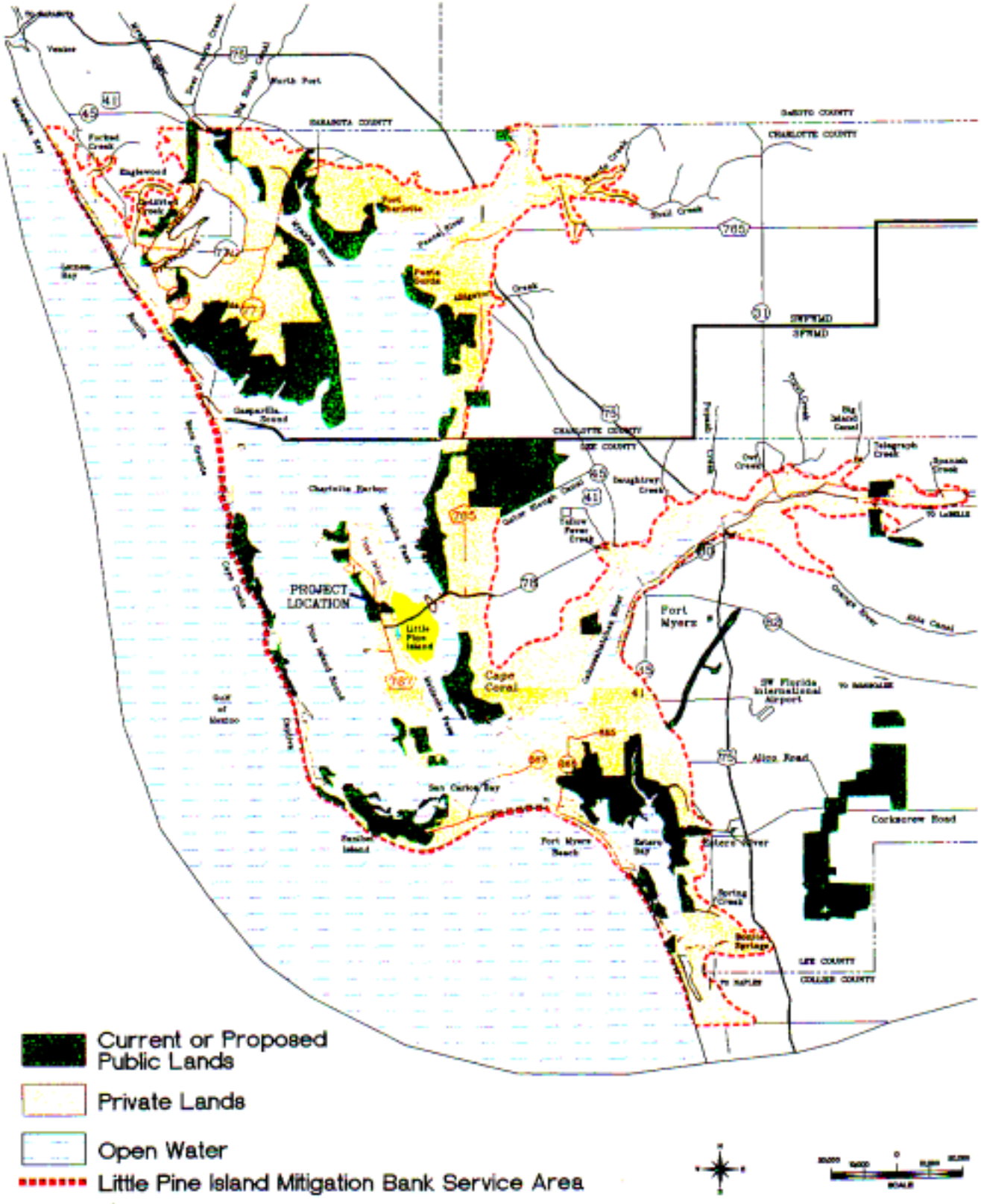
__x__3. Location map and design drawings of existing and proposed conditions. Figure A - Location Map, Figures B & C - cross section drawings of existing vegetative conditions and proposed ditch blocks.

__x__4. Detailed schedule for work implementation, including any and all phases. Construction activities are ongoing for seven phases until complete.

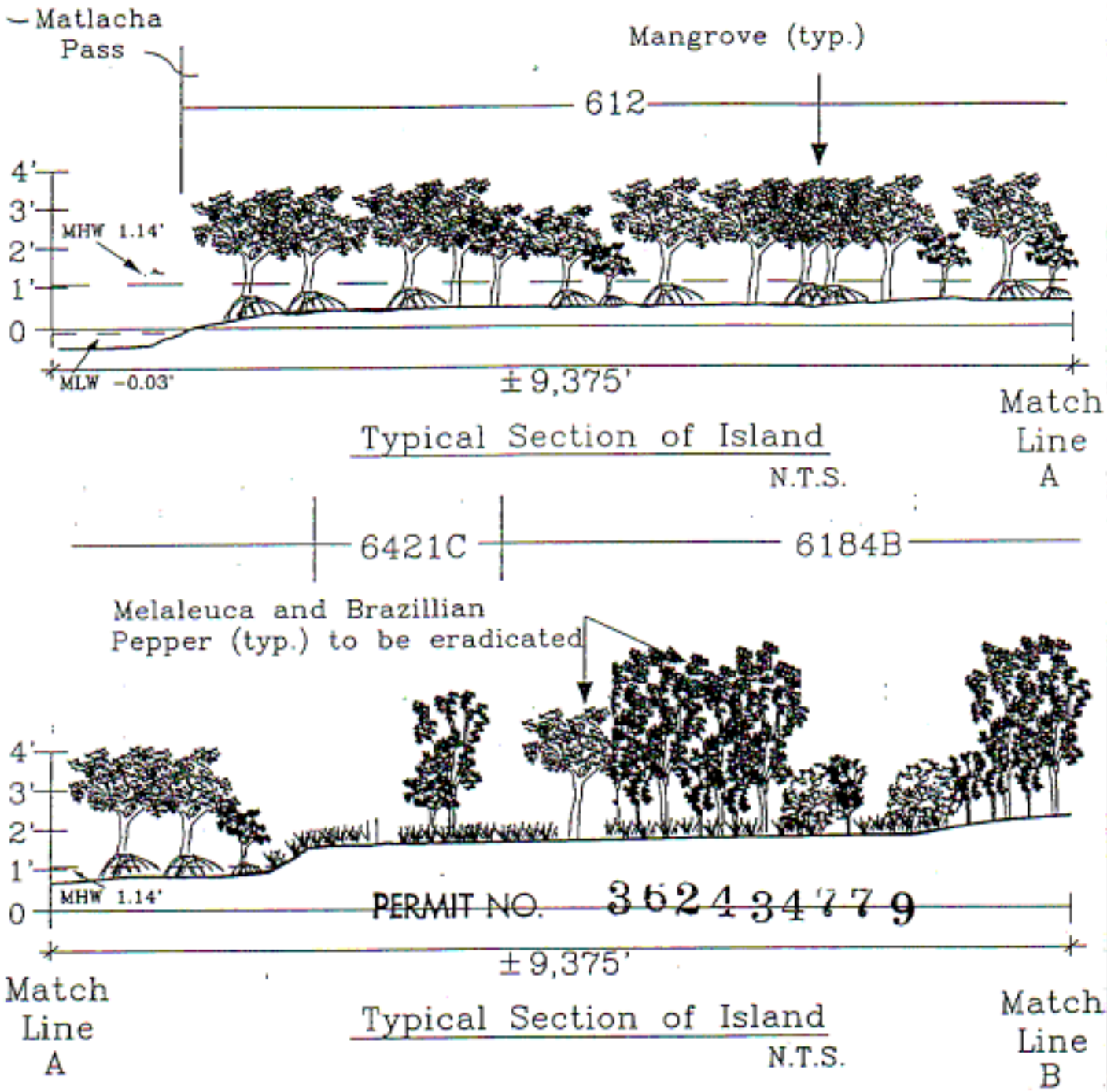
__x__5. Proposed success criteria and associated monitoring plan. The monitoring plan includes an extensive quantitative analysis procedure that includes hydrologic, vegetative, and wildlife evaluation as stipulated in the permit. The success criteria requires percent cover, presence, and richness of various flora and fauna species, also stipulated in the mitigation bank's permits.

__x__6. Long term maintenance plan. In order to achieve the success criteria, the mitigation banker has incorporated a routine maintenance schedule to ensure exotic and nuisance species are substantially minimized from regeneration.

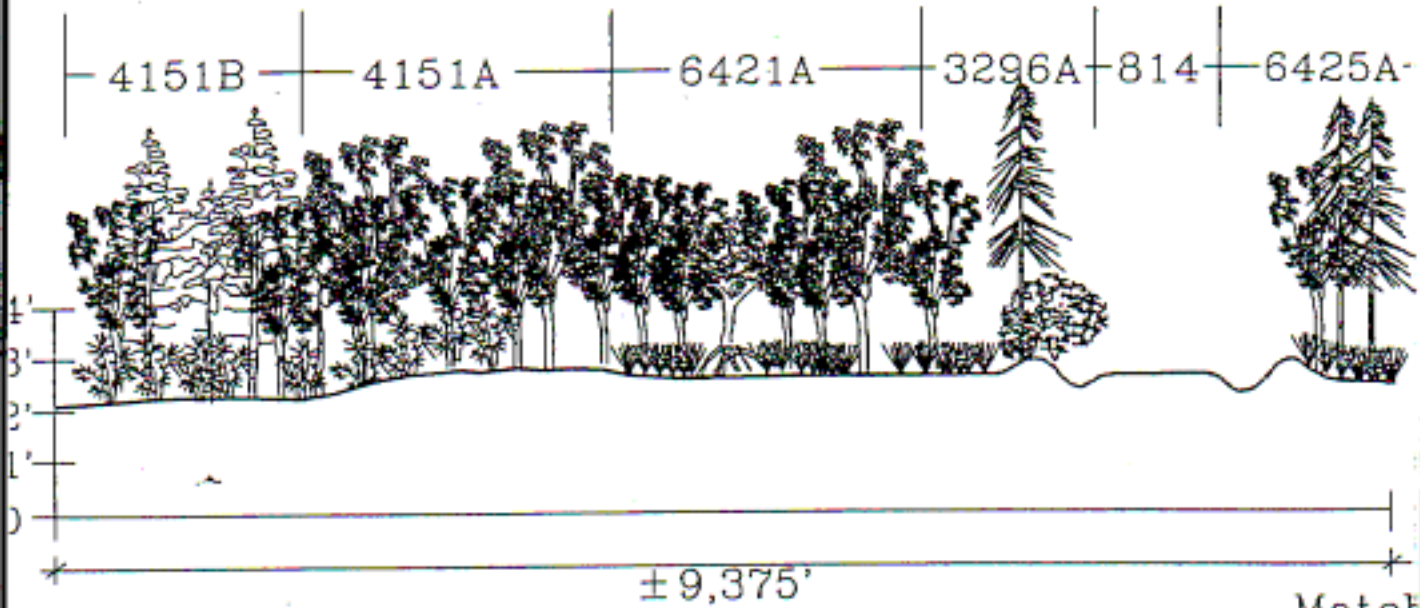
__x__7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s).Refer to previous discussion under Comment D.



FDOT - District 1 MITIGATION AREA (Charlotte Harbor)	LITTLE PINE ISLAND MITIGATION BANK (SW 52)	FIGURE A PROJECT LOCATION & SERVICE AREA

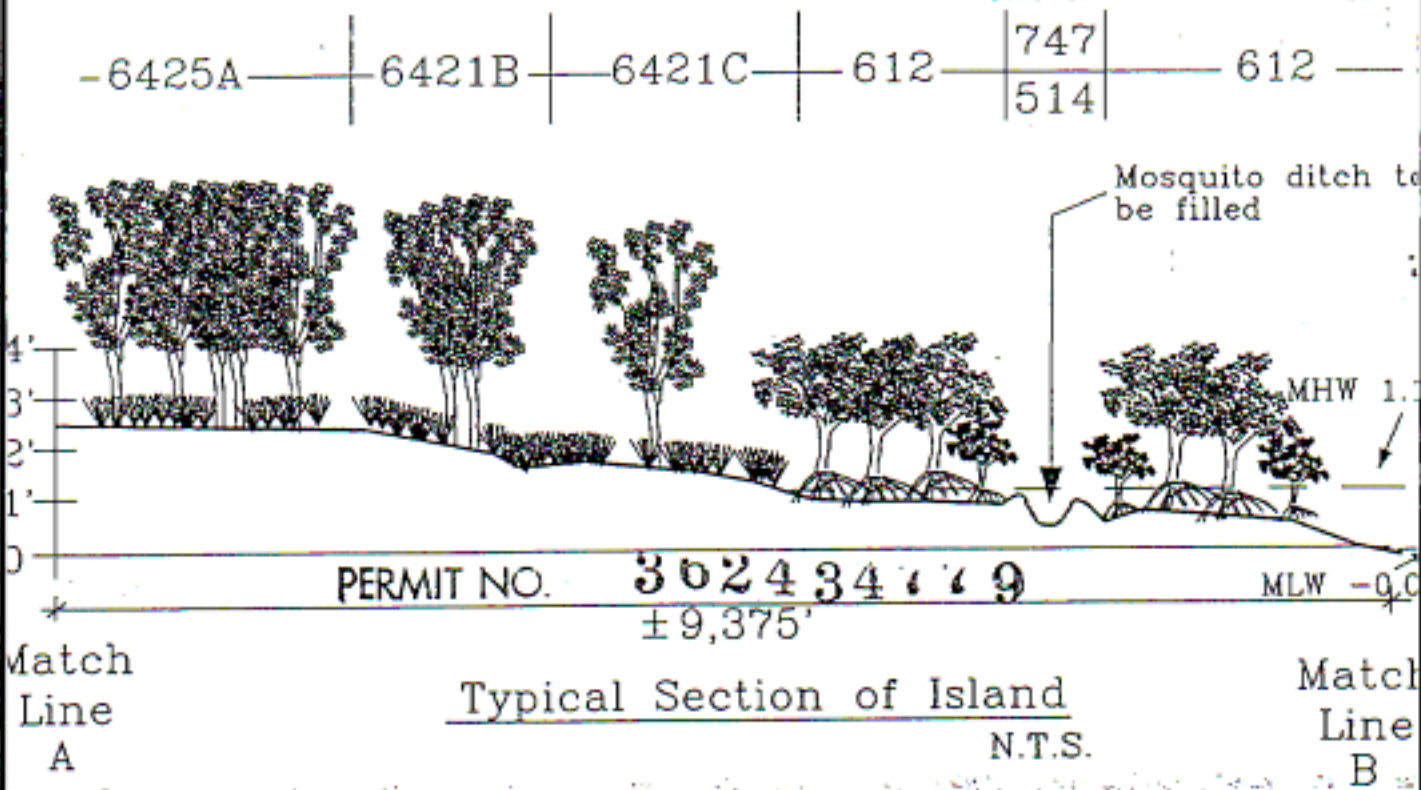


FDOT - District 1 MITIGATION AREA (Charlotte Harbor)	LITTLE PINE ISLAND MITIGATION BANK (SW 52)	FIGURE B TYPICAL VEGETATIVE CROSS SECTION



Typical Section of Island

N.T.S.



Typical Section of Island

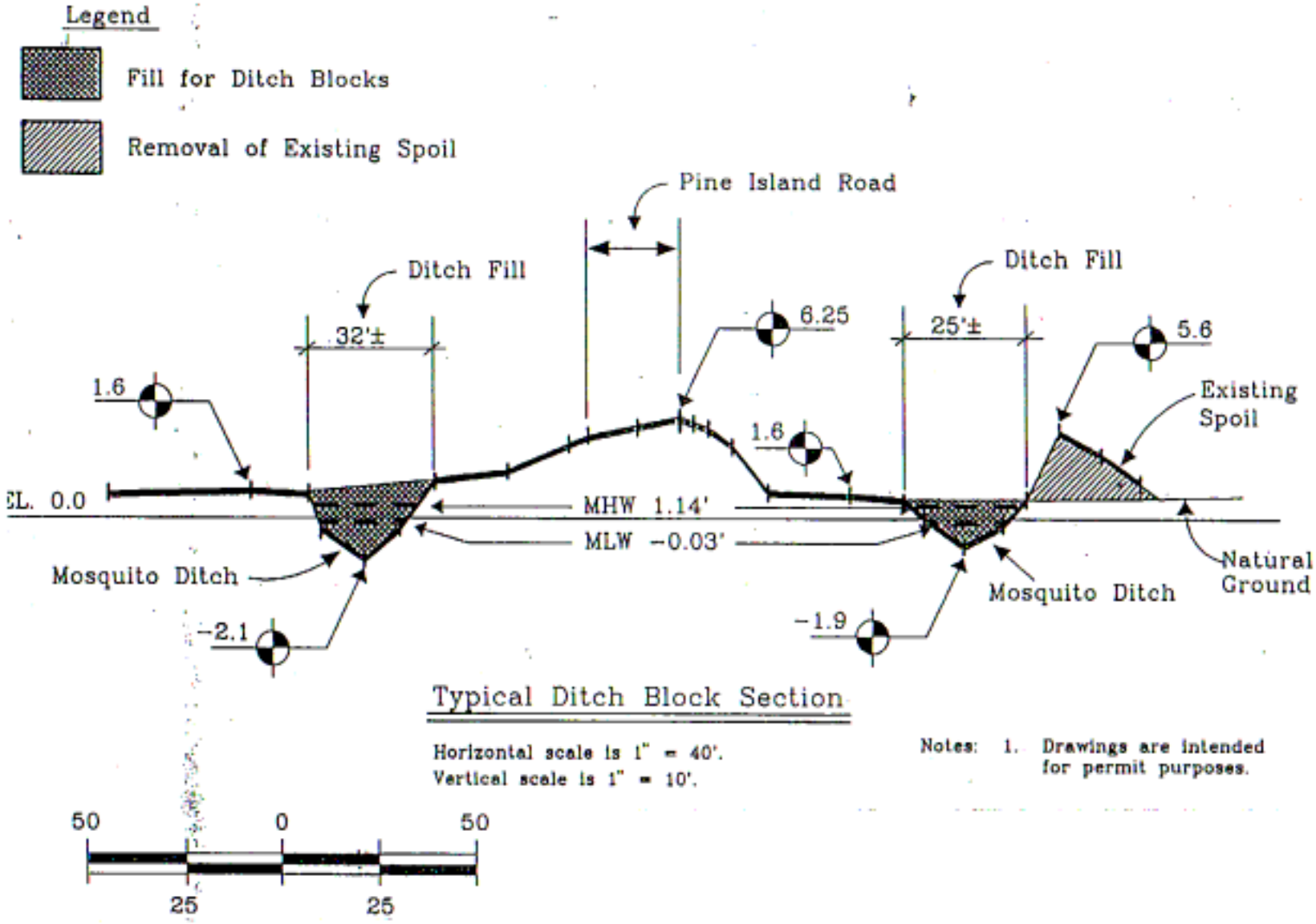
N.T.S.

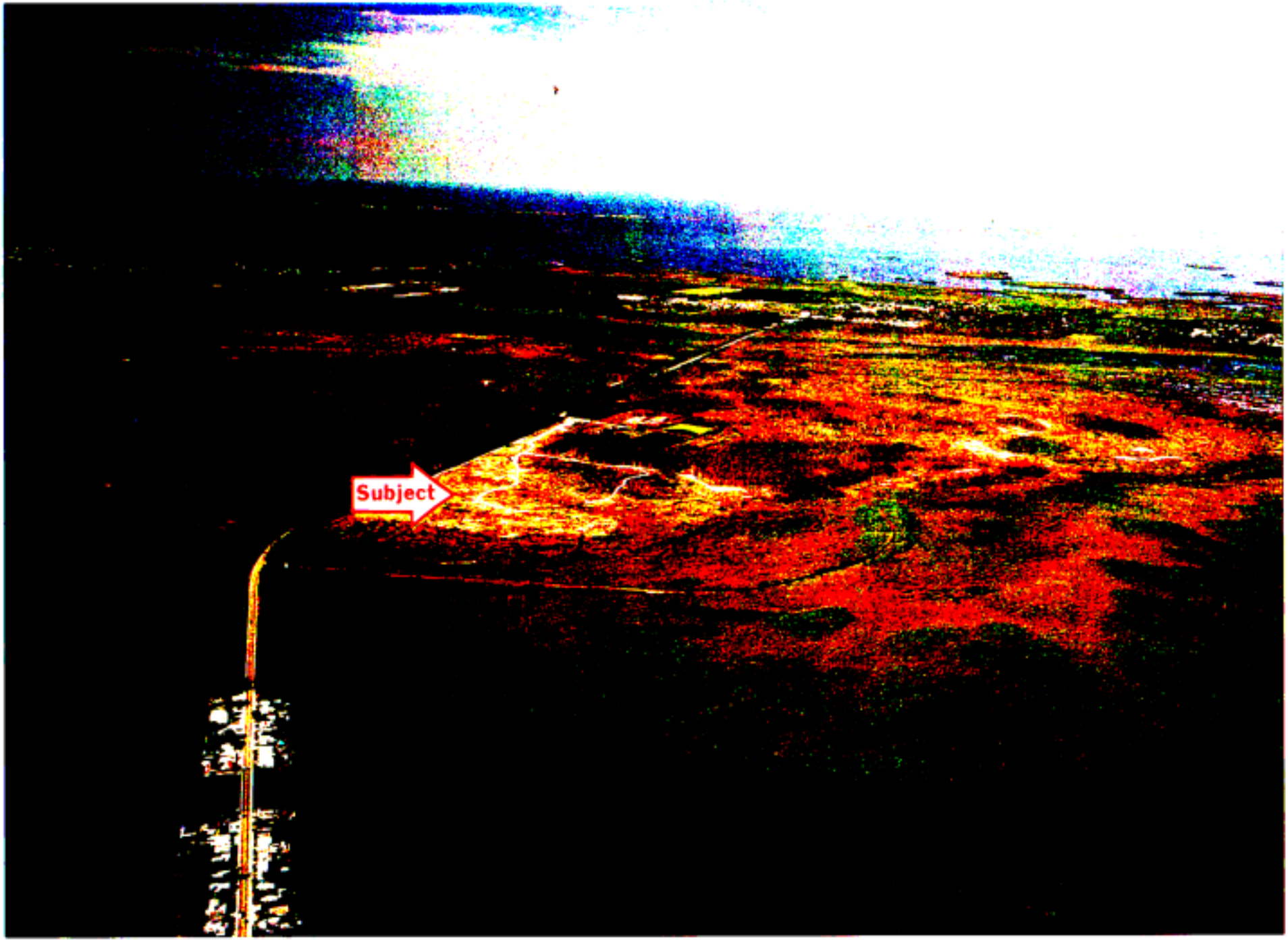
FDOT - District 1 MITIGATION AREA (Charlotte Harbor)	LITTLE PINE ISLAND MITIGATION BANK (SW 52)	FIGURE B TYPICAL VEGETATIVE CROSS SECTION

FDOT - District 1
MITIGATION AREA
(Charlotte Harbor)

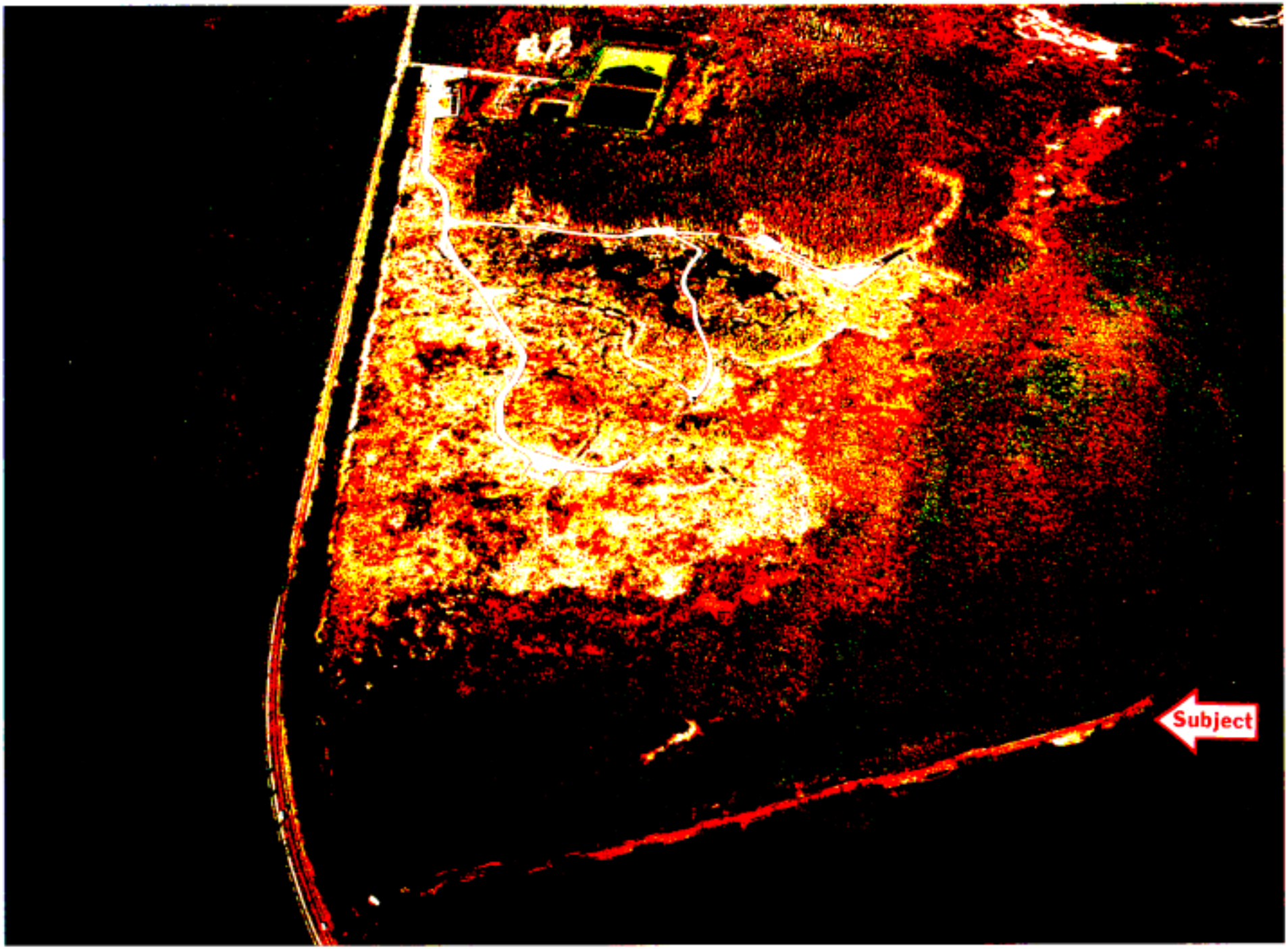
LITTLE PINE ISLAND
MITIGATION BANK
(SW 52)

FIGURE C
MOSQUITO DITCH
FILL CROSS SECTION

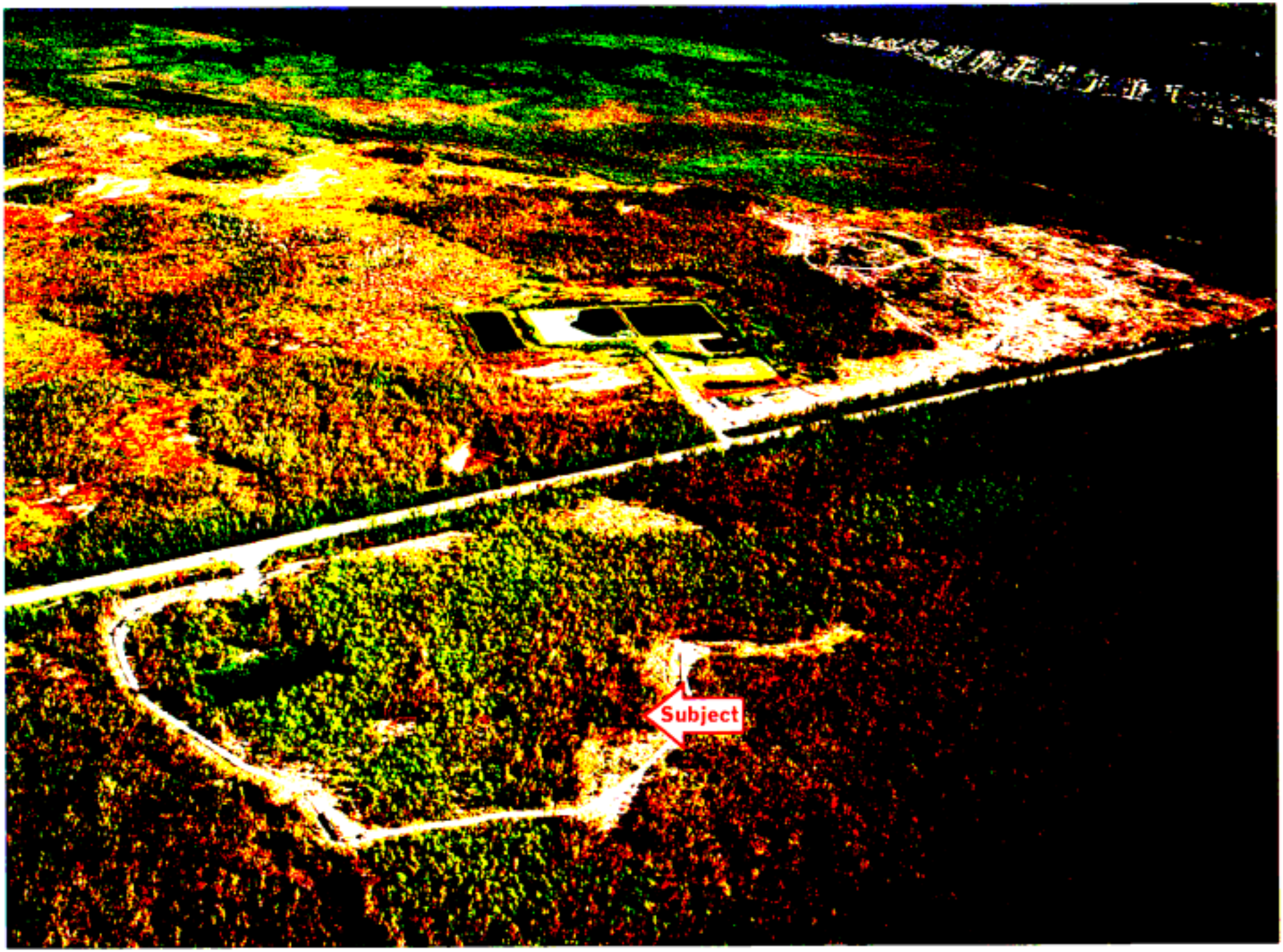




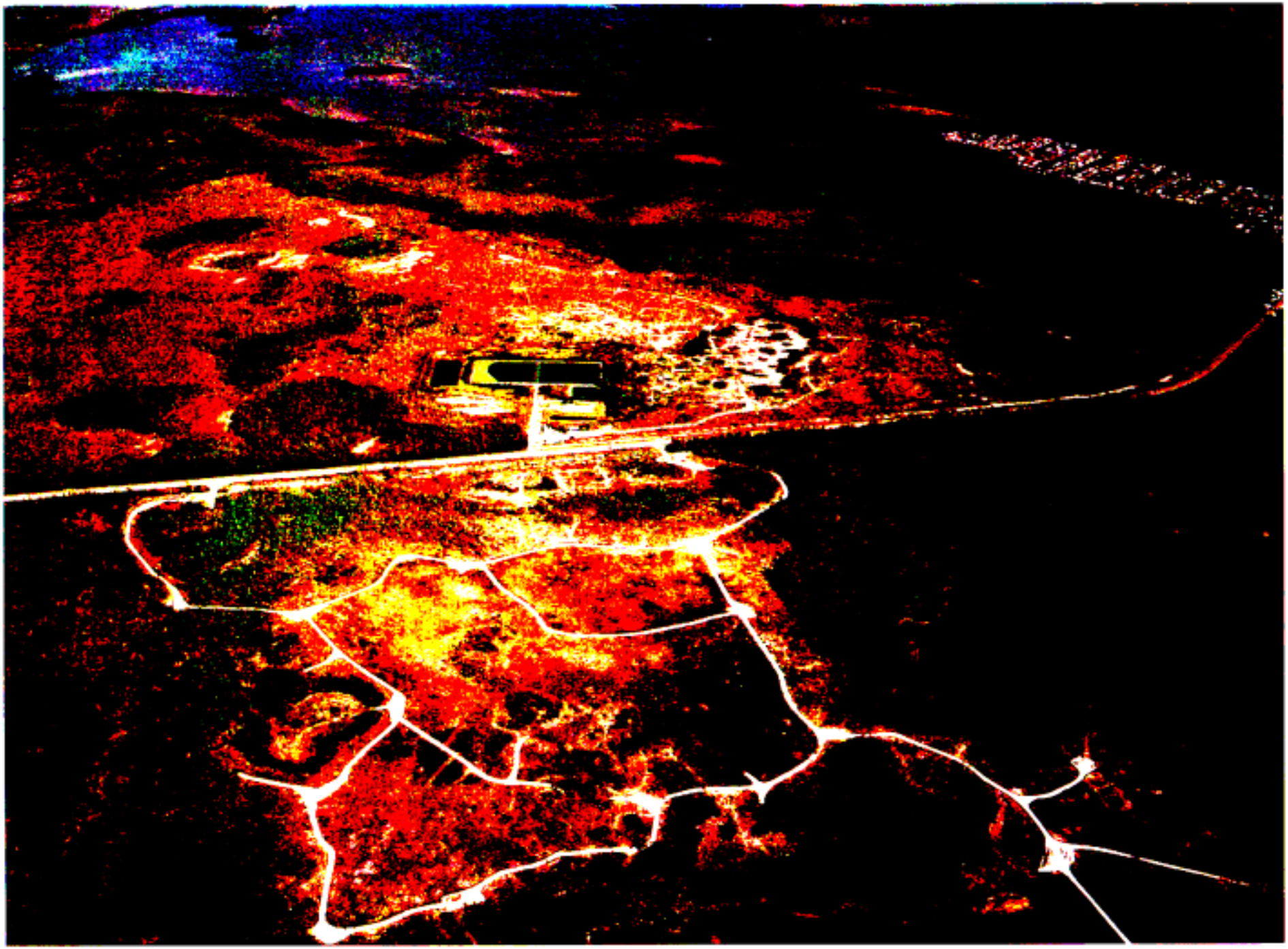
SEPTEMBER 1997 - PHASE I EXOTIC VEGETATION REMOVAL COMPLETE AT LITTLE PINE ISLAND - VIEW FROM MATLACHA PASS AQUATIC PRESERVE



SEPTEMBER 1997 - PHASE I HYDROLOGIC RESTORATION AT LITTLE PINE ISLAND - DRAINAGE CANALS ARE FILLED TO RESTORE SHEET FLOW



SEPTEMBER 1997 - COMMENCEMENT OF EXOTIC VEGETATION REMOVAL FROM FORESTED WETLANDS AT LITTLE PINE ISLAND



FEBRUARY 2000 - EXOTIC VEGETATION REMOVAL AND HYDROLOGIC RESTORATION OF LITTLE PINE ISLAND COMPLETED IN PHASES I, II, AND V. TEMPORARY ROADS REMOVED FROM PHASES I AND II.

Dense melaleuca infestation in former herbaceous wetlands has greatly reduced wetland functions including wildlife habitat at Little Pine Island

All exotic vegetation is cut using chain saws and manual labor so as to minimize the impacts to wetland habitat

Temporary roads are underlain by filter cloth so as to reduce impacts to habitat and facilitate road removal

April 1997 - commencement of exotic vegetation removal from Phase I herbaceous wetlands at Little Pine Island

August 1997 - initial regrowth of native herbaceous wetland plants at Little Pine Island Phase I

November 1997 - wetland dependent wading birds return to Phase I wetlands at Little Pine Island

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management District

Mitigation Project Name: **Boran Ranch Mitigation Bank** Project Number: **SW 53**

Project Manager: Don Ross, Charles Kocur - Earth Balance, Inc. Phone No: _(941) 624-2911

County: DeSoto Location: Section 29, T38S, R23E

IMPACT INFORMATION

(1) WPI 1121259, FM 1986401, Ft.Green/Ona Rd.- (Seg. 1) ERP #:4317734.000 COE #:199801201

(2) WPI 1110453, FM 1938851, SR 72 – Sarasota Co. Line to SR 70 ERP #:4317646.000 COE#: 199801103

(3) WPI 1111286, FM 1941021, US 17 (SR 35)-SR 64 to Peace Bridge ERP #:4316955.000 COE#:199405245

(4) WPI 1110145, FM 1937911, US 17 (SR 35)-CR 74 to CR 764 North ERP #:4113562.002 COE #:199500627

(5) WPI 1121257, FM 1986371, Ft.Green/Ona Rd.- (Seg. 2) ERP #:4317734.001 COE #:199801201

(6) WPI 1121256, FM 1986371, Ft.Green/Ona Rd.- (Seg. 3) ERP #:4317734.002 COE #:199801201

(7) WPI 1110152, FM 1937981, US 17-CR 764 S. to CR 764 N. ERP #:4317646.002 COE #:199500267

Drainage Basin(s):Peace River Water(s): Peace River, Horse Ck., Brandy Br., Buzzard's Roost Br. SWIM water? N

(1) WPI 1121259 – 2.08 ac. - 617 (Fluccs code)
(2) WPI 1110453 - 1.19 ac. – 615 (Fluccs code)
(3) WPI 1111286 – 1.84 ac. – 615 (Fluccs code)
0.46 ac. – 641 (Fluccs code)
TOTAL 2.30 ac.

(4) WPI 1110145 – 0.27 ac. – 630 (Fluccs code)
(5) WPI 1121257 – 7.22 ac. – 641 (Fluccs code)
(6) WPI 1121256 - 0.68 ac. – 615 (Fluccs code)
0.43 ac. - 617 (Fluccs code)
4.12 ac. - 640 (Fluccs code)
TOTAL 5.23 ac.

(7) WPI 1110152 – 3.00 ac. – 630 (Fluccs code)
0.58 ac. – 641 (Fluccs code)
TOTAL 3.58 ac.

TOTAL - 21.87 acres

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: ___ Creation _x_ Restoration _x_ Enhancement _x_ Preservation Mitigation : **_22.46 credits**
SWIM project? N Aquatic Plant Control project? N Exotic Plant Control Project? N

Mitigation Bank? _Y If yes, give DEP/WMD mit bank permit #: 4914074.04_ COE # 199601134 (IP-ML)
Drainage Basin(s) : Peace River Basin_ Water Body(s): un-named SWIM water body? N

Project Description

A. Overall project goal: Restoration, enhancement and preservation of freshwater forested and non-forested wetlands previously impacted by agricultural ditching. Restoration and preservation of upland habitat conditions.

FDOT Mitigation – Boran Ranch Mitigation Bank, Page 2

B. Brief description of current condition: Site is comprised of 132 wetland acres and 272 upland acres (total –404 acres). Wetlands and uplands have been drained by agricultural ditches and converted to improved pasture for cattle grazing (Figure C – Aerial). Since restoration & enhancement activities have been conducted in 1997-98, vegetative composition within former wet pastures have reverted to more diverse, desirable hydrophytic species (refer to pre-post construction photos).

C. Brief description of proposed work: Installed riser structures in three existing outfall ditches to enhance & restore proper wetland hydrology. The top 6 inches of the pasture surface soils were scraped/stockpiled, the underlying 6 inches of soil matrix was scraped and removed from the site. The original topsoil was evenly backfilled across the pasture, which has allowed appropriate hydroperiods for creation and regeneration of marsh and wet prairie habitat. The existing native upland habitat has been preserved and converted uplands have been planted with appropriate species. The project is currently in the maintenance & monitoring period, which will include implementing a prescribed burn plan (refer to Figure F).

C. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): The mitigation will enhance / restore and preserve wetland and upland habitat. The following information indicates the credits for six of the seven DOT projects that have been permitted for credit purchase at Boran Ranch.

Project 1 – WPI 1121259 – 2.08 ac. impacts – 2.08 credits of mesic hammock

Project 2 – WPI 1110453 – 1.19 ac. impacts – 1.19 credits of mesic hammock

Project 3 – WPI 1111286 – 2.30 ac. impacts – 1.84 credits of mesic hammock, 0.46 credits of marsh

Project 4 – WPI 1110145 – 0.27 ac. impacts – 0.27 credits of mesic hammock

Project 5 – WPI 1121257 – 7.22 ac. impacts – 7.22 credits of marsh

Project 6 – WPI 1121256 – 5.23 ac. impacts – 1.11 credits of mesic hammock, 4.71 credits of marsh

Project 7 – WPI 1110152 – 3.58 ac. impacts – 3.47 credits of mesic hammock, additional 0.11 credits to be purchased 9/03 to compensate for additional impacts.

E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: The Boran Ranch Mitigation Bank was selected because it provided the most cost-effective means to offset the proposed impacts, including cumulative impacts in the drainage basin.

F. Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body: No SWIM projects are available or currently proposed within the drainage basin to offset the specific impacts associated with the identified road projects.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: Boran Ranch Mitigation Bank
Contact Name: Don Ross or Charles Kocur, Earth Balance. Inc. Phone Number: (941) 624-2911

Entity responsible for monitoring and maintenance: Same
Proposed timeframe for implementation: Commence: 1998 Complete: Construction complete, currently monitoring.

FDOT Mitigation – Boran Ranch Mitigation Bank, Page 3

Project cost: $670,500 (TOTAL through 2002 DOT Mit. Plan)

Project 1 – WPI 1121259 – 2.08 credits x $30,000 = $62,400 (Purchased Summer, 2001)

Project 2 – WPI 1110453 – 1.19 credits x $30,000 = $35,700 (Purchased Spring, 2002)

Project 3 – WPI 1111286 – 2.30 credits x $30,000 = $69,000 (Purchased Spring, 2002)

Project 4 – WPI 1110145 – 0.27 credits x $30,000 = $8,100 (Purchased Summer, 2001)

Project 5 – WPI 1121257 – 7.22 credits x $30,000 = $216,600 (Purchased Summer, 2001)

Project 6 – WPI 1121256 – 5.82 credits x $30,000 = $174,600 (Purchased Spring 2002)

Project 7 – WPI 1110152 – 3.47 credits x $30,000 = $104,100 (Purchased Summer, 2001)
Additional 0.11 credits x $30,000 = $3,300 (Purchase Fall, 2003)

Attachments

__x__1. Detailed description of existing site and proposed work. Reference previous discussion, ACOE & SWFWMD Permits, attached site photographs of pre- (April, 1997) and post- (Sept., 2000) construction during monitoring.

__x__2. Recent aerial photograph with date and scale. Figure C - 1995 Infrared Aerial.

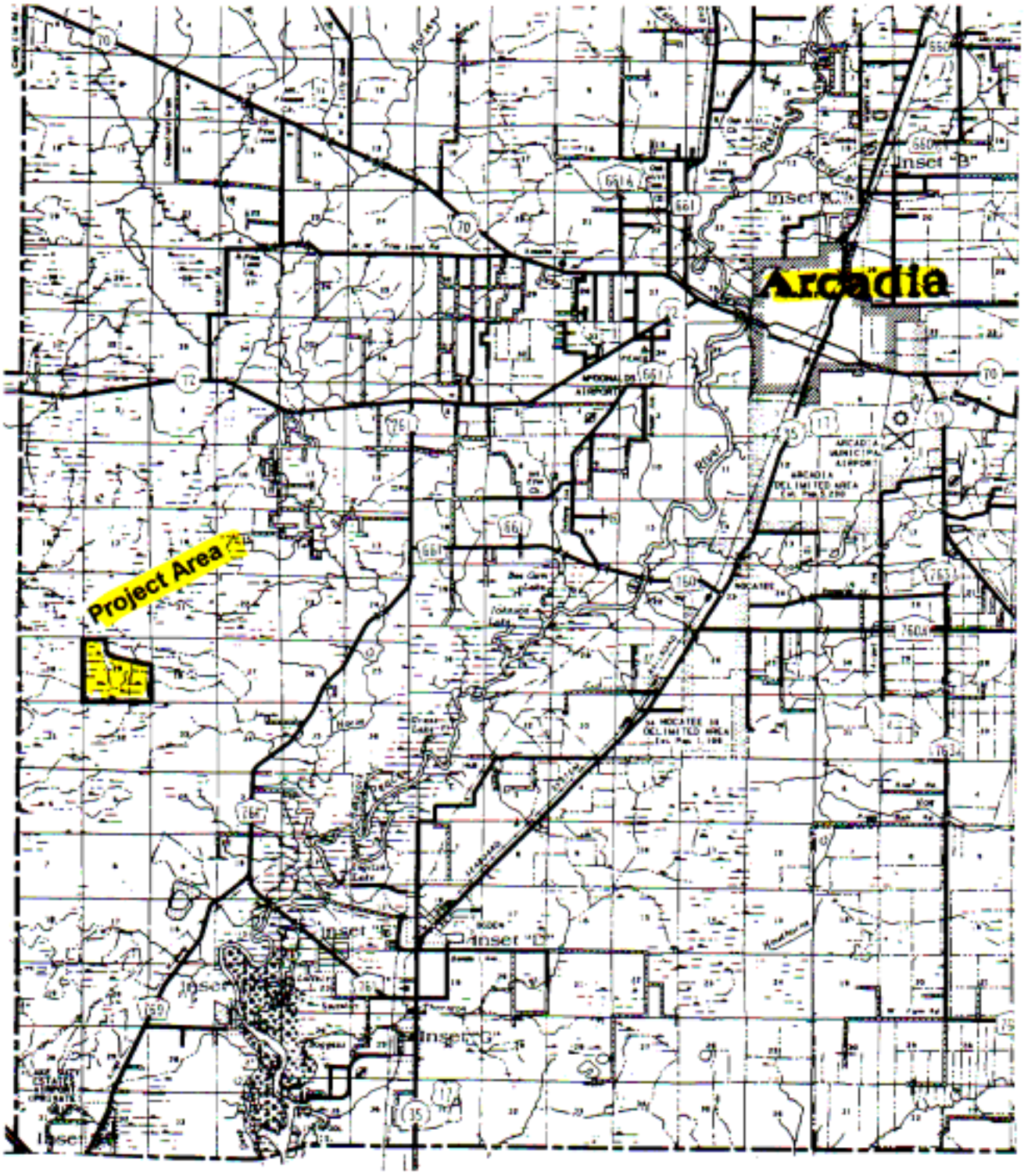
__x__ 3. Location map and design drawings of existing and proposed conditions. Figure A – Location Map, Figures B & D Existing & Proposed Habitat Conditions.

__x_4. Detailed schedule for work implementation, including any and all phases. Construction activities are complete, current maintenance & monitoring until required success criteria are met.

__x_5. Proposed success criteria and associated monitoring plan. Success criteria for each enhancement & restoration habitat area (upland & wetland) are specified in the permits, monitoring plan is depicted on Fig. E.

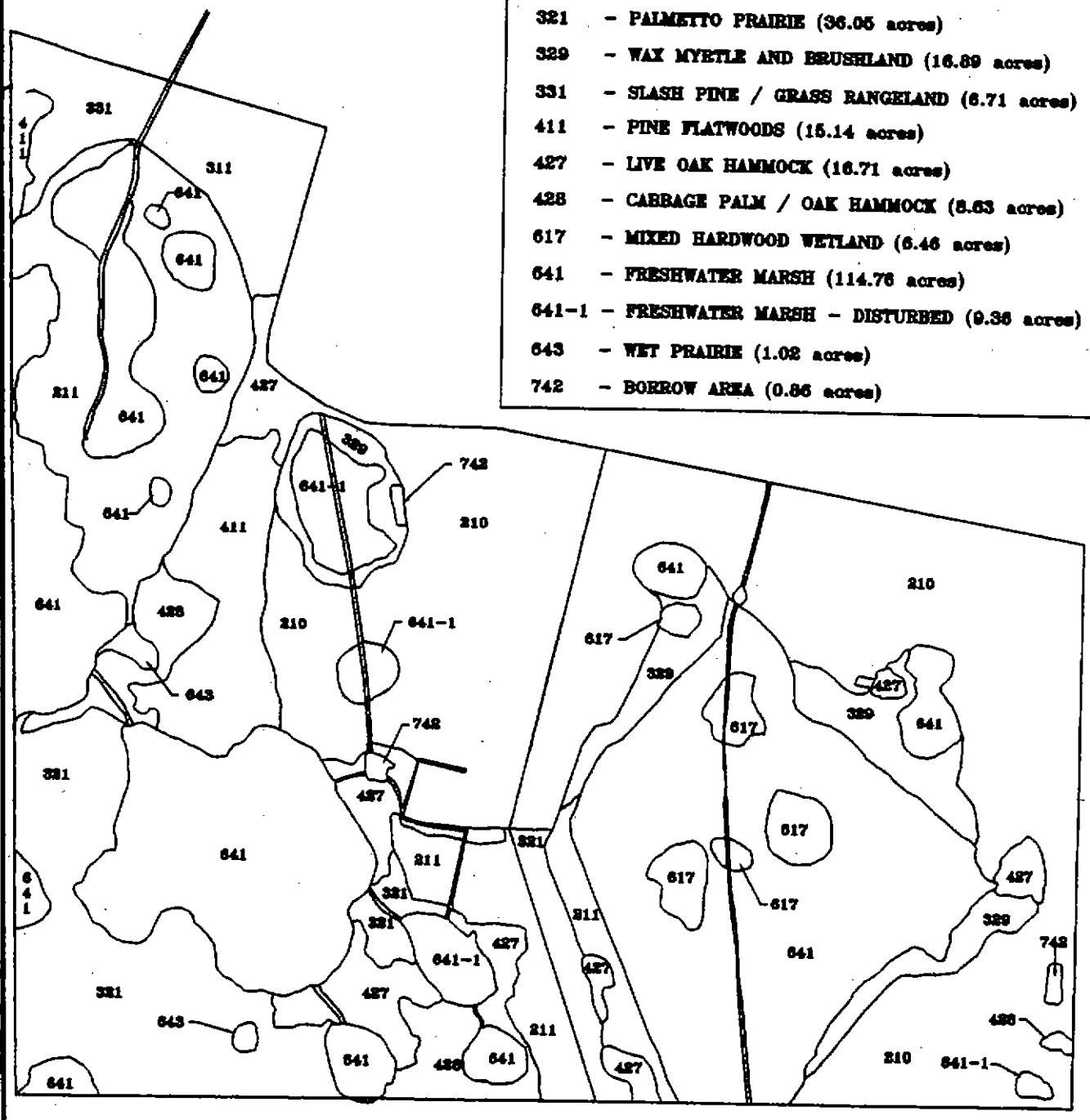
__x_6. Long term maintenance plan. The long-term maintenance plan is specified in the permits, includes minor use of herbicide control and long-term prescribed fire management plan (Figure F).

__x_7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). Refer to previous discussion under Section D.



FDOT - District 1 MITIGATION AREA (Peace River Basin)	BORAN RANCH MITIGATION BANK (SW 53)	FIGURE A PROJECT LOCATION

NORTH ^
SCALE 1 in. = 750 ft.



LEGEND

210	- CROP AND PASTURELAND (118.11 acres)
211	- IMPROVED PASTURE (41.24 acres)
311	- GRASS RANGELAND (10.43 acres)
321	- PALMETTO PRAIRIE (36.05 acres)
329	- WAX MYETLE AND BRUSHLAND (16.89 acres)
331	- SLASH PINE / GRASS RANGELAND (6.71 acres)
411	- PINE FLATWOODS (15.14 acres)
427	- LIVE OAK HAMMOCK (16.71 acres)
428	- CABBAGE PALM / OAK HAMMOCK (5.63 acres)
617	- MIXED HARDWOOD WETLAND (6.46 acres)
641	- FRESHWATER MARSH (114.76 acres)
641-1	- FRESHWATER MARSH - DISTURBED (9.36 acres)
643	- WET PRAIRIE (1.02 acres)
742	- BORROW AREA (0.86 acres)

FDOT - District 1
MITIGATION AREA
(Peace River Basin)

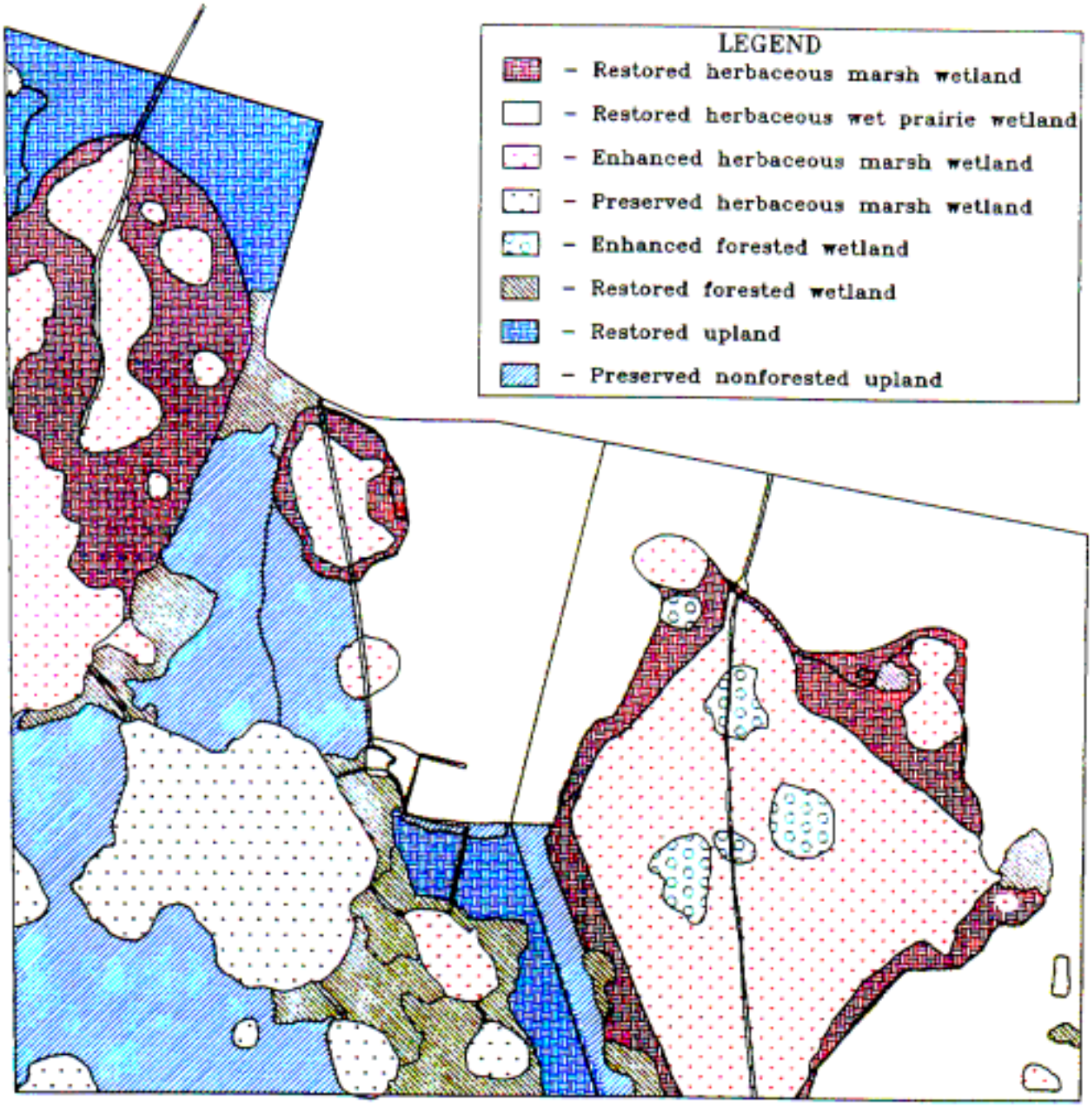
BORAN RANCH
MITIGATION BANK
(SW 53)

FIGURE B
EXISTING LAND USE /
HABITAT TYPES

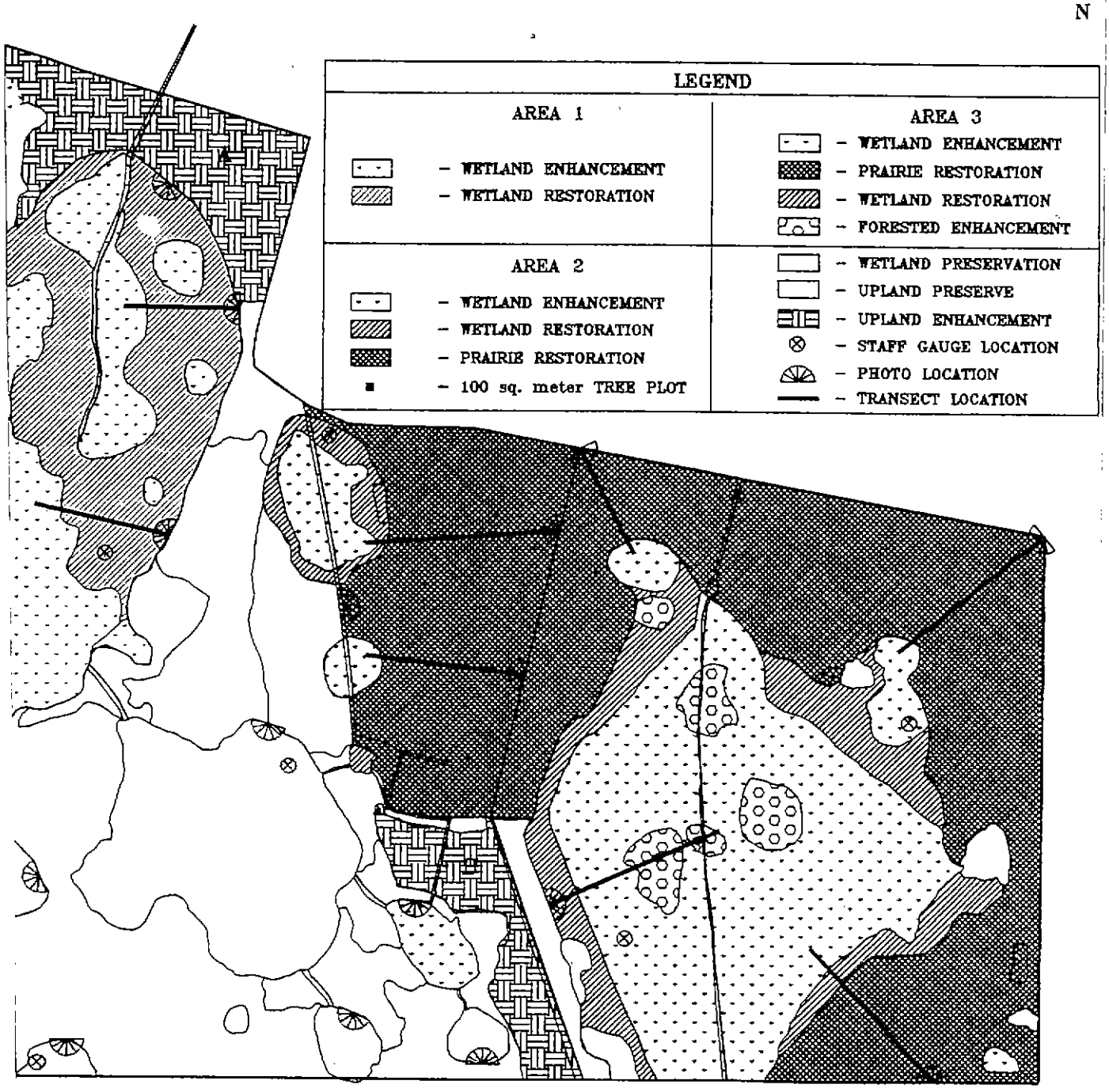
FDOT - District 1 MITIGATION AREA (Peace River Basin)	BORAN RANCH MITIGATION BANK (SW 53)	FIGURE C INFRARED AERIAL (1995)

SCALE 1 in. = 750 ft.

N



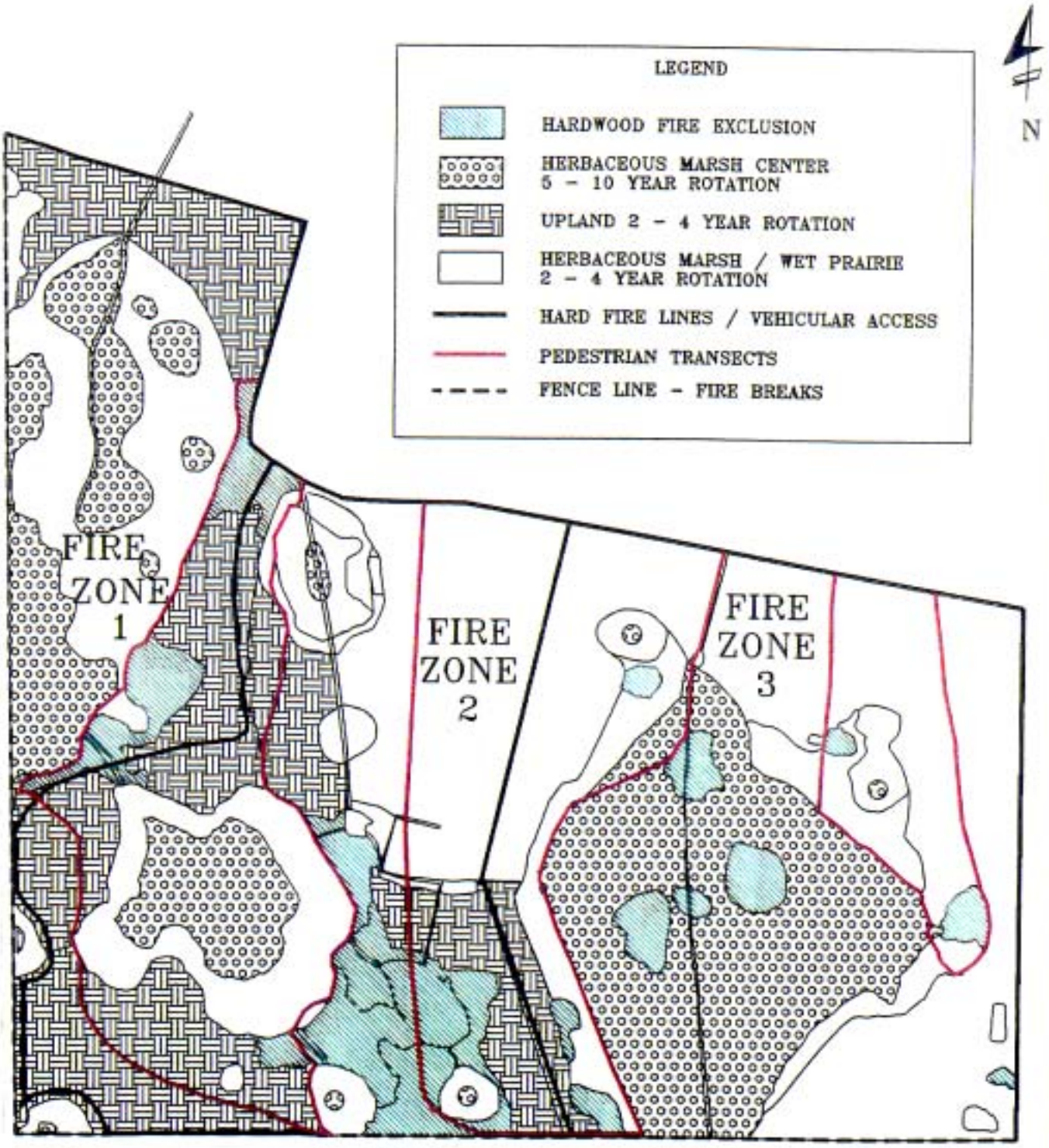
FDOT - District 1 MITIGATION AREA (Peace River Basin)	BORAN RANCH MITIGATION BANK (SW 53)	FIGURE D PROPOSED LAND USE / HABITAT TYPE



FDOT - District 1
MITIGATION AREA
(Peace River Basin)

BORAN RANCH
MITIGATION BANK
(SW 53)

FIGURE E
MONITORING PLAN
Scale 1 in. = 750 ft.



FDOT - District 1 MITIGATION AREA (Peace River Basin)	BORAN RANCH MITIGATION BANK (SW 53)	FIGURE F MANAGEMENT PLAN Scale 1 in. = 750 ft.

Boran Ranch Mitigation Bank

T6 Restoration/Transition Area - April 1997

T6 Restoration/Transition Area - September 2000

FDOT - District 1 Mitigation Site (Peace River Basin)	**Boran Ranch Mitigation Bank (SW 53)**

Boran Ranch Mitigation Bank

T7 Restoration/Transition Area - April 1997

T7 Restoration/Transition Area - September 2000

FDOT - District 1 Mitigation Site (Peace River Basin)	**Boran Ranch Mitigation Bank (SW 53)**

Boran Ranch Mitigation Bank

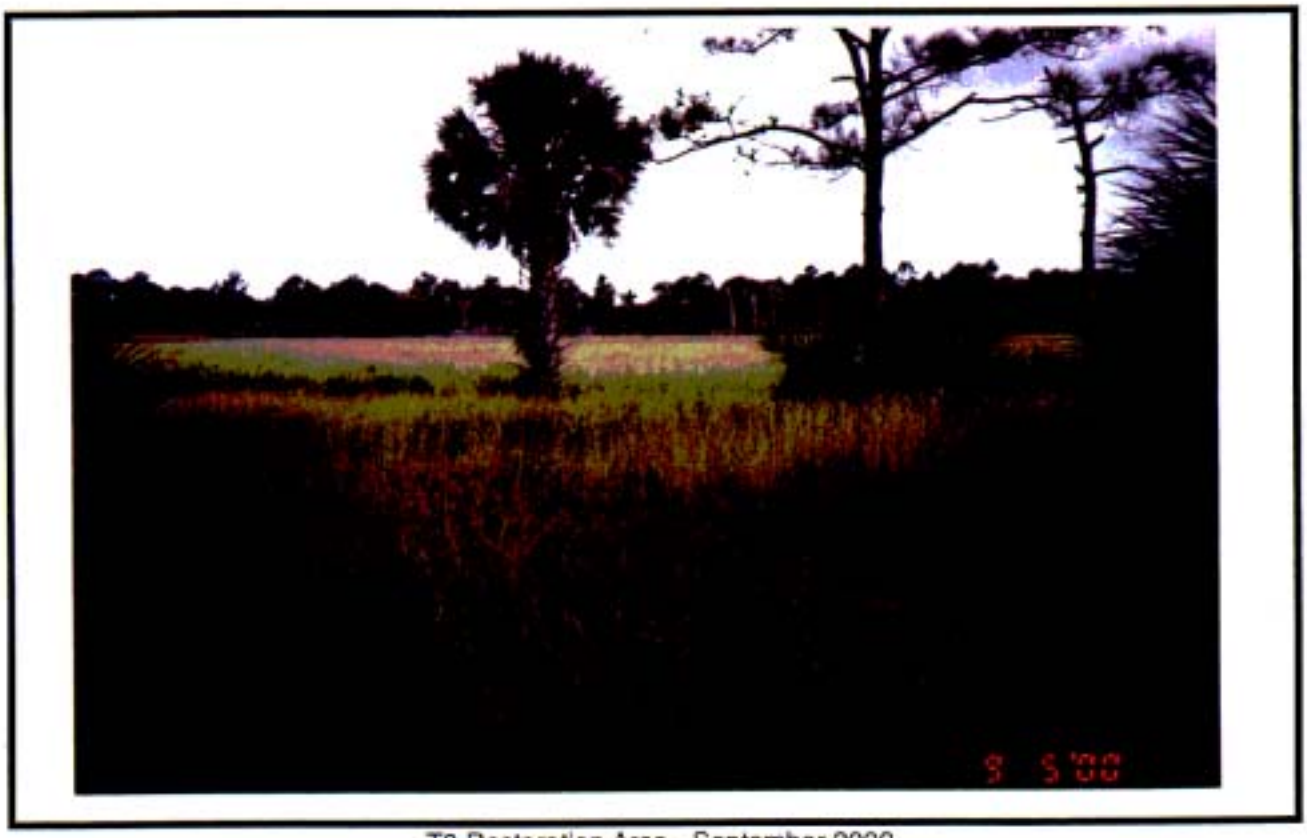
T7 Enhancement/Transition Area - April 1997

T7 Enhancement/Transition Area - September 2000

FDOT - District 1 Mitigation Site (Peace River Basin)	**Boran Ranch Mitigation Bank (SW 53)**

Boran Ranch Mitigation Bank

T8 Restoration Area - April 1997



T8 Restoration Area - September 2000

FDOT - District 1 Mitigation Site (Peace River Basin)	**Boran Ranch Mitigation Bank (SW 53)**

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management District
Mitigation Project Name: **Anclote Parcel** Project Number**: SW 54**
Project Manager: Clark Hull, Environmental Program Director Phone No: (352) 796-7211 ext. 4302
County(ies): Pasco Location : Sections 7, 18 T26S, R17E

IMPACT INFORMATION

(WPI): 7115974 (FM) 2563361 - SR 54 Mitchell to Gunn ERP #: 43016251.002 COE #: 199905202 (IP-RGW)
(WPI): 7115977 (FM) 2563391 - SR 54 Suncoast to US 41 ERP #: 43016251.000 COE #: 199504576 (IP-ES)

Drainage Basin(s): Upper Coastal Water Body(s) : Anclote River (South Prong) SWIM water body? N
Impact Acres / Type:

WPI: 7115974 - SR 54 (Mitchell to Gunn)

1.6 ac. 621 (Fluccs code)
2.8 ac. 630 (Fluccs code)
2.2 ac. 641 (Fluccs code)
TOTAL: 6.6 acres

WPI: 7115977 - SR 54 (Suncoast to US 41)

1.3 ac. 617 (Fluccs code)
0.8 ac. 619 (Fluccs code)
3.0 ac. 621 (Fluccs code)
0.5 ac. 641 (Fluccs code)
1.4 ac. 641x (Fluccs code)
TOTAL 7.0 acres

TOTAL: 13.7 acres

MITIGATION ENVIRONMENTAL INFORMATION

{tc \l1 "MITIGATION ENVIRONMENTAL INFORMATION**}**
Mitigation: X Creation X Enhancement X Preservation Mitigation Area: **82 ac.** For WPI: 7115974
X Enhancement X Preservation Mitigation Area: **103 ac**. For WPI: 7115977 **TOTAL: 185 Ac.**

SWIM project? N Aquatic Plant Control project? N Exotic Plant Control Project? N Mitigation Bank? N
Drainage Basin(s): Upper Coastal Water Body(s): Anclote River SWIM water body? N

Project Description

{tc \l2 "Project Description} **A. Overall project goal**: Acquisition, enhancement, and long-term management of 185 acres of high quality habitat including a portion of the Anclote River and associated mixed hardwood floodplain forest, mixed forested (cypress dominant) wetland, and buffers of pine flatwoods, and oak hammocks. This includes creation of 6-acres of freshwater marsh (with a perimeter 4-acres of planted cypress for mitigation of Starkey Blvd. proposed wetland impacts) in a borrow pit which exists on the property (site photos). The parcel is divided into two areas to mitigate for the two DOT projects. The northern 82-acres includes the marsh creation and mitigates for WPI: 7115974 (6.6 ac. impacts) because of the higher quantity of proposed marsh impacts (Fluccs 641). The southern 103-acres mitigates for WPI 7115977 (7.0 ac. impacts). Long-term management will be conducted by the WMD-Land Management Dept. and will primarily include prescribed burning and maintaining security.

B. Brief description of current condition: The parcel is in relatively high quality condition except for a borrow pit (which has been converted to a marsh and cypress fringe) and the lack of prescribed burn management in the uplands. Wetland and upland habitat is adjacent to the Anclote River floodplain, high quality habitat and abundant wildlife use. The mixed forested wetland habitat (139 acres) includes a diversity of tree species (refer to photos). The wetlands are bordered by pine flatwoods and oak hammocks (40 acres). The uplands require enhancement through prescribed burning. The parcel is located adjacent to other public lands and private property (Starkey family) which are in native habitat conditions (Figure A). A borrow pit (total 10 acres) has been filled to provide marsh habitat (6 acres – DOT mitig.) and surrounded by a perimeter of cypress (4 acres – County mitig. for Starkey Blvd.). The adjacent public property covers over 15,000 acres of native habitat, the majority acquired by the Turnpike and deeded to the WMD to provide mitigation for wetland impacts associated with constructing the Suncoast Parkway.

Mitigation Project – Anclote Parcel, Page 2

C. Brief description of proposed work: Acquisition and enhancement of the 185-acre parcel through fee simple purchase by the WMD (completed 2000). Of that total area, constructed 6- acres of freshwater marsh by filling and planting an existing borrow pit (currently under maintenance and monitoring). The adjacent perimeter 4- acres cypress creation will also be deeded to the WMD upon achieving mitigation success criteria. The uplands will be enhanced by implementing a prescribed burn management plan as an extension of adjacent WMD property, burn cycle 4-5 years.

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): The proposed mitigation will create and preserve wetlands providing functions similar to those lost due to the two nearby SR 54 roadway projects in the same drainage basin, along with enhancement of upland habitat buffers adjacent to preserved native habitat associated with SWFWMD-owned tracts (Starkey Wilderness Preserve, Anclote River Ranch, Serenova Preserve – total 25,000 acres). The SR 54-Mitchell to Gunn impacts (6.6 acres) will be mitigated with 6 acres of marsh creation and forested wetland preservation (76 acres) for a total of 82 acres (12:1 ratio). The SR 54-Suncoast to US 41 impacts (7 acres) will be mitigated with enhancement of pine flatwoods and oak hammocks (34 acres) that buffer the wetlands, and forested wetland preservation (69 acres) for a total of 103 acres (15:1 ratio). The acquisition, preservation, and enhancement of this 185-acre tract mitigates the 13.7 acres of proposed wetland impact at a cumulative ratio of 14– to - 1.

E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: No mitigation banks currently exist or proposed in the Upper Coastal drainage basin.

F. Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body : No SWIM projects are available in this basin.

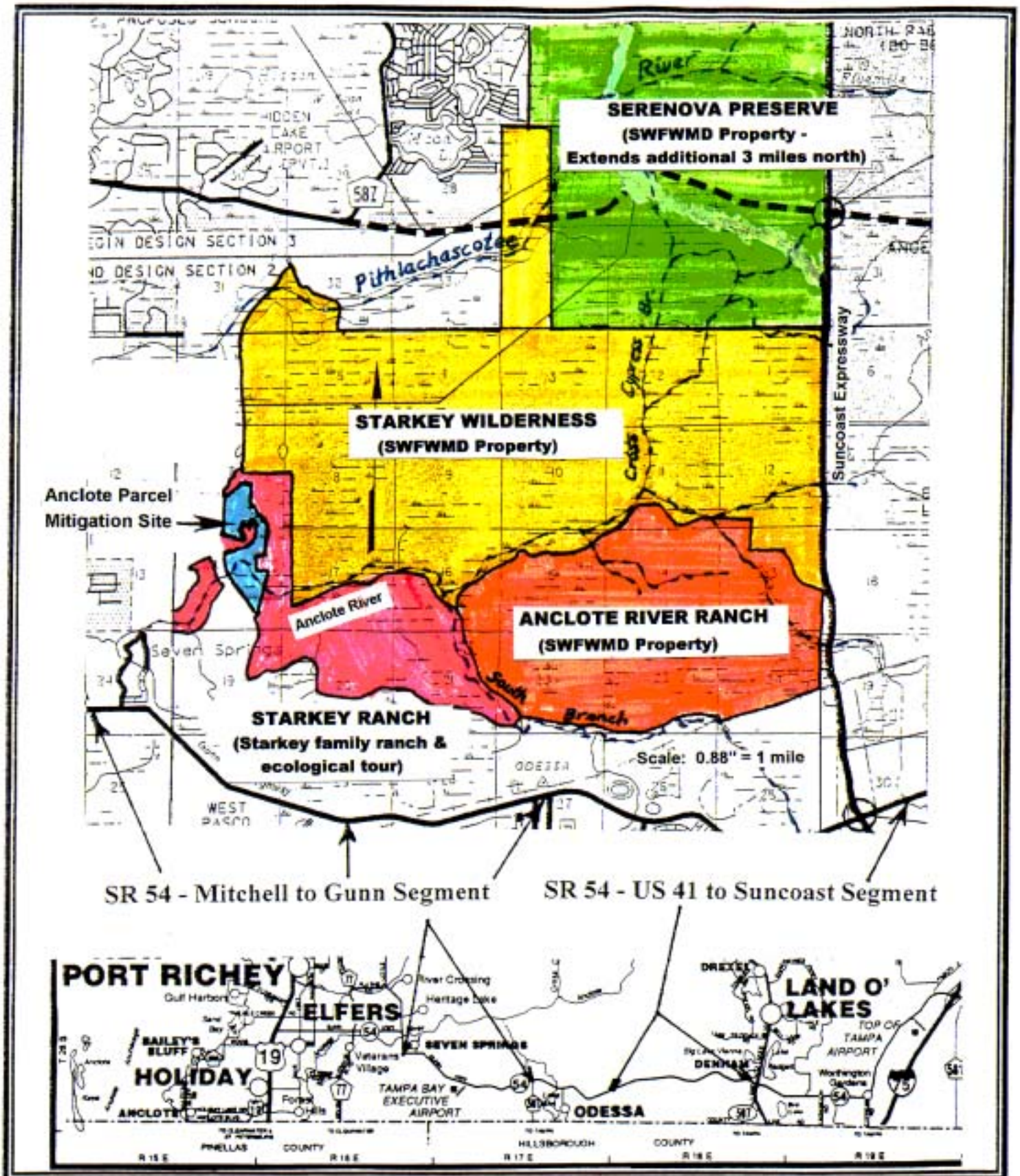
MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: Southwest Florida Water Management District
Contact Name: Mark Brown, WMD Environmental Scientist Phone Number: (352) 796-7211 ext. 4488
Entity responsible for monitoring and maintenance: Southwest Florida Water Management District
Proposed timeframe for implementation: Commence: July 1999 Acquired: April, 2000
Project cost: $ 675,000 (total); maintenance & management provided by the WMD-Land Management Dept.

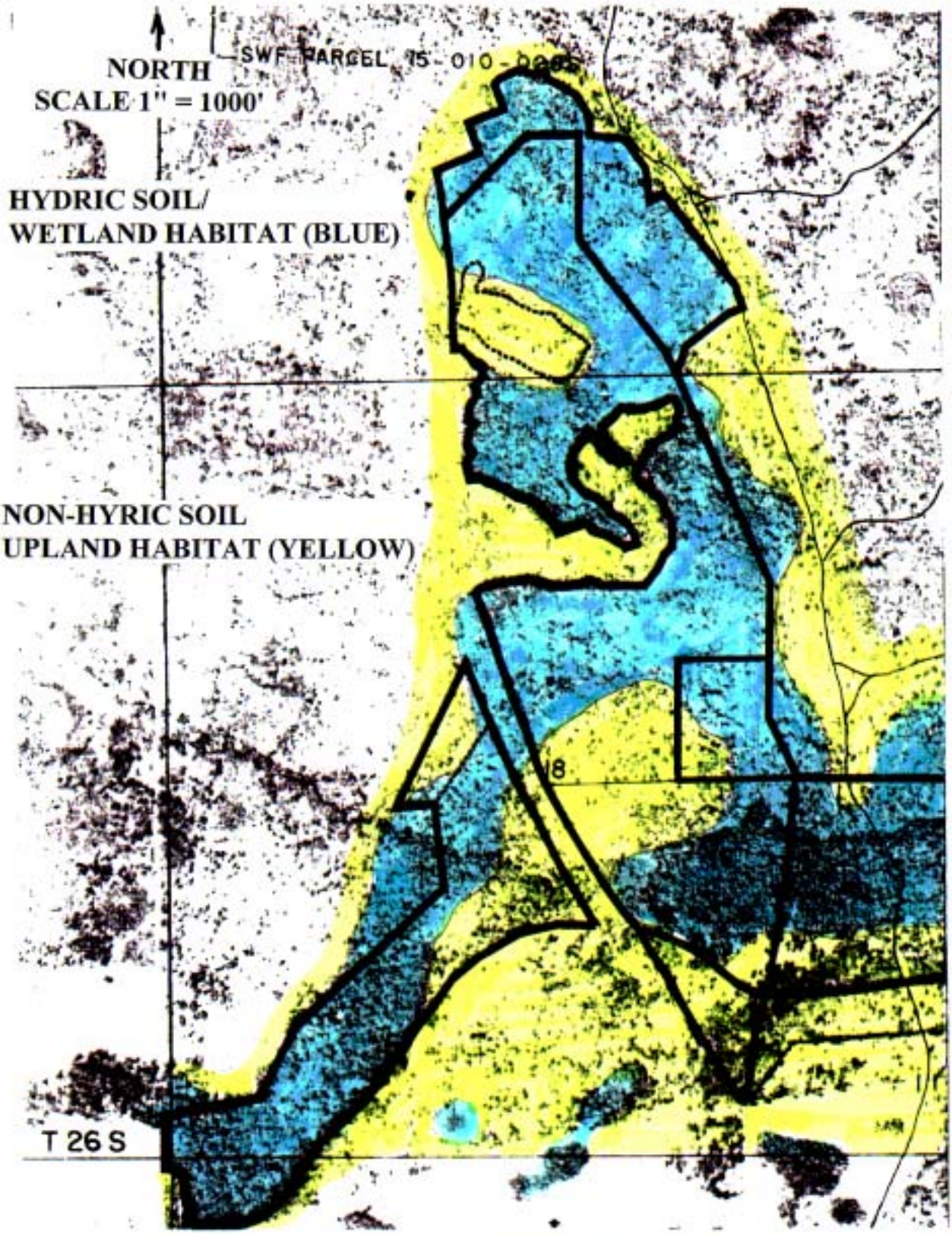
Attachments

X 1. Detailed description of existing site and proposed work. Refer to previous discussion and vegetative descriptions with the site photos. Additional site descriptions available from Clark Hull & Mark Brown (WMD).
X 2. Recent aerial photograph with date and scale. Refer to Fig. D (1995 Infrared).
X 3. Location map and design drawings of existing and proposed conditions. Fig. A - Location Map, Figure D.
X 4. Detailed schedule for work implementation, including any and all phases. Beyond regular management, only construction is associated with the creation of marsh & cypress habitat in the borrow pit (site photo).

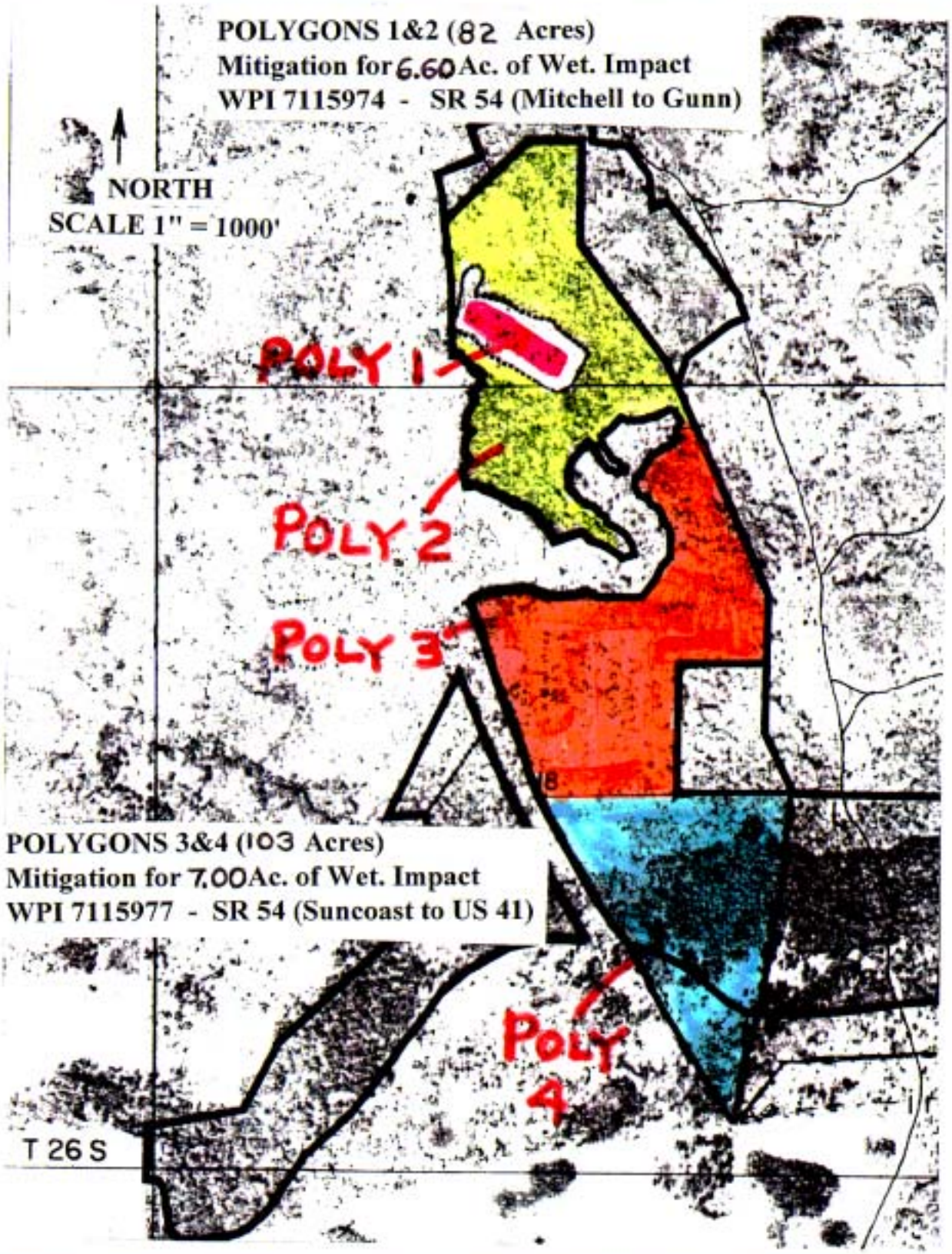
X 5. Proposed success criteria and associated monitoring plan. The native habitat is high quality that doesn't require success criteria & monitoring, the creation of marsh & cypress habitat has success criteria & monitoring associated with the permitting of the Starkey Blvd. mitigation plan. Currently within the maintenance & monitoring phase.
X 6. Long term maintenance plan. Prescribed management plans (primarily burn management) to be conducted in conformity with the adjacent SWFWMD property (Starkey Wilderness Preserve, Anclote River Ranch, Serenova Preserve).
X 7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). Refer to previous text concerning mitigation site and SR 54 impacts. Additional site evaluation and WRAP analysis available from Mark Brown.



SWFWMD-FDOT MITIGATION SITE	ANCLOTE RIVER TRACT PASCO COUNTY	FIGURE A LOCATION MAP



SWFWMD-FDOT MITIGATION SITE	ANCLOTE RIVER TRACT PASCO COUNTY	FIGURE B -WETLAND & HYDRIC SOILS MAP



SWFWMD-FDOT MITIGATION SITE	ANCLOTE RIVER TRACT PASCO COUNTY	FIGURE C - "WRAP" POLYGON LOCATIONS (ON-SITE MIT.)

FDOT - District 7 MITIGATION SITE (Upper Coastal Basin)	ANCLOTE PARCEL (SW 54)	FIGURE D INFRARED AERIAL (1995) VEGETATIVE COMMUNITIES

The mixed forested wetland within the northern portion of the tract is dominated by bald cypress with additional dense canopy coverage provided by red maple, tupelo, dahoon holly, and a perimeter of water & laurel oaks.

The Anclote River meanders through the southern portion. The river has an incised channel predominantly bordered with mixed forested wetlands dominated by laurel oak, red maple, and cabbage palm.

FDOT - District 7 Mitigation Site (Upper Coastal Basin)	ANCLOTE PARCEL (SW 54)

One of the pine flatwood communities at the site. These areas have not received prescribed burns for several years, allowing the overgrowth of palmetto, and generation of wax myrtle and oak species. These areas will be enhanced by scheduled mechanical thinning and roller chopping of the shrubs and palmetto, followed by prescribed fires every 3-4 years. This restores desired flatwood conditions, increases the foraging opportunities for wildlife while decreasing the potential of wildfires.

One of several small oak hammocks located along the perimeter of some wetlands and on sand deposits formed due to periodic overflow of the Anclote River. These hammocks have dominant canopy coverage provided by live oaks, scattered cabbage palm, few remnant pines (slash & loblolly), over saw palmetto. These areas also need prescribed burns to minimize palmetto density.

FDOT - District 7 Mitigation Site (Upper Coastal Basin)	ANCLOTE PARCEL (SW 54)

Within the site's southern forested wetlands, cypress are not as dominant compared to the northern portion. Water & laurel oaks are still dominant along the outer perimeter of the wetland, tupelo and maple in the interior. Due to shorter hydroperiods compared to the cypress dominated wetlands, more shrub and ground cover vegetation and diversity is present. Dominants include Virginia willow, wax myrtle (on hummocks), maple saplings, and various fern species (chain, swamp, & royal ferns).

Another view of the Anclote River on the parcel. With the addition of the Anclote Parcel, Anclote River Ranch, Starkey Wilderness Preserve, and private mitigation opportunities deeded to the WMD (Figure A), several miles of the Anclote River and the contributing Cross Cypress Branch will be preserved from impacts associated with extensive development activities within western Pasco County.

FDOT - District 7 Mitigation Site (Upper Coastal Basin)	ANCLOTE PARCEL (SW 54)

September, 2000 - Current site conditions of the former borrow pit in the northern portion of the parcel. A dewatering ditch (right) maintains a lower water table as the borrow pit grade is raised to construct wetland habitat. Adjacent to the former pit, stockpiled muck will be placed on top of the fill material to provide organics and wetland plant seed source. Forested wetlands border the former pit, a perimeter of created cypress habitat is proposed (mitigation for other activity, deeded to the WMD), followed by an interior of marsh creation to mitigate for the DOT projects.

A constructed wetland adjacent to a marsh & oak hammock (background) to be deeded to the WMD once the wetland mitigation meets success criteria. This area is designated as "Private Mitigation" on Figure D. Maidencane, arrowhead, various sedge species, and small cypress plantings are shown above, dog fennel invasion due to extended dry season conditions.

FDOT - District 7 Mitigation Site (Upper Coastal Basin)	**ANCLOTE PARCEL (SW 54)**

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management District
Mitigation Project Name: **Upper Hillsborough 4&5** Project Number: **SW55**
Project Manager: Mary Barnwell, SWFWMD Sr. Land Management Specialist Phone No: (352)796-7211, ext. 4475
County(ies): Pasco Location: S 28 & 38, T 25 S, R 22 E

IMPACT INFORMATION

WPI: 1147946 FM: 2012081 (Int.-4, County Line Rd. to Memorial., Seg.1) ERP #: 4311869.09 COE #: 199501846
Drainage Basin(s): Hillsborough River Water Body(s):none SWIM water body? N

Impact Acres / Types: WPI 1147946 6.57 ac. - 617 (Fluccs code)
6.98 ac. - 641 (Fluccs code) **Total: 13.55 ac.**

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: Restoration **10** ac. Enhancement **110** ac. Mitigation Area: **120 Acres**

SWIM project? N Aquatic Plant Control project? N Exotic Plant Control Project? N Mitigation Bank? N
Drainage Basin(s): Hillsborough River Water Body(s):Hillsborough River SWIM water body? N

Project Description

A. Overall project goal: Restore hydrologic and hydraulic conditions to wetlands adjacent to the Hillsborough River floodplain, removing a fill road and large ditches in order to restore wetland conditions, functions, and habitat value.

B.Brief description of current condition: The Upper Hillsborough (UH 4&5) tract covers 302 acres (Figures A-D), 15 wetland segments covering 110 acres have substantial opportunities for hydrologic enhancement and restoration (Fig. D). Large ditches (30-40 ft. across top-of-bank, 5-8 ft. deep, over 1.3 miles long) and a levee fill road were constructed adjacent and through a series of wetlands to effectively maintain the water levels below surface grades, resulting in very minimal wetland hydroperiods. Twelve forested wetlands (101.3 acres) and three non-forested wetlands (8.7 acres, Wetlands 9 and 15 are shallow borrow pits with vegetative cover) have been impacted by construction of the levee fill road, and adjacent large ditches that connect and drain wetlands to allow direct groundwater discharge into the Hillsborough River floodplain. The wetlands exhibit various signs of decreased water levels such as tree fall, soil loss, upland species encroachment, and changes in plant species composition (site photos). The groundwater drawdown has allowed extensive cover of nuisance upland species such as pokeweed to invade Wetlands 4 and 5, and dog fennel within the man-made ponds (Wetlands 9 and 15).

C. Brief description of proposed work: The ditches were filled from removal of the levee road during the spring and summer, 2001. The restored wetland grades were planted with cypress to restore 10 acres within the former ditches and supplemental plantings of cypress were conducted within Wetland 2. Vegetative ground cover species have recruited as well as naturally regenerated from hydrologically restoring the wetlands (110 acres). Eleven surficial aquifer monitor wells were installed within the proposed enhanced wetlands in the Spring, 2001, during which time there was no groundwater within six feet of the grade elevation within each of those wetlands. Since completion of construction, the groundwater and surficial hydrology and hydraulic flow patterns have been restored to historic conditions. The restored hydrology has resulted in the mortality of the pokeweed and dog fennel, allowing for the natural regeneration of maidencane, ferns, and other appropriate hydrophytic species.

D. Brief explanation of how this work serves to offset the impacts of the spcified DOT project(s): Restoring the wetlands to historic conditions has resulted in a large-scale improvement in wetland functions. Being located within a dense industrial area along Interstate-4, the wetland impacts associated with the interstate improvements were low quality systems.

E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: No mitigation banks currently exist or proposed in the Hillsborough River drainage basin.

F. Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body : The only SWIM project within this basin is Lk. Thonotasassa which has been constructed and serves as mitigation to off-set wetland impacts associated with another DOT project.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: SWFWMD, Operations Div. (Completed construction – Sept., 2001)

Contact Name: Mary Barnwell, Sr. Land Management Specialist Phone Number: (352) 796-7211 ext. 4475

Entity responsible for monitoring and maintenance: SWFWMD – Tech. Services & Land Management

Proposed timeframe for implementation: Commence: January 1999 Complete: September 2001 (Construction)

Project cost: $160,000.00 (total);

Design	$82,000
Construction & Planting	$65,000
Maintenance & Monitoring	$13,000

Attachments

__x__ 1. Detailed description of existing site and proposed work. Refer to previous discussion and site photographs.

__x__ 2. Recent aerial photograph with date and scale. Figure D - 1995 Infrared Aerial.

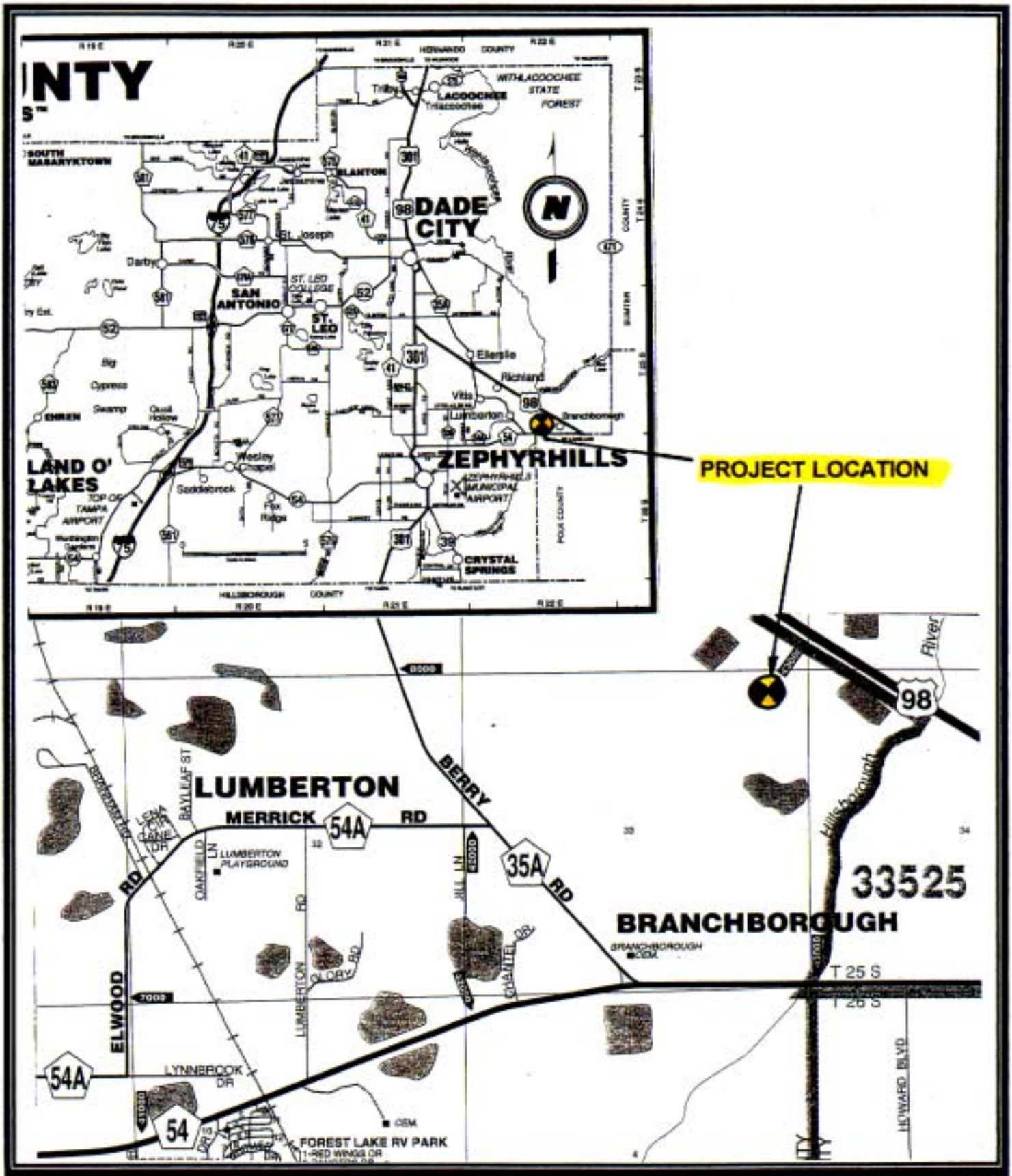
__x__ 3. Location map and design drawings of existing and proposed conditions. Figures A-D, photos depict pre-post construction.

__x__ 4. Detailed schedule for work implementation, including any and all phases. Construction was completed in Sept. 2001, followed by cypress planting, and a minimum three years of monitoring.

__x__ 5. Proposed success criteria and associated monitoring plan. Success criteria includes documentation of hydrologic restoration of the enhanced wetlands and vegetative re-establishment in the filled ditches. Monitoring will include qualitative evaluation of enhanced wetlands and measuring water levels within the 13 monitor wells on a quarterly basis for a minimum 3 years.

__x__ 6. Long term maintenance plan. Maintenance to control nuisance & exotic vegetation will be conducted as needed for a minimum 3 years. No maintenance activities have been required within the first year post-construction.

__x__ 7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). Refer to previous discussion under Comment D.

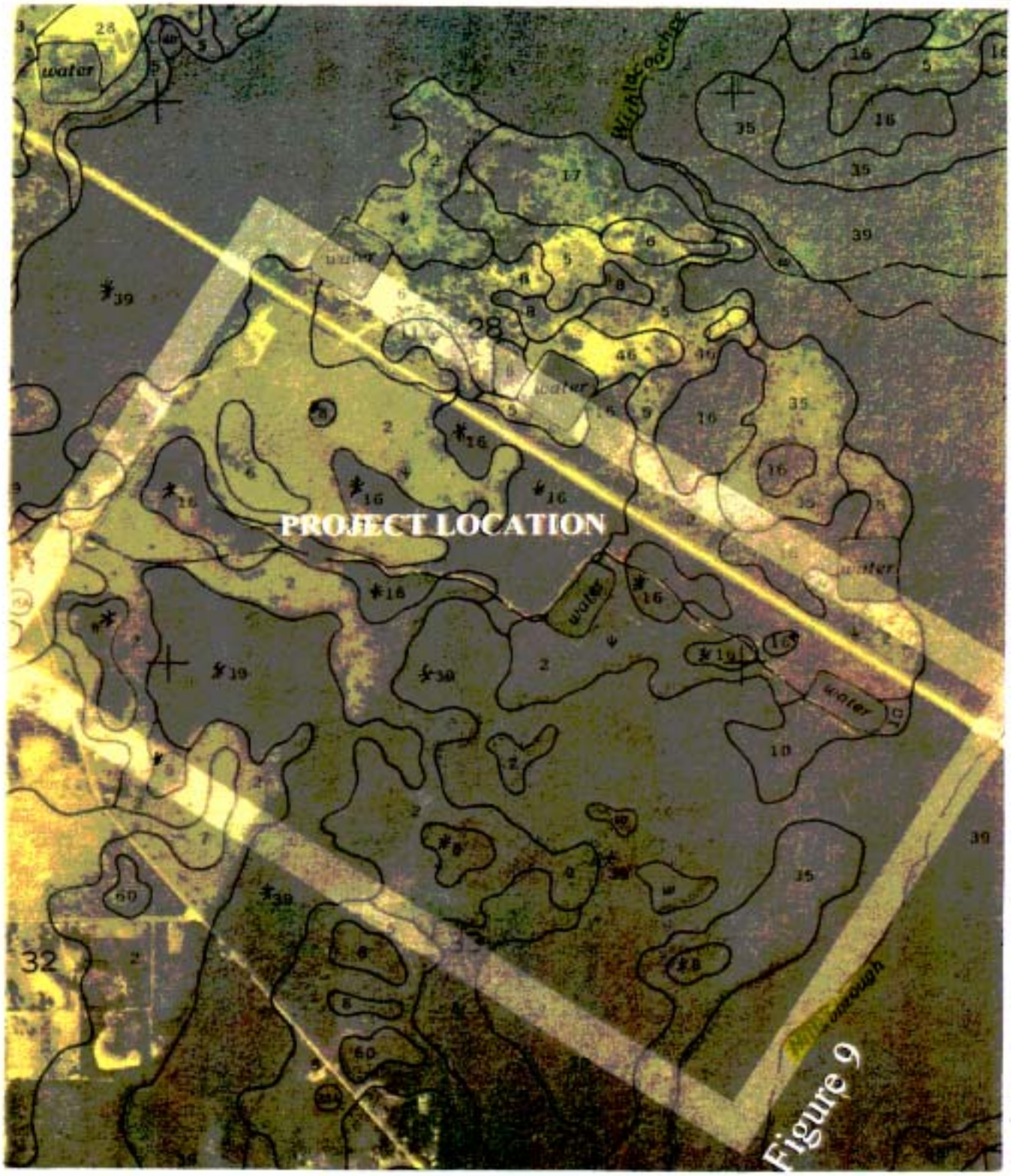


FDOT - District 1 MITIGATION AREA (Hillsborough River Basin)	UPPER HILLS. 4 & 5 - US HWY. 301 (SW 55)	FIGURE A PROJECT LOCATION

FDOT - District 1
MITIGATION AREA
(Hillsborough River Basin)

UPPER HILLS. 4 & 5 -
US HWY. 301
(SW 55)

FIGURE B
LAND USE / HABITAT TYPE



* HYDRIC SOILS

FDOT - District 1 MITIGATION AREA (Hillsborough River Basin)	UPPER HILLS. 4 & 5 - US HWY. 301 (SW 55)	FIGURE C PASCO CO. SOIL SURVEY Scale 4 in. = 1 mile, North ^

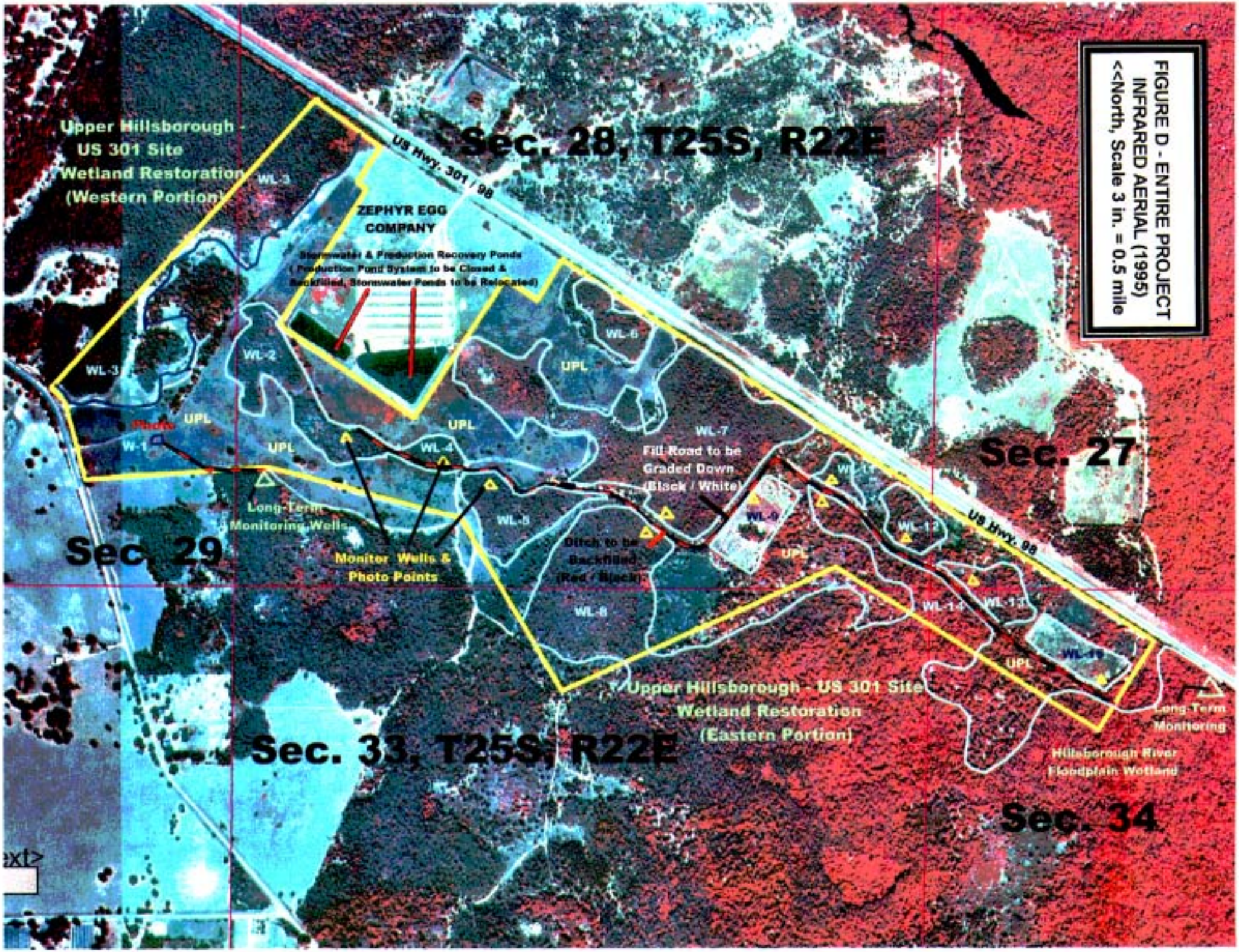
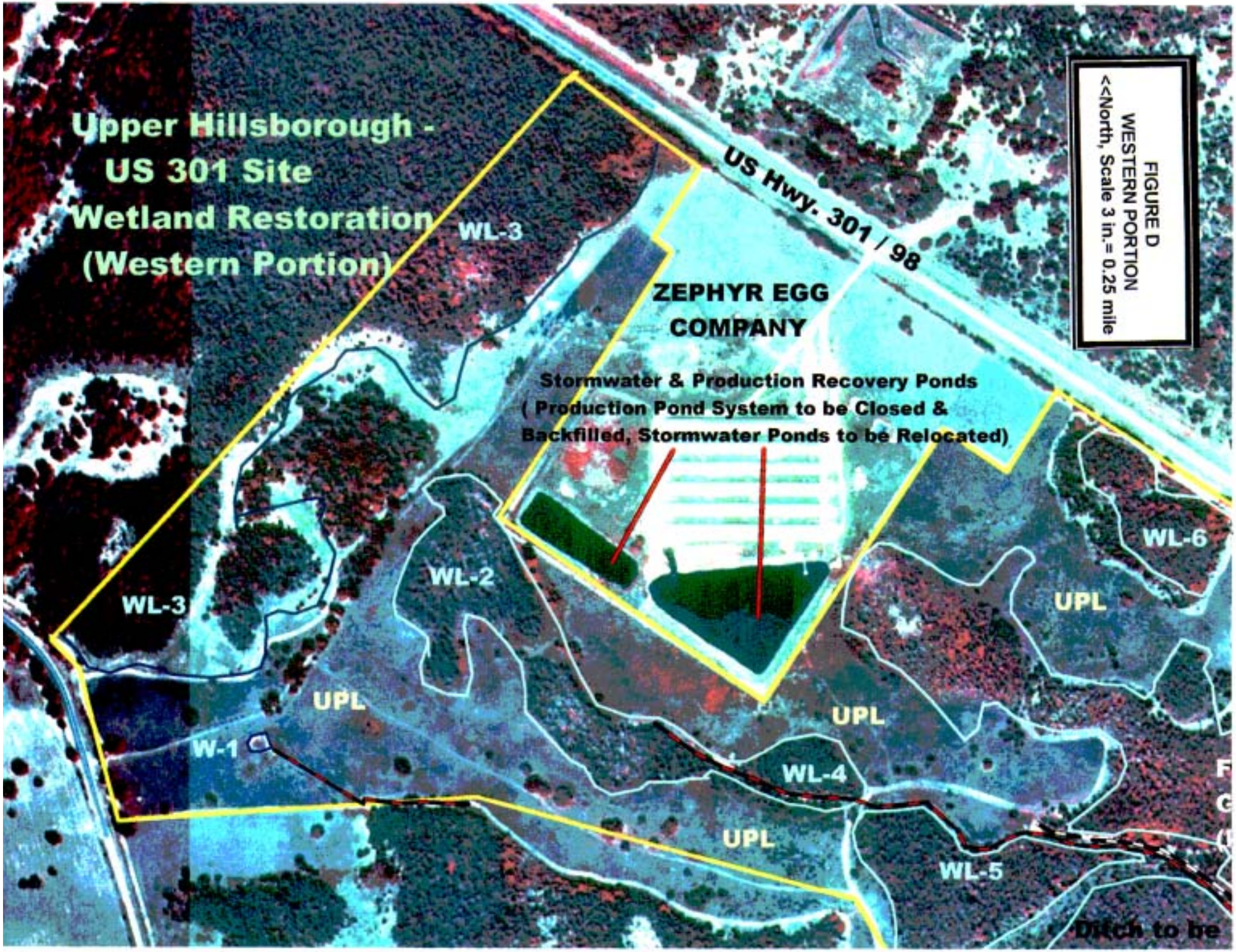
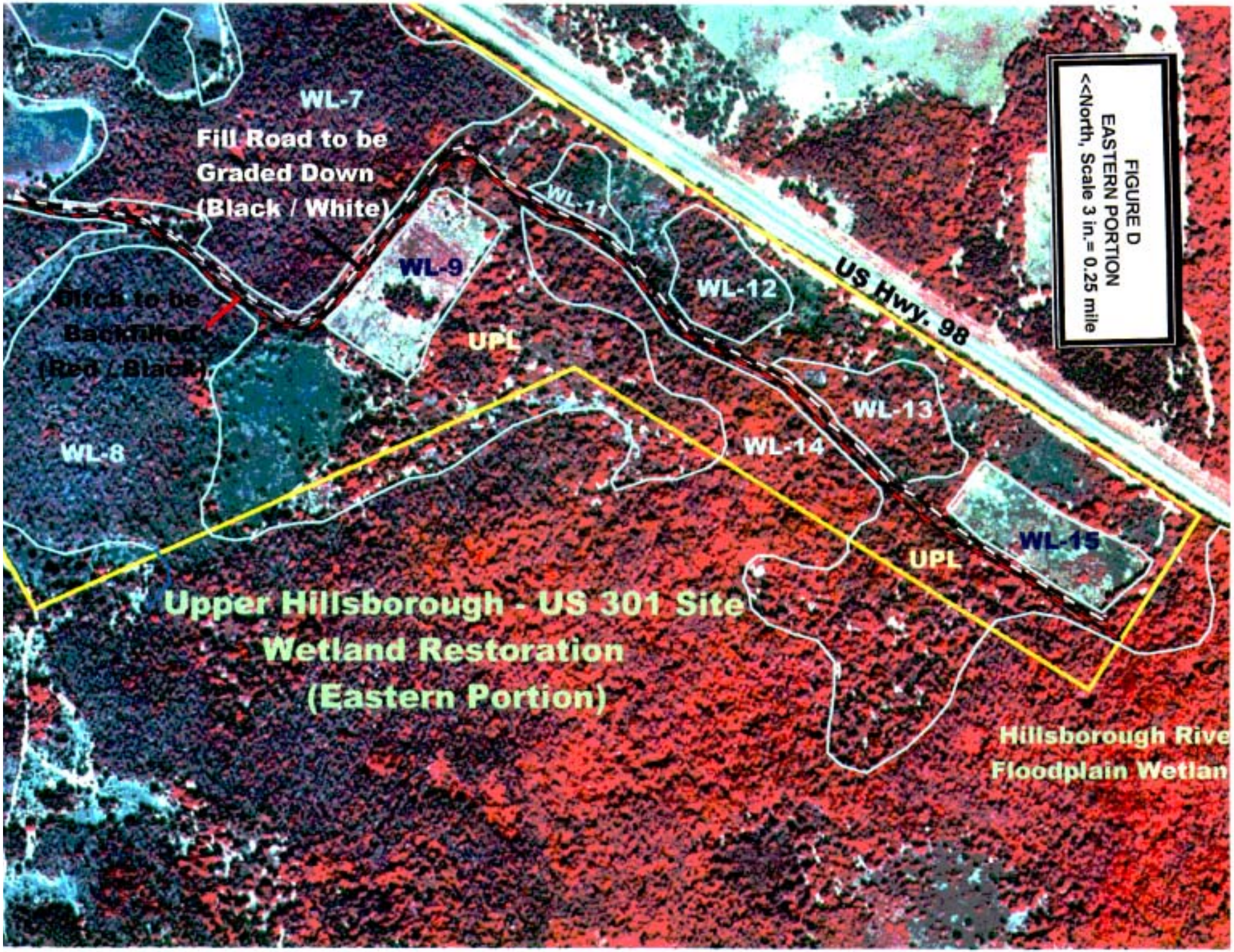


FIGURE D - ENTIRE PROJECT
INFRARED AERIAL (1995)
<<North, Scale 3 in. = 0.5 mile
Upper Hillsborough - US 301 Site Wetland Restoration (Western Portion)
Sec. 28, T25S, R22E
US Hwy. 301 / 98
ZEPHYR EGG COMPANY
Stormwater & Production Recovery Ponds
(Production Pond System to be Closed & Backfilled, Stormwater Ponds to be Relocated)
WL-3
WL-2
WL-6
UPL
Photo W-1
WL-4
WL-7
Fill Road to be Graded Down (Black / White)
Sec. 27
Long-Term Monitoring Wells
Sec. 29
Monitor Wells & Photo Points
WL-5
Ditch to be Backfilled (Red / Black)
WL-8
WL-9
WL-12
WL-14
WL-15
WL-16
Upper Hillsborough - US 301 Site Wetland Restoration (Eastern Portion)
Long-Term Monitoring
Hillsborough River Floodplain Wetland
Sec. 33, T25S, R22E
Sec. 34

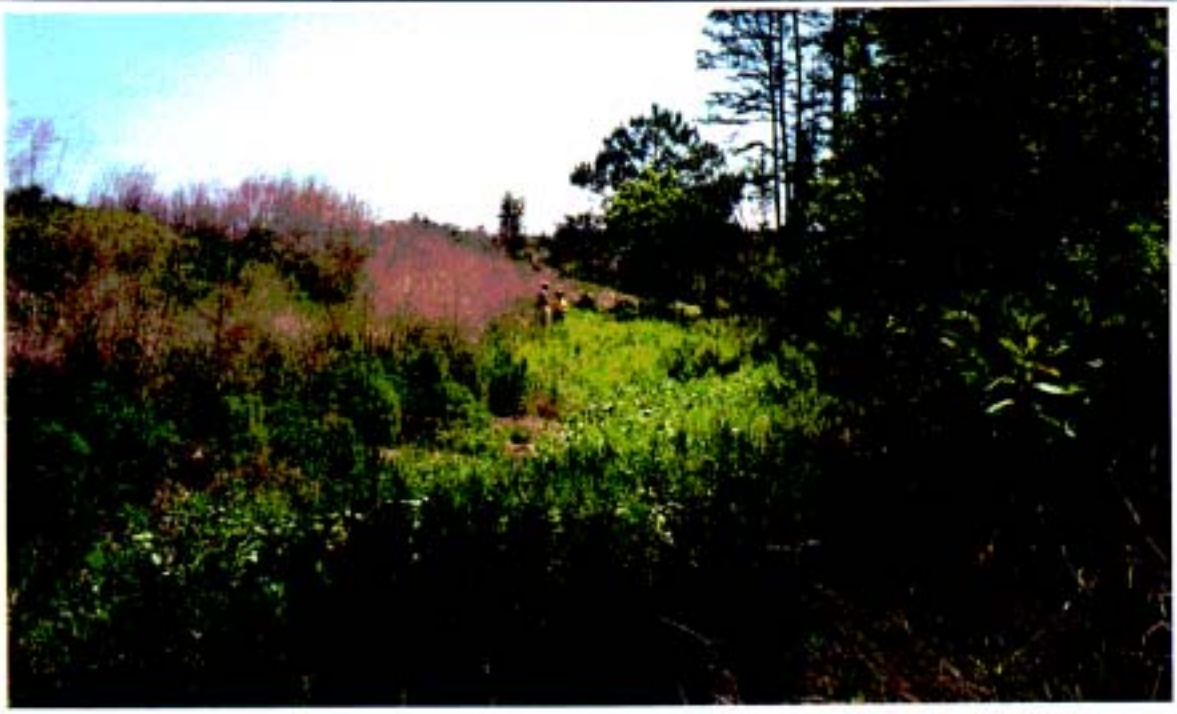

Upper Hillsborough -
US 301 Site
Wetland Restoration
(Western Portion)
FIGURE D
WESTERN PORTION
<<North, Scale 3 in.= 0.25 mile
US Hwy. 301 / 98
ZEPHYR EGG
COMPANY
Stormwater & Production Recovery Ponds
(Production Pond System to be Closed &
Backfilled, Stormwater Ponds to be Relocated)
WL-3
WL-3
WL-2
WL-6
UPL
UPL
UPL
UPL
W-1
WL-4
WL-5
Ditch to be


WL-7
Fill Road to be
Graded Down
(Black / White)
WL-11
WL-9
WL-12
US Hwy. 98
Ditch to be
Backfilled
(Red / Black)
UPL
WL-13
WL-14
WL-8
WL-15
UPL
Upper Hillsborough - US 301 Site
Wetland Restoration
(Eastern Portion)
Hillsborough Rive
Floodplain Wetlan
FIGURE D
EASTERN PORTION
<<North, Scale 3 in.= 0.25 mile

Wetland 5 - The perimeter ditches not only dewater the adjacent wetlands (left) and groundwater, but the adjacent spoil ridge detains contributing upland surface water from reaching the wetlands.

Same view as above photo after spoil material was backfilled. Silt screens installed to minimize erosion into the adjacent wetland while ground cover is establishing. Note where practical, construction worked around the drip line to preserve trees located on previous spoil ridge.

FDOT - District 7 Mitigation Site (Hillsborough River Basin)	**Upper Hillsborough 4&5 - US 301 (SW 55)**



Deep (4-5 ft.) perimeter ditch dredged adjacent to Wetland 2 (right).

Same view as above photo after spoil material was backfilled.
Preserved oak tree (left) on top of spoil mound depicts
the amount of graded material required to fill the perimeter ditch.

FDOT - District 7 Mitigation Site (Hillsborough River Basin)	**Upper Hillsborough 4&5 - US 301 (SW 55)**

Ditch connecting Wetlands 2 and 4 depict the 5-6 ft. decrease in grade elevation between the Wetland 4 grade (right) and the ditch bottom grade (left).

Wetland 2 - Tree fall & stress associated with the adjacent dewatering, after backfilling the adjacent ditch, the wetland will be planted with additional cypress.

FDOT - District 7 Mitigation Site (Hillsborough River Basin)	**Upper Hillsborough 4&5 - US 301 (SW 55)**

Typical view of a wetland-cut ditch that bisects a wetland into Wetlands 7 and 8. Nuisance species like ragweed and pokeweed are common ground cover species.

The tram fill road adjacent to a ditch, the fill material will be backfilled into the ditch.

FDOT - District 1 Mitigation Site (Hillsborough River Basin)	**Upper Hillsborough 4&5 - US 301 Site**

Wetland 5 - Muck oxidation due to exposed soils are common conditions of the dewatered wetlands.

Wetland 8 - Elevated lichen lines represent historic seasonal high water elevations, no moss collars are indicative of minimal depths & duration of surface water (hydroperiod).

FDOT - District 1 Mitigation Site (Hillsborough River Basin)	**Upper Hillsborough 4&5 - US 301 Site**

View of the major east-west ditch segment cutting through Wetlands 11-13.
Pines have been logged off the tram road (right),
just prior to grading fill back into the ditch.

View of the filled east-west ditch and removed tram road,
just after construction and prior to tree planting,
wetland groundwater and surface water sheet flow hydrology is restored.

FDOT - District 7 Mitigation Site (Hillsborough River Basin)	**Upper Hillsborough 4&5 - US 301 (SW 55)**

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management District
Mitigation Project Name: **Cockroach Bay Restoration - Freshwater** Project Number: **SW 56**
Project Manager: Brandt Henningson, PhD. SWIM Environmental Scientist Phone No: (813) 985-7481 ext. 2202
County: Hillsborough Location : Sec. 21, T32S, R18E

IMPACT INFORMATION

(1) FM: 2569571, US 19 - Drew to Railroad	ERP #: 4411760.000	COE #:199400606 (NW-PB)
(2) FM: 2557031, SR 60 – Cypress St. to Fish Creek *	ERP #:43002958.003	COE #:200205816 (IP-MN)
(3) FM: 2558881, US 301- Sligh to Tampa Canal **	ERP #:43024246.000	COE #:200206711 (IP-JF)
(4) FM: 2569491, US 19 (SR 55) – Seville Dr. to SR 60	ERP #:_____	COE #:_____
(5) FM: 2569941, CR 296 Connector, 40th St. to 28th St.	ERP #:_____	COE #:_____
(6) FM: 4052141, Gunn Hwy. – Ehlich Rd. to Mobley Rd.	ERP #:_____	COE #:_____
(7) FM: 2569981, CR 296 at I-275 Interchange	ERP #:_____	COE #:_____
(8) FM: 2555991, SR 676 (Causeway)-US 301 to US 41**	ERP #:_____	COE #:_____

Drainage Basin(s): Tampa Bay Drainage Basin Water Body(s): Old Tampa Bay, Alligator Ck.,Delaney Ck., Fish Creek SWIM water body? Y- Old Tampa Bay

Impact Acres / Types:

(1) 0.2 ac. 618 (Fluccs code)
0.3 ac. 641 (Fluccs code)
TOTAL: 0.5 Acres

(2) 0.8 ac. 641 (Fluccs code)

(3) 3.0 ac. 641 (Fluccs code)

(4) 0.1 ac. 641 (Fluccs code)

(5) 1.0 ac. 643 (Fluccs code)

(6) 0.5 ac. 640 (Fluccs code)

(7) 2.0 ac. 641 (Fluccs code)

(8) 0.8 ac. 510 (Fluccs code)
2.3 ac. 641 (Fluccs code)
TOTAL: 3.1 acres

TOTAL: 11.0 acres

* The total wetland impacts of this project include 16.6 acres. The ditch, pond, and mangrove impacts of this project (5.1 acres) are being mitigated at Tappan Tract (SW 62). The saltwater marsh impacts (10.9 acres) are being mitigated at Cockroach Bay – Saltwater (SW 77) and Apollo Beach (SW 67).

** The freshwater forested and shrub wetland impacts of these two projects are being mitigated at Boyd Hill Nature Park (SW 71).

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: X Creation __ Enhancement X Restoration Mitigation Area: **34 ac.** SWIM project? Y
Aquatic Plant Control project? N Exotic Plant Control Project? N Mitigation Bank? N Drainage Basin(s): Tampa Bay Drainage Water Body(s):Tampa Bay, Cockroach Bay SWIM water body? Y

PROJECT DESCRIPTION

A. Overall project goals: Cockroach Bay includes a multi-agency (USACOE, SWFWMD, FDEP, Hills. Co. Parks) wetland and upland habitat ecological restoration effort on property (total 651 acres) acquired by Hillsborough County. The SWFWMD is responsible for the initial habitat creation & restoration activities, Hillsborough Co. Parks is responsible for the perpetual management of the site. The designated mitigation area includes the creation of a freshwater marsh habitat (26 acres) and restoration of coastal hammock habitat buffer (7 acres).

B. Brief description of current condition: The area is currently a fallow farm field with invasion of exotic and nuisance vegetation, covered with ragweed, fennel, and various nuisance grass species (refer to photographs). Other species such as Brazilian pepper, salt-bush, and elderberry have also invaded the site. As noted on the difference between the 1958 and 1989 NRCS Soil Surveys (Fig. D), the site doesn't have the presence of hydric soils and was historically farmed but allowed to go fallow, allowing the nuisance and exotic species to heavily invade. The groundwater elevations and evaluations for any saltwater intrusion have been monitored for a few years in order to ensure the freshwater wetland components can be successfully created and maintained in perpetuity.

DOT Mitigation – Cockroach Bay, Freshwater, Page 2

C.Brief description of proposed work: Construct palustrine marsh habitat with diverse and variable vegetative zones (Figures E, F and Table 1). A coastal hammock buffer will be restored by eradication of exotic and nuisance species, and supplemental plantings around the marsh to provide cover for wildlife use. Since the entire area is considered upland, fallow farm fields , the mitigation qualifies as wetland creation and upland habitat restoration.

D.Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): The proposed wetland impacts are almost all low quality palustrine marshes (10.0 acres, Fluccs #640 series) and minor amount of open water canal (0.8 acre, Fluccs #510) and shrub habitat (0.2 acre, Fluccs #618). The proposed creation of palustrine marsh habitat (26 acres) and restoration of upland habitat buffer (7 acres) will adequately mitigate for these DOT impacts at a cumulative ratio of 3:1. This wetland creation and coastal hammock restoration effort will be further buffered with the restoration of adjacent forested upland habitat.

E.Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: The only mitigation bank in the basin is the Tampa Bay Mitigation Bank, which is also within the Cockroach Bay area. The mitigation bank has not been constructed and available credits are not anticipated until at least 2005.

F.Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body : This project is part of a large SWIM restoration effort for the Cockroach Bay area. The Cockroach Bay restoration effort has been guided by the Cockroach Bay Restoration Alliance, made up of stakeholders including the agencies, landowners, and the Tampa Bay Mitigation Bank. The SWFWMD - SWIM Section has coordinated the wetland creation and most of the upland restoration activities of the project. Hillsborough County Parks is responsible for the stormwater facilities, some upland restoration, and perpetual maintenance & management activities. Even though there are various restoration phases throughout the Cockroach Bay Habitat Restoration area, they are all inter-related based on site conditions, an ecological transition of upland habitat to palustrine wetlands, followed by salinity gradients of wetland habitats toward estuarine wetlands. Because of the extensive planning and evaluation of the restoration, being co-located with on-going restoration efforts that are managed and maintained by Hillsborough County, the mitigation portions are expected to be very successful.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: Southwest Florida Water Management District or designee

Contact Name: Brandt Henningson, PhD, SWIM Environ. Scientist Phone Number: (813) 985-7481ext. 2202

Entity responsible for monitoring and maintenance: SWFWMD, Hillsborough County or designee

Proposed timeframe for implementation: Commence: Design finish late 2002 Complete: Const., Commence 2003

Project cost: $ 741,458 (total);
$150,000 for design
$591,458 for const., planting, and maintenance & monitoring

Attachments

- x 1. Detailed description of existing site and proposed work. Refer to Attachment A.
- x 2. Recent aerial photograph with date and scale. Figures B & C - 1995 Infrared Aerial.
- x 3. Location map and design drawings of existing and proposed conditions. Figure A - Location Map, design plans on Figures E & F.
- x 4. Detailed schedule for work implementation, including any and all phases. The construction will commence in the summer, 2003 and be completed by the end of the 2003, followed by a minimum of 3 years of maintenance & monitoring.
- x 5. Proposed success criteria and associated monitoring plan. Refer to Attachment B.
- X 6. Long term maintenance plan. Refer to Attachment B.
- x 7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). Refer to previous discussion under Comment D.

Attachment A – Site Conditions & Proposed Plan

The exotic and nuisance species have recruited and generated throughout the fallow farm fields. Construction of palustrine marsh habitat will provide a valuable component of habitat diversity for wildlife use to inter-relate between the restored upland and existing, restored, and created estuary habitat at Cockroach Bay. Due to the extensive design effort associated with the entire Cockroach Bay restoration, additional groundwater salinity data for the Cockroach Bay area was required to determine the extent of freshwater and various saltwater wetland creation and restoration components. The additional data was critical to ensure the various restoration segments will function as proposed.

The majority of land area within the Tampa Bay Drainage Basin has some degree of saltwater influence during hurricane conditions, extreme spring tides, and/or major flood events (25 year, 50 year, and/or 100 year). These oligohaline conditions apply to both the freshwater wetland impact areas as well as created freshwater wetlands at Cockroach Bay. The species proposed for planting at the freshwater mitigation site (Table 1) are capable of enduring these very periodic events.

Attachment B – Maintenance & Monitoring, Success Criteria

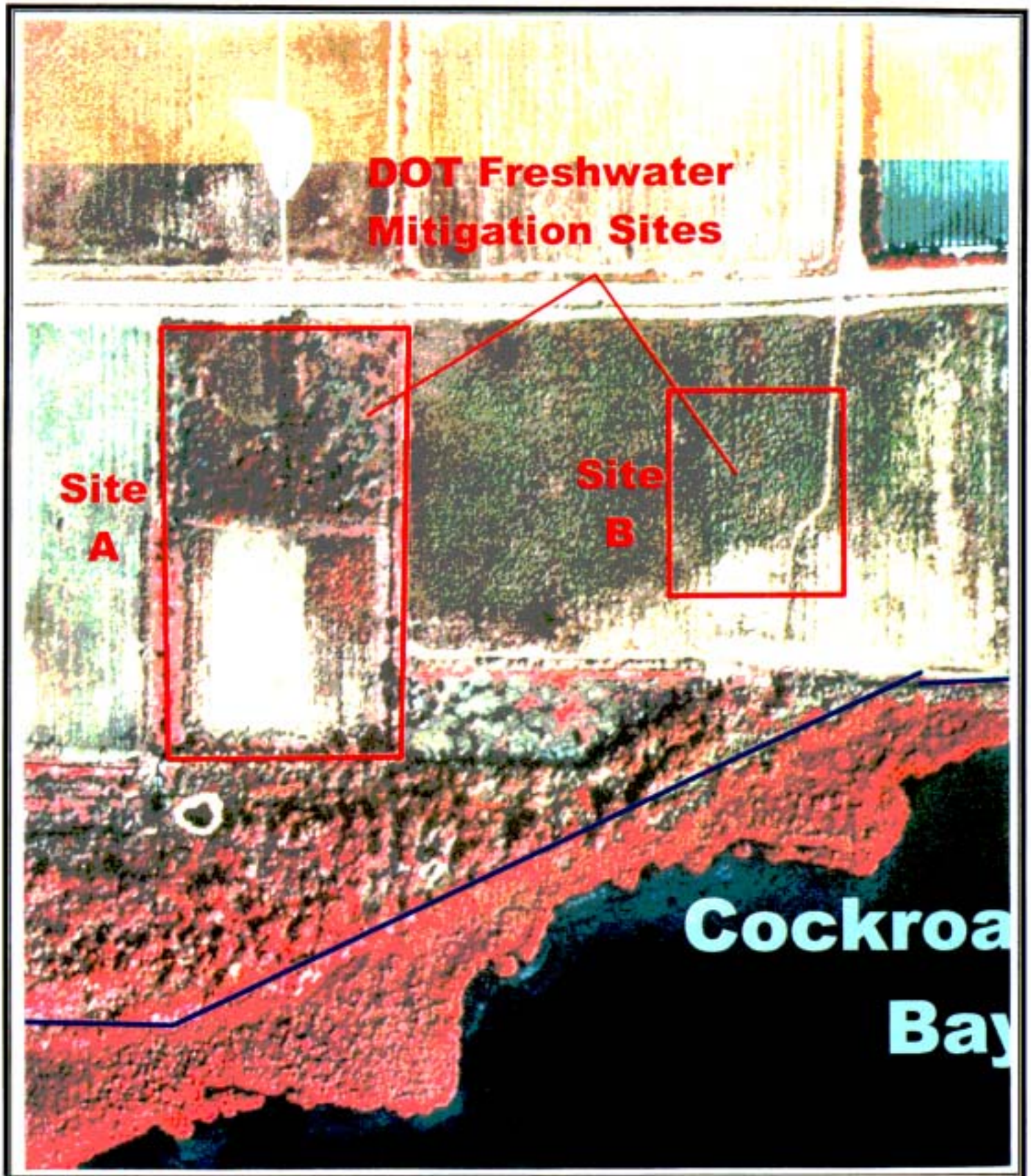
The maintenance activities will be conducted by Hillsborough County staff with assistance from the SWFWMD, and be primarily related to control of invasive exotic vegetation. Maintenance will be a more intensive effort during the first couple years after planting to allow for establishment of desirable plants, and less frequent maintenance as the project matures. Maintenance will be conducted as needed, expected to be quarterly for two to three years. After this period, maintenance activities will be conducted as needed by SWFWMD and/or Hillsborough County staff to maintain the success criteria. Inspections on a semi-annual basis are anticipated to evaluate vegetative conditions, debris, and any nuisance & exotic vegetation. After each inspection, proper maintenance activities will be conducted to correct any problems.

Monitoring will be conducted semi-annually, with annual reports for three years post-construction. Monitoring will include qualitative evaluation and photo documentation of the mitigation area, to evaluate and document species survival, coverage, wildlife use, exotic & nuisance species coverage, and recommended actions needed to ensure or enhance success. The success criteria will reflect a minimum 90% survivorship for planted material for one-year post planting, a total 85% cover of planted and recruited desirable species, and less than 10% exotic and nuisance species cover.

Monitoring will be conducted semi-annually, with annual reports for three years post-construction. Monitoring will include qualitative evaluation and photo documentation of the mitigation area, to evaluate and document species survival, coverage, wildlife use, exotic & nuisance species coverage, and recommended actions needed to ensure or enhance success. The success criteria will reflect a minimum 90% survivorship for planted material for one-year post planting, a total 85% cover of planted and recruited desirable species, and less than 10% exotic and nuisance species cover.

FDOT - District 7 **MITIGATION SITE** **(Tampa Bay Drainage Basin)**	**COCKROACH BAY-FRESHWATER** **(SW 56)**	**FIGURE A – Location Map** **^ North**

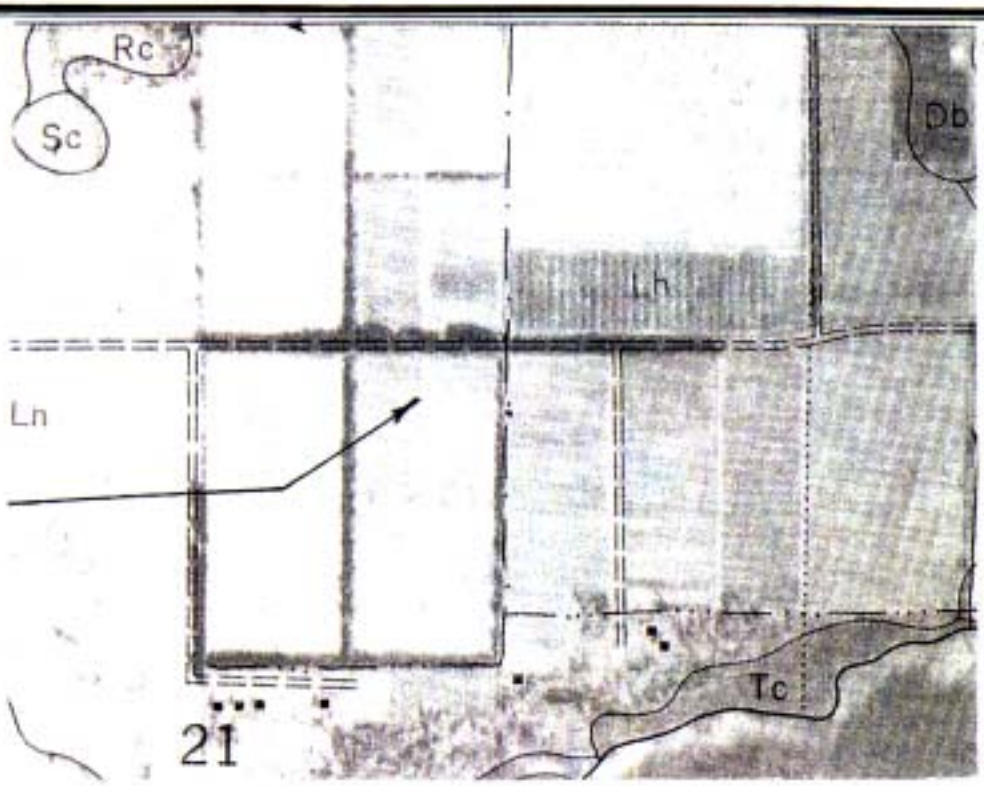
FDOT – District 7 MITIGATION SITE (Tampa Bay Drainage Basin)	COCKROACH BAY- FRESHWATER (SW 56)	FIGURE B – Infrared Aerial (1995) Scale 1 in = 1365 ft. , ^ North



FDOT - District 7 MITIGATION SITE (Tampa Bay Drainage Basin)	COCKROACH BAY- FRESHWATER (SW 56)	FIGURE C – Infrared Aerial (1995) Scale 1 in. = 380 ft., ^ North

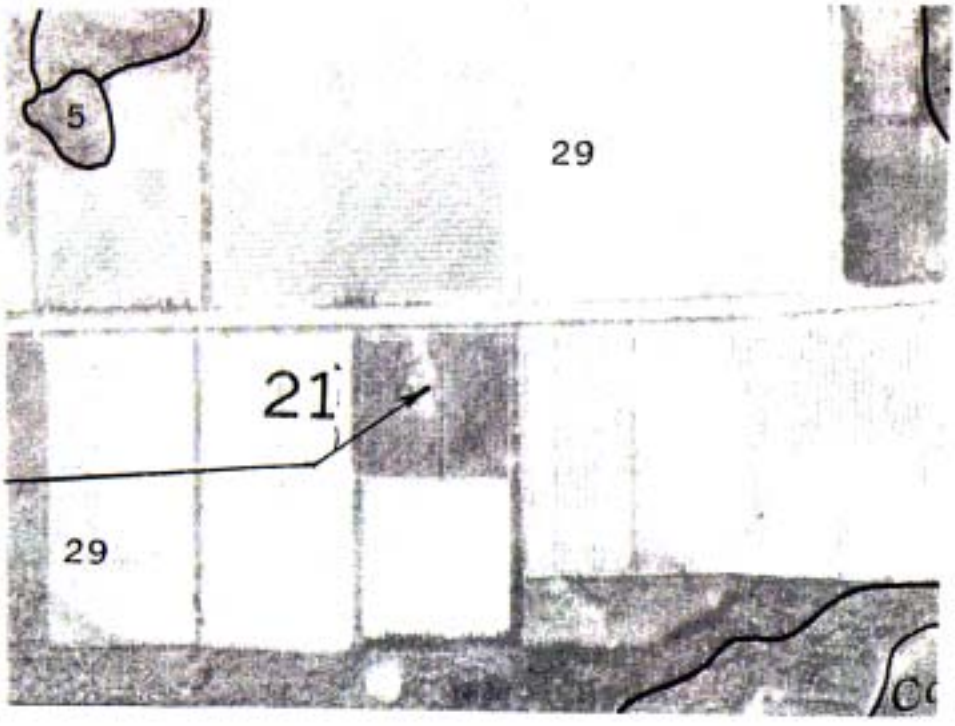
1958 Soil Survey
(1949 Aerial)

Lh – Leon fine sand
(Non-hydric soil)
Land use – row crops

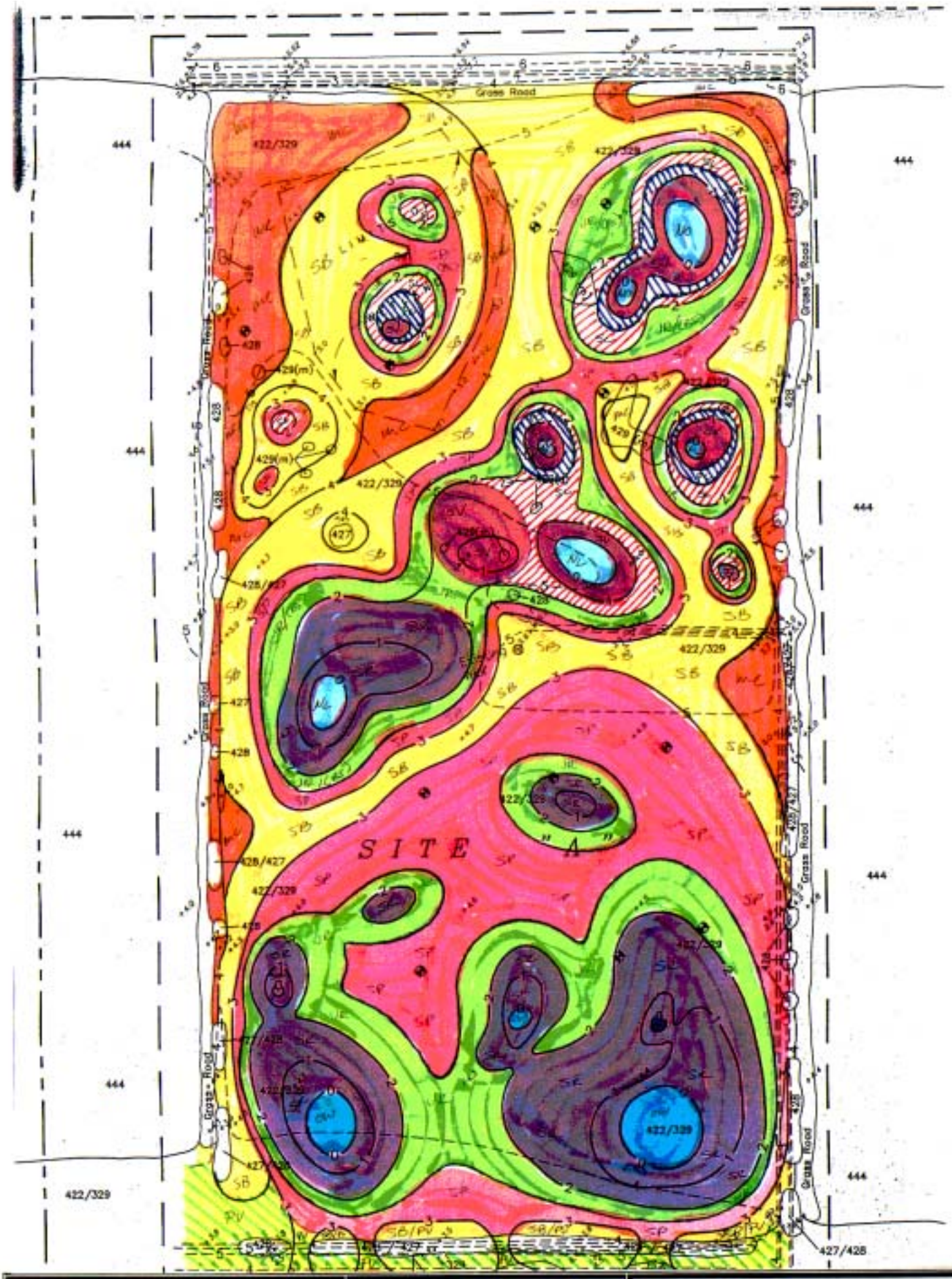


1989 Soil Survey
(1982 Aerial)

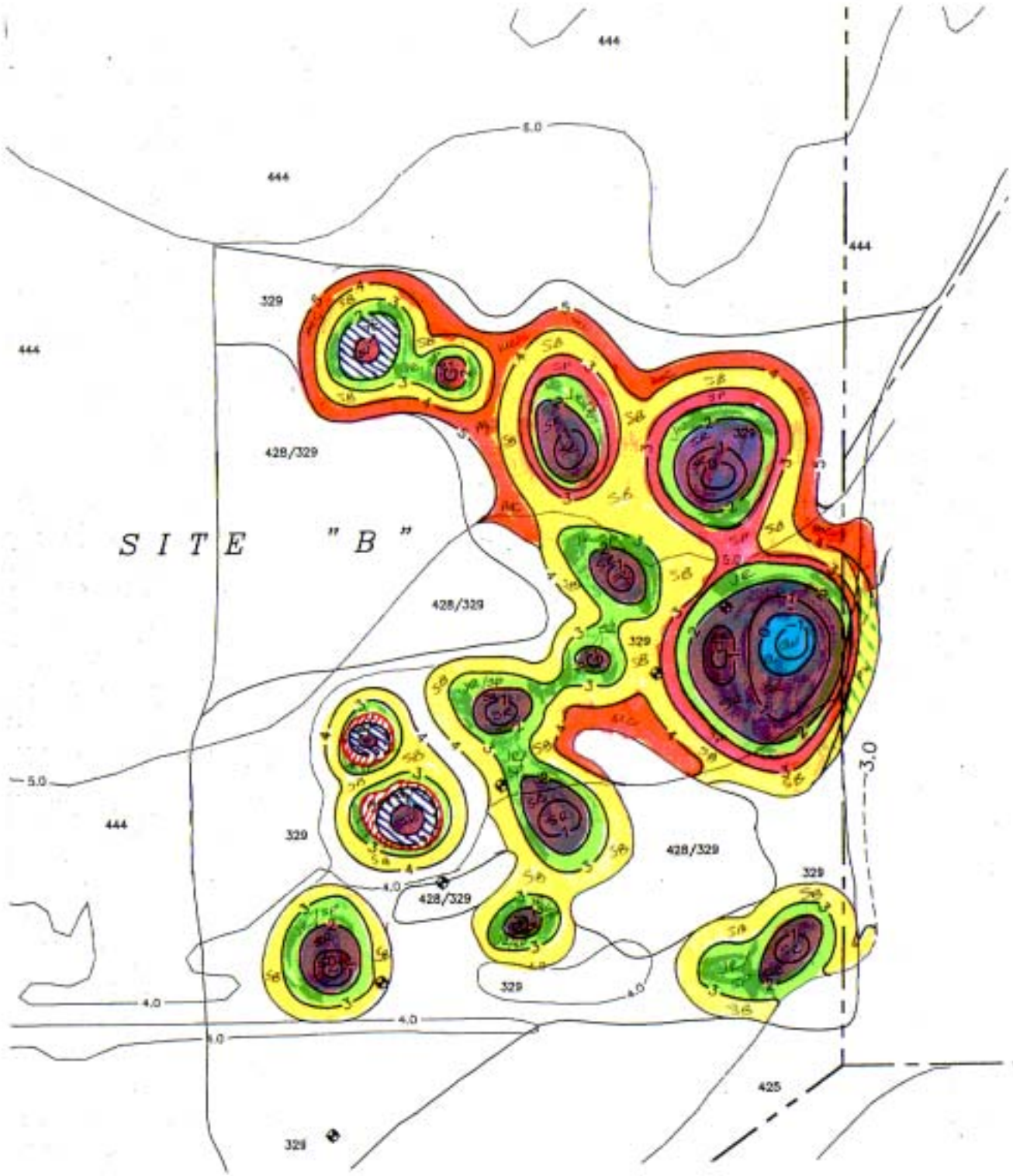
29 – Myakka fine sand
(Non-hydric soil)
Land use – North
Row crops,
South & East
Exotic & nuisance
Species



FDOT – District 7 MITIGATION SITE (Tampa Bay Drainage Basin)	COCKROACH BAY- FRESHWATER (SW 56)	FIGURE D – 1958 & 1989 Hills. Co. Soil Survey Scale 6.4 in. = 1 mile, ^ North



FDOT – District 7 **MITIGATION SITE** **(Tampa Bay Drainage Basin)**	**COCKROACH BAY-** **FRESHWATER** **(SW 56)**	**FIGURE E** **SITE A – 30% Design Plans** **Scale 1 in. = 155 ft., ^ North**



FDOT – District 7 **MITIGATION SITE** **(Tampa Bay Drainage Basin)**	**COCKROACH BAY-** **FRESHWATER** **(SW 56)**	**FIGURE F** **Site B – 30% Design Plans** **Scale 1 in = 155 feet, ^ North**

Table 1. Preliminary list of species proposed for the Cockroach Bay Freshwater Habitat Restoration Project.

Symbol	Zone/*species*	common name	elevation
OW	**Open water/Submergent**		< 0'
RM	*Ruppia maritima*	wigeongrass (natural recruitment)	
	Deep Emergent		
NO	*Nymphaea odorata*	white waterlily	0 to 1'
NL	*Nuphar luteum*	spatterdock	0 to 1'
	Shallow Emergent		
SV	*Scirpus validus*	soft-stem bulrush	0 to 2'
SR	*Scirpus robustus*	salt marsh bulrush	0 to 2'
PC	*Pontederia cordata*	pickerelweed	1 to 2'
SL	*Sagittaria lancifolia*	duck potato	1 to 3'
BM	*Bacopa monnieri*	water hyssops	1 to 3'
JR	*Juncus roemerianus*	black needlerush	2 to 3'
AD	*Acrostichum danaeifolium*	leather fern	2 to 3'
CA	*Crinum americanum*	string lily	2 to 3'
	High Marsh/Wet Prairie/Glade		
SP	*Spartina patens*	marshhay cordgrass	2 to 3'
SV	*Sporobolus virginicus*	seashore dropseed	2 to 3'
DS	*Distichlis spicata*	saltgrass	2 to 3'
BS	*Blechnum serrulatum*	swamp fern	2 to 4'
PV	*Paspalum vaginatum*	seashore paspalum	2 to 4'
BF	*Borrichia frutescens*	seaside oxeye	2 to 4'
LC	*Lycium carolinianum*	Christmasberry	2 to 4'
CO	*Cephalanthus occidentalis*	buttonbush	2 to 4'
SB	*Spartina bakeri*	sand cordgrass	3 to 4'
MC	*Muhlenbergia capillaris*	hairawn muhly	3 to 5'
MY	*Myrica cerifera*	wax myrtle	3 to 5'
	Coastal Hammock		
SA	*Sabal palmetto*	cabbage palm	> 3'
SR	*Serenoa repens*	saw palmetto	> 3'
QV	*Quercus virginiana*	live oak	> 3'
SC	*Sideroxylon celastrinum*	saffron plum	> 3'
ZF	*Zanthoxylum fagara*	wild lime	> 3'
CA	*Chiococca alba*	snowberry	> 3'
EH	*Erythina herbacea*	coralbean	> 3'
FS	*Forestiera segregata*	Florida privet	> 3'

Historically an area used for row crops, the proposed freshwater wetland creation site has generated to extensive cover of exotic and nuisance species such as Brazilian pepper, dog fennel, ruderal grass species, and Australian pine (background left).

View of the same area, connecting to the right side of the above photograph. Desirable species such as cabbage palm will be incorporated into the creation project.

FDOT – District 7
MITIGATION SITE
(Tampa Bay Drainage Basin)

COCKROACH BAY – FRESHWATER
(SW 56)

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : _Southwest Florida Water Management District___
Mitigation Project Name: **Lake Panasoffkee Restoration** (SWIM) Project Number**: SW57**
Project Manager: _Lizanne Garcia ,SWFWMD-SWIM Env. Scientist Phone No: 352-796-7211 ext. 2204
County(ies): Sumter Location: Sec.18,19,20,28,29,32,33,T19S, R22E
Sec. 4,3 T20S, R22E

IMPACT INFORMATION

DOT (FM): 4063291 – I-75, Lk. Panasoffkee Bridge ERP #: 4320508.00 COE #: 200000754 (NPR-KF)
Drainage Basin(s) : Withlacoochee River Water Body(s) :Lake Panasoffkee SWIM water body? Y
Acres / Types: 5.93 ac. 500 (Fluccs code) **TOTAL: 5.93 acres**

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: ___ Creation ___ Restoration _X_ Enhancement ___ Preservation Mitigation Area: **+/- 75 ac.**
SWIM project? Y Aquatic Plant Control project? N Exotic Plant Control Project? N Mitigation Bank? N
Drainage Basin(s): _Withlacoochee River Basin Water Body(s): Lake Panasoffkee SWIM water body? Y

Project Description

A. Overall project goal: Lake Panasoffkee has suffered due to the extensive buildup of inorganic sediments and shallowing of the lake has destroyed fish spawning areas, promoted nuisance/exotic species growth along the shoreline and substantial bands of nuisance emergent vegetation in the lake. The restoration plan proposes several steps to improve the fisheries habitat, restore the shoreline, and facilitate navigation.

B. Brief description of current condition: Lake Panasoffkee has accumulated sediment and silted in hard bottom areas which historically served as fish beds, in many areas the nuisance emergent vegetation is extremely dense due to shallowing of the lake.

C. Brief description of proposed work: The Lake Panasoffkee Restoration Council has recommended removal of the inorganic sediments from the lake bottom and hydraulic dredging will be a major element of the restoration plan. The dredging prospects will follow a six step approach presented in the Lake Panasoffkee Restoration Plan (Attachment A) as reported to the State Legislature. STEP 1 included a Pilot Project of dredging completed in the summer, 2000). The dredging plan included various areas and proposed final grade depths associated with the lake. STEP 2 includes dredging almost 5 million cubic yards of sediments from approximately 1,010 acres (30% of the lake bottom grade) to hard bottom. Approximately 75 acres of this phase of the project will mitigate for the proposed open water wetland impacts.

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): The DOT project proposes impacts to open water habitat associated with the area between the two I-75 bridge spans that cross along the southeast portion of Lake Panasoffkee. The I-75 bridges were very narrow and long, not only resulting in multiple accidents but also without the opportunity for vehicles to safely move from travel lanes until reaching the end of the bridge span.

Mitigation Project – Lake Panasoffkee Restoration, Page 2 of 2

It was decided that bridging the interior gap between the two existing spans was necessary in order to add lanes and safety apron. The proposed roadway open water wetland impacts and location match the proposed restoration habitats associated with the same Lake Panasoffkee.

E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: There isn't an existing or proposed mitigation bank within the Withlacoochee River Basin.

F. Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body : Lake Panasoffkee is a SWIM project, the State Legislature awarded $5 million to the project in 1999, an additional $25 million was awarded in 2003.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: Contractor selected by the SWFWMD
Contact Name: Lizanne Garcia – SWFWMD- SWIM Environ. Scientist Phone Number: 352-796-7211 ext. 2204

Entity responsible for monitoring and maintenance: Contractor selected by the SWFWMD.
Proposed timeframe for implementation: Commence: Summer, 2000 Complete: Pending funding for the six steps.

Project cost: $469,733 - Estimate for 75 acres of sediment removal under STEP 2 construction.

Attachments

__X__1. Detailed description of existing site and proposed work. Refer to Attachment A.

__X__2. Recent aerial photograph with date and scale. Figure B - 1995 infrared aerial.

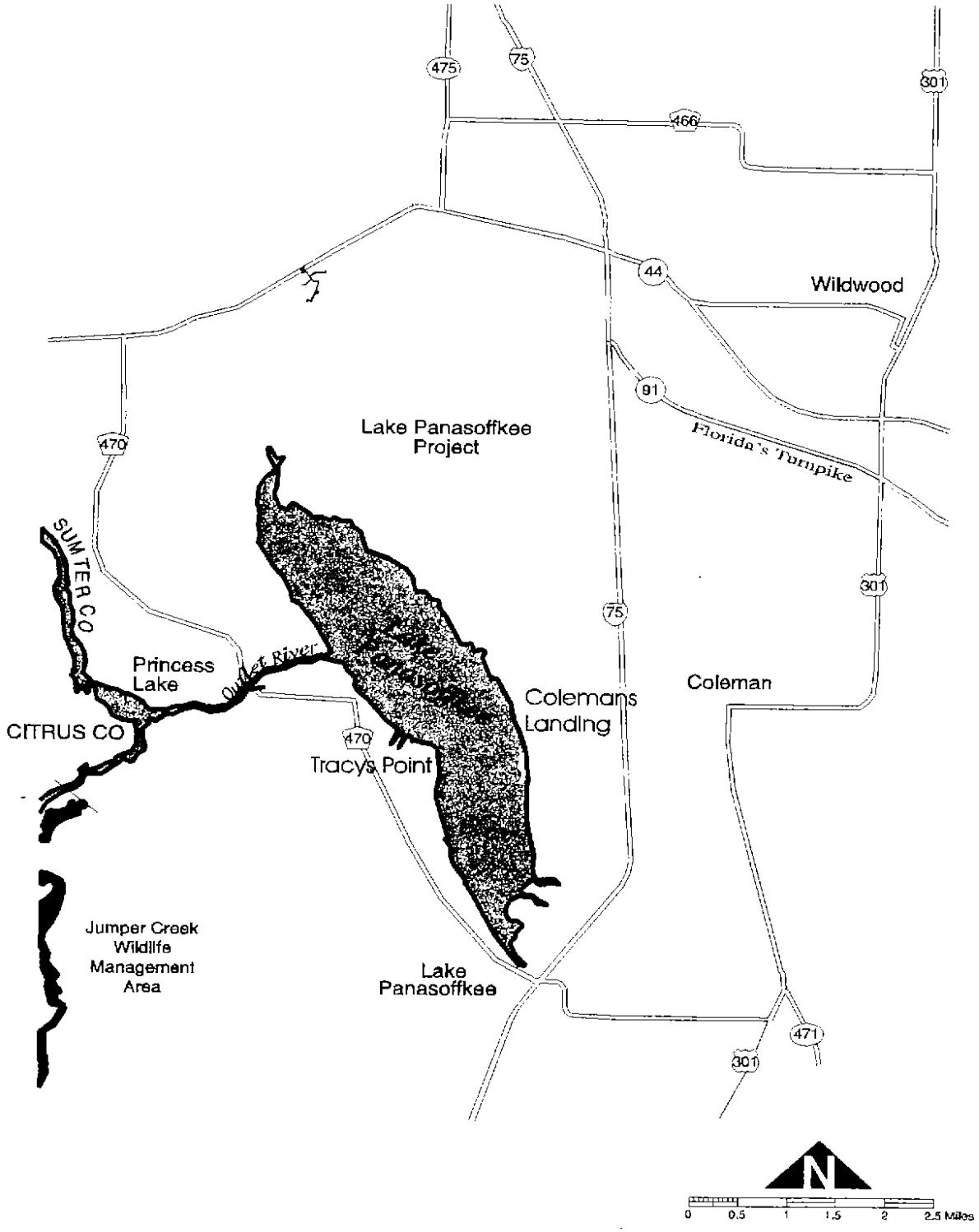
__X__3. Location map and design drawings of existing and proposed conditions. Figure A-Location Map, Attachment A has the proposed conditions.

__X__4. Detailed schedule for work implementation, including any and all phases. Design of STEP 2 (portion proposed for DOT mitigation) will be finalized by June 2001. Based on current schedule, construction of STEP 2 of the restoration project will begin in the summer, 2003 and continue through early, 2004.

__x___5. Proposed success criteria and associated monitoring plan. This project proposes to create open water habitat in Lake Panasoffkee, an Outstanding Florida Water. The bottom elevations will be deep enough to exclude emergent species, thus ensuring the persistence of open water habitat. The monitoring is expected to examine colonization of the lake bottom with desirable submergent species, prevent colonization of invasive exotic plants and recommend actions needed to ensure success.

__x___6. Long term maintenance plan. The mitigation is associated with the larger Lake Panasoffkee Project being implemented by the WMD. Maintenance will primarily be related to control of invasive exotic vegetation with a more intensive early effort to allow for the plants to become established and less frequent herbicide control as the project matures.

___x__7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). Refer to Comment D.



FDOT - District 5 **MITIGATION SITE** **(Withlacoochee River Basin)**	**LAKE PANASOFFKEE** **RESTORATION** **(SW 57)**	**FIGURE A** **LOCATION MAP**

FDOT - District 5 **MITIGATION SITE** **(Withlacoochee River Basin)**	**LAKE PANASOFFKEE** **RESTORATION** **(SW 57)**	**FIGURE B** **INFRARED AERIAL** **(1995)**

Attachment A

Concerned for the health of Lake Panasoffkee, the Legislature passed the Chapter 98-69, Laws of Florida, creating the Lake Panasoffkee Restoration Council (Council). The Legislature charged the Council with identifying strategies to restore the lake. Specifically, the Council was to look at sport fish population recovery strategies, shoreline restoration, sediment removal, exotic species management, floating tussock management and removal, navigation, water quality and fisheries habitat improvement. The Council established that of the seven restoration issues identified in the enacting legislation, its primary objectives in priority order were: fisheries habitat improvement, shoreline restoration, and navigation.

Based on the studies reviewed, presentations by agency experts and the knowledge and life long experience of members of the Council, it was concluded that the primary cause of adverse impacts to the water resources of the lake was due to the accumulation of sediments causing a reduction in the fisheries habitat, shoreline degradation and impediments to navigation. Accumulated sediment had silted in hard bottom areas which served as fish bedding areas, and in other areas emergent vegetation had become extremely dense due to shallowing. In addition, the growth of vegetation has progressed to such an extent that more than 800 acres of historic lake bottom are now covered with a mix of woody/shrubby vegetation. In order to reclaim these areas it was determined that substantial amounts of chiefly inorganic sediments would have to be removed from the lake bottom and that hydraulic dredging would likely be a major element of any restoration plan.

The Council, in consideration of the recommendations of its Advisory Group voted at its October 12, 1998 to include in their 1998 report to the Legislature the following recommendation and request:

> Design and seek regulatory approval for removal of sediments following a systematic six step approach to insure maximum benefit to the restoration of the lake while insuring all necessary environmental safeguards are implemented.

The six steps are fully described in the *Lake Panasoffkee Restoration Council Report to the Legislature, November 25, 1998*. Step 2 proposes to restore the littoral zone of the lake by removing flocculent sediment to expose hard lake bottom. Step 3, which involves the removal of emergent vegetation will restore 800 acres of open water. Together these two steps are proposed to provide mitigation for the open water impacts identified in this application. Steps 2 and 3 are described below.

Step Two - Dredge to Hard Bottom from the 35-foot Contour

The prime historic fish bedding areas in Lake Panasoffkee are known to have existed in areas around Grassy Point and Shell Point located on the lake's northeast side (Figure 1). Extensive deposits of snail shells occur throughout this area, and sport fish, particularly redear ("shell cracker") and other sunfish ("bream") are known to have spawned there.

Hard bottom can be reached with the least sediment removal in the Grassy and Shell Point areas and in a narrow band bordering much of the western shoreline. It is documented that in areas where accumulated sediment deposits are five feet or less, the lakeward most edge of the area could be fairly well defined by the 35-foot contour. For this reason, it is proposed that many historical bedding areas could be restored by dredging in two areas from the 35-foot contour toward shore while removing sufficient material to expose the hard bottom (e.g., shell deposits, sand, etc.). It was also recognized that there are substantial sediment deposits (i.e., greater than 20 feet deep) in the north end of the lake, that two major inflows, Little Jones and Big Jones creeks, enter the lake in this area, and that it is highly likely that sediments in this area would be carried into the two cleared spawning zones if not lowered to the 35-foot contour as well. For this reason, it is recommended that sediments in this area be dredged even though hard bottom would not be reached. It should be noted that very little submersed vegetation occurs in the north end of the lake, that fish usage appears low perhaps due to lack of cover, and that there is probably more organic sediment deposited here than in most areas of the lake. To accomplish Step Two, it is estimated that as much as 4.9 million cubic yards of sediment will have to be removed and that approximately 900 acres (30 percent) of the lake bottom will be restored.

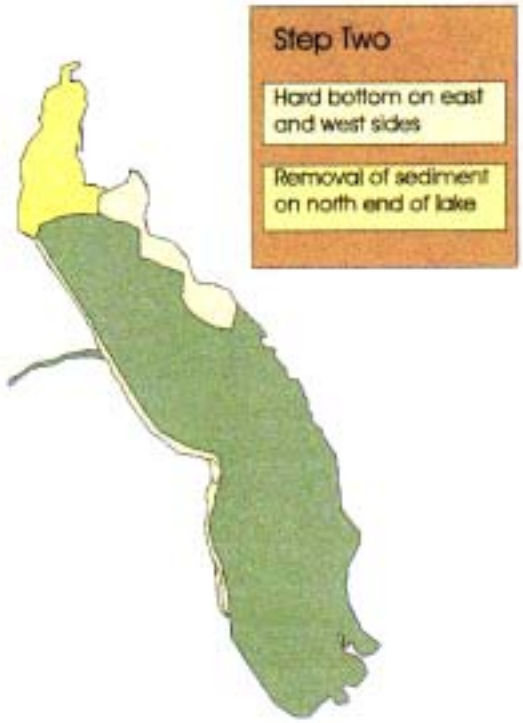


Figure 1. Step Two - Dredge to Hard Bottom from 35' Contour - entails dredging on east side of lake in vicinity of Shell and Grassy Points, along most of western shoreline. Although sediment deposits are deep, the north end is dredged to prevent material from this area being transported into hard bottom areas.

Step Three - East Side Emergent Removal - Tied to 35-foot Contour: There is a broad band of emergent vegetation along the eastern shoreline of Lake Panasoffkee that runs from just south of Shell Point to the southern end of the lake (see Figure 2). This band of emergent vegetation is composed largely of pickerelweed, cattail and arrowhead. Although much of the vegetation is rooted to the lake bottom, a substantial amount could be classified as tussocks and much of the tussock problem on the lake is generated by this band of vegetation. The band is more than 1,000 feet wide in some sections and is so dense and impenetrable that much of it does not provide productive fish habitat. Removal of this vegetation would improve fish habitat, restore much of the eastern shoreline and improve navigation. Dredging to a depth of two to three feet will open the area to fish and encourage the growth of submersed vegetation while discouraging emergents. It is proposed that sediment be dredged from the 35-foot contour toward the shore, and the area be sloped or stepped so that a narrow emergent zone is preserved. The entire

project area is almost 800 acres, and this step would remove upwards of 3.2 million cubic yards of sediment and open up approximately 388 acres for possible colonization by submersed plants. Cost $4,589,000.

It should be noted that land bordering the entire eastern shoreline of Lake Panasoffkee is in public ownership, and the proposed dredging will enhance public access to the lake's resources. Defined as the East Lake Panasoffkee property, approximately 9,950 acres were purchased through the Save Our Rivers program. The majority of the property consists of floodplain swamp, and most of the property remains in a relatively natural, unaltered condition. Public ownership of the property will contribute directly to the long-term protection and management of the lake (SWFWMD 1996).

Figure 2.

Step Three - Removal of East side emergent vegetation and sediments from the 35' Contour.

Step Five - Removal of woody/shrubby vegetation and associated sediments.

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management District
Mitigation Project Name: **Ledwith Lake** Project Number: **SW 58**
Project Manager: Ramesh Buch, Land Conservation Manager
Alachua Co. Environmental Protection Dept. Phone No: (352) 264-6800
County: Alachua Location: Sections 1, 2 T12S, R19E

IMPACT INFORMATION

(1) FM 238762 - SR 40, CR 225A to SW 52nd St. ERP #: _____ COE #: NPR (isolated wetland)
(2) FM 238641 - SR 500 (US 27), Levy Co. to SR 326 ERP #: 43014024.001 COE #: NPR (isolated wetland)
(3) FM 238678 - SR 500 (US 27), SR 326 to CR 225A ERP #: 438697.01__ COE #: 199702099 (NW)
(4) FM 238719 – SR 40, SR 328 to SW 80th ERP #: 44022268.00 COE #: NPR (isolated wetland)

Drainage Basin(s) : Ocklawaha River Basin Water Body(s):None SWIM water body? N

Acres / Types of Impact: (1) FM 238762 - 0.20 ac. 617 (Fluccs code)
(2) FM 238641 - 2.37 ac. 640 (Fluccs code)
(3) FM 238678 - 1.09 ac. 641 (Fluccs code)
(4) FM 238719 – 0.08 ac. 641 (Fluccs code) **TOTAL: - 3.74 ac.**

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: ___ Creation _____ Restoration _X_ Enhancement _X_ Preservation Mitigation Area**: 160 ac**.
SWIM project? N Aquatic Plant Control project? N Exotic Plant Control Project? N Mitigation Bank? N
Drainage Basin: Ocklawaha (also considered Florida Ridge Basin) Water Body: Ledwith Lake SWIM water body? N

Project Description

{SEQ 1_0 * ALPHABETIC \r 1}. Overall project goal: Acquire, preserve, and enhancement of a portion (160 acres) of Ledwith Lake, a high quality marsh covering 2200 acres in Alachua & Marion Counties. Along with the adjacent marsh enhancement associated with Levy Lake, this is the highest concentration of wetland habitat within the same basin of the proposed DOT wetland impacts. Preservation through acquisition is the best alternative toward protecting this important water and wetland resource, particularly considering the lack of other large wetland systems within the majority of this basin. This acquisition will be conducted by Alachua County, with assistance from the Conservation Trust for Florida.

{SEQ 1_0 * ALPHABETIC \n}. Brief description of current condition: Ledwith Lake is a 2200-acre marsh prairie with a few pockets of open water around the perimeter (Figures C, D, photos 1,2). The marsh has dominance of pickerelweed, floating pennywort, smartweed, spatterdock, soft rush, and maidencane. Extensive vegetative diversity and wildlife is present in the marsh and surrounding hardwood hammocks. Resource evaluations were conducted and are available from Mark Brown (SWFWMD).

C. Brief description of proposed work: Ledwith Lake is part of a proposed east-west corridor of proposed land acquisition between Ocala National Forest and Waccasassa River. This portion of the proposed acquisition is referred to as the “Levy Project” (Figure B) which includes a 4000 - acre acquisition of Ledwith Lake and the surrounding area (Figures C & D) from Rayonier and the Zetrouer Tract. Once acquired by Alachua County, the property will be managed under a joint agreement with FDEP, who owns and manages the adjacent Paynes Prairie

State Preserve. A current hydrology study of Levy Lake and Ledwith Lake will determine if the hydrologic connection should be elevated or decreased via the existing structures (Photo 4) to enhance the site conditions of each wetland. Other enhancement opportunities include the elimination of cattle grazing within the marsh prairie, which has allowed some encroachment of nuisance vegetation along the perimeter.

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): Essentially all the DOT wetland impacts (3.54 of the 3.74 acres) are proposed to occur to marsh habitat. Preservation and minimal enhancement of a portion (160 acres) of this high quality marsh prairie will result in a proposed wetland mitigation ratio of 43:1. Ledwith Lake is one of the few and largest marsh systems within the entire basin, exhibits high quality characteristics and conditions that deserve protection through an acquisition program.

E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: There are no mitigation banks within this basin. Due to the very limited public property within this basin (the least of any basin that covers the SWFWMD), and the minimal presence of wetlands within this predominantly high ridge basin (also referred to as the Florida Ridge Basin), there are limited wetland enhancement & restoration opportunities in this basin, and in particular within the portion of the basin located within the SWFWMD boundaries.

F. Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body : There are no SWIM projects or SWIM water bodies within this basin.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: No construction warranted, any revisions to Ledwith Lake hydrology will be conducted in coordination between Alachua County, FDEP, and the SJRWMD.

Contact Name: Ramesh Buch, Land Conservation Manager Phone Number: (352) 264-6800

Entity responsible for monitoring and maintenance: Joint agreement between Alachua County and FDEP staff (Paynes Prairie Preserve) to ensure both entities will coordinate the long-term maintenance & management.

Proposed timeframe for implementation: Commence: Summer, 2001 Complete: Land acquisition by Summer, 2004

Project cost: $100,000 (total); Acquisition (160 acres) – Long-term management conducted by Alachua Co. & FDEP

Attachments

_X_ 1. Detailed description of existing site and proposed work. The detailed evaluations of site conditions are included in the 2001 DOT Mitigation Plan and are available from Mark Brown (SWFWMD, 352-796-7211, ext. 4488). There are no proposed work activities at this time. If the hydraulic and hydrology study of Ledwith & Levy Lake determine the water levels need to be modified to enhance either marsh system, that will be conducted by Alachua County in coordination with FDEP and SJRWMD.

_X_ 2. Recent aerial photograph with date and scale. Fig. B & C - Infrared aerials – 1995.

_X_ 3. Location map and design drawings of existing and proposed conditions. Fig. A, location map, drawings of existing and proposed conditions are exhibited under Figures B &C.

_X_ 4. Detailed schedule for work implementation, including any and all phases. Refer to schedule provided above.

_X_ 5. Proposed success criteria and associated monitoring plan. No proposed success criteria or monitoring plan.

_X_ 6. Long- term maintenance plan. A long-term maintenance plan is not warranted due to the habitat conditions.

Mitigation Project – Ledwith Lake, Page 3 of 3

_X_ 2. Recent aerial photograph with date and scale. Fig. B & C - Infrared aerials – 1995

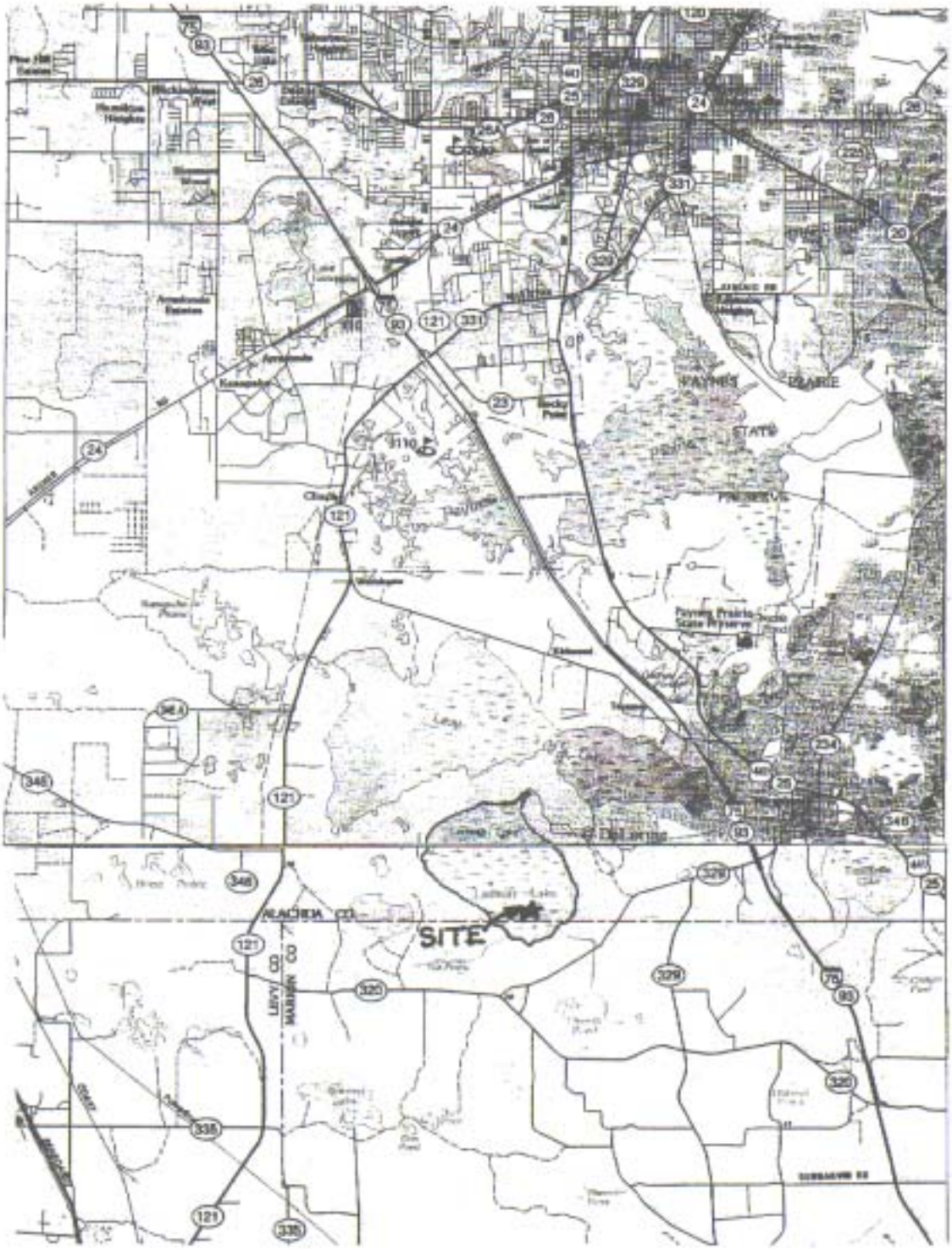
_X_ 3. Location map and design drawings of existing and proposed conditions. Fig. A, location map, design drawings of existing and proposed conditions are not necessary.

_X_ 4. Detailed schedule for work implementation, including any and all phases. Refer to schedule provided above.

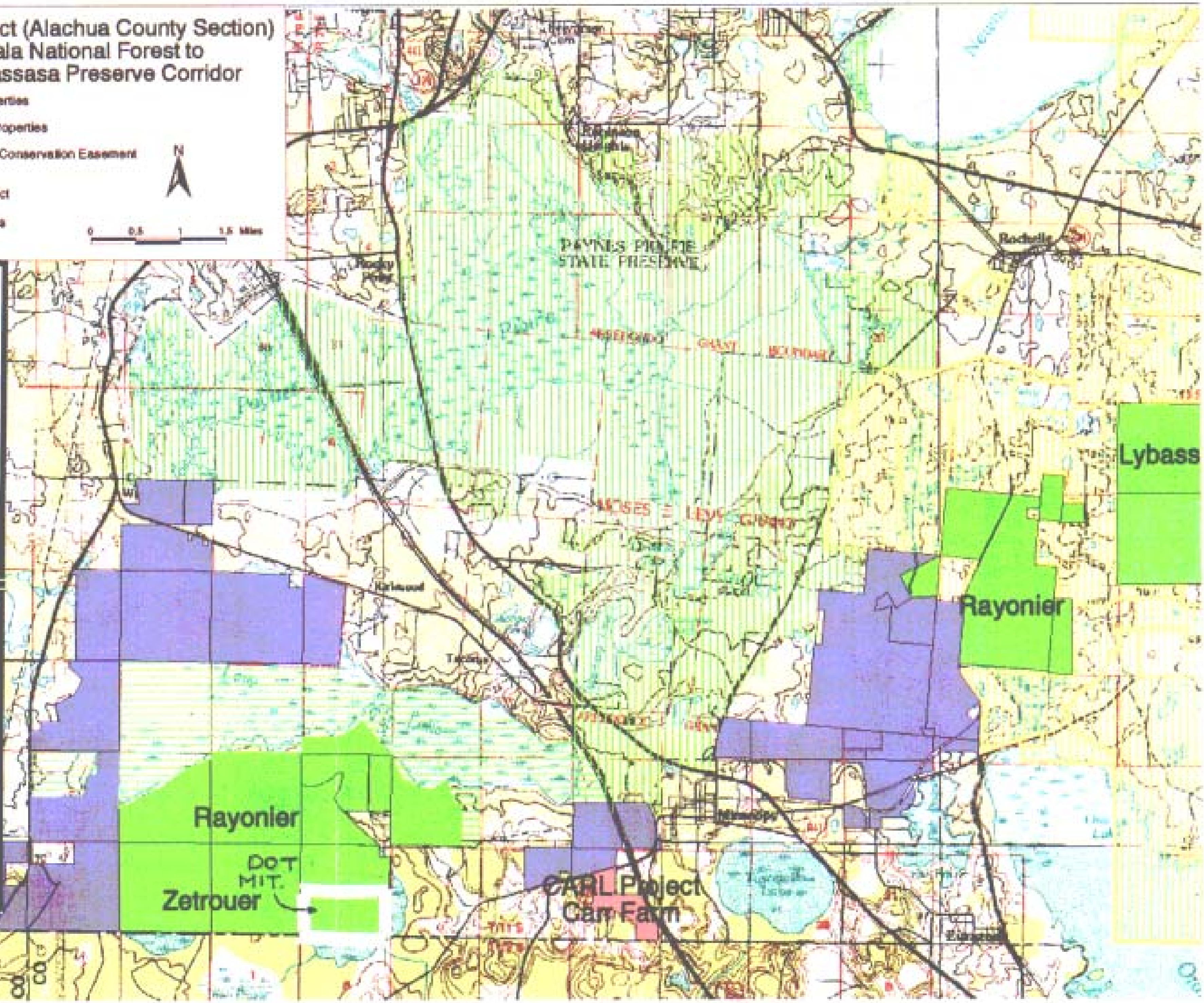
_X_ 5. Proposed success criteria and associated monitoring plan. No proposed success criteria or monitoring plan.

_X_ 6. Long term maintenance plan. A long-term maintenance plan is not warranted due to the habitat conditions.

_X_ 7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). Refer to previous text.

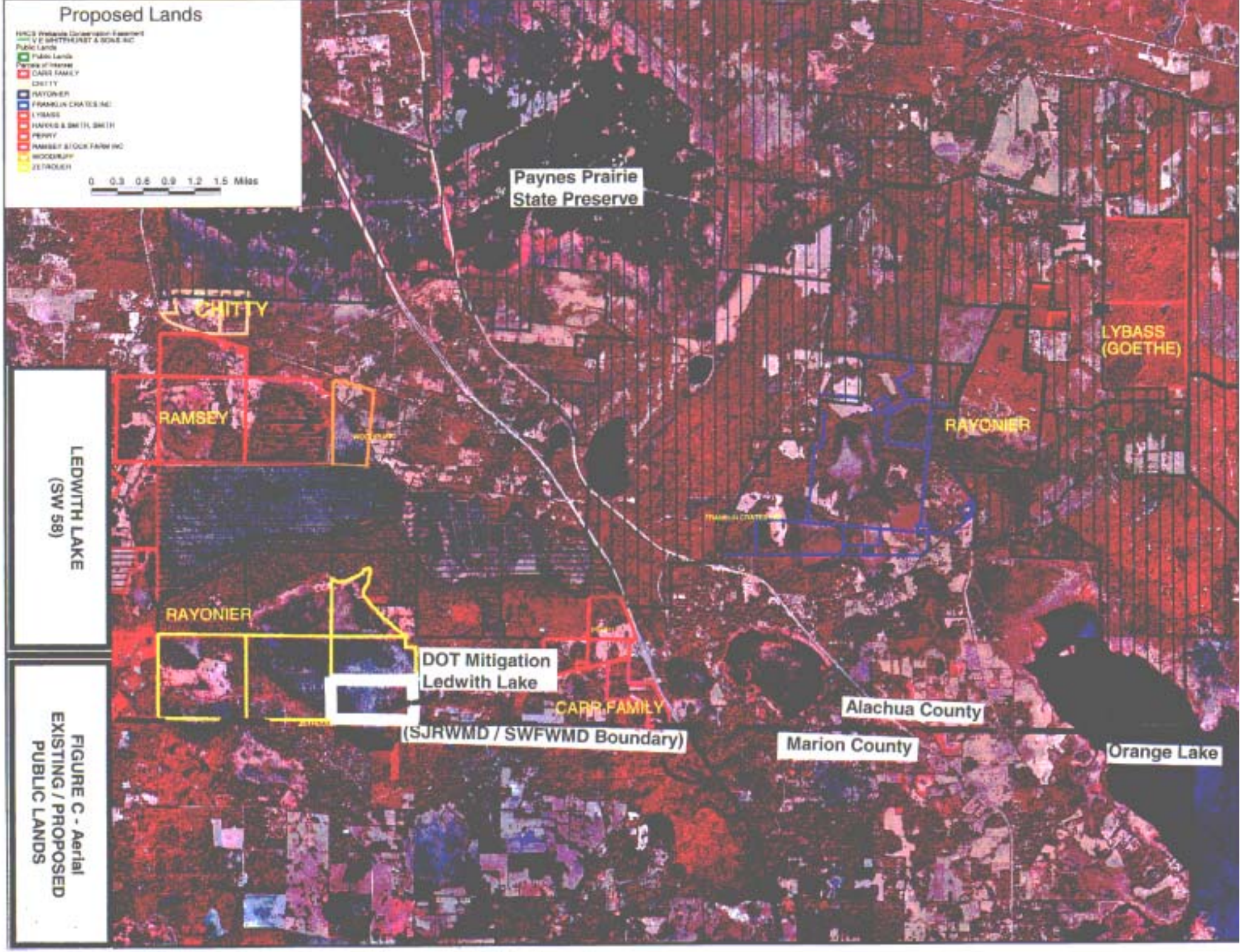


FDOT - District 5 **MITIGATION SITE** **(Ocklawaha River Basin)**	**LEDWITH LAKE** **(SW 58)**	**FIGURE A** **LOCATION MAP** **Scale 1 in. = 2.3 miles**



LEDWITH LAKE
(SW 58)

FIGURE B
EXISTING / PROPOSED
PUBLIC LANDS


Proposed Lands
Public Lands
Public Lands
Parcels of Interest
CARR FAMILY
CHITTY
RAYONIER
FRANKLIN CRATES INC
LYBASS
HARRIS & SMITH, SMITH
PENNY
RAMSEY & COX FARM INC
WOODRUFF
ZETRAUER
0 0.3 0.6 0.9 1.2 1.5 Miles
Paynes Prairie
State Preserve
CHITTY
RAMSEY
LYBASS
(GOETHE)
RAYONIER
RAYONIER
DOT Mitigation
Ledwith Lake
CARR FAMILY
(SJRWMD / SWFWMD Boundary)
Alachua County
Marion County
Orange Lake
LEDWITH LAKE
(SW 58)
FIGURE C - Aerial
EXISTING / PROPOSED
PUBLIC LANDS

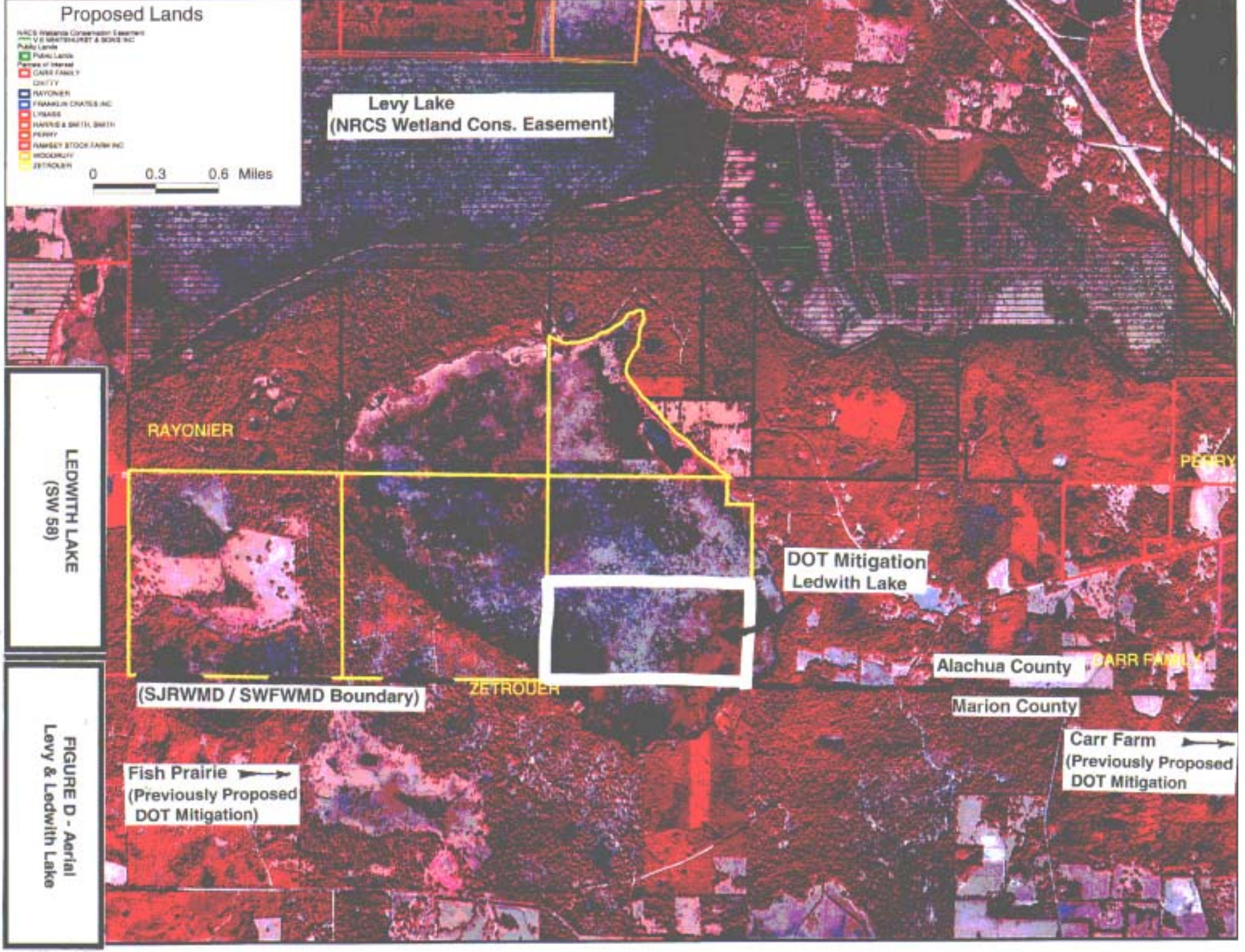


FIGURE D - Aerial
Levy & Ledwith Lake

Photo 1 - View of Ledwith Lake from the western marsh boundary. The marsh prairie has diverse vegetative cover including a dominance of pickerelweed, floating pennywort, smartweed, spatterdock, soft rush, and maidencane.

Photo 2 - View extending from right of Photo 1, open water areas in Ledwith Lake are few and predominantly located within the perimeter of the marsh prairie. Hardwood wetlands rim portions of the marsh, short transitions to upland hardwood hammocks.

FDOT - District 5 Mitigation Site (Ocklawaha Basin)	**Ledwith Lake (SW 58)**

Photo 3 - Some wetland hardwoods rim Ledwith Lake and within the hydrologic connection between Levy Lake and Ledwith Lake (shown above), dominance of laurel oak, red maple, sweetgum, and swamp chestnut oak that transition to upland hardwood hammocks of pignut hickory and live oak.

Photo 4 - The two outfall structures with flashboard risers that control the water elevation and flow from Ledwith Lake north to Levy Lake.

FDOT - District 5 Mitigation Site (Ocklawaha Basin)	**Ledwith Lake (SW 58)**

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management District
Mitigation Project Name**: Hampton Tract** Project Number: **SW 59**
Project Manager: Mark Brown, WMD Environmental Scientist Phone No: (352) 796-7211 ext. 4488
Philip Rhinesmith, WMD Environmental Scientist (352) 796-7211 ext. 4266

County(ies): Polk Location : Sections 22, 23, 25, 26, 27, 34, 35, 36 T25S, R23E ; Sections 30, 31 T25S R24E

IMPACT INFORMATION

(1) FM 2012092, I-4, US 98 to CR 557 (Sec. 3-5)* ERP #: 43011896.026 COE #: 200204891 (IP-MGH)
(2) FM 2012041, I-4, CR 557 to Osceola (Sec. 6,7,9)** ERP #:_____ COE #: _____

Drainage Basin(s) : Withlacoochee River Water Body(s) : Lake Mattie, Lake Agnes SWIM water body? N

Impact Acres/ Types:

(1) FM 2012092 2.40 ac. 510 (Fluccs code)
0.40 ac. 617 (Fluccs code)
2.30 ac. 618 (Fluccs code)
3.50 ac. 621 (Fluccs code)
8.10 ac. 630 (Fluccs code)
0.40 ac. 641 (Fluccs code)
0.70 ac. 643 (Fluccs code)
TOTAL 17.80 acres

(2) FM 2012141 3.55 ac. 640 (Fluccs code)
TOTAL 3.55 acres

TOTAL 21.35

* Note – A portion of this I-4 project is located within the Peace River Basin and associated wetland impacts (total – 1.5 acres) will be mitigated at Tenoroc / Saddle Creek (SW 47).

** Note – A portion of this I-4 project (Seg. 9) is located within the Kissimmee Ridge basin and the associated wetland impacts (total – 1.99 acres) will be mitigated at Reedy Creek Mitigation Bank (SW 49). Another portion of this I-4 project is located within the Ocklawaha basin and those wetland impacts (4.32 acres) will be mitigated at Lake Lowery (SW 76).

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: ___ Creation __Restoration _X_ Enhancement ___ Preservation Mitigation Area: **1076 ac.**

Mixed Forested (Fluccs- 630)	684 acres
Cypress (Fluccs- 621)	309 acres
Marsh Slough (Fluccs- 643)	60 acres
Hydric Flatwoods (Fluccs- 625)	19 acres
Marsh (Fluccs- 641)	4 acres
TOTAL	**1076 acres**

SWIM project? N Aquatic Plant Control project? N Exotic Plant Control Project? N Mitigation Bank? N
Drainage Basin: Withlacoochee River Water Body: Gator Cr., Colt Cr., Sapling Drain, Bee Tree Drain SWIM water? N

Project Description

A. Overall project goal: The Hampton Tract (Total -7640 acres) was acquired by the SWFWMD in late, 1999. The site has an extensive network of ditches that have excessively drained various wetland habitats throughout the property. With the use of at least 90-100 large ditch blocks and filling approximately 5 miles of ditches, the wetlands will be hydrologically enhanced, allowing other wetland functions and values to be restored and enhanced.

Mitigation Project - Hampton Tract

B. Brief description of current condition: The site has various wetland habitats covering over 2400 acres, dominated by cypress domes & strands, mixed forested floodplains, hydric pine flatwoods, and marshes (Figure F). Approximately 1000 wetland acres are hydrologically impacted by three major drainage ditch systems (Figure E, Colt Creek Drain, Sapling Drain, Bee Tree Drain). These ditches ultimately connect to Gator Creek along the western project boundary. Upland habitats (approx. 4200 acres) are dominated by pine flatwoods with some upland hardwood hammocks generally located along the perimeter of the forested wetlands. The remaining property is dominated by improved pasture (approx. 1000 acres) primarily located within the northeast and center of the tract. The pastures are separated and interspersed by various cypress strands & domes. The property is bordered to the north & west by extensive property owned and managed by the SWFWMD (Figures A,D), and to the east & south by low-density residential areas.

C. Brief description of proposed work: The Hampton Tract has been included in a Gator Creek Watershed Study (conducted by Polk Co. and the SWFWMD) to evaluate and determine design features necessary to restore the hydrology of the Hampton Tract without impacting adjacent landowners. The majority of wetland hydrologic restoration will be conducted by constructing ditch blocks (90-100, approximate locations on Figure F), that will redirect and detain surface and ground water in the wetlands. There are two miles of a large perimeter ditch located along the northeast property boundary, the adjacent spoil material has minimal tree cover and will be back filled into the ditch (Figure F). There is also a 2.5-mile ditch (Sapling Drain, Figure F - Central) that diverts all the historic water sheet flow away from a remnant marsh & cypress slough. That ditch will also be back filled to restore sheet flow through the slough. Monitor locations (23) have been designated with the installation of shallow monitor wells. These wells will be monitored on a semi-annual basis and surrounding wetland habitat conditions will be noted for a period of at least three years post-construction.

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): The majority (approximately 70%) of the proposed I-4 wetland impacts will be to forested wetland habitat. The Hampton Tract will have at least 993-acres of forested wetland hydrologic enhancement (cypress & mixed forested) plus the enhancement of marsh habitat (64 acres) and hydric pine flatwoods (19 acres). The cumulative mitigation area (1076 acres) and impact acreage (21.35 acres) result in an overall mitigation ratio of 50-to-1. The mitigation acreage and habitat types associated with each section at Hampton is described in Attachment D. Even though the hydrologic restoration plan will benefit all the wetlands and uplands within and adjacent to the 7600-acre tract, wetlands without direct hydrologic enhancement (over 1400 acres) are not accounted for in the mitigation credit (reference green delineated wetlands on infrared aerials). The substantial wetland enhancement on a large-scale site will adequately and appropriately mitigate for these Interstate-4 wetland impacts within the Withlacoochee Basin. No other DOT projects are proposed to be mitigated through the enhancement activities at the Hampton Tract.

E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: There are no established or proposed mitigation banks within the Withlacoochee River Basin at this time.

F. Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body : The only SWIM project within the Withlacoochee River Basin is the restoration of Lake Panasoffkee (SW 57). The lake is being restored through the re-establishment of the appropriate aquatic habitat, and is being proposed to mitigate for wetland impacts associated with the I-75 bridge widening over the southern portion of the lake.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: WMD Operations Department
Contact Name: Mark Brown, WMD Environmental Scientist Phone Number: (352) 796-7211 ext. 4488
Entity responsible for monitoring and maintenance: The WMD will be responsible for monitoring and maintenance.
Proposed timeframe for implementation: Commence: Fall, 2000 Complete: Spring, 2005 (Construction)

Install Monitor Wells – Spring, 2001	Project Cost: $1,400,000 (total):	
Watershed Study – Complete, 2003	Watershed Study	$50,000
Design – Complete, 2004	Design	$80,000
Construction -- Spring, 2005 & 2006	Construction	$1,230,000
Minimum 3 Years Maintenance & Monitoring	Maintenance & Monitor	$40,000

Attachments

{tc \l2 "Attachments } X 1. Detailed description of existing site and proposed work. Attachment A -Existing Site & Proposed Work.

X 2. Recent aerial photograph with date and scale. Attached infra-red aerials (1995).

X 3. Location map and design drawings of existing and proposed conditions. Figure A - Watershed Map, Figure B - Location Map. One set of infrared aerials (Fig. E) depict the major ditches (yellow) and natural wetland water flow patterns (blue). Another set of infrared aerials (Fig. F) and depict wetlands proposed for enhancement (blue) and minimal enhancement (green). The wetlands designated in green are not accounted for as mitigation credit. Additional design drawings will be prepared as part of the Gator Creek Watershed Study.

X 4. Detailed schedule for work implementation, including any and all phases. The work schedule for proposed activities are presented under Project Implementation.

X 5. Proposed success criteria and associated monitoring plan. Refer to Attachment B.

X 6. Long term maintenance plan. Refer to Attachment B - Maintenance & Monitoring Plan, Success Criteria.

X 7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). Attachment C.

ATTACHMENT A - Existing Site & Proposed Work

The site is located within the Green Swamp (Area of Critical State Concern), and has over 60% of the adjacent property also under ownership of the SWFWMD (referred to as “Green Swamp East”). The site’s habitat and land-use is dominated by approximately 2400 wetland acres (predominantly mixed forested and cypress systems), 4200 acres of pine flatwood & upland hardwood hammocks, and 1000 acres of improved pasture.

The site's natural drainage pattern meanders from east to west. During the late 1940’s and early 1950’s, the construction of large drainage ditches (Colt Creek Drain, Sapling Drain, Bee Tree Drain) and smaller connecting ditches resulted in a more direct drainage of surface and ground water west to connect with Gator Creek along the project’s western boundary. In turn, Gator Creek has been ditched and connects to the Withlacoochee River

approximately 4 miles northwest of the site (Figure B). However, the northern boundary of the Hampton Tract is adjacent to the forested floodplain associated with the Withlacoochee River. These ditched drainage systems have directly impacted the hydroperiods and vegetative composition of a large percentage of the site's wetlands, particularly with the transition of obligate to more facultative species within the wetland, and allowing undesirable upland species to encroach along the wetland perimeters. The major ditches are designated with yellow lines and the natural surface water drainage patterns are marked with curved blue lines on the infrared aerial (Fig. E).

A combination of predominantly large ditch block construction (90-100), breach cuts within spoil ridges located within wetlands, and some total ditch backfilling (approx. 5 miles) will be conducted to hydrologically enhance the ditched wetlands, allowing the regeneration of more obligate species that have gradually decreased from the wetlands. This construction will also attenuate the surficial and groundwater hydrology for the entire tract. The constructed ditch blocks will include spoil material from the adjacent ditches, with a top top-of-block length of 50 to 100 feet, and gradual sideslopes (minimum 10:1) to the bottom ditch grades. Since the majority of the ditches on the site are 3-4 feet deep, these ditchblocks will extend 110 to 180 feet in total length. The ditchblocks will be stabilized with vegetative cover (predominantly maidencane) and, where necessary, stabilized on the downstream slope with structural support (liners with rip-rap rubble). These ditchblocks will allow also provide easier access for wildlife into the wetlands during wet season conditions. The following information describes the wetland enhancement aspects associated with each major drainage system.

Colt Creek Drain

The Colt Creek Drain includes a combination of isolated, partially connected, and forested wetland tributaries within the northern portion of the property. The highest concentration of isolated and partially connected wetlands for the entire Hampton Tract is associated with cypress systems within the northeast pastures. Historically, these wetlands were hydrologically connected with surface water that sheet flowed through minor drainageways and pine flatwoods during the wet season. The high concentration of perimeter ditches around the wetlands have connected and substantially altered those drainage patterns and the wetlands' hydroperiods. West of the pastures, the wetlands are more contiguous and less historically isolated, particularly for the unnamed tributary located south of the southeast-northwest access road leading to the rock mine (Figure F).

In order to restore the drainage patterns within each of these wetlands, the highest percentage of ditch blocks are proposed for the wetlands associated with the Colt Creek Drain. The ditch blocks will be strategically placed at certain locations within the perimeter ditches to divert contributing water across low elevation breach points into the adjacent wetlands. This is particularly more important for the elongated wetland strands than the cypress domes. In all cases, ditch blocks will be constructed within the ditch locations where the wetland surface and ground water outfalls through the ditch toward the next downstream wetland system. This is generally at the location where the ditch crosses the wetland/upland boundary. This will not only detain water within the wetland throughout the rainy season to restore hydroperiods, but contribute groundwater hydration of wetlands during the dry season. This is important since during recent drought periods, surface water was not only absent in the wetlands but also in the ditches. Soil borings at the 23 monitor locations during the spring, 2001 indicated groundwater was greater than 6 ft. below surface grade elevations within each of the wetlands. Extended dry season ground and surface water conditions not only stress vegetative conditions, but the surface water sources for all types of wildlife use, not just wetland dependent species. Even though the wetlands have natural cycles of below grade water elevations, the opportunity to maintain some surface water within the ditches without resulting in groundwater drawdown will allow an important water resource to be available for wildlife use during extended droughts.

Mitigation Project - Hampton Tract

As noted on Figure F (East aerial photo), there is a 2-mile long ditch along the northeastern property boundary proposed for backfill. As noted in the photos, this ditch and adjacent road berm are large and block historic surface water flow to the on-site wetlands from adjacent property. Unlike some of the smaller ditches associated with Colt Creek, wildlife accessibility of the wetlands and crossing from the adjacent property is difficult, particularly during the rainy season conditions when the perimeter ditch water storage is very deep. With construction equipment access to this ditch and associated spoil material, backfilling this ditch will not only enhance the hydrology of the wetlands but allow more wildlife movement through and around the wetlands and adjacent property, which includes other WMD property north of the Hampton Tract. The backfilled ditch will have native seed source material transferred to re-establish an appropriate wetland buffer habitat of facultative sedges, rushes, etc.

The WMD has converted the land use of the northeast upland pastures to silviculture. However, pines were planted at least 50 feet from the wetlands and this buffer is allowed to naturally generate foraging sedges and rushes to replace the bahia. With the introduction of pines to replace open pasture, additional vegetative cover will encourage more wildlife to cross from the native habitat areas west and north of these sections. In addition, the meandering alignment of the wetland strands allow corridor connections to other native habitat.

As noted, there is an unnamed tributary to the Colt Creek Drain south of the main access road to the former limerock mine in the northwest corner of the property. This tributary commences near Rock Ridge Road at the entrance gate (Section 36), and extensively meanders west through Sections 35 and 27. Due to the meandering and contributing water flow from adjacent wetlands, the ditch was constructed from the area of monitor site 14 and extends northwest to a wetland near the rock mine. This ditch was dredged through uplands and wetlands (e.g. Wetlands 31, 164, 195, Figure F - Central) to adequately circumvent the meandering flow into a relative direct alignment off the property. The ditch blocks are proposed at the locations where the ditch crosses wetland/upland boundaries to restore the water flow into the meandering systems. Along with the ditch blocks, adequate breach points in the spoil ridges adjacent to the wetland ditch segments will be constructed only where necessary by pushing spoil segments back into the ditch. In order to minimize impacts to trees throughout the property, every effort will be made to utilize only spoil material without tree cover for both ditch blocks, backfilling ditch segments, and creation of breach points. Graded spoil material will commence at the dripline of any adjacent trees in order to not impact roots or result in disruption of spoil material.

Sapling Drain

Sampling Drain is a large, straight, east-west ditch that conveys substantial volumes of water from a large contributing watershed. The majority of the existing central pasture north and south of the drain was historically a wet prairie slough. Remnant portions of the slough (Wetland 194, 220, Figure F - Central) will be substantially enhanced from a restored sheet flow pattern. The current vegetative cover is predominantly bahia, fennel, and pine trees with a few pockets of dewatered cypress domes (refer to photo). This remnant slough was the heart of the historic wet prairie and this enhancement effort will restore an east-west wetland & wildlife corridor across the property to Gator Creek. This will attenuate and sheet flow surface water to replace the straight ditch. Some minimal coverage of desirable hydrophytic vegetation is currently present within the cypress portions of the slough, however supplemental plantings (predominantly soft rush, maidencane, and pickerelweed) will be conducted in those areas where natural regeneration does not provide at least 80% cover of hydrophytic vegetation.

However, it's noted that much of the pasture northeast of Wetland 194 have average grade elevations less than 6 inches above that of the remnant slough. It has been decided to not plant pines in this pasture, nor detain surface water flow when it does extend beyond the slough. These pastures have been periodically mowed which

minimize regeneration of fennel, and allows soft rush to generate in the collector swales. The cattle have been removed and the restored hydrology associated with filling Sapling Drain is expected to result in regeneration and recruitment of soft rush and other hydrophytic vegetation in the pasture. Documentation of these conditions will be noted throughout the restoration and monitoring effort and even though not accounted for in the mitigation credits, this natural regeneration of substantial wet prairie acreage is expected to become an additional ecological benefit of the restoration effort.

Bee Tree Drain

Bee Tree Drain was dredged across a meandering mixed forested wetland and the adjacent upland habitat. Like the previously discussed unnamed tributary of the Colt Creek Drain, restoring the wetland flow patterns will be conducted by constructing ditch blocks at the wetland/upland boundary. Portions of spoil material along the ditch segments within the wetlands will also be backfilled to create appropriate breach points necessary to restore historic flow patterns. One of the most drastic water diversions is the drain outfalling from Wetland #224 near monitor location #22 (Figure F – Central). This diversion takes the majority of the natural water flow that historically flowed north and directly west into a borrow pit within the Gator Creek floodplain.

Gator Creek

Gator Creek is a major north-south drainage feature in the Green Swamp. Historically, this floodplain had minimal definition of a creek channel, more dependent on water sheet flow like the other wetland strands on the property. With the demand to increase drainage to the Withlacoochee River, a large ditch was dredged through the floodplain. As seen on the aerials, the portion of the Gator Creek ditch that crosses the Hampton Tract was dredged along the western edge of the floodplain, as opposed through the floodplain core which has slightly lower grade elevations. Even though the floodplain still maintains high quality habitat, the transition toward more facultative species such as laurel oak has replaced the dominance of the obligate tree species, even within the wetland core.

With the increased residential development activities in the Green Swamp during the last 20 years, filling the Gator Creek ditch to restore sheet flow patterns is unfortunately not feasible. A Gator Creek watershed study is being conducted for the WMD and Polk County to evaluate and determine future maintenance and management activities. Due to potential flooding impacts to residential development south and east of the Hampton Tract, there are limited opportunities to divert water flow from the large ditch into the Gator Creek floodplain. However, some breaches within the spoil material adjacent to the ditch will be constructed to match natural grade. This will allow some water attenuation within the adjacent floodplain when the ditch water flow does periodically overflow the banks.

In addition, filling the short ditch segments of the connecting Sapling Drain and Bee Tree Drain portions within the Gator Creek floodplain will provide some wetland enhancement opportunities. This will allow more attenuation of contributing groundwater and sheet flow throughout the floodplain that is currently direct channel flow from the east. Since laurel oaks presently cover the spoil ridges, unfortunately this backfilling operation will result in loss of the majority of those trees. Care will be given to minimize impacts to the larger trees on the spoil, but with the contributing seed source, oaks will recruit and supplemental plantings of maples and cypress (1 gallon containerized, 10 ft. centers) will also be conducted to quickly regenerate the forested component for the displaced trees on the spoil. As noted, the combination of the breach cuts within the Gator Creek spoil and filling the connector ditches to attenuate more contributing hydrology to this floodplain will be an ecological benefit. However, it's difficult to quantify the degree and limits of this enhancement relative to the Gator Creek ditch that has to be maintained open instead of backfilled. As a result, upon additional evaluation determination, the

restoration effort does not designate mitigation credit for the approximately 270 acres of the Gator Creek forested wetland floodplain that crosses through the Hampton Tract.

ATTACHMENT B - Maintenance & Monitoring Plan, Success Criteria.

Maintenance & monitoring activities are anticipated for a minimum three years and until success criteria is met. Maintenance activities will be predominantly associated with evaluating and ensuring the structural integrity and suitability of the ditch blocks. At any time should any ditch blocks or associated wetland enhancement areas are not performing as proposed, corrective action will be taken which will include additional block support, backfilling extra ditch segments, and/or constructing additional breaches within spoil ridges through the wetlands. These inspections will be conducted on a monthly schedule throughout the first rainy season post-construction, and quarterly for at least two more years. Additional maintenance will be perpetually conducted as part of a long-term management plan for the Hampton Tract. One of the primary components of the management plan includes prescribed burns. Such burns can periodically encroach too far into drained forested wetlands, which has resulted in vegetative impacts and loss of organic topsoil. With the restored hydrology of those drained wetlands on-site, the prescribed burns will only encroach along the transitional perimeters of the forested wetlands. These transitional areas often become too dense with vegetative species such as wax myrtle and smilax, limiting some wildlife movement. So periodic burns to include the upland buffers and wetland transition will allow for more wildlife use of all habitat areas.

The 23 monitoring stations will be monitored for water levels, flow patterns, vegetative components, and wildlife activities on a semi-annual basis pre- and post- construction, which will be for a minimum three years post-construction. This will provide at least two years of pre-construction hydrologic monitoring to compare with post-construction monitoring to ensure the surface water hydrology has been restored and document any potential problems. Additional documentation will be conducted of habitat conditions within the Gator Creek floodplain (including the trees planted within the filled floodplain ditches), any supplemental plantings within the Sapling Drain restored slough, and the natural regeneration of wet prairie conditions within pastures north of the Sapling Drain (not accounted for in the mitigation credit).

Success criteria will include documentation of restored hydrologic and hydraulic flow regimes of those wetlands proposed for enhancement. It also includes documentation of ditch block stabilization, vegetative cover of totally filled ditches and, where necessary, rip-rap material. Shifts in vegetative cover and diversity will be noted in the monitoring reports, but no proposed specific criteria for species shifts since the majority of the major transitions will take place over 10-20 years. Planted trees in the Gator Creek floodplain will require 90% survivorship, and 30% canopy closure of planted and recruited trees in the displaced area.

A long-term maintenance & management plan will be prepared as an extension of the adjacent Green Swamp East & West Tracts, also referred to as the Green Swamp Wilderness Preserve. Specific issues such as prescribed burn parcels, fencing, silviculture operations, and wildlife management will be prepared by the Land Management Specialist who manages the Hampton Tract. For an example of the type of general management plans and procedures for the area, a copy of the "*Plan for Use & Management of the Green Swamp Wilderness Preserve*, SWFWMD, January, 1994" is available for review. Most of these same principles will be applied for the long-term management of the Hampton Tract.

ATTACHMENT C - DOT Mitigation

The wetland impacts associated with the two Interstate-4 projects were designated different areas of enhancement at the Hampton Tract. In order to evaluate which wetlands would and would not be documented for enhancement, all the site's wetlands were mapped, evaluated, and are depicted on Figure F. Those wetlands that are delineated with green boundaries are anticipated to have minimal habitat improvements and are not designated for mitigation credit. Those wetlands designated with blue boundaries will have hydrologic improvements and are accounted for mitigation credit. For those contiguous wetlands that cross into more than one section, the first section where the individual wetland is first designated has the total wetland acreage documented, as opposed to dividing the individual wetland's acreage based on each section. The following table designates the wetland enhancement acreage associated with the proposed activities at the Hampton Tract.

Sect. & Total Mitig. Acres	**#630 –Enhanced Mix Wet. Forest**	**#621–Enhanced Cypress**	**#641 – Enhanced Marsh**	**#643 – Enhanced Marsh Slough**	**#625– Enhanced Hydric Flatwoods**
22 - 235.9	73.8	162.1			
23 - 88.6	74.7	13.2	0.7		
26 - 57.7	52.7	5.0			
25 - 24.5		24.5			
36 - 103.8	78.8	25.0			
27 - 43.1	10.6	32.5			
34 - 139.8	76.8	13.2	1.4	48.4	
35 - 154.7	153.1	1.6			
2 - 61.1	24.0	4.6	1.5	11.8	19.2
3 - 152.1	139.0	13.1			
11 - 14.6		14.6			
1076 Acres	**683.5 Ac.**	**309.4 Ac.**	**3.6 Ac.**	**60.2 Ac.**	**19.2 Ac.**

In order to provide appropriate habitat mitigation to offset the proposed impacts, the following breakdown of impacts to mitigation are provided based on the various sections at the Hampton Tract. With these projects currently going through the permitting phase, the impact acreage will be adjusted and final acreages placed within the 2003 DOT plan. Of the two Interstate 4 projects with wetland impacts being mitigated at the Hampton Tract, the eastern portion (Segments 6-9) currently proposes all non-forested wetland impacts. Since Section 34 at the Hampton Tract has the majority of non-forested wetland enhancement, these are designated as mitigation for the wetland impacts associated with the eastern segment.

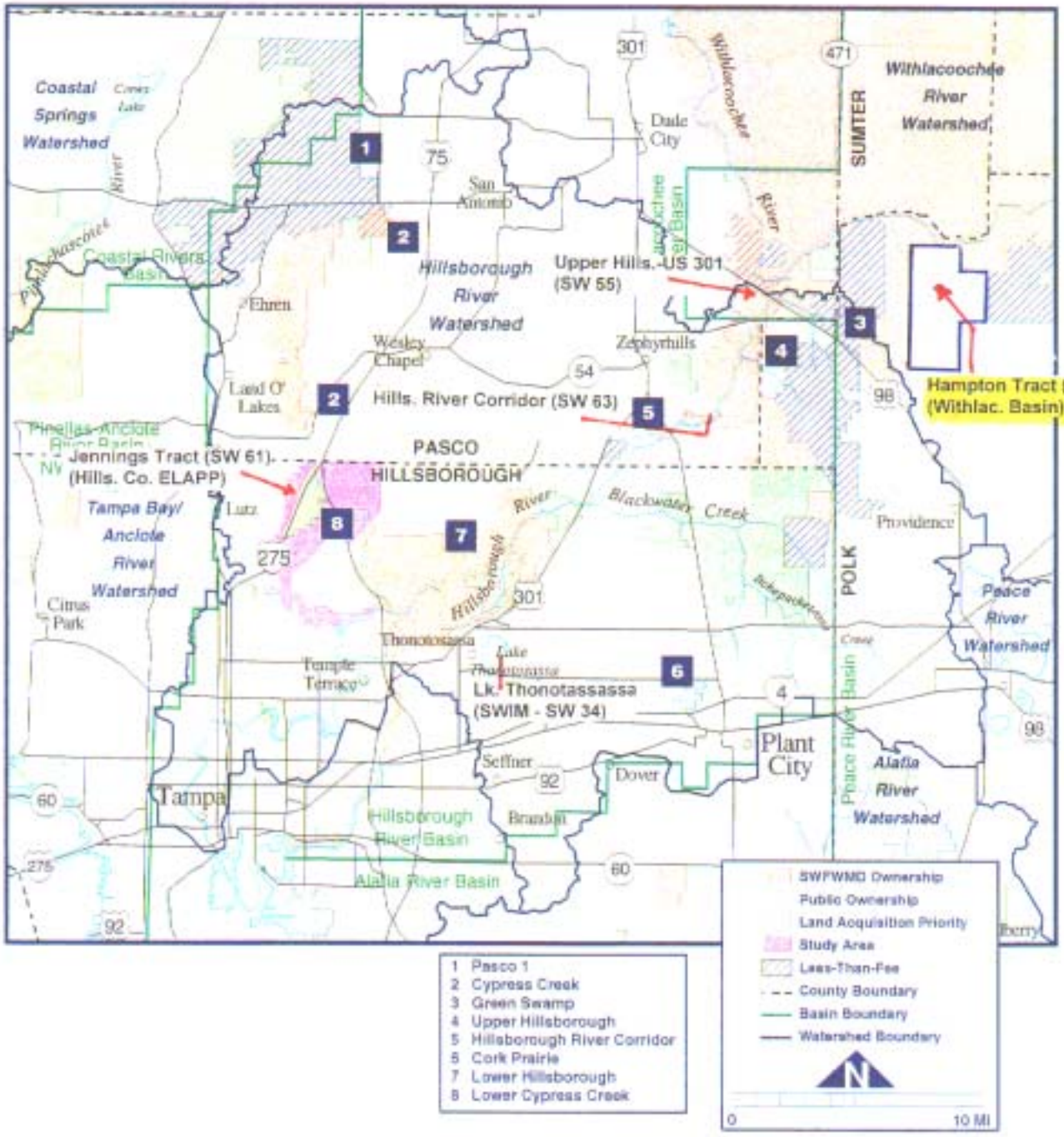
FM 2012092 – Interstate 4, US 98 to CR 557 **Wetland Impacts, (Western Project – Segments 3-5)** 2.40 acres – Streams & Waterway (510)	**Mitigation – Sect. 22, 23, 26, 25, 36, 27, 35, 2, 3, 11 (all but Section 34)**

Mitigation Project - Hampton Tract

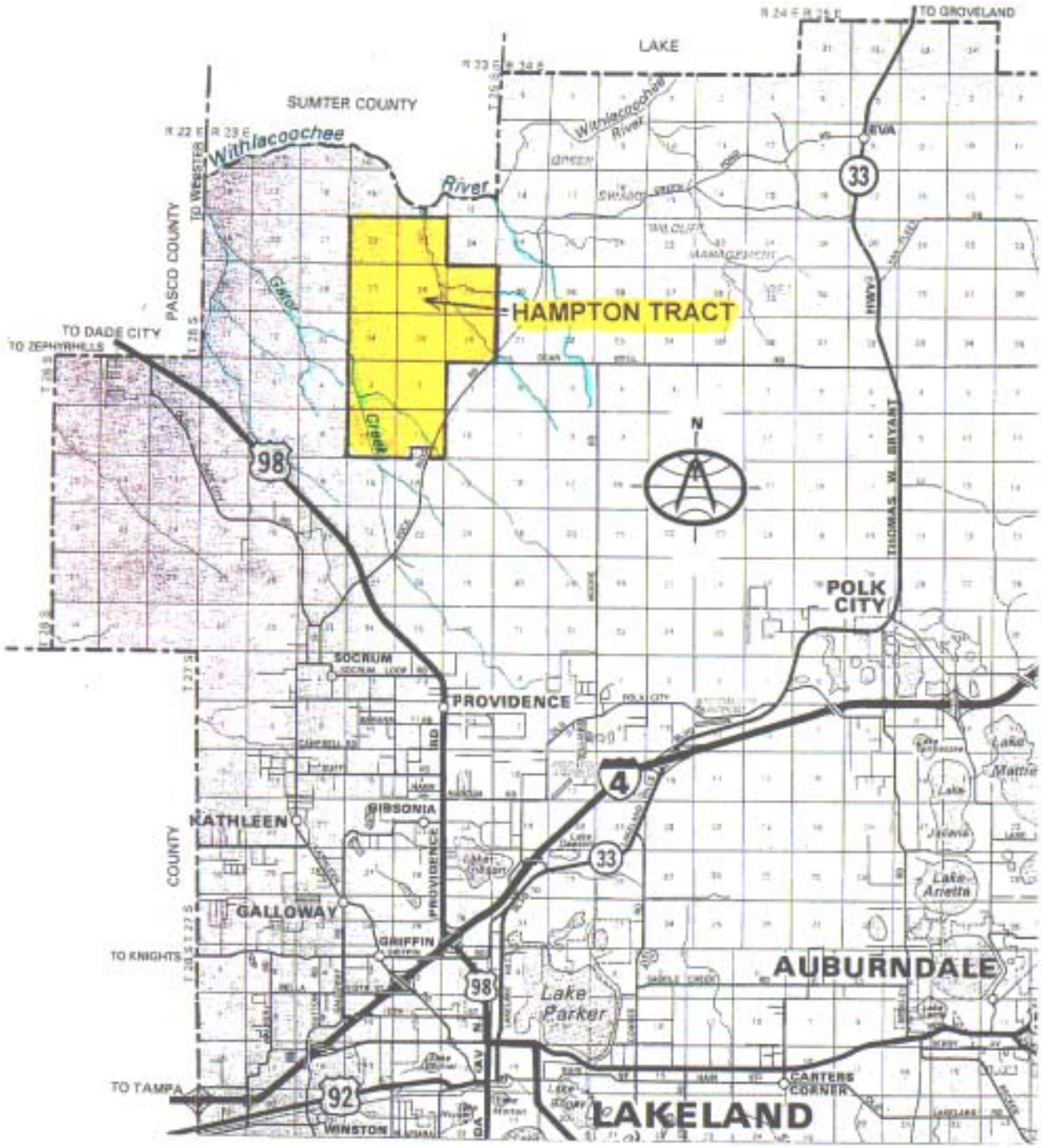
0.40 acres – Mixed Hardwood Forest (617) 2.30 acres – Willow & Elderberry (618) 3.50 acres – Cypress (621) 8.10 acres – Mixed Wetland Forest (630) 0.40 acres – Freshwater Marsh (641) 0.70 acres – Wet Prairie (643) **17.80 Acres – TOTAL**	Mixed Forested Enhancement – 606.7 acres Cypress Enhancement – 296.2 acres Marsh Enhancement – 2.2 acres Marsh Slough – 11.8 Hydric Flatwoods – 19.2 acres **TOTAL – 936.1 acres (ratio 53-to-1)**
FM 2012141 – Interstate 4, CR 557 to Osceola Co. Wetland Impacts, (Eastern Project – Segments 6-9) 3.55 acres – Freshwater Marsh (640) **3.55 Acres – TOTAL**	**Mitigation – Section 34** Mixed Forested Enhancement – 76.8 acres Cypress Enhancement – 13.2 acres Marsh Enhancement – 1.4 acres Marsh Slough Enhancement – 48.4 acres **TOTAL – 139.8 acres (ratio 40-to-1)**

The combination of the wetland enhancement, along with the proposed upland habitat enhancement and management activities (not conducted for mitigation credit) will restore the major historic habitat features of the Hampton Tract. This will allow the wildlife species within the adjacent Green Swamp public property to gradually return and provide cumulative habitat and wildlife value and function to this large and important site within a Green Swamp tract that is designated as an “Area of Critical State Concern” (Figure D).

Save Our Rivers
Preservation 2000
2000 Five-Year Plan



FDOT - District 1 MITIGATION SITE (WITHLACOOCHEE BASIN)	**HAMPTON TRACT (SW 59)**	**FIGURE A WATERSHED BASIN MAP**



NORTH ^ SCALE 0.3 in. = 1 mile

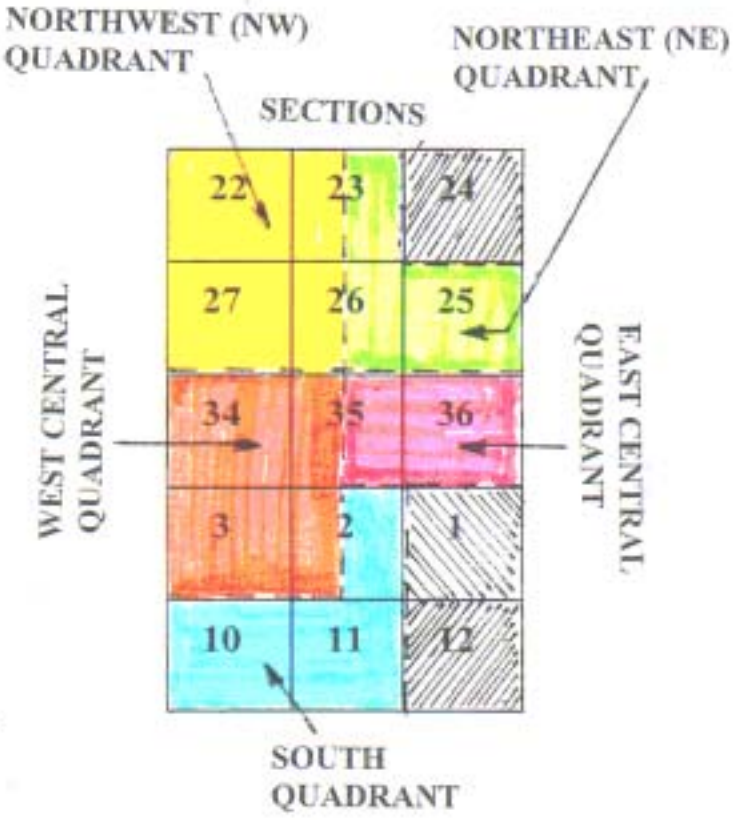
FDOT - District 1 MITIGATION SITE (WITHLACOOCHEE BASIN)	HAMPTON TRACT (SW 59)	FIGURE B LOCATION MAP

HAMPTON TRACT
SOIL LEGEND

5 - Eau Gallie fine sand
6* - Eaton mucky fine sand, dep.
7 - Pomona fine sand
9 - Lynne sand
10* - Malabar fine sand
13* - Samsula muck
17 - Smyrna and Myakka fine sands
19* - Floridana mucky fine sand, dep.
23 - Ona fine sand
25* - Placid and Myakka fine sands, dep.
32* - Kaliga muck
33* - Holopaw fine sand, depressional
35* - Hontoon muck
36* - Basinger mucky fine sand, dep.
40 - Wauchula fine sand
42 - Felda fine sand
48* - Chobee fine sand, depressional
58 - Udorthents, excavated
62 - Wabasso fine sand
67 - Bradenton fine sand
75* - Valkaria sand
78 - Paisley fine sand, stony subsurface
82* - Felda fine sand, frequently flooded
86* - Felda fine sand, depressional
87* - Basinger fine sand

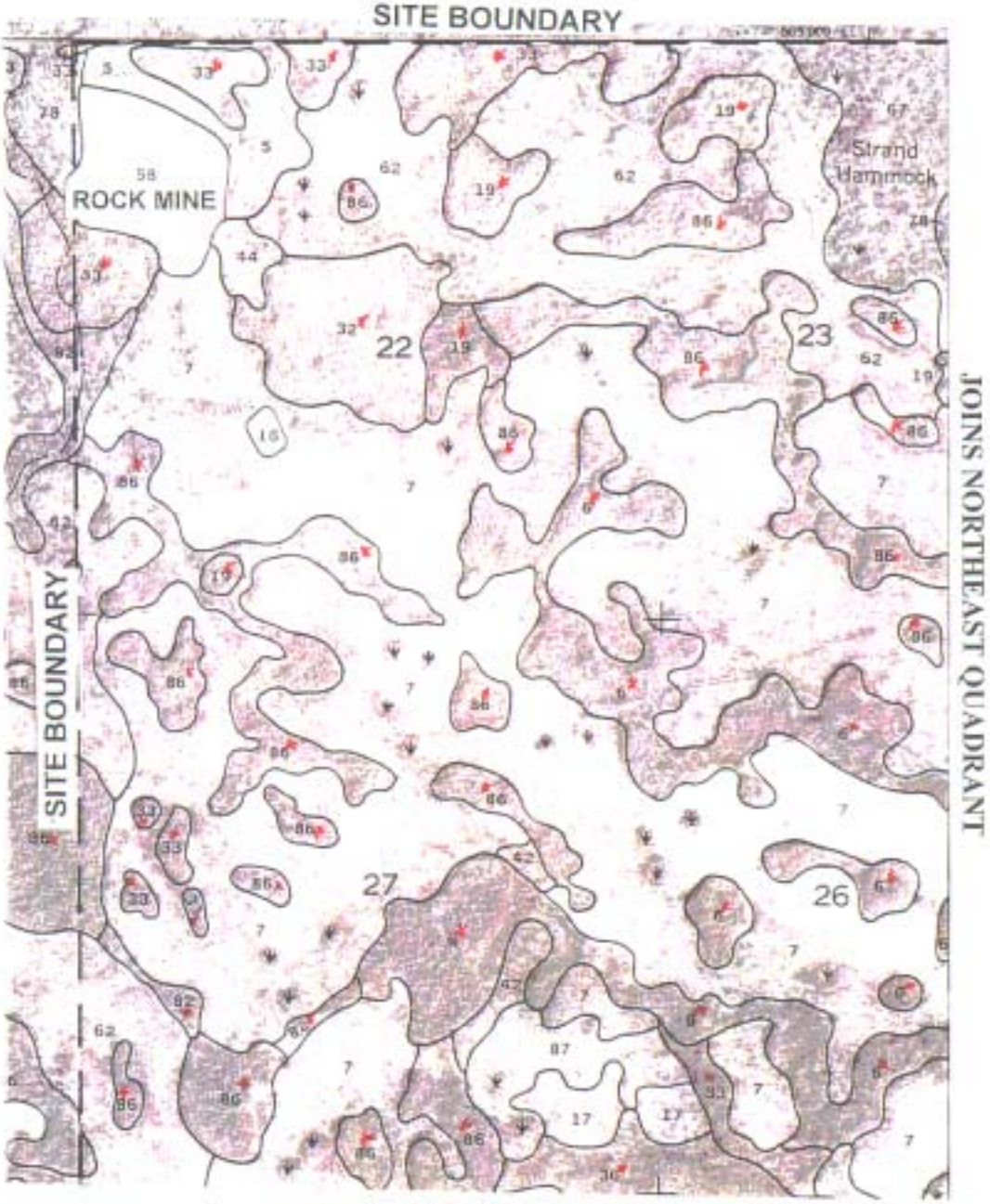
* Hydric Soils

NORTH ^
Scale - 3.75 inches = 1 mile



POLK SOIL SURVEY AERIAL DATE - 1974

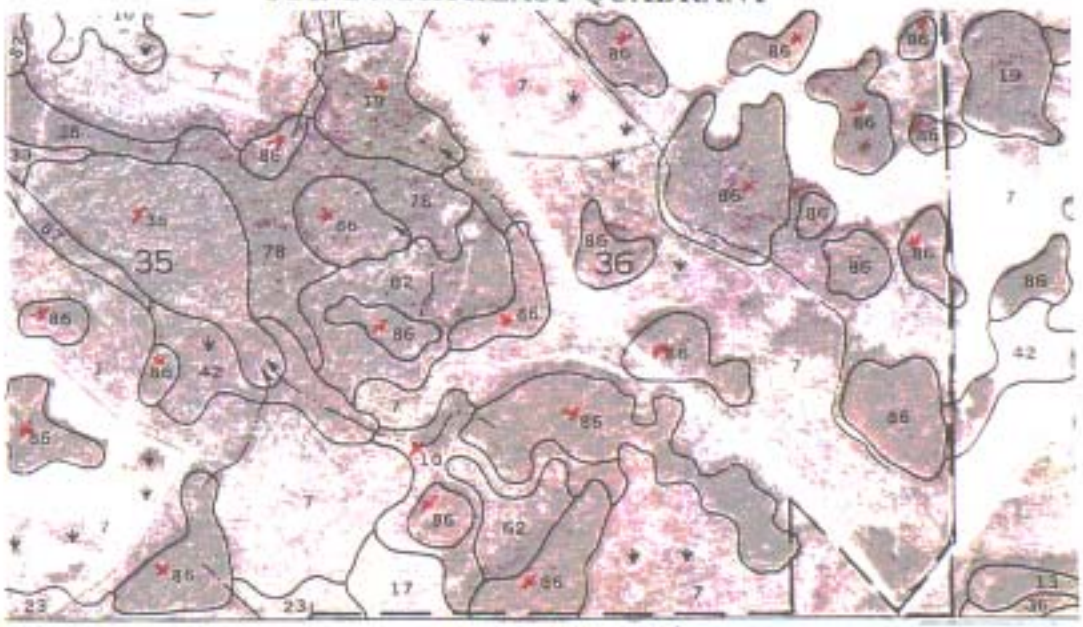
FDOT - District 1 MITIGATION SITE (WITHLACOOCHEE BASIN)	HAMPTON TRACT (SW 59)	FIGURE C POLK CO. SOIL SURVEY (LEGEND & QUADRANT MAP)



NORTH ^ SCALE 3.25 in. = 1 mile

FDOT - District 1 MITIGATION SITE (WITHLACOOCHEE BASIN)	HAMPTON TRACT (SW 59)	FIGURE C POLK CO. SOIL SURVEY (NW QUADRANT)

JOINS NORTHEAST QUADRANT

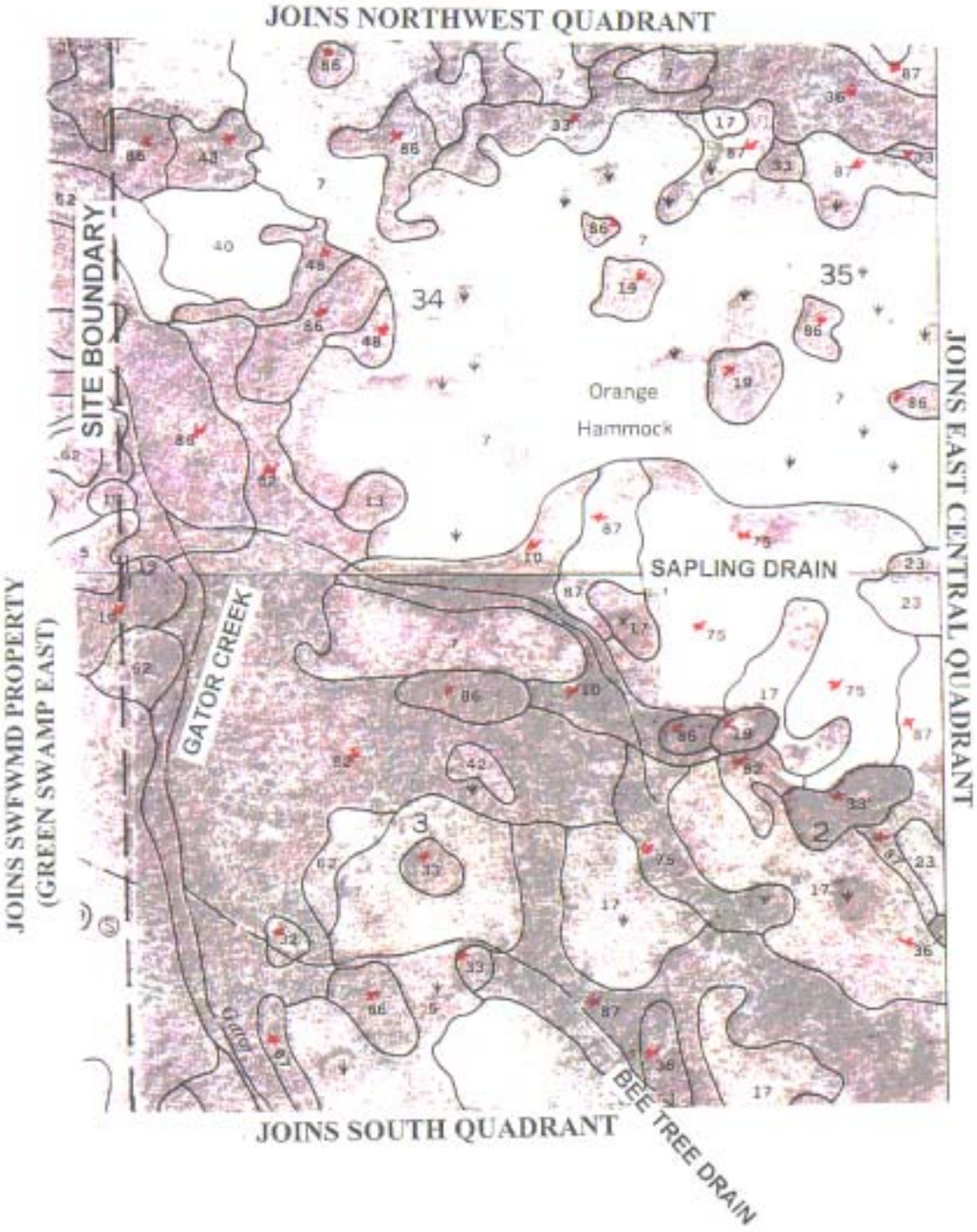


JOINS SOUTH QUADRANT

SITE BOUNDARY

NORTH ^ SCALE 3.25 in. = 1 mile

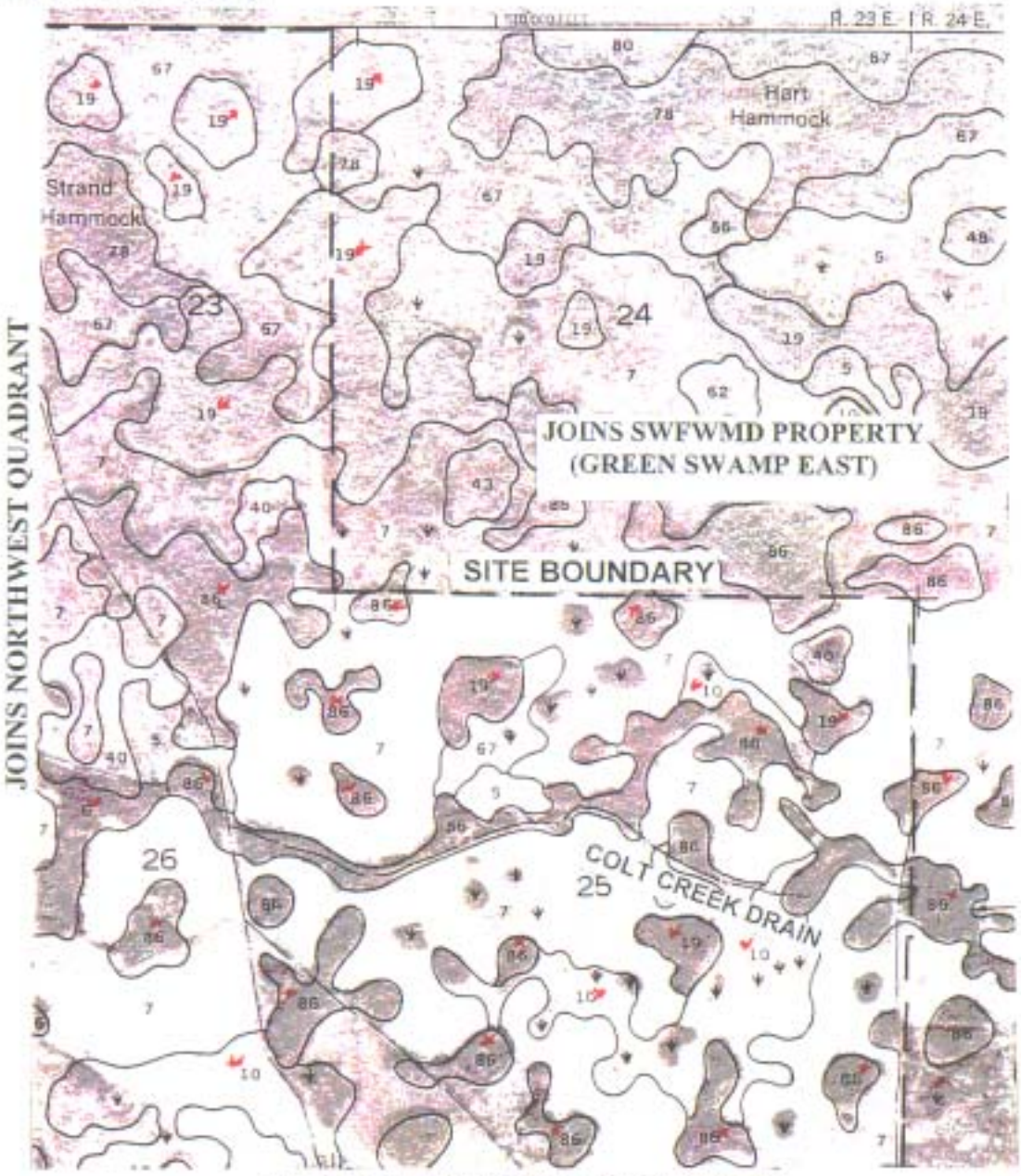
FDOT - District 1 MITIGATION SITE (WITHLACOOCHEE BASIN)	HAMPTON TRACT (SW 59)	FIGURE C POLK CO. SOIL SURVEY (EAST CENTRAL QUADRANT)



NORTH ^ SCALE 3.25 in. = 1 mile

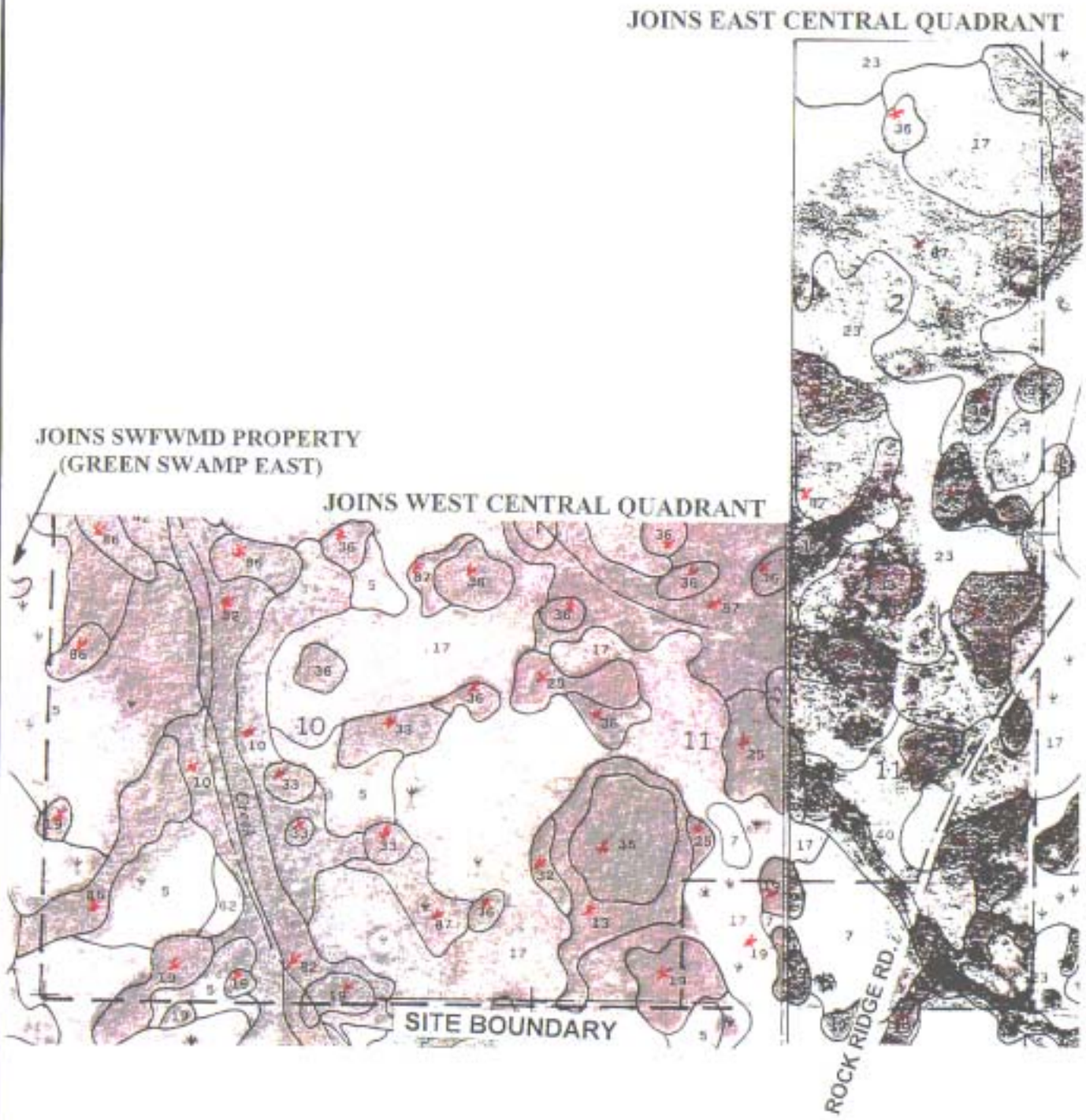
FDOT - District 1 MITIGATION SITE (WITHLACOOCHEE BASIN)	HAMPTON TRACT (SW 59)	FIGURE C POLK CO. SOIL SURVEY (WEST CENTRAL QUADRANT)

JOINS SWFWMD PROPERTY
(GREEN SWAMP EAST)



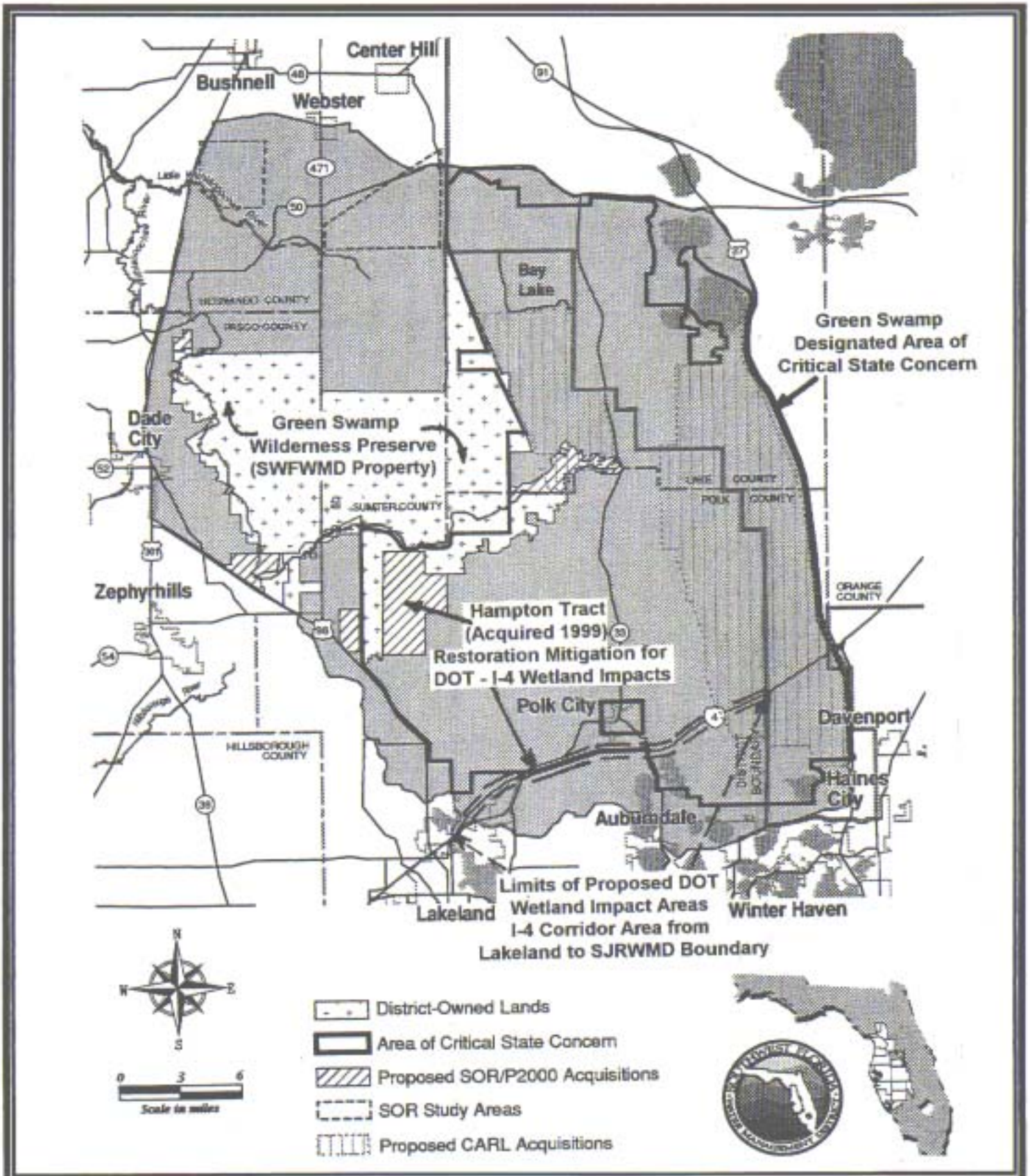
NORTH ^ SCALE 3.25 in. = 1 mile

FDOT - District 1 MITIGATION SITE (WITHLACOOCHEE BASIN)	HAMPTON TRACT (SW 59)	FIGURE C POLK CO. SOIL SURVEY (NE QUADRANT)



NORTH ^ SCALE 3.25 in. = 1 mile

FDOT - District 1 MITIGATION SITE (WITHLACOOCHEE BASIN)	HAMPTON TRACT (SW 59)	FIGURE C POLK CO. SOIL SURVEY (SOUTH QUADRANT)



FDOT - District 1 MITIGATION SITE (Withlacoochee Basin)	HAMPTON TRACT (SW 59)	FIGURE D GREEN SWAMP MAP

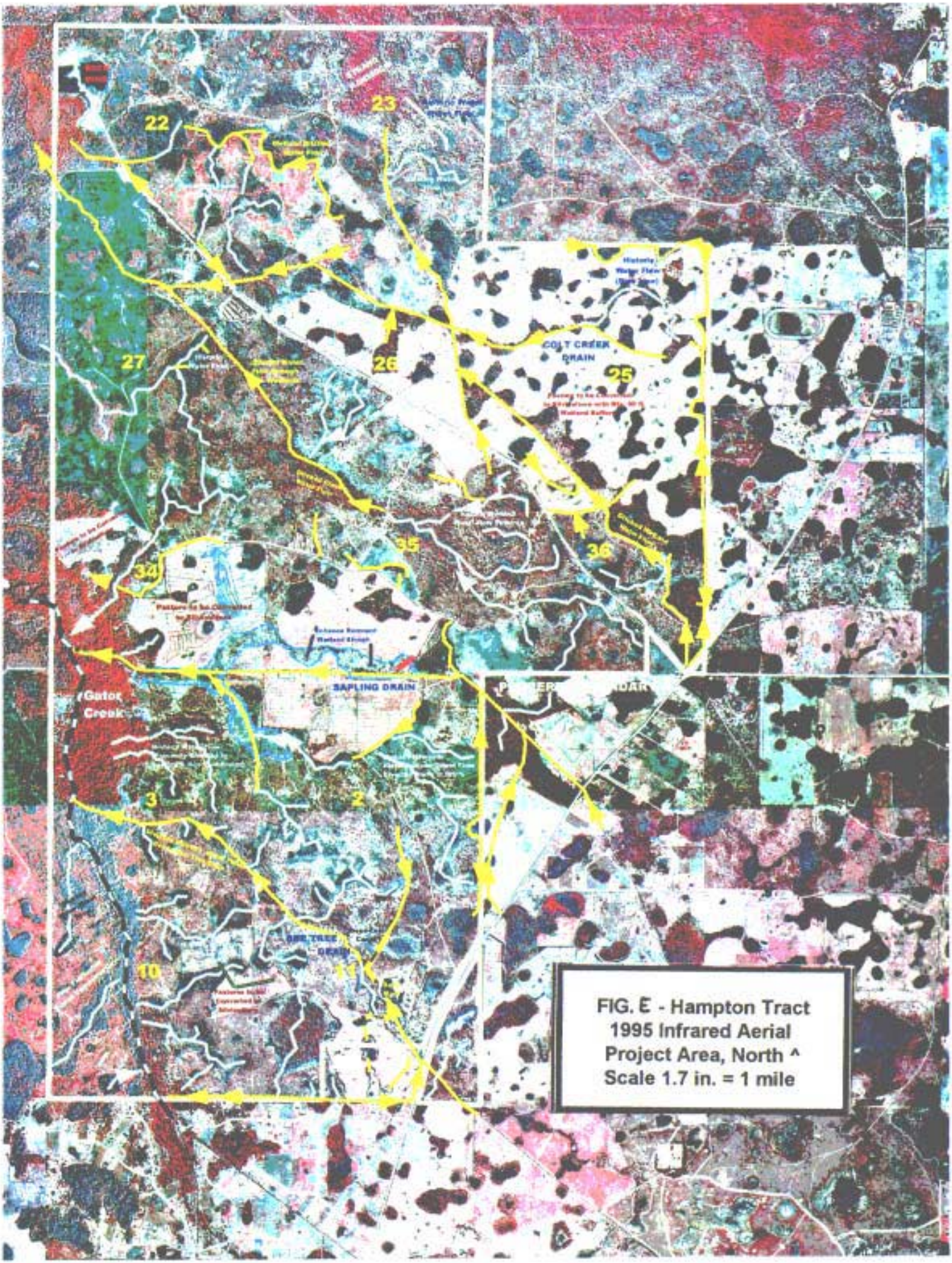


FIG. E - Hampton Tract
1995 Infrared Aerial
Project Area, North ^
Scale 1.7 in. = 1 mile

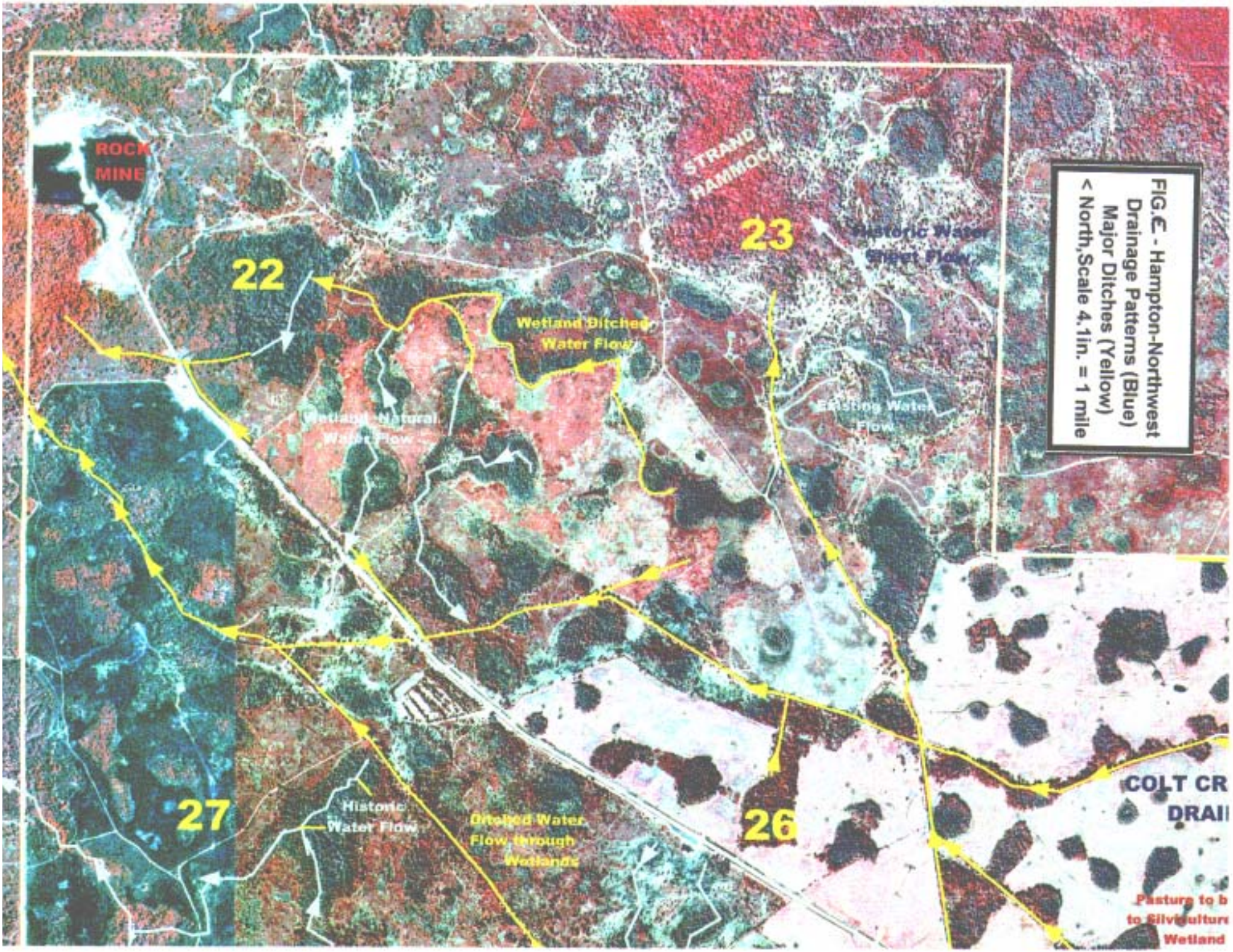


FIG.E - Hampton-Northwest Drainage Patterns (Blue) Major Ditches (Yellow) < North,Scale 4.1in. = 1 mile

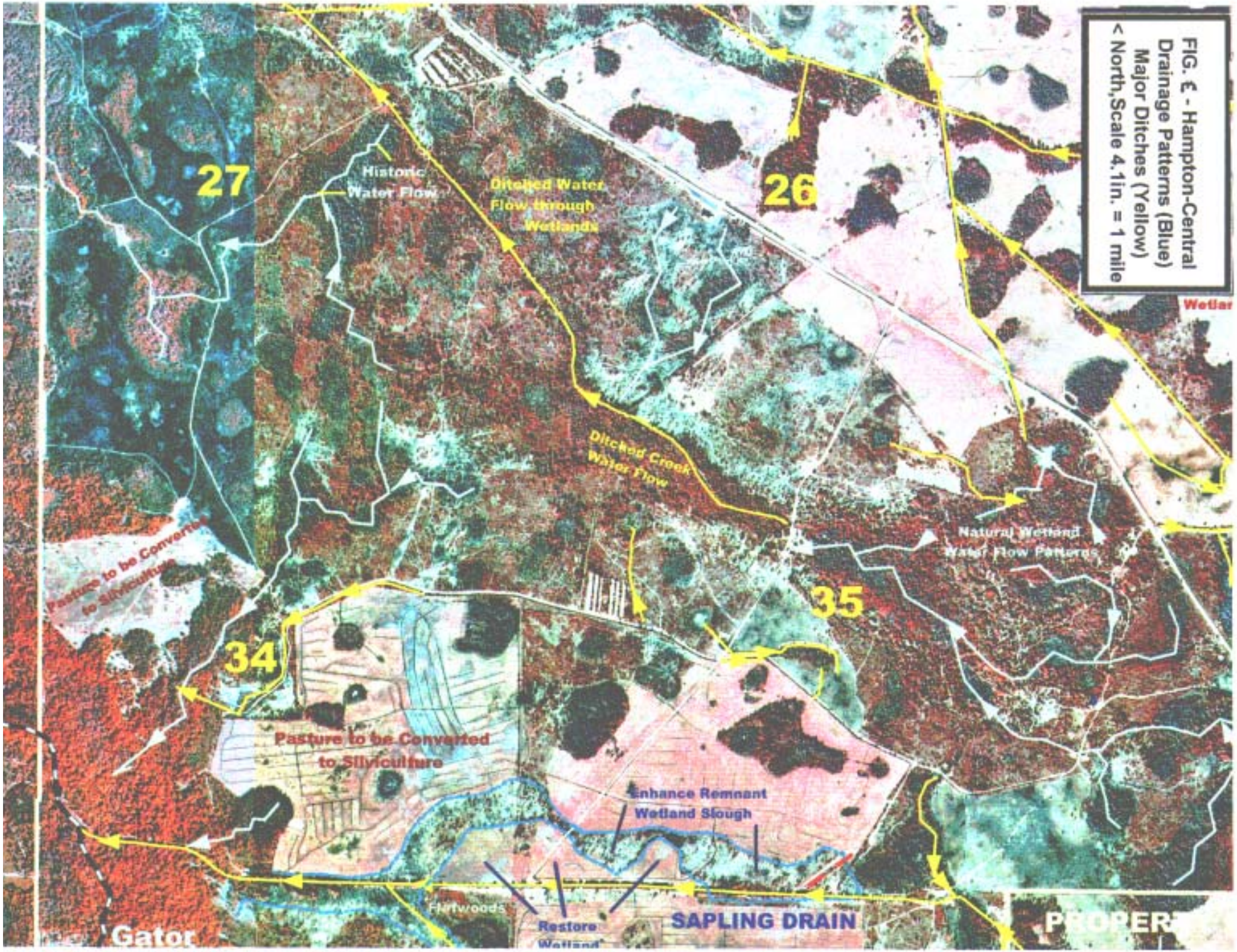


FIG. £ - Hampton-Central
Drainage Patterns (Blue)
Major Ditches (Yellow)
< North,Scale 4.1in. = 1 mile
27
26
35
34
Historic
Water Flow
Ditched Water
Flow through
Wetlands
Ditched Creek
Water Flow
Natural Wetland
Water Flow Patterns
Pasture to be Converted
to Silviculture
Pasture to be Converted
to Silviculture
Enhance Remnant
Wetland Slough
Hardwoods
Restore
Wetland
SAPLING DRAIN
Gator
PROPER

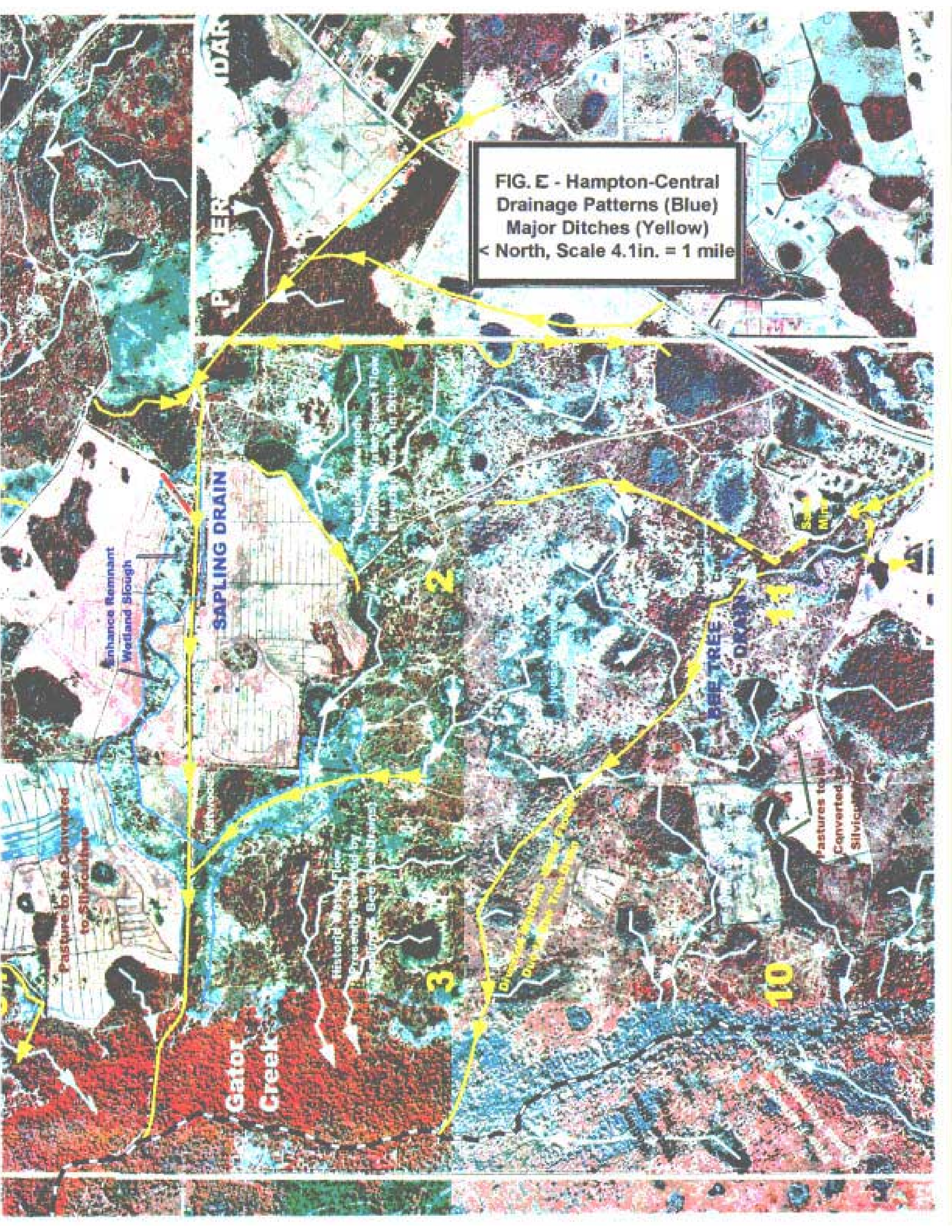


FIG. E - Hampton-Central
Drainage Patterns (Blue)
Major Ditches (Yellow)
< North, Scale 4.1in. = 1 mile

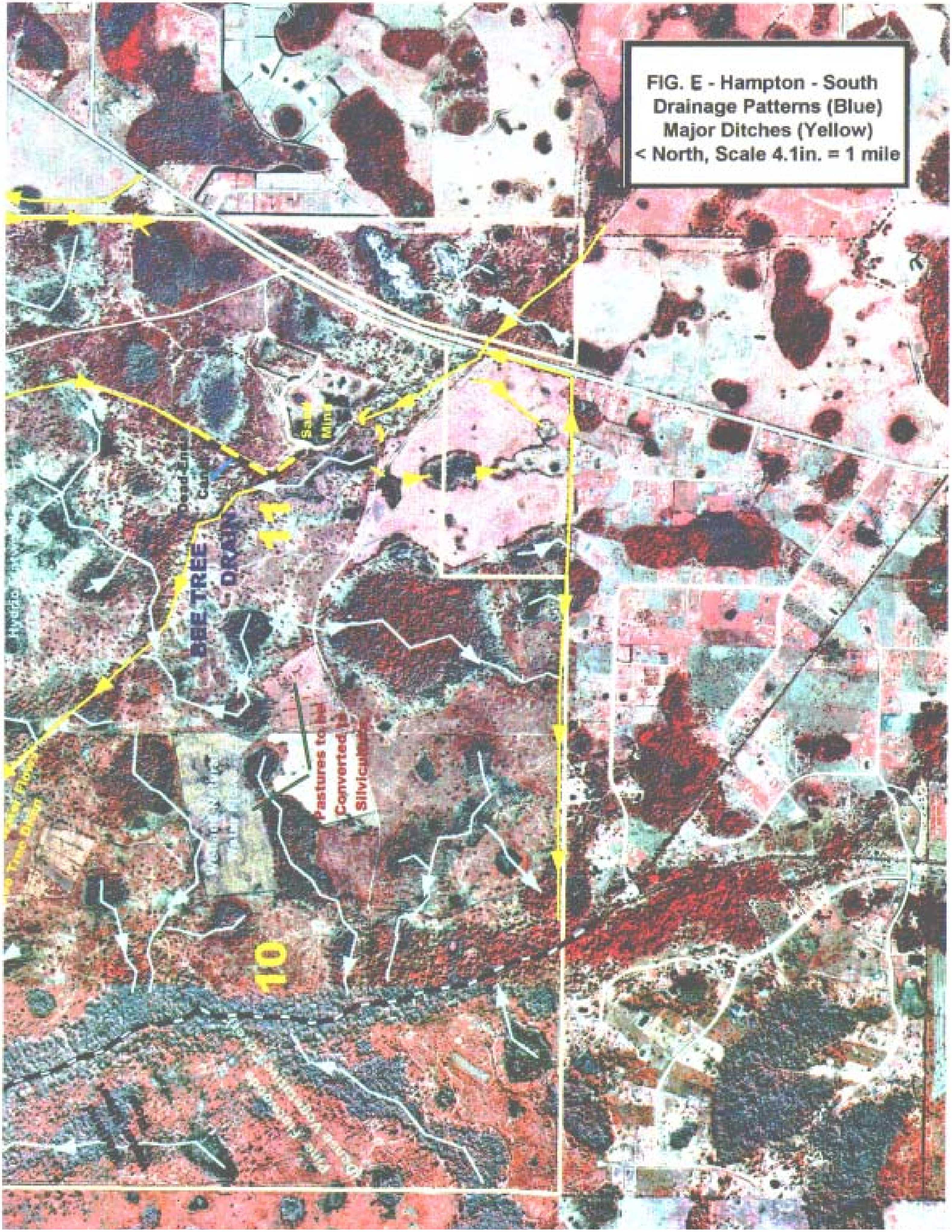


FIG. E - Hampton - South
Drainage Patterns (Blue)
Major Ditches (Yellow)
< North, Scale 4.1in. = 1 mile
BEE TREE
DRAIN
11
10

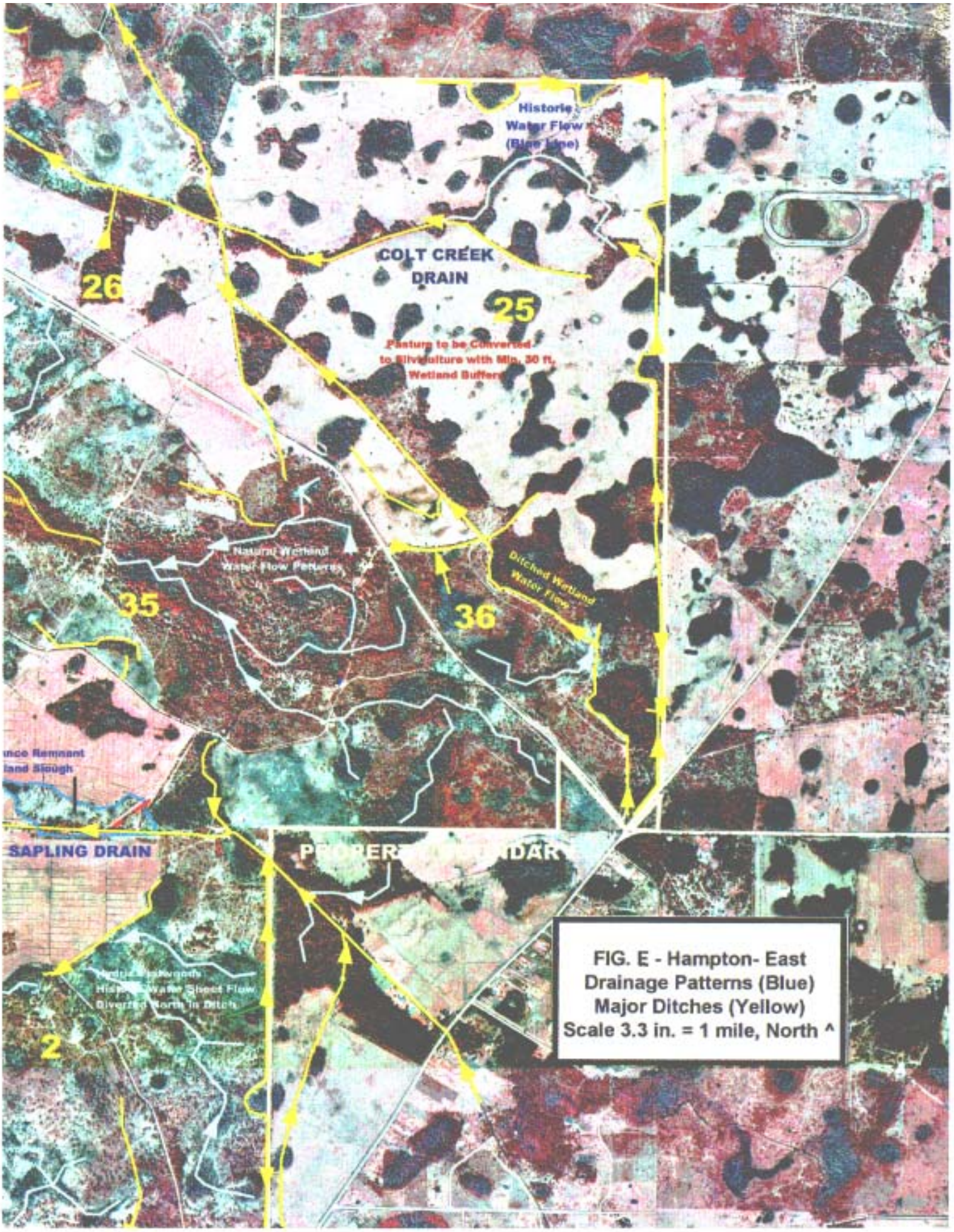
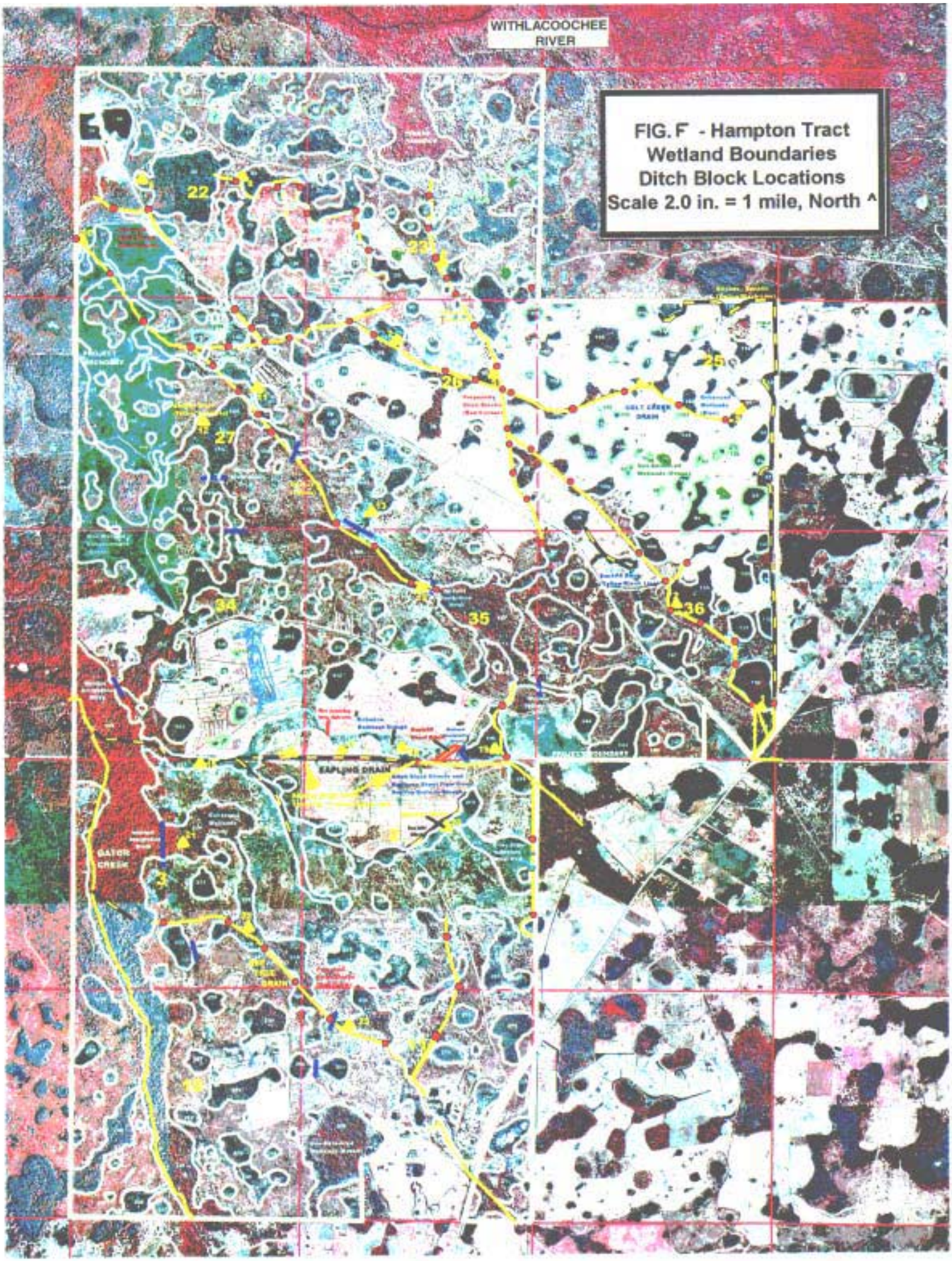


FIG. E - Hampton- East
Drainage Patterns (Blue)
Major Ditches (Yellow)
Scale 3.3 in. = 1 mile, North ^


WITHLACOOCHEE RIVER
FIG. F - Hampton Tract
Wetland Boundaries
Ditch Block Locations
Scale 2.0 in. = 1 mile, North ^
22
23
25
26
27
34
35
36
SAPLING DRAIN
GATOR CREEK
3

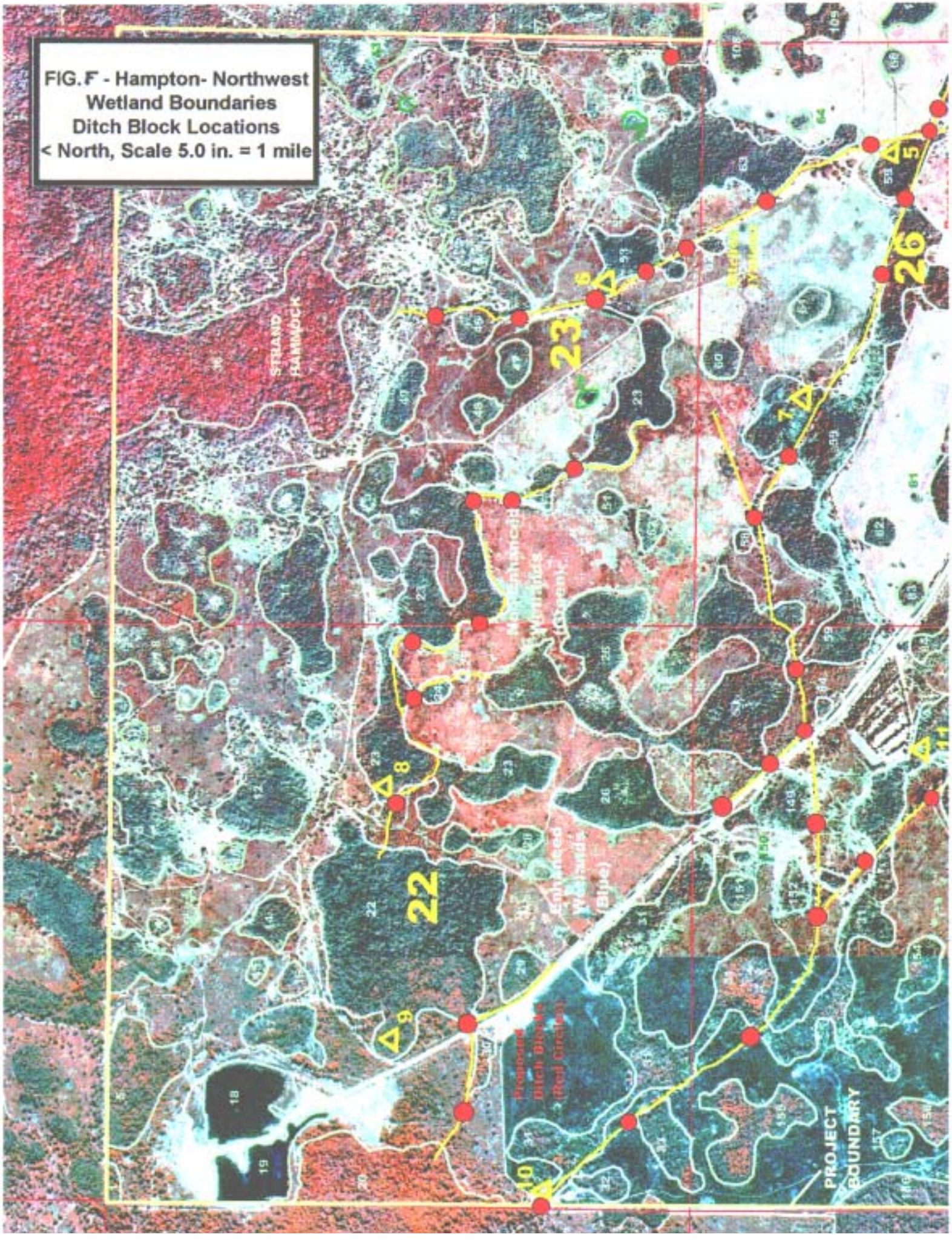


FIG. F - Hampton- Northwest
Wetland Boundaries
Ditch Block Locations
< North, Scale 5.0 in. = 1 mile
STRAND HAMMOCK
23
22
26
PROJECT BOUNDARY

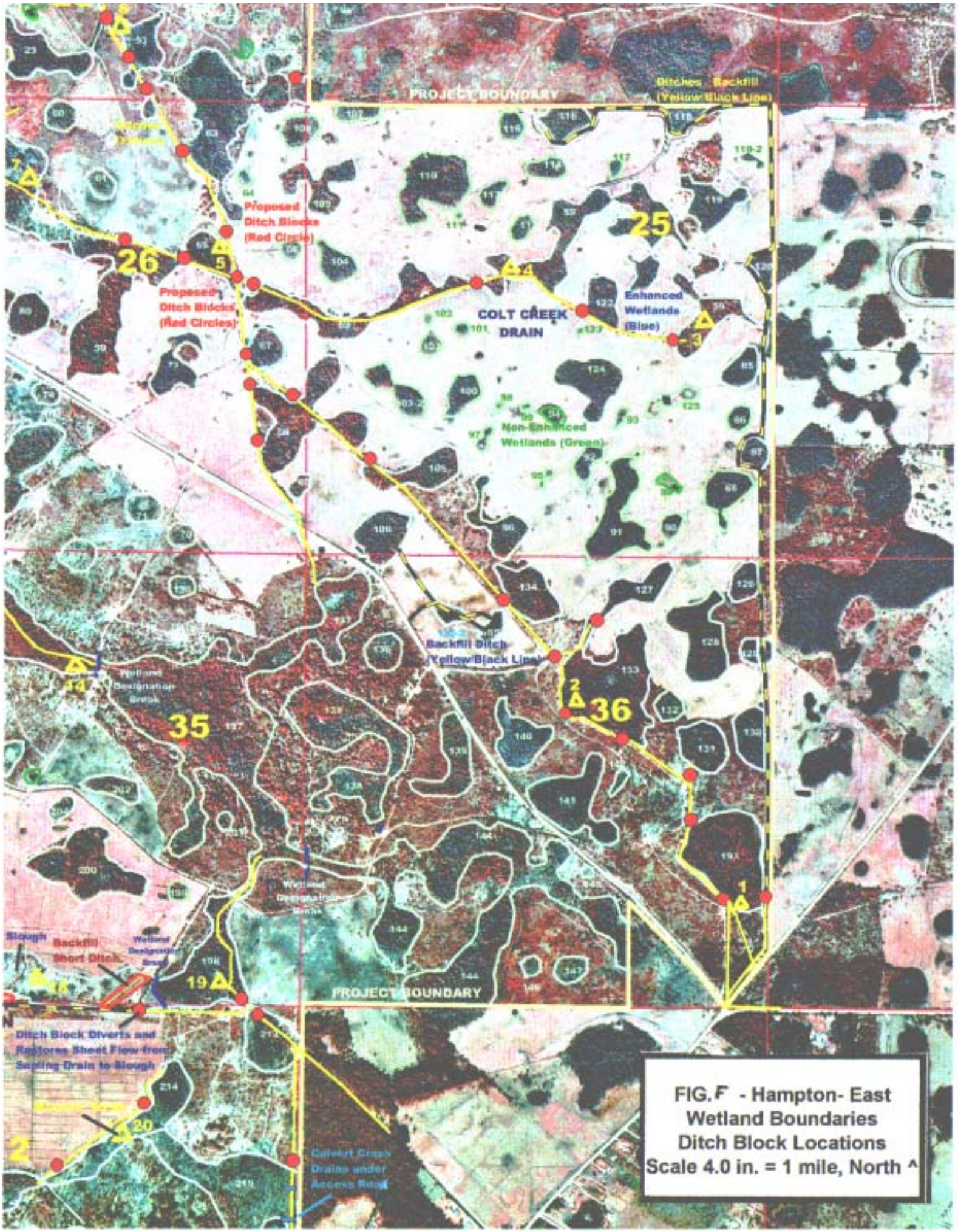


FIG. F - Hampton- East Wetland Boundaries Ditch Block Locations Scale 4.0 in. = 1 mile, North ^

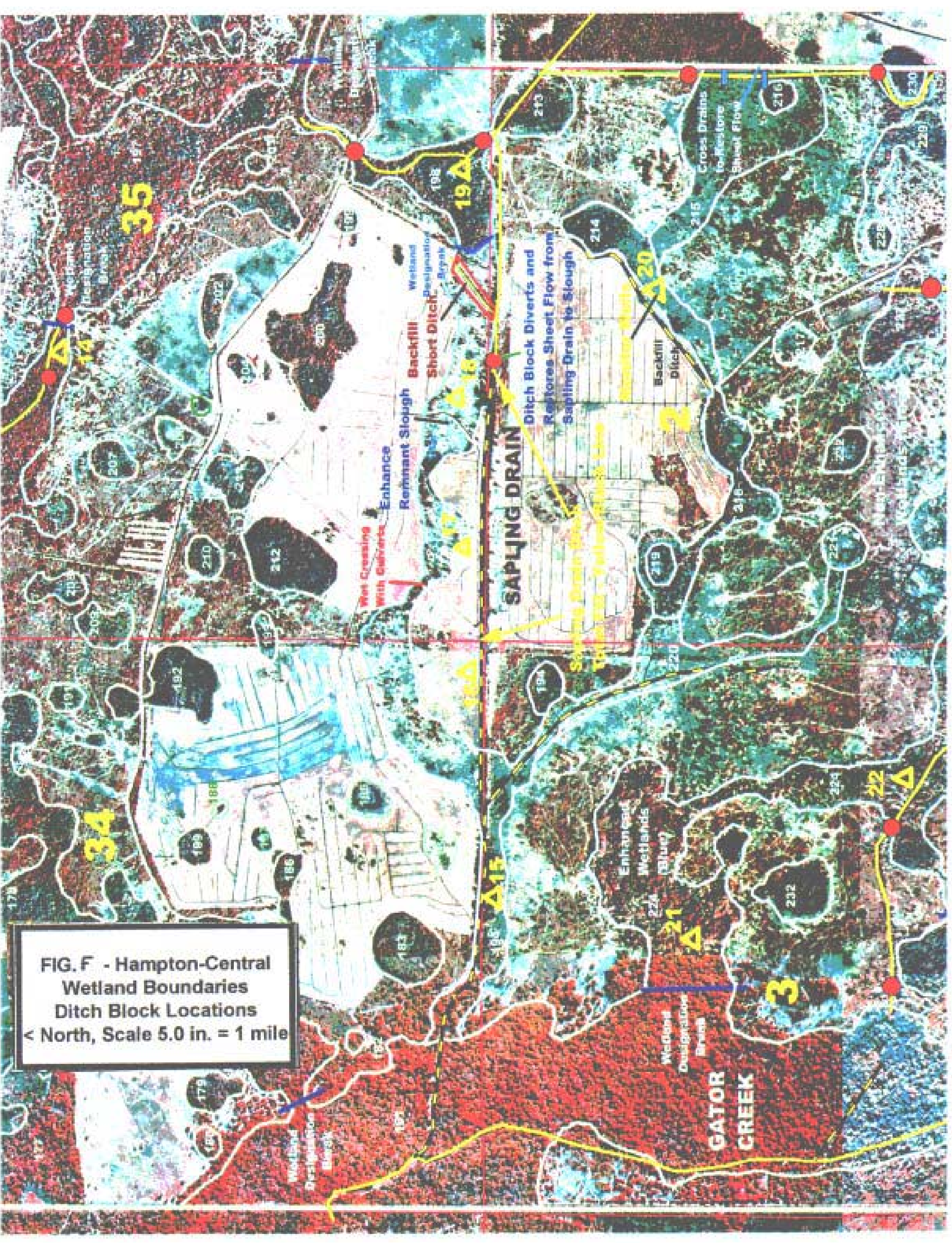


FIG. F - Hampton-Central
Wetland Boundaries
Ditch Block Locations
< North, Scale 5.0 in. = 1 mile

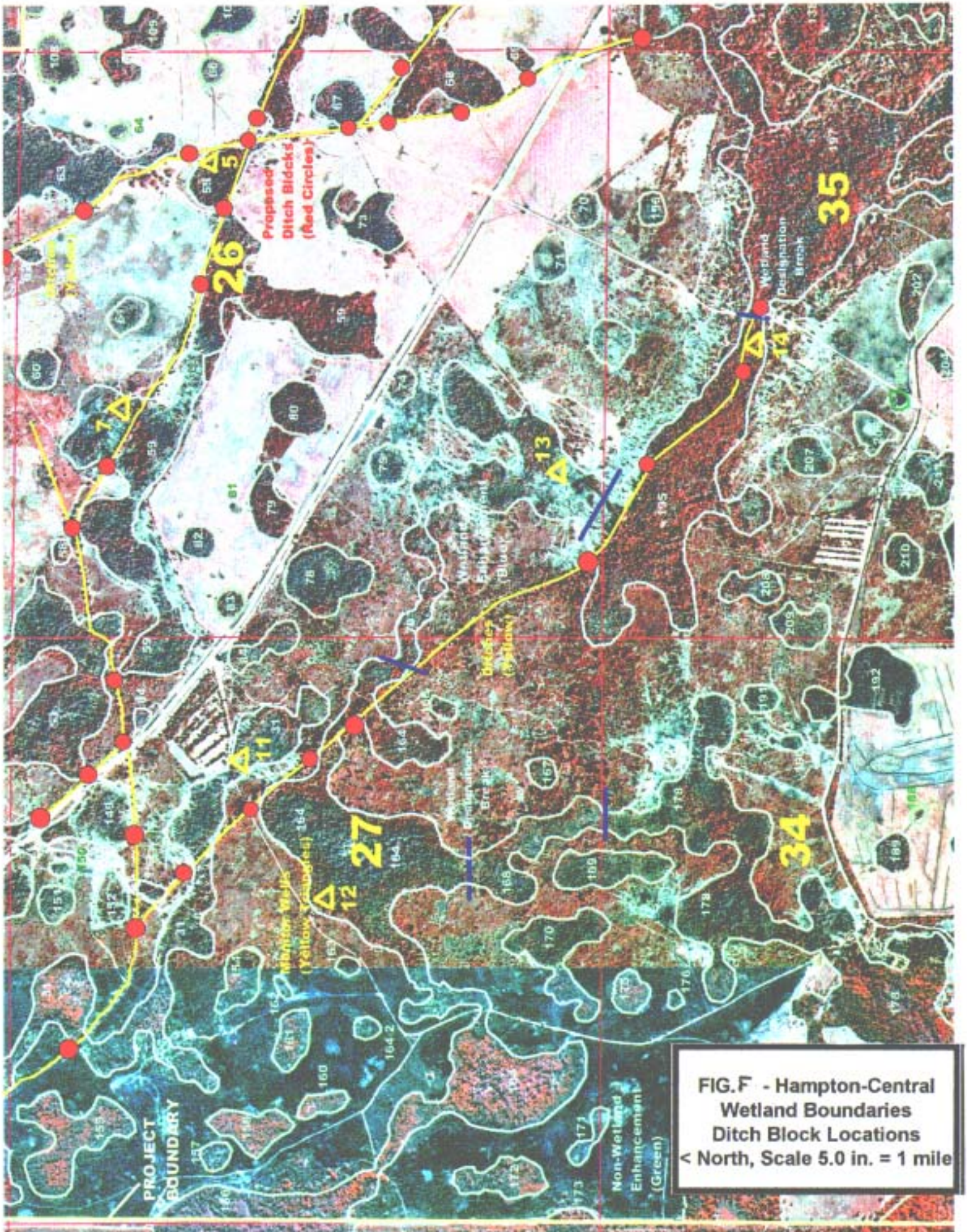
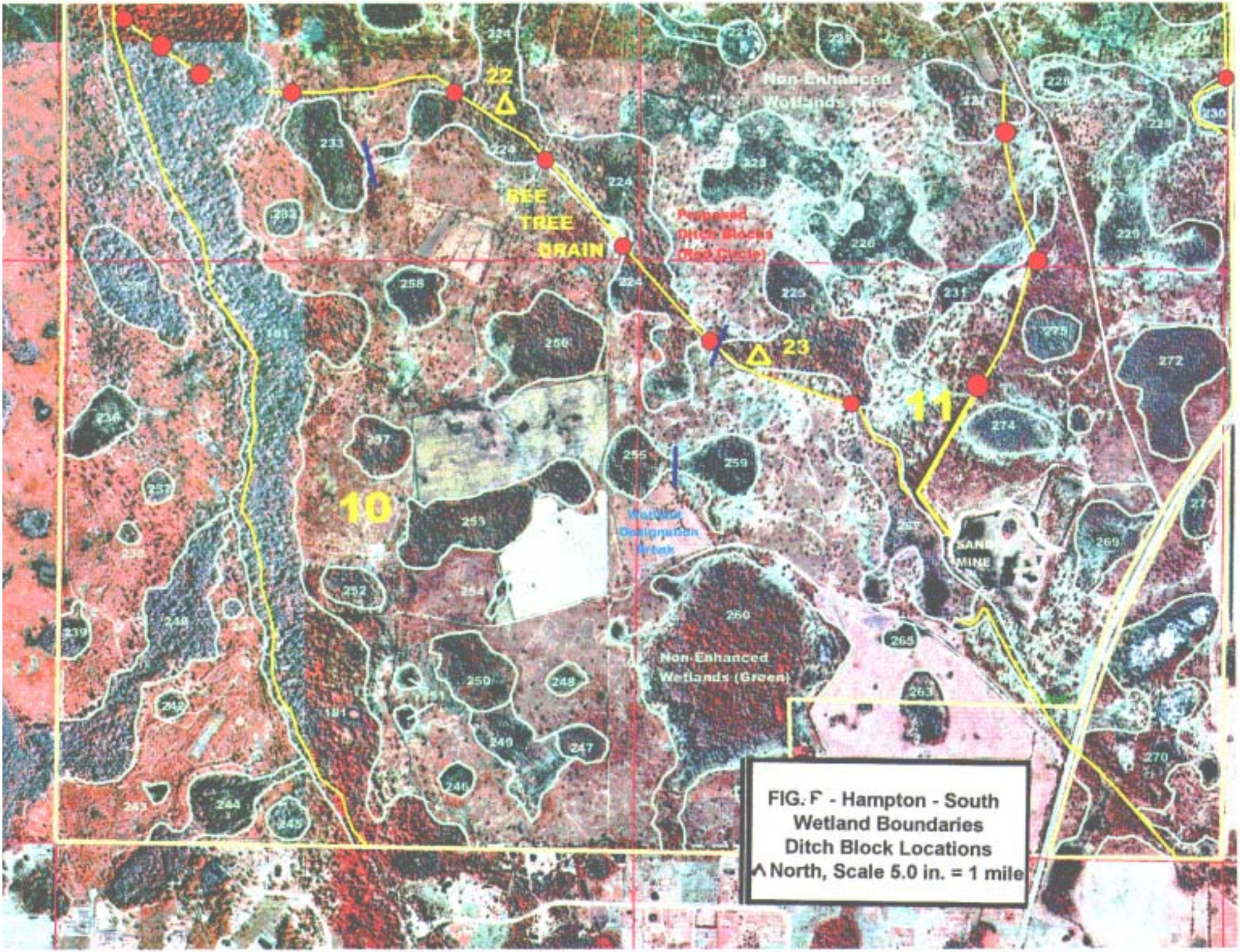


FIG. F - Hampton-Central Wetland Boundaries Ditch Block Locations < North, Scale 5.0 in. = 1 mile


22
BEE TREE DRAIN
Non-Enhanced Wetlands
Proposed Ditch Blocks (Red Circle)
23
11
10
SAND MINE
Non-Enhanced Wetlands (Green)
FIG. F - Hampton - South
Wetland Boundaries
Ditch Block Locations
North, Scale 5.0 in. = 1 mile

Colt Creek Drain – This ditch is located through and in many cases, around the perimeter of the cypress systems in the northeastern pastures. Total backfilling for the pasture ditches and ditchblocks at the cypress outfalls will enhance wetland hydrology. The wetland buffers will be restored with native seed source material from a WMD donor site.

Colt Creek Drain – Monitor Site 3 is representative of many of the cypress systems with diverted water flow. Pines & laurel oaks have invaded the cypress strands due to minimal durations of surface water, and ground cover vegetation is displaced by pine thatch.

FDOT – District 1 **MITIGATION SITE** **(Withlacoochee River Basin)**	**HAMPTON TRACT** **(SW 59)**

Colt Creek Drain – Monitor Station 2, another dewatered cypress dome exhibits facultative species such as laurel oak, wax myrtle, and the opportunistic grapevine invading and displacing the cypress within the interior of the system. Biological indicators exhibit little to no surface water hydrology for many years.

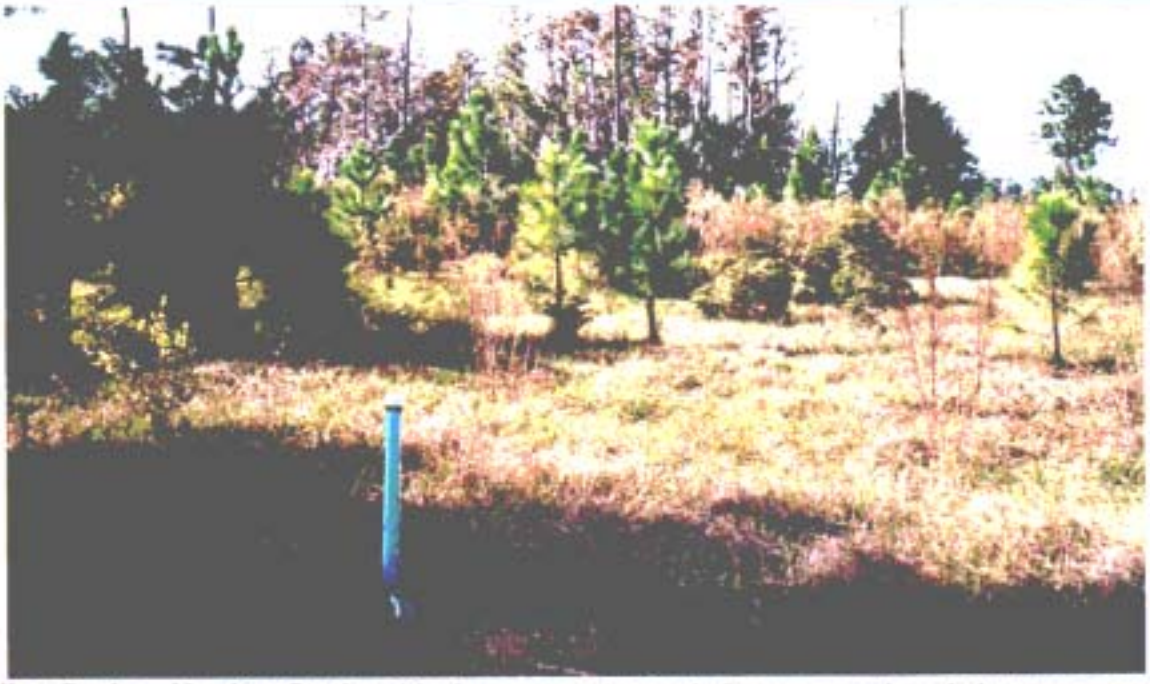
Bee Tree Drain – Adjacent to Monitor Site 22, the ditch drain (foreground) dewaters the adjacent forested wetland, allowing pines and laurel oaks to invade the system. The cypress lichen elevations indicate historic seasonal high water elevations but there are no indications that the water has overflowed the banks in many years. A ditch block along the downstream wetland boundary will restore the flow back through this wetland.

FDOT – District 1 **MITIGATION SITE** **(Withlacoochee River Basin)**	**HAMPTON TRACT** **(SW 59)**

Sapling Drain – View of base flow conditions of the ditch that diverts contributing flow direct to Gator Creek, instead of through the marsh & cypress slough north of the drain (cypress segment in far background).

Sapling Drain – View from the spoil ridge of the Sapling Drain ditch (left) as it ties Into the Gator Creek ditch (background). Spoil material will be backfilled into the drain to restore the wetland floodplain hydrology, and trees will be planted to aid in restoring the earthwork areas.

FDOT – District 1 **MITIGATION SITE** **(Withlacoochee River Basin)**	**HAMPTON TRACT** **(SW 59)**



Sapling Drain – Monitor Station 18, the remnant marsh & cypress slough (cypress area in background) have minimal wetland characteristics. Bahia, fennel, and pines dominate. Sapling Drain will be backfilled, restoring the sheet flow hydrology through this area, along with supplemental planting of hydrophytic herbs.

Sapling Drain – Monitor Station 15, the drain is located adjacent to this cypress strand that extends from the adjacent Gator Creek floodplain. No surface water hydroperiods occur in this system, allowing the cypress to be displaced with laurel oak. Filling of Sapling Drain will restore sheet flow hydrology through this habitat.

FDOT – District 1 **MITIGATION SITE** **(Withlacoochee River Basin)**	**HAMPTON TRACT** **(SW 59)**

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management District
Mitigation Project Name: **Serenova Extension** Project Number: **SW 60**
Project Manager: Mark Brown, WMD Environmental Scientist Phone No: (352) 796-7211, ext. 4488
County(ies): Pasco Location : Sec. 10, 11 T 25S, R17E

IMPACT INFORMATION

DOT FM: 2589581, Suncoast Parkway/Ridge Rd. Interchange ERP #: _____ COE #: _____
Drainage Basin(s): Upper Coastal Basin Water Body(s):None SWIM water body? N

Impact Acres/Types: FM 2589581- 0.15 ac. - 530 (Fluccs)
8.19 ac. - 621 (Fluccs)
3.48 ac. - 641 (Fluccs) **TOTAL 11.82 ac.**

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: X Creation ___ Restoration X Enhancement X Preservation Mitigation Area**: 215 ac.**
SWIM project? N Aquatic Plant Control project? N Exotic Plant Control Project? N Mitigation Bank? N
Drainage Basin(s): Upper Coastal Basin Water Body(s):None SWIM water body? N

Project Description

A. Overall project goal: Acquire, preserve, and manage a 215-acre tract of predominantly high quality upland and wetland habitat located adjacent to an existing protected habitat area (Serenova & Starkey Wilderness Area – Total 15,000 acres, Fig. A). The property is currently owned by the Florida Turnpike, and is proposed for WMD acquisition to expand existing public land habitat and mitigate the proposed wetland impacts associated with the above-referenced Turnpike project.

B. Brief description of current condition: The tract has upland habitat comprised of live oak hammocks (38 acres) and pine flatwoods (98 acres). The wetlands are made up of cypress domes (15 acres) with some perimeter marsh habitat (2 acres), two borrow pits (7 acres), and mixed forested wetland systems (44 acres) (Figures B & C). Descriptions of habitat vegetation are described under Attachment A.

C. Brief description of proposed work: The SWFWMD Land Management Division has implemented best management practices for maintenance and enhancement of the adjacent Serenova Tract. These same management activities (particularly prescribed burning in the uplands) will be implemented at this proposed extension of Serenova. The 136 acres of upland habitat referenced above does not include an additional 11 acres of predominantly flatwoods that will be graded to construct necessary floodplain compensation areas in association with the widening of the adjacent segment of SR 52. These floodplain compensation areas will be graded and planted to create marsh habitat conditions that will be utilized as compensation for the proposed wetland impacts. Additional information is provided under Attachment B.

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): The majority of the proposed wetland impacts (8.19 of the total 11.82 acres) will be to cypress wetlands, of which there are 59 acres of high quality forested wetlands that will be preserved at the proposed mitigation site. The remaining wetland impacts include borrow pits and marsh (3.63 acres), which can be compensated with the creation of marsh habitat within the floodplain compensation areas (11 acres) and preservation of existing borrow pits (7 acres). In addition to these

mitigation components, the plan includes the preservation and enhancement of oak hammocks (38 acres) and pine flatwoods (98 acres) that buffer the existing and constructed wetlands. Upland enhancement will be through implementing a prescribed burn management plan. The project will result in 78 acres of high quality wetland preservation, 87 acres of upland habitat preservation and enhancement, creation of 11 acres of marsh habitat, and 7 acres of borrow pit preservation. The overall plan will result in 215 acres of mitigation to compensate for 11.82 acres of proposed wetland impacts (18:1 ratio). Additional information is provided in Attachment C.

E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: A mitigation bank is not existing or currently proposed within the Upper Coastal Basin.

F. Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body : There are no current or proposed SWIM projects within the Upper Coastal Basin.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: Marsh grading to be conducted by FDOT selected contractor for SR 52 widening, planting to be conducted by certified Nursery Contractor designated by the WMD.
Contact Name: Mark Brown, WMD Environmental Scientist Phone Number: (352) 796-7211 ext. 4488

Entity responsible for monitoring and maintenance: Maintenance & management of the tract will be conducted by the SWFWMD Land Management Dept. as an extension of the same activities within the adjacent Serenova Tract.
Proposed timeframe for implementation: Commence: Acquisition when Turnpike proposes interchange project – 2004.
Complete: Perpetual maintenance & management by the SWFWMD Land Management Division as an extension of the existing Serenova Tract.

Project cost: $1,017,000 (Total will be determined by the appraised value & final acreage. Construction, planting, short-term maintenance & monitoring to be reimbursed by FDOT funds. Perpetual management operations will be funded by the SWFWMD.

Attachments

__X__ 1. Detailed description of existing site and proposed work. Refer to Attachment A - Existing Site & Proposed Work, Figure C- Infra-red aerial, Site Photographs.

__X__ 2. Recent aerial photograph with date and scale. Figure C - Infra-red aerial (1995).

__X__ 3. Location map and design drawings of existing and proposed conditions. Figure A- Location map. A grading and marsh planting plan of the five floodplain compensation ponds can be obtained from Mark Brown (WMD).

__X__ 4. Detailed schedule for work implementation, including any and all phases. Acquisition pending final design and permitting of the Suncoast – Ridge Road interchange, which in turn is dependent on the permitting of the Ridge Road extension. Final decision of the Ridge Road permitting is expected in 2004. The proposed construction of the floodplain compensation areas will commence late, 2006, in association with the widening of the adjacent SR 52. Once acquired, perpetual maintenance and management of the Serenova Extension parcel will be conducted by the WMD.

__X__ 5. Proposed success criteria and associated monitoring plan. Refer to Attachment B. Maintenance & Monitoring Plan, Success Criteria.

__X_ 6. Long term maintenance plan. Refer to Attachment B.

__X___ 7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). Attachment C - DOT Mitigation.

ATTACHMENT A - Existing Site & Proposed Work

The Serenova Extension parcel includes a variety of high quality native habitats. There are two large live oak hammocks (northwest and southeast) and several pocket hammocks of less than 0.5 acre each (Figure C - Infra-red aerial, site photos). Canopy cover is generally 50-70%, dominated by sand live oak (*Quercus geminata*), live oak (*Quercus virginiana*), and scattered turkey oak (*Quercus laevis*). Ground cover is dominated by scattered saw palmetto (*Serenoa repens*), wiregrass (*Aristida stricta*), runner oak (*Quercus pumila*), live oak saplings, rusty lyonia (*Lyonia ferruginea*), and various ground mosses (*Cladonia* spp.). Several gopher tortoise burrows are present within the oak hammocks and adjacent pine flatwoods. The pine flatwoods have scattered longleaf pine (*Pinus* palustris) over dense cover of saw palmetto, scattered gallberry (*Ilex glabra*) and rusty lyonia, with a ground cover dominated by wiregrass.

The eastern mixed forested wetland (Figure C) is primarily a bay/maple system with a cypress core. Slight hydroperiod changes and fire management have allowed slash pine (*Pinus elliottii*) to encroach this system. Dominant canopy cover (avg. 70%) includes slash pine, sweet bay (*Magnolia virginiana*), loblolly bay (*Gordonia lasianthus*), red maple (*Acer rubrum*), laurel oak (*Quercus laurifolia*), and a core of bald cypress (*Taxodium distichum*). Dense subcanopy is dominated by wax myrtle (*Myrica cerifera*), gallberry (*Ilex glabra*), saw palmetto along the wetland perimeter, and saplings of the same canopy species. Understory vegetation is dominated by sawgrass (*Cladium jamaicense*) in the core, with less ground cover and dominated by sedges (*Cyperus* spp.) and blue maidencane maidencane (*Amphicarpum muhlenbergianum*) within the outer zones. The cypress systems have a dense canopy (>80%) and includes a dominance of bald cypress with additional cover provided by tupelo in the interior; dahoon holly, red maple, and slash pine along the perimeters. These same species along with wax myrtle provide a moderate shrub canopy (30-50% cover). Sawgrass and various fern species, particularly swamp fern (*Blechnum serrulatum*) and chain fern (*Thelypteris* spp.) provide the dominant cover. The water level indicators for the cypress systems depict an appropriate range of hydroperiods and fluctuations.

The mixed forested wetland across the western portion of the site has a very dense canopy (> 90%) and sub-canopy cover (80-90%), dominant cover is provided by red maple, loblolly bay, sweet bay, swamp bay (*Persea palustris*), dahoon holly (*Ilex cassine*); with tupelo (*Nyssa sylvatica*) and cypress within the interior of this system. A sub-canopy is dominated by bay saplings, but also includes wax myrtle along the perimeter and dense fetterbush (*Lyonia lucida*) within the interior. Various ferns (*Thelypteris* spp., *Woodwardia* spp.) and lizard's-tail (*Saururus cernuus*) dominate the understory. The hydrology of this system is primarily through continuous groundwater seepage. The mixed forested and cypress systems have all the appropriate functions and represent high quality wetland systems. The marsh habitats are perimeters of cypress systems, dominated by blue maidencane, spikerush (*Eleocharis* spp.), and St. John's-wort (*Hypericum* spp.). The borrow pits were dredged from isolated marshes. The ponds have upland shrub islands and when the wetlands have water levels below grade during the dry season, these deep-cut ponds are the primary water source for wildlife.

Since the borrow pits removed the majority of the historic marsh habitat on the site, the floodplain compensation areas (5 sites, total 11 acres) will be graded to create marsh habitat. The ponds are referred to and depicted as "FPC" on Figure C. For all the ponds except for FPC 3, the ponds will be shallow-cut ponds with lowest grade elevations less than 1.5 feet below the seasonal high water table (SHWT) of the adjacent wetland to provide hydraulic connections. These ponds will be planted with species such as soft rush (*Juncus effusus*), pickerelweed (*Pontederia cordata*), and arrowhead (*Sagittaria lancifolia*). The largest pond (FPC 3- 5 acres) will have these same species and a small inner core of permanent pool conditions for wildlife use, allowing for the use of more obligate species such as bulrush (*Scirpus validus*), fireflag (*Thalia geniculata*), and spatterdock (*Nuphar luteum*).

Observed wildlife on the tract include deer, turkey, raccoon, and armadillo. The site's location adjacent to an existing several thousand-acre preserve allows contiguous and extensive wildlife use. The mixture of various wetland and upland habitats within the Serenova Extension site represent the most dominant types of ecological habitats in the vicinity. The tract has been relatively well-managed, which has maintained proper wetland hydrology and periodic prescribed burns have kept palmetto heights and densities at appropriate levels. The

WMD-Land Resources Dept. has considered this an important extension to buffer any potential future development activities of the adjacent SR 52 frontage from the primary Serenova parcel.

ATTACHMENT B – Maintenance, Monitoring, & Success Plan

The Serenova Tract and Anclote River Ranch (now part of the Starkey Wilderness Area) was purchased by the Turnpike and deeded to the SWFWMD to mitigate for wetland impacts associated with the Suncoast Parkway, which is a toll road facility located along the eastern boundary of Serenova (Figure A). The Serenova Extension area is presently owned by the Turnpike and will be added to the management plan, which will maintain and enhance the upland habitat with an appropriate prescribed burn plan, and provide security of the property. Maintenance will include prescribed burning (conducted by the SWFWMD Land Management Dept.) of the upland habitat on a 3-5 year cycle, as an extension of the same management & maintenance conducted on the Serenova Tract south of the site. Maintenance of fencing and security patrols will also be conducted to control access and activities.

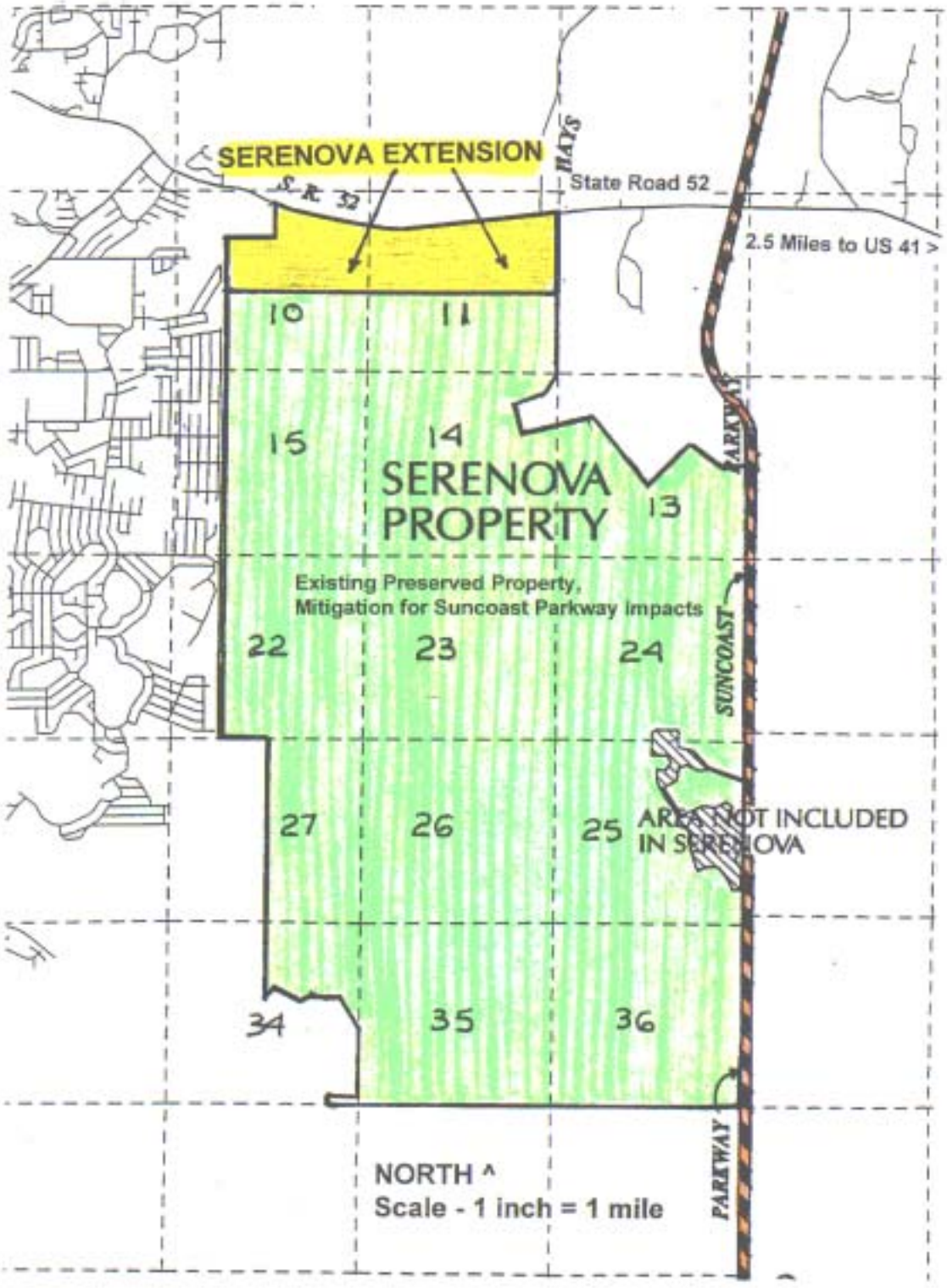
The floodplain compensation areas will be graded by the roadway contractor who constructs SR 52, commencing in late, 2006. Upon completion of the earthwork, the compensation area planting will be conducted by a nursery contractor on contract to the SWFWMD. Monitoring will be semi-annually conducted for a minimum three years post-planting. The monitoring will be qualitative in order to document the various functions and habitat value of the constructed marshes. Documentation of planted and recruited species coverage, water elevations, wildlife utilization, overall conditions and trends toward achieving success criteria, and summary of any conducted or proposed maintenance activities. Photos of the five wetland creation areas will be conducted at the same station points during each monitoring event. Information from the two semi-annual monitoring events will be compiled and documented in an annual monitoring report that will be presented to the WMD-Regulation Dept. and ACOE Enforcement Branch, for a minimum of three years and until success criteria is met. The first annual report will document the planting schemes for each of the five sites (e.g. design details, herb species, quantities, sizes, etc.), construction activities and site preparation, and the plant installation.

Maintenance of the planted areas will occur on an as-needed basis to control nuisance and/or exotic species that may threaten the establishment of desirable vegetation. Maintenance activities are anticipated to be quarterly the first year and semi-annually or quarterly thereafter, primarily herbicide control of exotic and nuisance vegetation. To minimize the chance of exotic and nuisance species from establishing within the project area, the littoral zones (1 acre each) of the two future DOT stormwater ponds will be planted with arrowhead, fireflag, bulrush, and pickerelweed. Maintenance will be conducted to control exotics within these littoral areas for the first year post-planting.

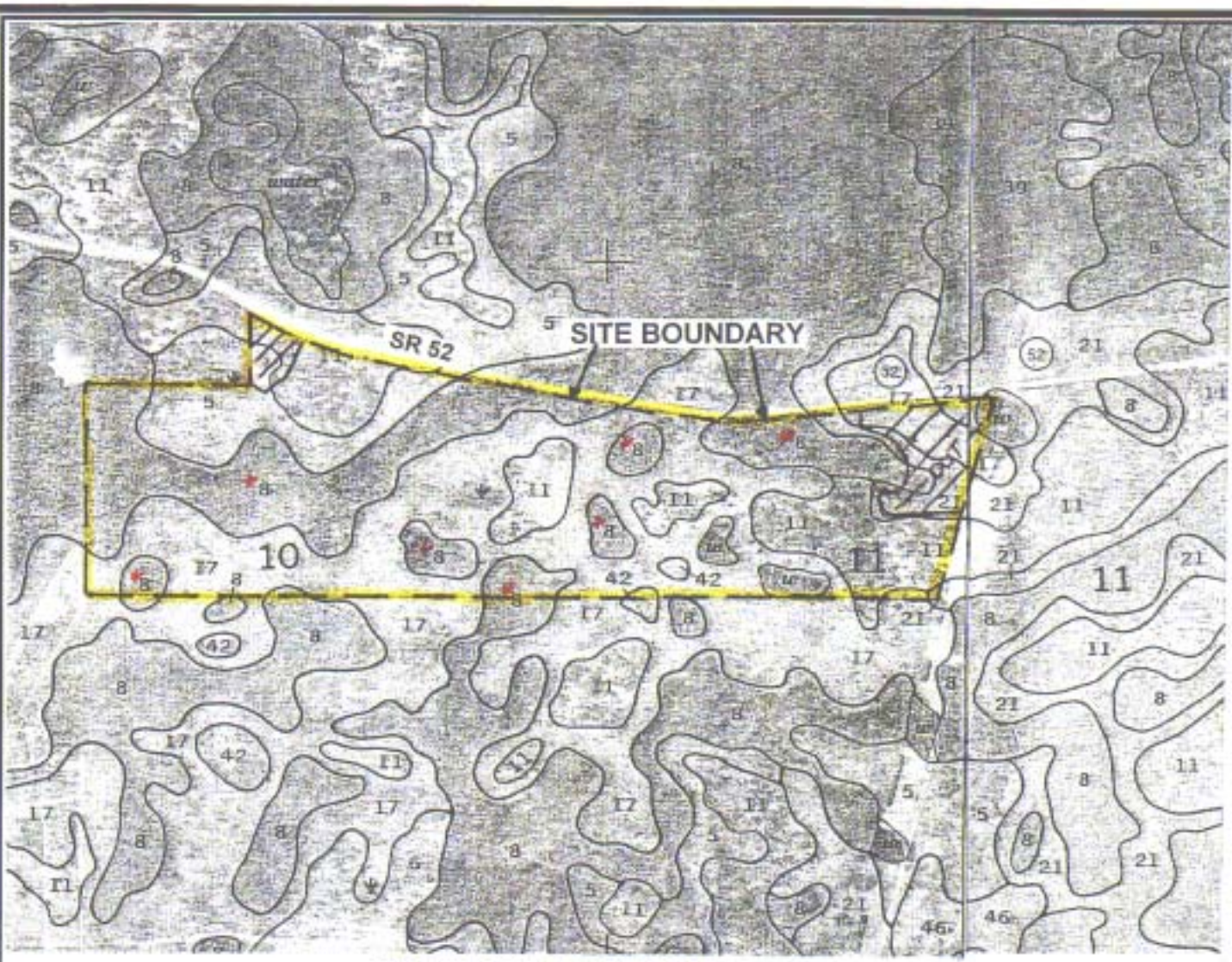
The mitigation success will be based on implementation and maintaining a prescribed burn management plan for the upland habitat, and establishment and management of appropriate marsh habitat within the constructed wetlands. Success criteria for the constructed wetlands include a minimum 85% coverage of desirable planted and naturally recruited vegetation, and less than 10% coverage of exotic and nuisance species.

ATTACHMENT C - DOT Mitigation

This proposed mitigation project is designated to compensate for wetland impacts associated with the proposed interchange of the existing Suncoast Parkway and the Pasco County proposed Ridge Road extension. The Suncoast Parkway was constructed with a bridge overpass to accommodate the proposed Ridge Road so the proposed wetland impacts are associated with access ramps. If the extension of Ridge Road does not receive all the necessary permits and approvals for construction, there will be no need to construct an interchange. If that situation would occur, Turnpike has agreed to still consider allowing the Serenova Extension tract be purchased by the WMD which will provide a mitigation option for proposed wetland impacts associated with DOT-District 7 projects. The final decision of Ridge Road construction is anticipated by mid-2004. No matter whether this proposed mitigation will be compensating for wetland impacts associated with the Turnpike interchange or District 7 projects, the existing and proposed conditions represent a high quality, diverse, and inter-related mosaic of various habitats, value and functions.



FDOT - TURNPIKE MITIGATION SITE (UPPER COASTAL BASIN)	SERENOVA EXTENSION (SW 60)	FIGURE A LOCATION MAP



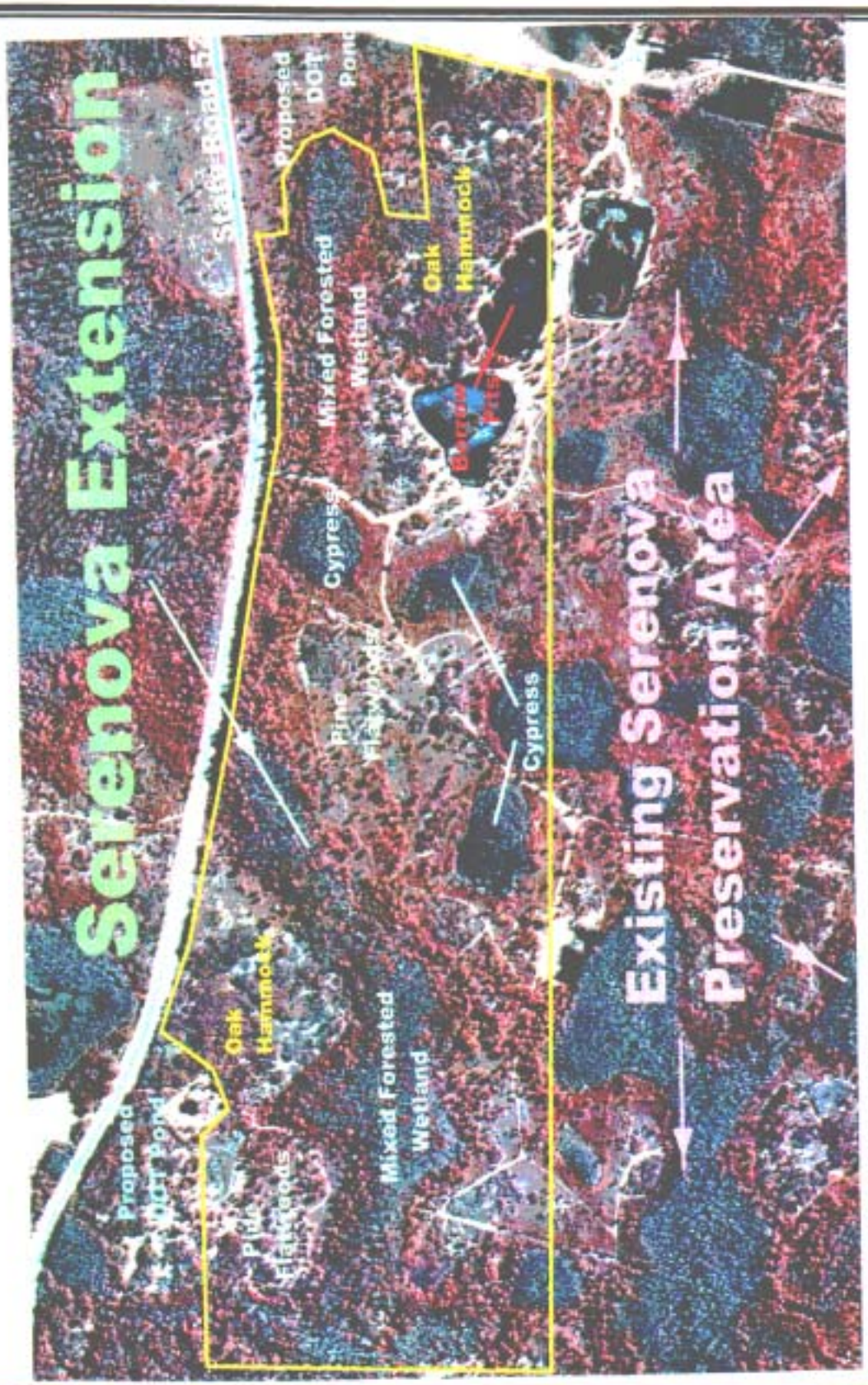
SERENOVA EXTENSION
SOIL LEGEND

5 - Myakka fine sand
8* - Sellers mucky loamy fine sand
11 - Adamsville fine sand
17 - Immokalee fine sand
21 - Smyrna fine sand
42 - Pomello fine sand, 0-5% slopes

* Hydric Soils

NORTH ^
Scale - 3.75 inches = 1 mile

FDOT - TURNPIKE MITIGATION SITE (UPPER COASTAL BASIN)	SERENOVA EXTENSION (SW 60)	FIGURE B PASCO CO. SOIL SURVEY



FDOT - Turnpike MITIGATION SITE (Upper Coastal Basin)	SERENOVA EXTENSION (SW 60)	FIGURE C 1995 INFRARED AERIAL < North, Scale 1in. = 750 ft.

Southeast quadrant, one of the two large oak hammocks, typical species coverage of sand live oak, over pockets of saw palmetto, runner oak, and scattered wiregrass, gopher tortoise burrow in foreground.

Pine flatwood area in the center of the tract, scattered longleaf pine over saw palmetto, gallberry, and wiregrass under palmetto. Appropriate pine density, palmetto density and heights controlled by prescribed burns.

FDOT - TURNPIKE Mitigation Site (Upper Coastal Basin)	**SERENOVA EXTENSION (SW 60) (Upland Habitat)**

Interior of cypress dome, photo taken June, 2000 during extreme drought conditions. However, the typical cypress wetlands on the tract have biological (moss collars, lichen lines) and other hydrologic indicators that demonstrate appropriate surface water hydrology.

The few marshes on the tract are located along the perimeter of the cypress systems, drought conditions have stressed the blue maidencane & cypress saplings but marsh fringe will soon recover from summer rains.

FDOT - TURNPIKE Mitigation Site (Upper Coastal Basin)	**SERENOVA EXTENSION (SW 60) (Wetland Habitat)**

Large mixed forested wetland within the western portion of the tract, outer portions of the wetland indicate a dense & diverse habitat conditions, with cover of bay species, maples, dahoon holly, cypress, myrtles, shiny lyonia, saw palmetto, gallberry, ferns.

Interior of the mixed forested wetland depicted above, very good species density and cover, more cypress with the maple, tupelo, and variable density (due to water levels & shading) of ground cover, typical species include sawgrass, ferns, and lizard's-tail.

FDOT - TURNPIKE Mitigation Site (Upper Coastal Basin)	**SERENOVA EXTENSION (SW 60) (Wetland Habitat)**

The mixed forested wetland in the northeast quadrant of the site differs from the western mixed forested system. Maples and bays are still present, but slash pine, gallberry, myrtles, & palmetto have encroached due to extended periods of shorter hydroperiods (water depth & duration). Sawgrass is the dominant ground cover species.

One of the two borrow pits on the tract. Minimal coverage of littoral zones but good island feature for resting/nesting birds, and continuous, clean water source for wildlife.

FDOT - TURNPIKE Mitigation Site (Upper Coastal Basin)	**SERENOVA EXTENSION (SW 60) (Wetland Habitat)**

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management District
Mitigation Project Name: **Jennings Tract - Cypress Creek Preserve, West** (ELAPP) Project Number: **SW 61**

Project Manager: Forest Turbiville, Resource Manager Phone: 813-672-7876
Hillsborough County Parks & Recreation
10940 McMullen Road
Riverview, FL 33569-6226
County(ies): Hillsborough Location: Sections 4, 5, T27S, R19E

IMPACT INFORMATION

1- WPI: 7123664 FM: 2578071 B.B. Downs Bikepath (Hunter's)	ERP #: 4418710.000	COE #: 199803683
2- WPI: 7113773 FM: 2555361 SR 39, Blackwater Ck. Bridge	ERP #: 4320526.000	COE #: 200000574 (IP-MS)
3- WPI: 7147617 FM: 2587341 SR 56, SR 54 to BB Downs	ERP #: 4312944.004	COE #: 199500079 (IP-MN)
4- WPI: 1147955 FM: 2012171 I-4, Memorial to US 98 (Seg.2)	ERP #: 43011896.028	COE #: 199502569 (MOD-MGH)
5- FM: 2578072 B.B. Downs Bikepath (Amberly)	ERP #: 4421434.000	COE #: 200101187 (NW-MS)
6- FM: 2558591 SR 678 (Bearss Ave.) Florida Ave.	ERP #: 4419802.002	COE #: 200101181 (NW-MS)
7- FM: 2578391 Alexander St., US 92 to Inter.-4	ERP #: 43011896.025	COE #: 200003012 (IP-RGW)
8- FM: 2584491 Alexander St., On-Ramp to Westbound I-4	ERP #: 43011896.025	COE #: 200003012 (IP-RGW)
9- FM: 2584131 SR 93 (Inter. 275), US 41 to Pasco Co.	ERP #: _____	COE #: _____
10-FM: 4084602 I-75 at CR 581 (Off-Ramp to B.B. Downs)	ERP #: 4421639.000	COE #: 199803683 (NW-KI)

Drainage Basin(s) : Hillsborough River Water Body(s): Blackwater Creek , Cypress Creek SWIM water body? N
Impact Acres/ Wetland Types:

1-WPI 7123664 0.4 ac. 618 (Fluccs)
0.1 ac. 641 (Fluccs)
TOTAL 0.5 ac.

2-WPI 7113773 1.4 ac. 615 (Fluccs)
0.7 ac. 641 (Fluccs)
TOTAL 2.1 ac.

3-WPI 7147617 5.2 ac. 630 (Fluccs)
0.1 ac. 641 (Fluccs)
TOTAL 5.3 ac.

4-WPI 1147955 0.93 ac. 615 (Fluccs)
1.34 ac. 630 (Fluccs)
1.84 ac. 641x (Fluccs)
TOTAL 4.11 ac.

5-FM 2578072 0.2 ac. 610 (Fluccs)

6-FM 2558591 0.1 ac. 618 (Fluccs)

7-FM 2578391 2.6 ac. 617 (Fluccs)

8-FM 2584491 1.7 ac. 617 (Fluccs)

9-FM 2584131 4.6 ac. 610 (Fluccs)
0.2 ac. 621 (Fluccs)
0.1 ac. 630 (Fluccs)
2.7 ac. 640/641 (Fluccs)
TOTAL 7.6 ac.

10-FM 4084602 0.50 ac. 621 (Fluccs)

TOTAL 24.71 ACRES

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type:___ Creation X Restoration X Preservation Mitigation Area: **298 Acres**

SWIM Project? N Aquatic Plant Control Project? N Exotic Plant Control Project? N Mitigation Bank? N

Drainage Basin(s): Hillsborough River Water Body(s): Blackwater Creek, Cypress Creek SWIM water? N

Project Description

A. Overall project goal: The acquisition, enhancement, and management of a 298-acre tract that includes a high quality mosaic of native upland & wetland habitat within the Cypress Creek floodplain. The property has been a high priority for acquisition by the Hillsborough County Parks & Recreation Dept., under the Environmental Lands Acquisition and Protection Program (ELAPP). The County presently owns several hundred acres east of the site, referred to as Cypress Creek Preserve East. This additional acquisition is part of an evaluation and acquisition corridor area by Hillsborough County and the SWFWMD, referred to as Lower Cypress Creek, that will connect other property owned by the SWFWMD (Cypress Creek in Pasco Co. and Lower Hillsborough in Hillsborough County, Refer to Figure A).

B. Brief description of current condition: The native habitat components of the site represent high quality functions relative to wildlife habitat, species richness & diversity, and especially habitat connectivity to both on- and off-site habitat conditions. There is mixed forested wetland (146 acres) surrounding hardwood hammock uplands (98 acres), pine flatwoods (19 acres), and palmetto prairies (15 acres). The only non-native habitat is bahia pasture (20 acres) along the western edge of the parcel (Figure E - Vegetative Communities).

C. Brief description of proposed work: The proposed activity includes acquisition of the property and enhancement of the native habitat areas. Land management and maintenance activities such as prescribed burning within the existing and restored upland habitat areas. The bahia pasture will be restored to pine flatwoods with appropriate planting, but construction activities are not necessary. A conceptual management plan has been prepared by the Hillsborough County Parks and Recreation Dept. (available from Mark Brown, SWFWMD). The SWFWMD will carry title on the property and Hills. County Parks will manage the site as part of an inter-agency agreement.

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): The majority of the proposed wetland impacts will occur to forested wetlands. The proposed mitigation site has 146 acres of high quality mixed forested wetlands and 98 acres of high quality hardwood hammock that compensate for the impacts to the forested wetland habitat. The remaining proposed wetland impacts include encroachments of marsh, shrub, and predominantly ditch habitats. These impacts will also be compensated by the site's wetlands but in addition, 54 acres of enhanced and restored upland habitat buffers. The inter-relationship of the hardwood hammocks, palmetto prairie, and pine flatwoods with the forested wetlands provide a high quality habitat for wildlife use that compensates for the proposed wetland impacts. This 298-acre acquisition & enhancement will result in an overall mitigation ratio of 10 acres of compensation for every 1 acre of wetland impact. The breakdown of mitigation per each roadway impact is referenced on the project table (Attachment B) and Figure F. Each of ten DOT projects has some form of upland habitat enhancement and/or restoration along with upland and wetland preservation. Preservation alone is not proposed for any one DOT project. As an added bonus of habitat enhancement, an additional 100-acres of native habitat adjacent to the Jennings Tract (referred to as the Greer Tract – SW 72) has also been preserved and provides partial mitigation for wetland impacts associated with one DOT project.

E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: There are no existing or currently proposed mitigation banks within the Hillsborough River basin.

F. Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body : The only SWIM project in the Hillsborough Basin is the Lake Thonotasassa Restoration Project. The habitat restoration associated with that project has already been delegated the mitigation option for another DOT project.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: No proposed construction, management by Hillsborough County Parks & Recreation
Contact Name: Sheryl Bowman, Resource Manager, Hills. Parks & Rec. Phone Number: (813)-672-7876

Entity responsible for monitoring and maintenance: Hillsborough County Parks & Recreation
Proposed timeframe for implementation: Commence: Summer, 2000 Complete: Summer, 2001, followed by a minimum 3 years maintenance & monitoring

Project cost: $1,000,000 (total) - For acquisition; maintenance & management activities funded by Hills. Parks.

Attachments

__X__1. Detailed description of existing site and proposed work. Refer to Attachment A.

__X__ 2. Recent aerial photograph with date and scale. Figure D- Infrared aerial (1995).

__X__3. Location map and design drawings of existing and proposed conditions. Figures A & B - Location Maps, Figures D & E – existing & proposed habitat conditions.

__X__4. Detailed schedule for work implementation, including any and all phases. Acquisition completed in 2001. Long-term maintenance & management conducted by the Hills. Co. Parks & Recreation Department.

__X__5. Proposed success criteria and associated monitoring plan. Refer to Attachment B.

__X__6. Long term maintenance plan. Maintenance & management to be conducted by Hillsborough Co. Parks & Rec. as a continuous operation of the adjacent Cypress Creek Preserve East property. A management plan for this property has been prepared by Hills. Co. Parks (available from Mark Brown – SWFWMD).

__X__7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). Refer to previous discussion under Project Description - D, Attachment C (text and table), & Figure F designates the various mitigation for each wetland impact.

ATTACHMENT A - Existing & Proposed Site Conditions

In addition to preservation of mixed forested wetland (145 acres) and hardwood hammock uplands (98 acres), there will be enhancement of pine flatwoods (19 acres), palmetto prairie (15 acres), and restoration of bahia pasture (20 acres) into pine flatwoods. Due to the dense canopy cover (80-90%) and the high percentage of hydric soil mapped on the soil survey (Figure C), the presence of several upland hardwood hammocks are not as readily evident as actually present (Figure E), providing an overall diverse combination of upland and wetland communities.

The upland hardwood hammocks include a dominance of live oak, Southern magnolia, sweet gum, and water oak, a sub-canopy of saw palmetto, cabbage palm, beautyberry, salt-bush, and buckthorn, and ground cover dominated by small panicums *(Dicanthelium spp)*. Depending on the variable wetland surface grade elevation, the mixed forested wetland has dominant canopy and subcanopy species including laurel oak, sweet gum, red maple, bald cypress, American elm, sweet bay, cabbage palm, tupelo, and ironwood.

During the 1970's, selective upland and wetland tree-cutting allowed many of the normal subcanopy species to spread and reach canopy heights. Ground cover is dense in the transitional wetland areas, minimal in obligate zones where rainy season water levels are generally above surface grade. Dominant ground cover species include cabbage palm saplings, various sedges & rushes, wild coffee, Jack-in-the-Pulpit, and shield fern. The palmetto prairie and pine flatwoods have a dominance of slash pine (in the flatwoods), over saw palmetto, rabbit tobacco, paw-paw, and bahiagrass. The density and height of palmetto is generally moderate to low, but has increased in cover since removal of the cattle. Wildlife diversity is known to be high within the forested areas, and several gopher tortoise inhabit the pasture.

Implementation of a prescribed burn plan will be conducted within the upland habitats, in order to maintain appropriate vegetative coverage and minimize the opportunity for nuisance and exotic species to generate and recruit. Longleaf pine and wiregrass will be planted within the bahia pasture and palmetto prairie in order to enhance and restore upland habitat.

The acquisition of this tract for preservation, enhancement, and management is important for native habitat conditions. As noted, there is extensive upland habitat than what appears from the soil survey. This has made the parcel more valuable for potential development than if the site was predominantly wetlands. Prior to the County's acquisition, the landowner had offers to sell the property for constructing residential development on the upland hammocks. Acquiring this property as a mitigation alternative has provided the habitat protection needed for this area of Hillsborough County and the Hillsborough River basin.

ATTACHMENT B – Maintenance & Monitoring, Success Criteria

Maintenance activities are primarily associated with implementing the prescribed burn plan as necessary to maintain appropriate habitat conditions. Based on the growth rate of vegetative cover, these burns will be attempted on 5-year cycles for the pine flatwoods (restored and enhanced flatwoods) and probably 10-15 year cycles for the upland hardwood hammocks. Herbicide control of existing and generated exotic and nuisance species will be conducted as necessary. The dominant undesirable species of concern for this parcel include Chinaberry and skunkvine.

Qualitative monitoring will be conducted semi-annually for a minimum 3-years post planting. Monitoring stations will be established to adequately evaluate habitat conditions and functions for each of the habitat communities. The results of the two monitoring events each year will be compiled into an annual monitoring report that documents the habitat conditions, any maintenance & management activities, and success trends. Documentation of the County's efforts to implement the management plan will also be included as part of the monitoring reports. Success criteria requirements include adequate pine plantings within the bahia pasture and palmetto prairie to guarantee survivorship of 200 trees per acre. Wiregrass will be planted in these same areas to guarantee survivorship rates of 300 plants per acre.

ATTACHMENT C - Mitigation Opportunities

The delineation of the DOT projects relative to the various habitat types are depicted on Figure F. The following table designates the various wetland impacts for each DOT project and the associated mitigation acreage. The delineation provides a combination of wetland and upland habitat (preserved and enhanced/restored) to compensate for the wetland impacts associated with each of the ten DOT projects. No individual project's impacts are being mitigated with just wetland preservation.

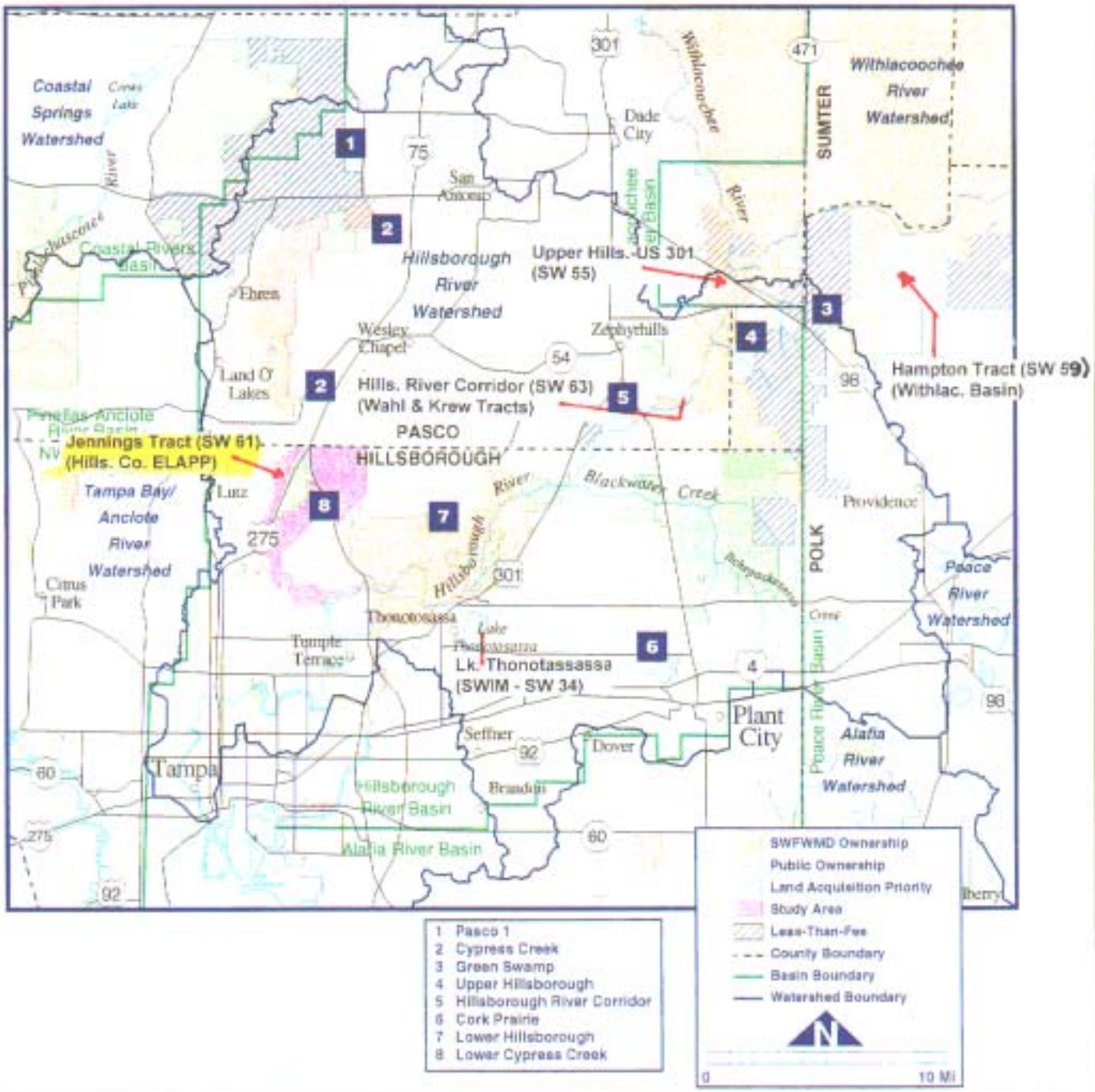
As noted on the attached table, there are two projects (one District 7 and one District 1) that are currently in the final design phases. The design of one of the DOT projects (Project 9, I-275-US 41 to Pasco Co.) has an estimate of 8.1 acres of wetland impacts, however that acreage will probably change pending final design. This proposed segment of I-275 is located along the eastern boundary of the Preserve, which would essentially be an on-site mitigation opportunity to compensate for these impacts.

The District One project (Project 4, Interstate-4, Seg. 2) is within a re-design phase in late, 2002. Within the 2001 DOT mitigation plan for this project, the Jennings Tract was proposed to provide mitigation for 2.08 acres of upland-cut ditches under ACOE jurisdiction that didn't require mitigation per ERP criteria. During 2002, the ACOE made a decision to also not require mitigation for the 2.08 acres. However, the roadway redesign has resulted in different wetland impacts with a range of 4.7 to 8.1 acres, predominantly forested systems and a high percentage of upland-cut ditches. As with the previous design, the optimal 8.1 impact acres include approximately 3-4 acres of upland-cut ditches that may or may not require mitigation. Therefore, the mitigation plan design has accounted for the optimal 8.1 acres and designated appropriately lower ratios in case the ditches do require mitigation per ACOE criteria.

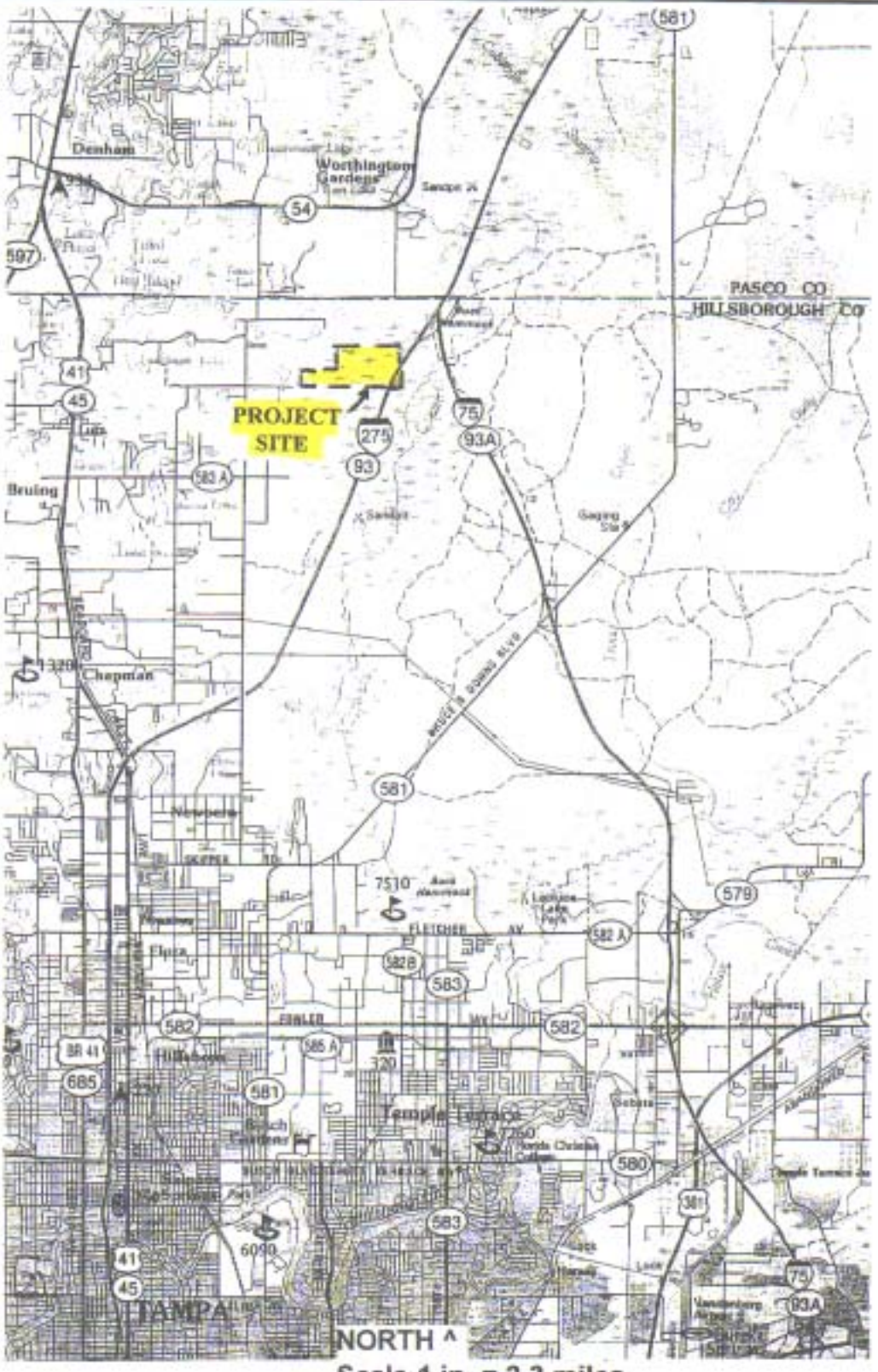
Attachment C - DOT Project / Mitigation Table **Cypress Creek Preserve, West (Jennings Tract) Hills. Co. ELAPP Updated 9/03**

SITE	DOT Project	WPI	FM	USACOE Permit #	SWFWMD Permit #	Impact Acres	Habitat (FLUCFCS)	Mitig. Ratio	Mitig. Ac.	Mitigation Type
1	BB Downs Bikepath (Hunter's)	7123606	2578071 2578641	199803683	4418710.000 **TOTALS**	0.40 0.10 **0.50**	618- Willow & Elderberry 641 - Marsh	**15 to 1**	1.0 2.0 4.5 **7.5**	Mix Forest Wet. Preservation Upl. Hardwood Preservation Flatwoods Restoration
2	SR 39-Blackwater Ck. Bridge	7113773	2555361	200000574 (IP-MS)	4320526.000 **TOTALS**	1.40 0.70 **2.10**	615- Stream Swamp 641- Marsh	**19 to 1**	24.0 10.0 6.0 **40.0**	Mix Forest Wet. Preservation Upl. Hardwood Preservation Flatwoods Enhancement
3	SR 56-SR 54 to BB Downs	7147617	2587341	199500079 (IP-MN)	4312944.004 **TOTALS**	5.20 0.10 **5.30**	630-Mix Forest 641-Marsh	**13 to 1**	2.0 3.0 19.0 47.0 **71.0**	Flatwoods Restoration Flatwoods Enhancement Upl. Hardwood Preservation Mix Forest Wet. Preservation
4	I-4, Memorial- US 98 (Seg. 2)	1147944	2012171	**199502569 (MOD-MGH)**	43011896.028 **TOTALS**	0.93 1.34 **1.84** **4.11**	615- Stream Swamp 630- Mixed Forest **641x – Hydric Ditch**	**10 to 1**	17.0 13.5 12.0 **42.5**	Mix Forest Wet. Preservation Flatwoods Restoration Upl. Hardwood Preservation
5	BB Downs Bikepath (Amberly)	NA	2578072	200101187 (NW-MS)	4421434.000 **TOTALS**	0.20 **0.20**	610- Hardwood Forest	**18 to 1**	0.5 3.0 **3.5**	Mix Forest Wet. Preservation Flatwoods Restoration
6	SR 678 (Bearss Ave.)	NA	2558591	200101181 (NW-MS)	4419802.002 **TOTALS**	0.10 **0.10**	618 – Willow & Elderberry	**15 to 1**	0.2 1.0 0.3 **1.5**	Upl. Hardwood Preservation Palmetto Prairie Enhancement Mix Forest Wet. Preservation
7	Alexander St., US 92 to Interstate 4	NA	2578391	200003012 (NW-RGW)	43011896.025 **TOTALS**	2.60 **2.60**	617-Mix Hardwood Forest	**12 to 1**	7.0 12.0 13.0 **32.0**	Palmetto Prairie Enhancement Upl. Hardwood Preservation Mix Forest Wet. Preservation
8	Alexander St., On-Ramp to Interstate 4	NA	2584491	200003012 (IP-RGW)	43011896.025 **TOTALS**	1.70 **1.70**	617-Mix Hardwood Forest	**9 to 1**	7.0 1.0 7.5 **15.5**	Flatwoods Enhancement Upl. Hardwood Preservation Mix Forest Wet. Preservation
9	I-275, US 41 to Pasco County	NA	2584131	Applic. Review (9/03)	Applic., Review (9/03) **TOTALS**	4.60 0.20 0.10 2.70 **7.60**	610 - Hardwood Forest 621 – Cypress 630 – Mixed Forest 640/641 - Marsh	**10 to 1**	4.0 39.0 33.0 **76.0**	Palmetto Prairie Enhancement Upl. Hardwood Preservation Mix Forest Wet. Preservation
10	I-75 at BB Downs Off – Ramp	NA	4084602	199803683 (NW-KI)	4421639.000 **TOTALS**	0.50 **0.50**	621-Cypress	**17 to 1**	2.0 3.0 3.3 **8.3**	Mix Forest Wet. Preservation Upl. Hardwood Preservation Palmetto Prairie Enhancement

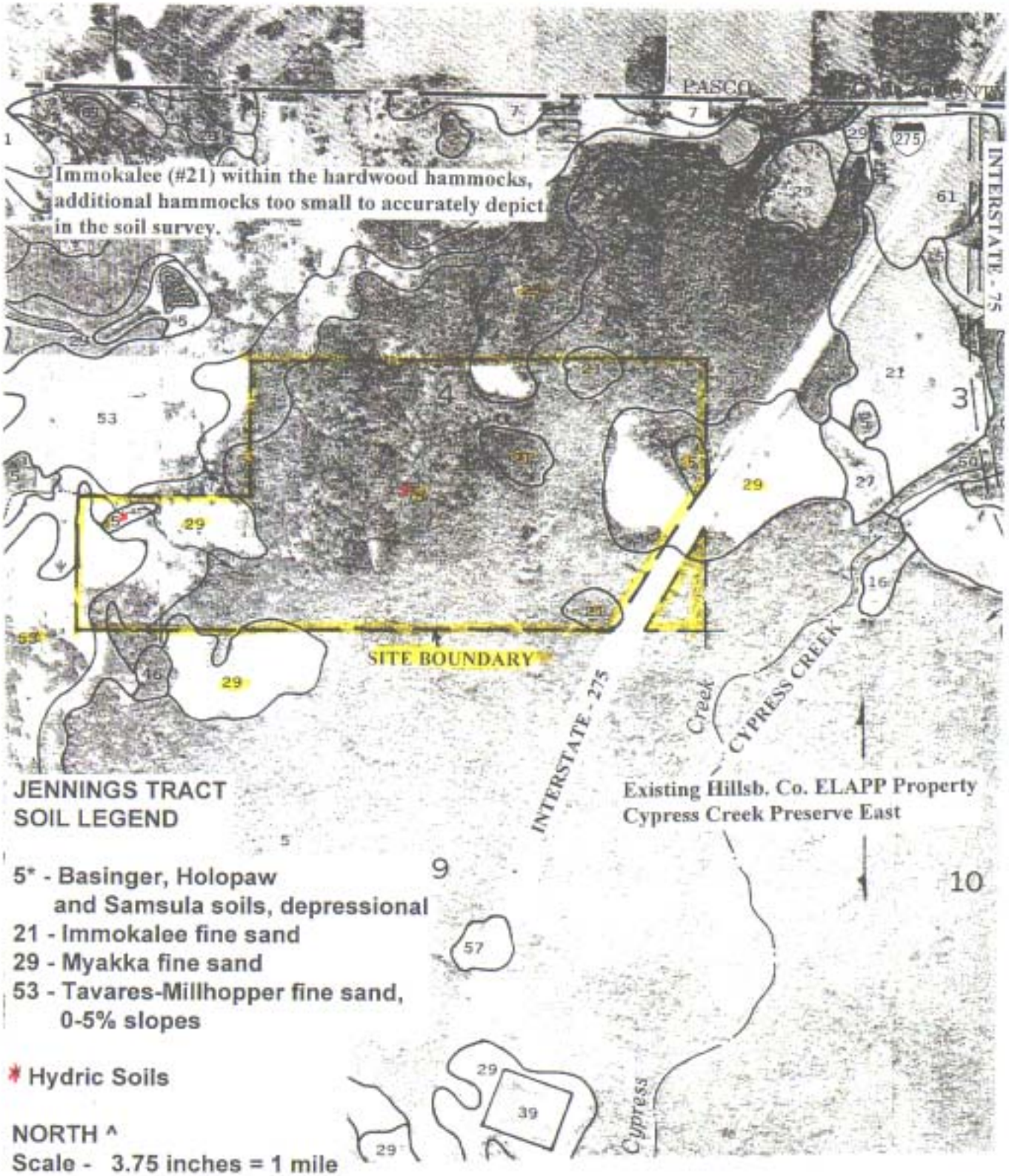
Save Our Rivers
Preservation 2000
2000 Five-Year Plan



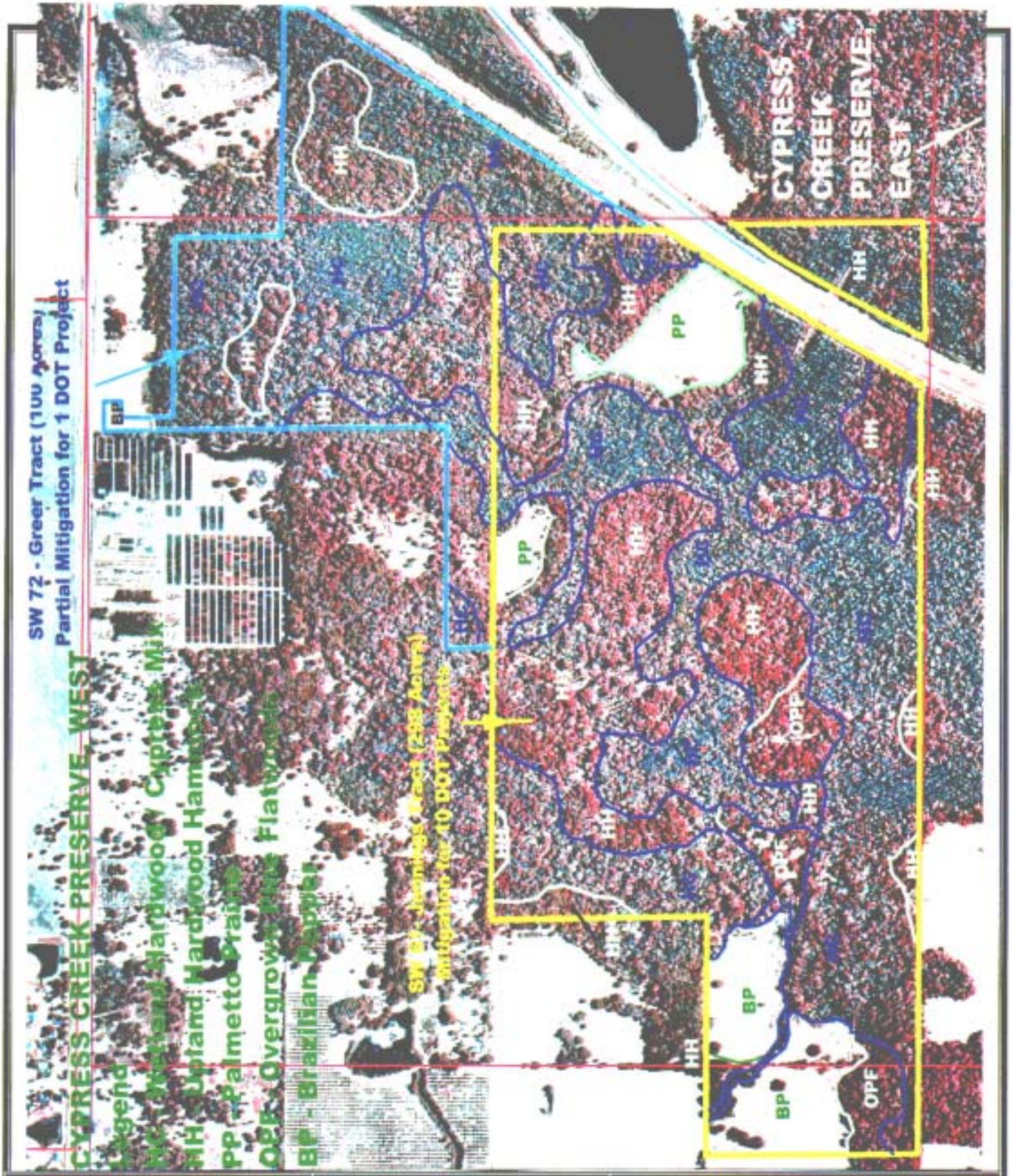
FDOT - District 7 MITIGATION SITE (HILLSBOROUGH BASIN)	JENNINGS TRACT CYPRESS CREEK PRESERVE WEST Hills. Co. ELAPP (SW 61)	FIGURE A - WATERSHED BASIN MAP



FDOT - District 7 MITIGATION SITE (HILLSBOROUGH BASIN)	JENNINGS TRACT CYPRESS CREEK PRESERVE WEST Hills. Co. ELAPP (SW 61)	FIGURE B LOCATION MAP



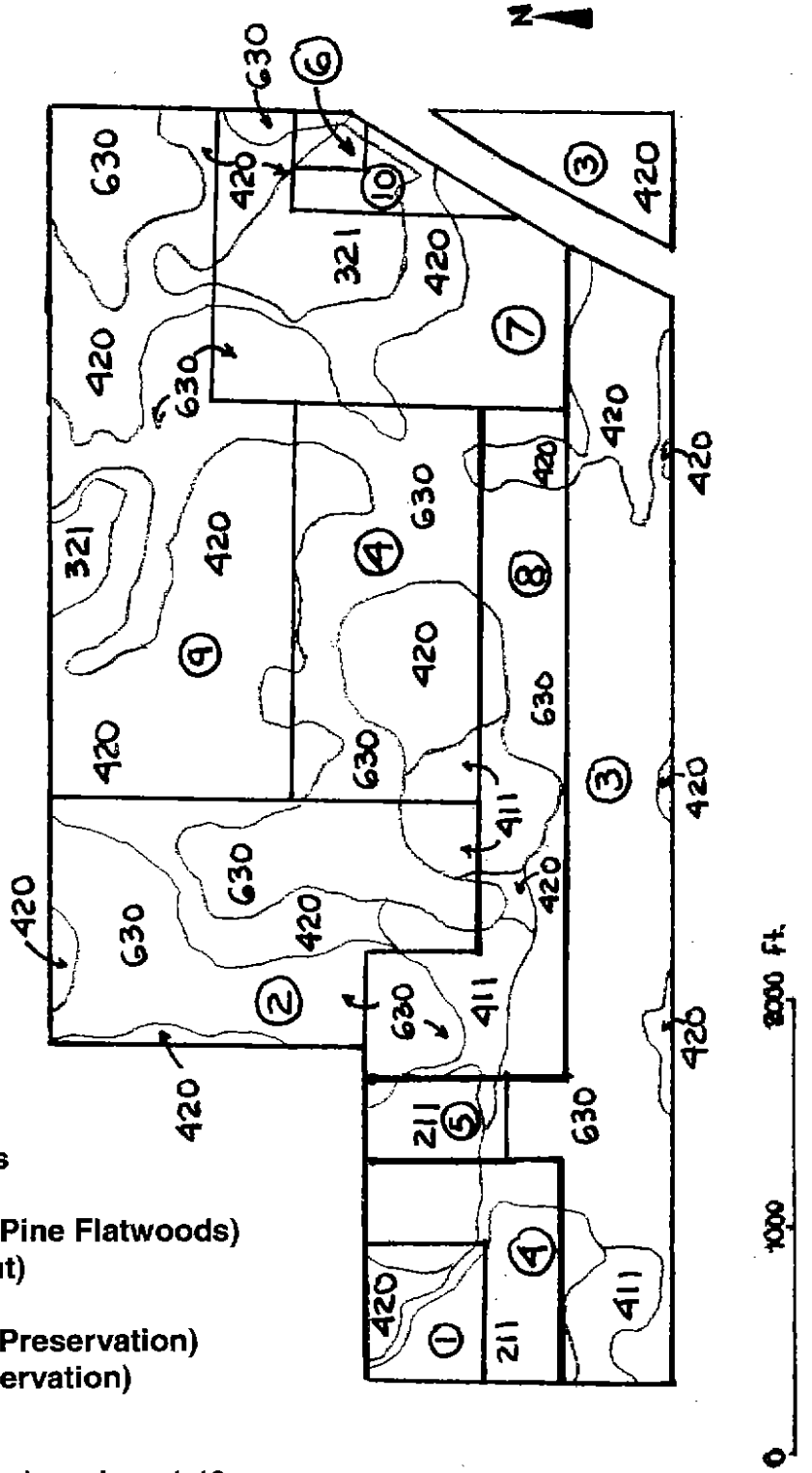
FDOT - District 7 MITIGATION SITE (HILLSBOROUGH BASIN)	JENNINGS TRACT CYPRESS CREEK PRESERVE WEST Hills. Co. ELAPP (SW 61)	FIGURE C HILLS. CO. SOIL SURVEY AERIAL DATE - 1982



FDOT – District 7 MITIGATION SITE (Hillsborough Basin)	JENNINGS TRACT CYPRESS CREEK PRESERVE WEST (SW 61)	FIGURE D – 1995 Infrared Aerial HABITAT MAP Scale 1 in = 910 feet, <North

FDOT - District 7 MITIGATION SITE (HILLSBOROUGH BASIN)	JENNINGS TRACT CYPRESS CREEK PRESERVE WEST Hills. Co. ELAPP (SW 61)	FIGURE E VEGETATIVE COMMUNITIES

1	BB Downs Bikepath (Hunter's)
2	SR 39-Blackwater Ck. Bridge
3	SR 56-SR 54 to BB Downs
4	I-4, Memorial to US 98 (Seg. 2)
5	BB Downs Bikepath (Amberly)
6	SR 678 (Bearss Ave.)
7	Alexander St., US 92 to I-4
8	Alexander St., On-Ramp to I-4
9*	I-275, US 41 to Pasco Co.
10	I-75 at BB Downs Off-Ramp



Cypress Creek - Jennings Parcel
Plant Communitles - FLUCCS codes

211 - Improved Pasture (Restore to Pine Flatwoods)
321 - Palmetto Prairie (Enhancement)
411 - Pine Flatwood (Enhancement)
420 - Upland Hardwood Hammock (Preservation)
630 - Mixed Forested Wetland (Preservation)

FDOT Projects are designated by circled numbers 1-10

FDOT - District 7 **MITIGATION SITE** **(Hillsborough Basin)**	**JENNINGS TRACT** **CYPRESS CREEK** **PRESERVE WEST** **Hills. Co. ELAPP (SW 61)**	**FIGURE F** **DESIGNATED MITIGATION**

Upland Hardwood Hammock - The hardwood hammocks have diverse canopy species, dominated by live oak, water oak, Southern magnolia, sweet gum, over saw palmetto, beautyberry, and buckthorn.

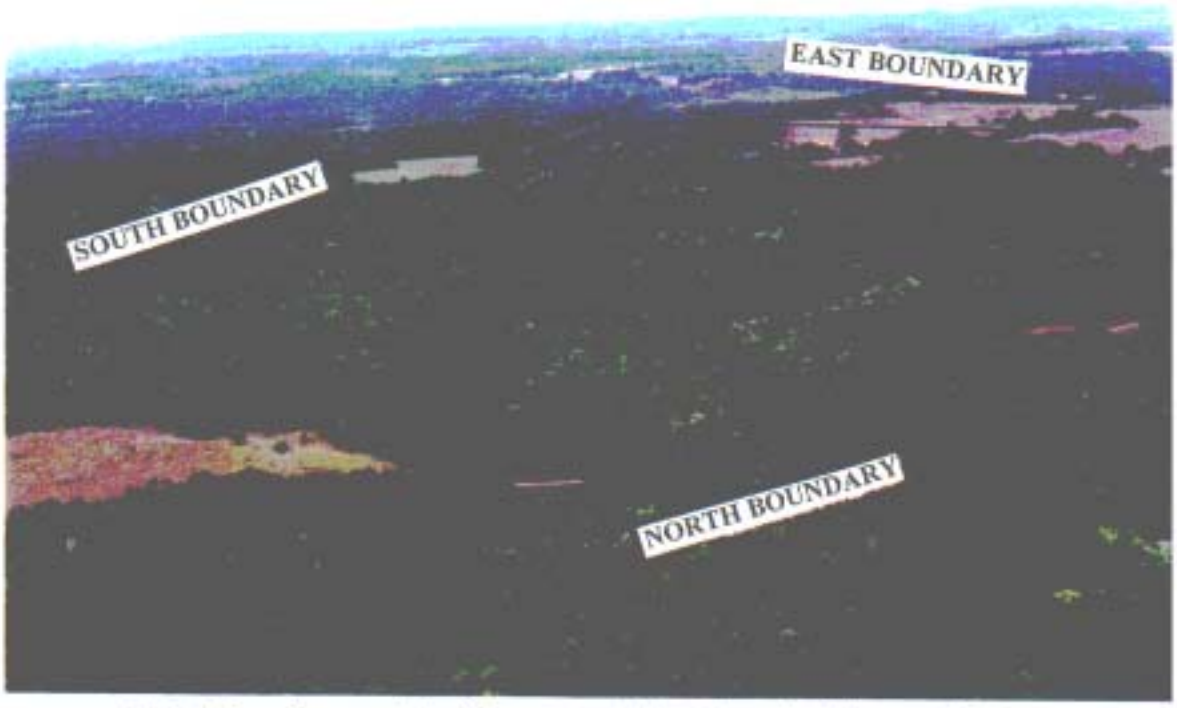
Upland Hardwood Hammock - Transitional area depicting the upland hammock (right) with sweet gum over saw palmetto, dropping in grade elevation to the mixed forested wetland (left) with cabbage palm, laurel oak, maples. Intricate mosiac of upland hammocks and wetland hardwoods results in high quality habitat for wildlife .

FDOT - District 7 Mitigation Site (Hillsborough River Basin)	**CYPRESS CREEK PRESERVE WEST (SW 61) (Jennings Tract, Hills. Co. ELAPP)**

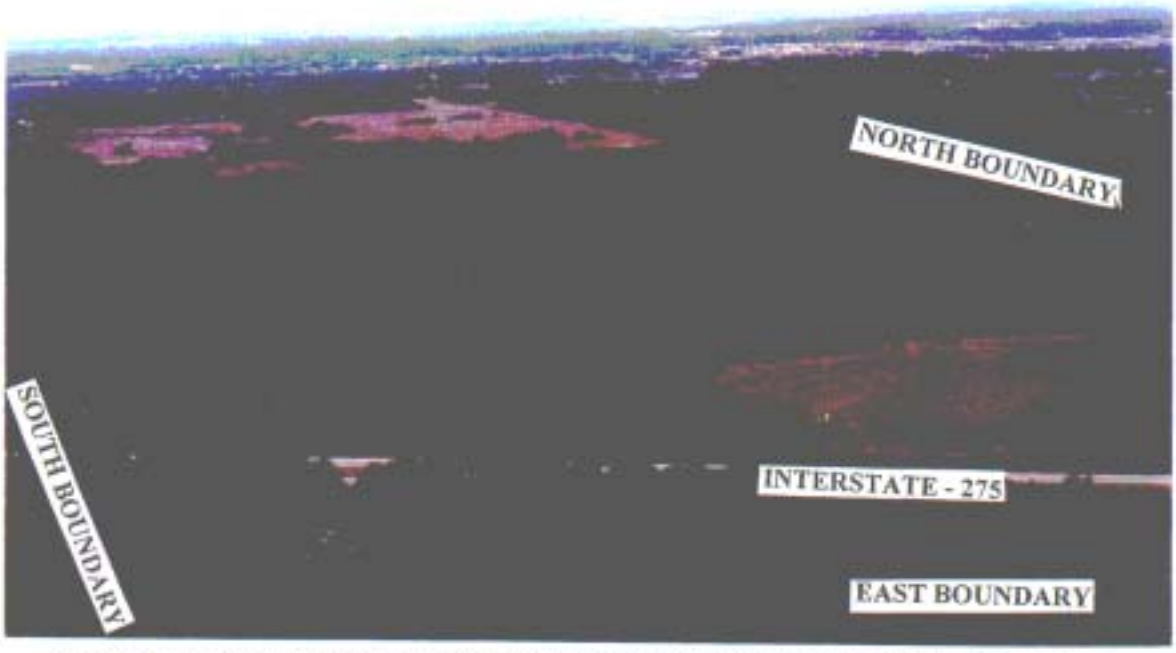
Mixed Forested Wetland - View of one of the lower grade elevations that becomes inundated with surface waters during the rainy season, tupelos and cypress are more common than the higher elevations.

Mixed Forested Wetlands - The higher grade elevations are more prevalent than the lower elevations. Mixed hardwoods (laurel oak, maple, sweet gum, American elm, ironwood) are the most common species.

FDOT - District 7 Mitigation Site (Hillsborough River Basin)	**CYPRESS CREEK PRESERVE WEST (SW 61) (Jennings Tract, Hills. Co. ELAPP)**



Aerial view from north of the property boundary, looking southwest, palmetto prairie along I-275 (left), isolated palmetto praire to the right.



Aerial view from east of the property, looking west. Triangular parcel separated from the main tract by I-275 in the foreground, large palmetto prairie to the right.

FDOT - District 7 Mitigation Site (Hillsborough River Basin)	**CYPRESS CREEK PRESERVE WEST (SW 61) (Jennings Tract, Hills. Co. ELAPP)**

Palmetto Prairie - Will be enhanced by removing cattle, planting wiregrass and scattered longleaf pine.

Bahia Pasture - Will be enhance by removal of cattle and debris, planting of wiregrass and longleaf pine. Area was included in the proposed acquisition due in part to the several large gopher tortoise present.

FDOT - District 7 Mitigation Site (Hillsborough River Basin)	**CYPRESS CREEK PRESERVE WEST (SW 61) (Jennings Tract, Hills. Co. ELAPP)**

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management District
Mitigation Project Name**: Tappan Tract** Project Number: **SW 62**
Project Manager: Amy Remley, WMD- SWIM Environmental Scientist Phone No: 813-985-7481 ext. 2083
County(ies): Hillsborough Location : Sec. 17, T30S, R18E

IMPACT INFORMATION

DOT (FM): 2557031, SR 60 - Cypress St. to Fish Creek* ERP #: 43002958.003 COE #: 200205816 (IP-MN)
Drainage Basin(s): Tampa Bay Coastal Water Body(s): Tampa Bay SWIM water body? Y

Acres/Impact Types: FM 2557031 - 0.6 ac. 510- Saltwater canal (Fluccs code)
0.1 ac. 530 (Fluccs code)
0.3 ac. 612 (Fluccs code)
0.6 ac. 641x (Fluccs code)
3.5 ac. 642x (Fluccs code) **TOTAL: 5.1 acres**

* Note: Only the minor mangrove and substantial ditch and open water impacts associated with this project are being mitigated at Tappan Tract. The saltwater marsh impacts for this DOT project (10.7 acres) will be mitigated at the Apollo Beach (SW 67) and Cockroach Bay – Saltwater (SW 77) projects. The freshwater marsh impacts for this DOT project (0.8 acres) will be mitigated at the Cockroach Bay – Freshwater project (SW 56).

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: X Wetland Creation X Upland Enhancement X Wetland Enhancement Mitig. Area: **8.38 ac.**
SWIM project? Y Aquatic Plant Control project? N Exotic Plant Control Project? N
Mitigation Bank? N Drainage Basin(s): Tampa Bay Drainage Water Body(s): Tampa Bay SWIM water body? Y

Project Description

A. Overall project goal: Create tidal pool (0.41 ac.), salt marsh (1.19 ac.), and freshwater ephemeral marsh (0.55 ac.) habitat (total 2.15 acres of wetland creation). Enhance saltern habitat (0.53 ac.), tidal pool/creek (1.18 ac.), mangrove habitat (0.77 ac.) and salt marsh (2.55 ac.) (total 5.03 acres of wetland enhancement). Existing and upland spoil covered with exotic species will be enhanced into hardwood hammock habitat (1.20 ac.). The Tappan Tract is a SWIM project on property owned by the City of Tampa along the eastern shoreline of Old Tampa Bay.

B. Brief description of current condition: The Tappan Tract property covers approximately 33-acres, which includes 9 upland acres and 24 wetland acres (Figures D&E). Only the eastern portion of the property has proposed construction activities, and that is the area that has been proposed to provide the mitigation for the DOT wetland impacts. The upland area within the east central portion of the site is primarily a mowed maintained open field with dominant cover of grasses, sedges, scattered cabbage palm, exotic species (Brazilian pepper, Melaleuca), and a few live oaks along the eastern boundary (site photos). A ridge of spoil material is located along the north and northwestern perimeter of the proposed construction area (Figure E), approx. 10 ft. above natural grade, covered with pokeweed, caesar's-weed, and elderberry. A dense stand of Brazilian pepper and Melaleuca is located along the northern boundary, scattered B. pepper along the western project boundary. Saltmarsh and mangroves are present north and west of the project boundaries. South Sherrill Street and W. Prescott Street border the east and west sides respectively.

C. Brief description of proposed work: The exotic species will be removed from the proposed wetland creation and enhancement areas, the wetland creation area will be graded to create tidal pool, saltmarsh, and an ephemeral freshwater marsh (Figure F). The wetland enhancement will be conducted primarily through removal of exotic species. The spoil ridges will have the prolific exotic species removed, decreased in grade elevation, and converted to upland hardwood hammocks. The project will include planting species typical of estuarine habitat (attachment A).

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): Only a portion of the proposed wetland impacts associated with the DOT project will be mitigated at the Tappan Tract, the remainder mitigated at the Cockroach Bay (Freshwater and Saltwater sites), and the Apollo Beach site; all SWIM projects conducted on Hills. Co. Parks property. For the 0.3 acres of proposed mangrove impact, there will be mangrove enhancement (0.77 ac.), for a mitigation ratio of 2:1. Additional mangrove germination is anticipated to occur within the enhanced and constructed salt marsh. For the 3.5 acres of saltwater ditch impacts, the proposed mitigation includes salt marsh creation (1.19 ac.), salt marsh enhancement (3.06 ac.), tidal pool creation (0.41ac.), saltern enhancement (0.53 ac.), and tidal pool enhancement (0.72 ac.), for a total mitigation ratio of 1.7:1. For the 0.6 acres of freshwater ditch impacts, the mitigation will include freshwater marsh creation (0.55 ac.) and hardwood hammock enhancement (1.20 acres), which is a mitigation ratio of 3:1. Considering 94% of the proposed impacts are associated with ditches, and there are over 20 acres of publicly protected quality habitat surrounding the proposed restoration area, the mitigation is considered appropriate and adequate to mitigate these impacts.

E.Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: To date, the only proposed mitigation bank in the Tampa Bay Drainage Basin is the Tampa Bay Mitigation Bank (TBMB). It will be a few years of construction before TBMB is capable of selling mitigation credits.

F. Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body : This is a SWIM project.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: SWFWMD, Operations Dept. or selected contractor
Contact Name: Amy Remley, WMD-SWIM Environmental Scientist Phone Number: 813-985-7481 ext. 2083
Entity responsible for monitoring and maintenance: City Of Tampa, Parks Department
Proposed timeframe for implementation: Commence: Design, 2000, Construction, Dec. 2002 Complete: June, 2003 (construction complete), followed by 3 years maintenance & monitoring

Project cost: $ 460,000 (total)
Design: $80,000
Construction and planting: $340,000
Monitoring & Maintenance: $40,000

Attachments

__X__1. Detailed description of existing site and proposed work. Attachment A - Existing Site & Proposed Work
__X__ 2 . Recent aerial photograph with date and scale. Figure D & E - Infrared Aerial (1995).

__X__ 3. Location map and design drawings of existing and proposed conditions. Figure A (Location Map), Figure D (Existing Conditions), Figure F (Conceptual Habitat Plan).

__X__4. Detailed schedule for work implementation, including any and all phases. Refer to Attachment B - Schedule

__X__5. Proposed success criteria and associated monitoring plan. Attachment C - Success Criteria & Monitoring

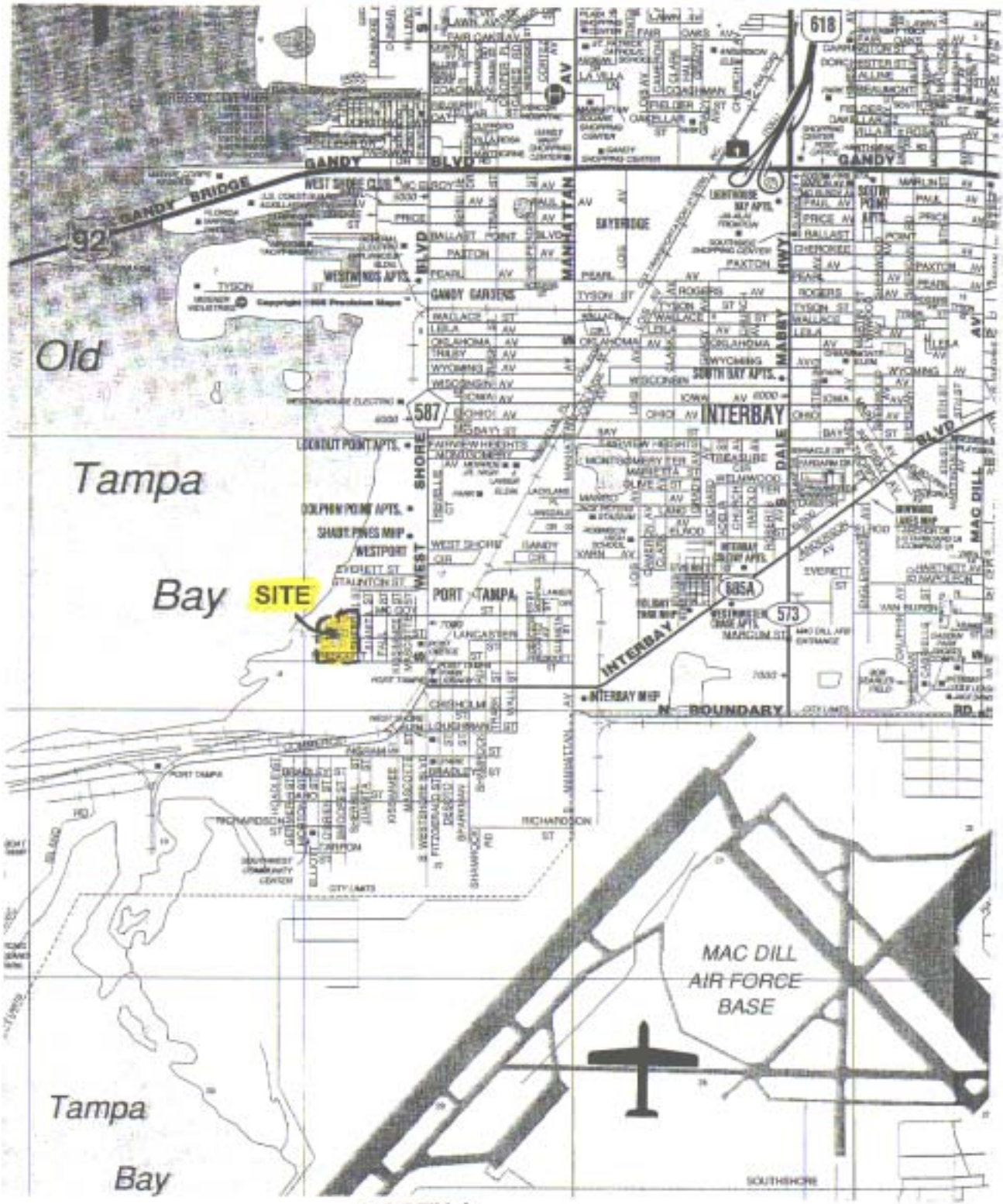
_X__6. Long term maintenance plan. Refer to Attachment C

_X___7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). Refer to previous text.

ATTACHMENT A - Existing Site & Proposed Work - Based on the information (aerials, soils), the historical 1948 aerial (Figure B) and present conditions (Figures C & D, site photos), the site was historically a coastal pine flatwood adjacent to a mangrove fringe along Tampa Bay. The pine flatwood area was cleared and fill material was placed along the wetland boundary. Possible fill source was from the scraped upland along the southeast side of the project site, resulting in the generation of a transitional salt marsh (refer to Figure E). The clearing and fill material allowed the site to become invaded by Brazilian pepper and Melaleuca. As part of the initiative of the SWFWMD-Surface Water Improvement & Management Program (SWIM) and the Tampa Bay National Estuary Program (TBNEP), this site was selected to not only restore upland habitat, but to create estuarine wetlands that will be tidally connected to Tampa Bay. This project is one of the proposed habitat creation and restoration projects under consideration along Tampa Bay, referred to as the South Tampa Greenway, and owned by the City of Tampa. Property directly south of the Tappan Site is also being evaluated for possible City of Tampa acquisition and future SWIM Restoration activities. As part of the proposed construction, the exotic species will be removed and appropriate grading will be conducted to create and enhance estuarine habitat such as salt marsh, saltern, tidal pool, and mangrove habitat (Figure F). In areas where grading is required for estuarine creation, species such as smooth cordgrass, marshhay cordgrass, sand cordgrass, seaside paspalum, and needle rush will be planted throughout the creation area. The mangrove forest adjacent to the project site will provide a seed source to allow mangroves to recruit and germinate within portions of the created marsh habitat. The freshwater marsh will be separated from tidal influence by the existing spoil ridges that will be decreased in elevation. The marsh will be planted with soft rush and beak rush species, but will also include salt tolerant species such as fimbries, lemon bacopa, muhly grass, and American bulrush. The upland berms will be graded to slope and provide surface water runoff into the ephemeral marsh, will be mulched and planted with coastal hammock species such as Florida privet, live oak, firebush, redbay, sabal palm, wild coffee, and rouge plant. Even though not accounted for in the mitigation acreage, a few acres of upland directly east of the freshwater marsh is being evaluated for planting to mimic what was believed to be coastal flatwoods, which will include species such as muhly grass, slash pine, and palmetto.

ATTACHMENT B – Schedule - As of the summer, 2002, the design has been finalized and will require permitting from the ACOE. Construction commenced December, 2002 and completed in June, 2003; followed by plant installation. Construction was conducted by the SWFWMD-Operations Dept. who has extensive experience in restoration construction projects. A minimum of 3 years maintenance & monitoring will be conducted after construction. The proposed commencement of roadway construction with the wetland impacts associated with this mitigation plan are not planned to occur until at least August, 2004.

ATTACHMENT C - Maintenance & Monitoring Plan, Success Criteria - The maintenance of the project is expected to be minimal. The plants typically planted in association with estuarine restoration projects will survive, vigorously recruit, and have minimal regeneration of exotic species. Maintenance will primarily be related to control of debris from the site, replacement of plants that may not have survived the initial planting, and to ensure exotics (particularly Brazilian pepper and Melaleuca) do not regenerate within the upland area. Saplings of these species are controlled with herbicide. Long-term maintenance will be the responsibility of the City of Tampa Parks Dept. who owns the property. The qualitative monitoring is expected to be semi-annual for 3 years, with an annual monitoring report each year to document the habitat conditions and maintenance activities for the previous year. The success criteria includes 90% survivorship for planted material for at least 90-days post planting, a total 85% cover of desirable species, and less than 10% cover of exotic and nuisance species. The DEP and WMD experiences with the estuarine mitigation projects indicate when the grade elevations are correctly constructed to allow for sufficient tidal action, the vegetation survives and recruits throughout other areas of the mitigation site.

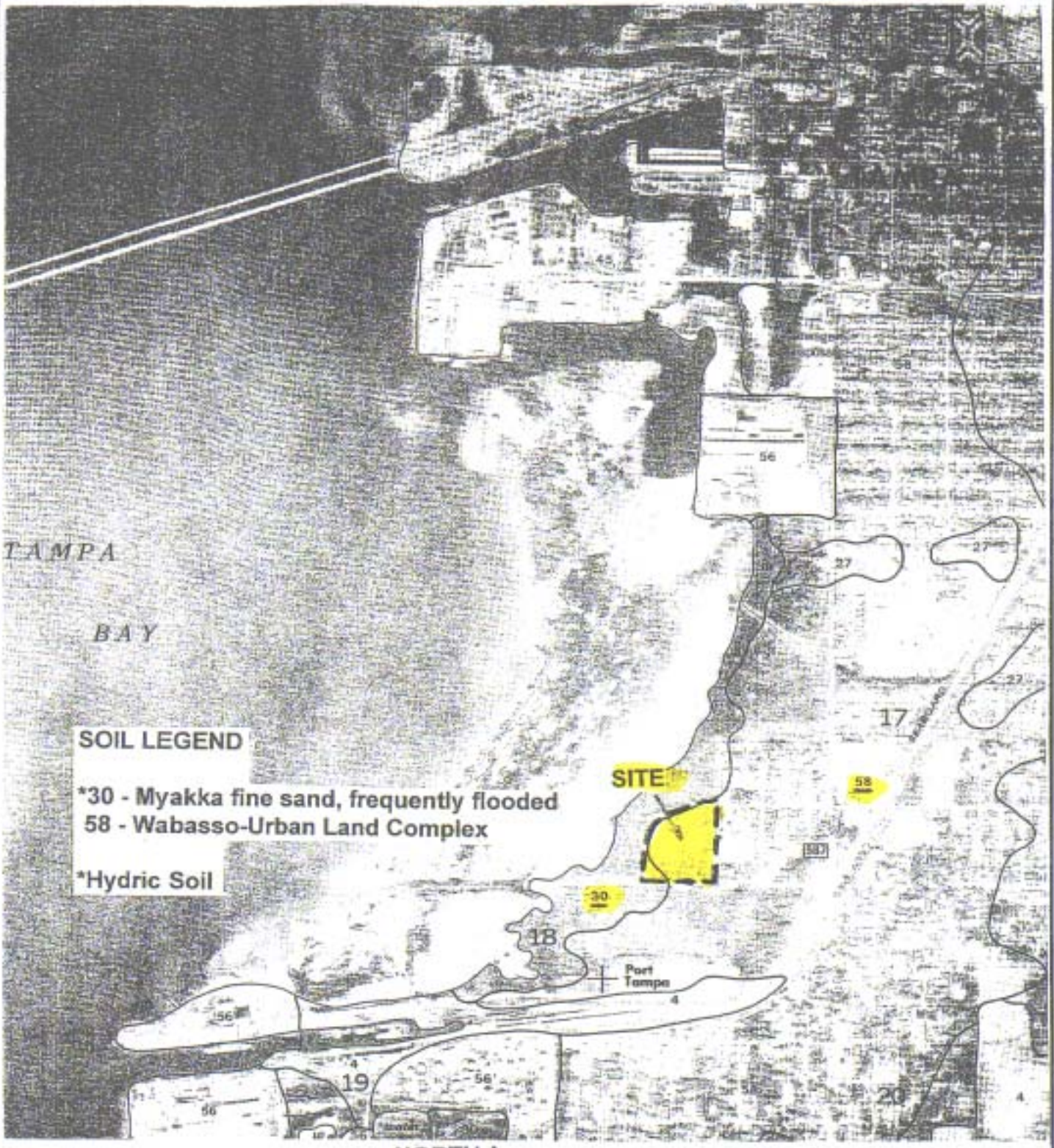


NORTH ^
SCALE: 1.8 in. = 1 mile

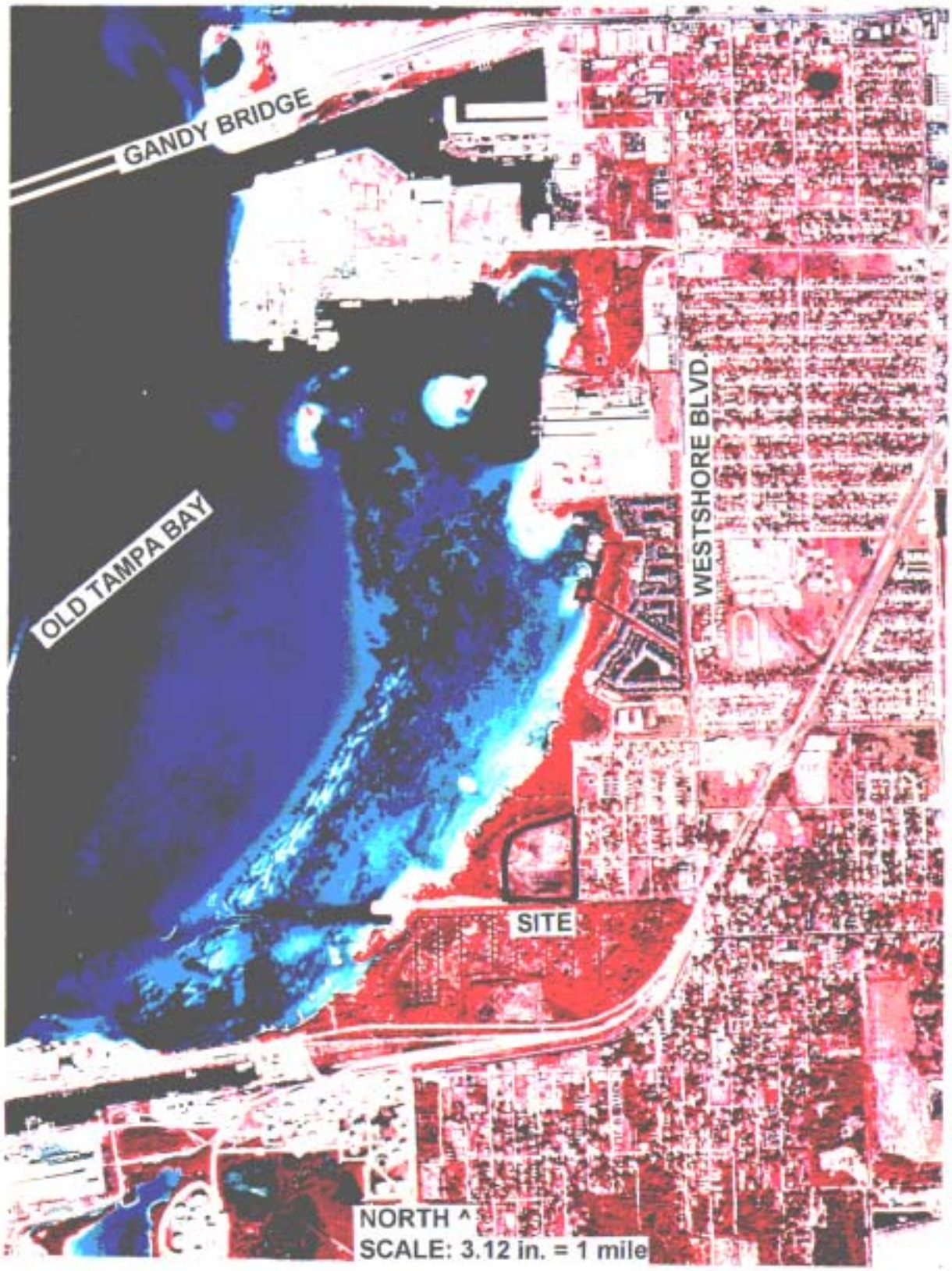
FDOT - District 7 MITIGATION SITE (Tampa Bay Drainage Basin)	TAPPAN SITE (SW 62)	FIGURE A LOCATION MAP

NORTH ^
SCALE: 3.12 in. = 1 mile

FDOT - District 7 MITIGATION SITE (Tampa Bay Drainage Basin)	TAPPAN SITE (SW 62)	FIGURE B HILLS. CO. SOIL SURVEY (AERIAL DATE - 1948)

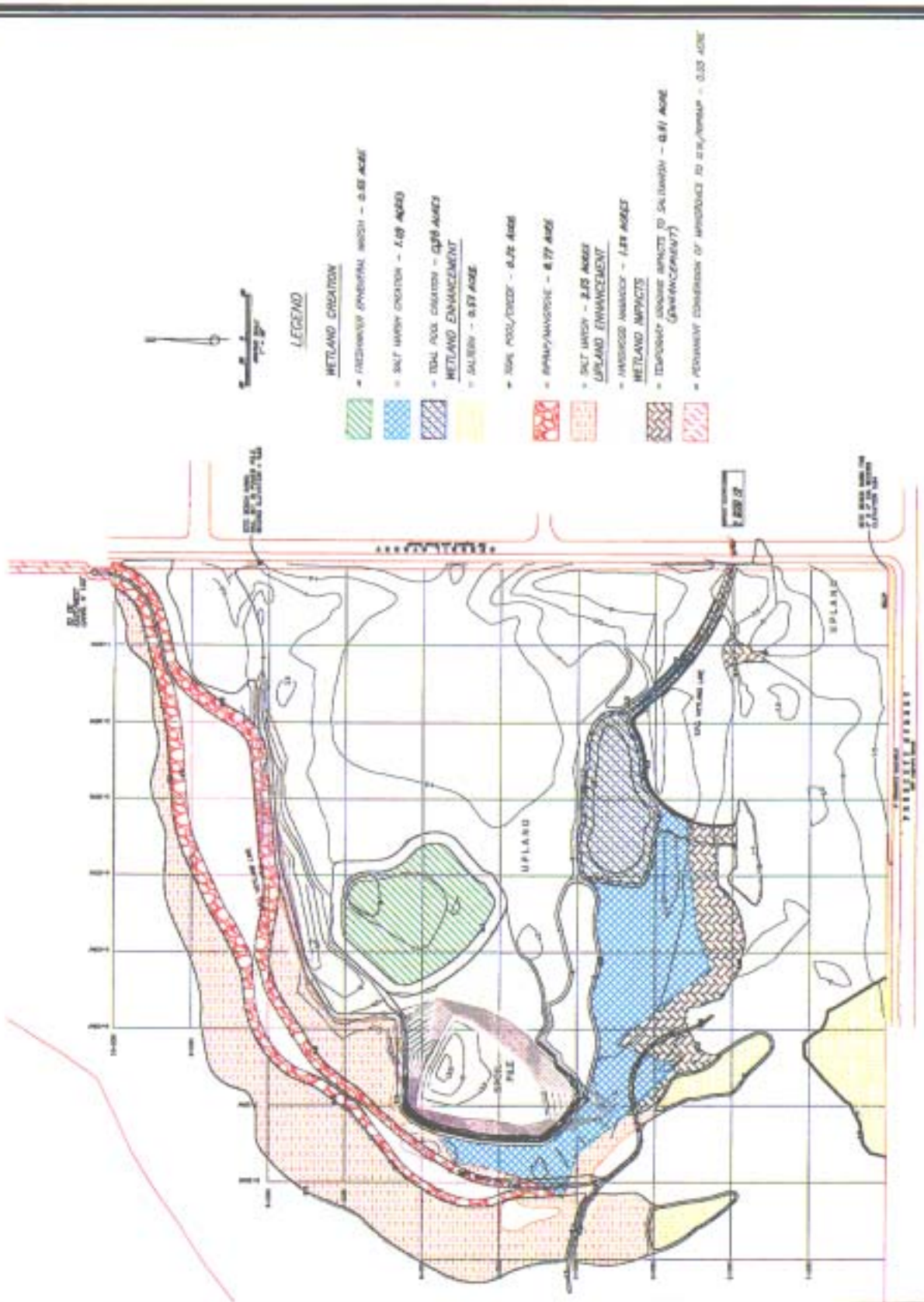


FDOT - District 7 MITIGATION SITE (Tampa Bay Drainage Basin)	TAPPAN SITE (SW 62)	FIGURE C HILLS. CO. SOIL SURVEY (AERIAL DATE - 1982)



FDOT - District 7 MITIGATION SITE (Tampa Bay Coastal Basin)	TAPPAN SITE (SW 62)	FIGURE D INFRARED AERIAL (AERIAL DATE - 1995)

FDOT - District 7 **MITIGATION SITE** **(Tampa Bay Drainage Basin)**	**TAPPAN TRACT** **(SW 62)**	**FIGURE E** **EXISTING HABITAT**



FDOT - District 7 **MITIGATION SITE** **(Tampa Bay Drainage Basin)**	**TAPPAN TRACT** **(SW 62)**	**FIGURE F** **CONCEPTUAL MITIGATION DESIGN**

View from the southeast corner (intersection of South Sherrill and West Prescott Streets). Some scattered palms and live oaks along the eastern boundary will be preserved by incorporating them into an upland habitat restoration area of the project.

Opposite view of previous photo, from close to the northwest corner of the site. Standing on a fill ridge of 15-20 ft., this view shows the majority of the tract is dominated by bermuda grass with a few scattered myrtle, cabbage palm, Brazilian pepper, and melaleuca.

FDOT - District 7 Mitigation Site (Tampa Bay Drainage Basin)	**Tappan Tract (SW 62)**

View toward northern project boundary from top of the fill ridge. The fill is heavily covered with nuisance/exotic species such as pokeweed, caesarweed, elderberry, and Brazilian pepper. As seen in the background, the northern boundary has extensive coverage of melaleuca and Brazilian pepper that will be eradicated.

View of the saltmarsh just west of the project boundary. Needle rush, salt bush, Borrichia, saltmarsh cordgrass, salt grass, glasswort, and sea blite are commonly found in the vicinity of the site boundary. B. pepper within the transitional wetland will be eliminated.

FDOT - District 7 Mitigation Site (Tampa Bay Drainage Basin)	**Tappan Tract (SW 62)**

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management District
Mitigation Project Name: **Hillsborough River Corridor** (Crews Tract) Project Number: **SW 63**
Project Manager: Mark Brown, WMD Environmental Scientist Phone No: (352) 796-7211 ext. 4488
County(ies): Pasco Location : Sections 30, T26S, R22E

IMPACT INFORMATION

FM: 2563151, US 41, Bell Lake to Tower Road ERP #:4418030.002 COE #: 199241273 (IP-ES)
Drainage Basin(s): Hillsborough River Water Body(s):Trout Creek, Cabbage Swamp SWIM water body? N

Impact Acres/Types: FM: 2563151 - 1.1 ac. 621 (Fluccs code)

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: ___ Creation___ Restoration ___ Enhancement X Preservation Mitigation Area**: 10 ac.**
SWIM project? N Aquatic Plant Control project? N Exotic Plant Control Project? N Mitigation Bank? N
Drainage Basin(s) : Hillsborough Water Body(s):Hillsborough River SWIM water body? N

Project Description

{SEQ 1_0 * ALPHABETIC \r 1}. Overall project goal: Acquisition and preservation of a parcel within the Hillsborough River floodplain, a mixed forested wetland (10 acres) that is part of a high quality riverine habitat corridor (Figure D). This tract is an outparcel of adjacent river floodplain property already owned by the SWFWMD (Figures A, C, D).

{SEQ 1_0 * ALPHABETIC \n}. Brief description of current condition: The entire tract is a mixed forested wetland floodplain with high quality habitat. A narrow portion (40-60 ft. wide) of the Hillsborough River meanders through the southern portion of the tract (refer to Attachment A for additional site information).

{SEQ 1_0 * ALPHABETIC \n}. Brief description of proposed work: After acquisition, the site will be periodically reviewed for security and high quality habitat conditions are maintained. Efforts will continue to be made to hopefully acquire the adjacent 20 acre outparcel of floodplain forest to finalize the corridor connection of public lands along the Hillsborough River (Fig. D).

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): The Hillsborough River corridor is an important area for wildlife use and access, water quality treatment, flood attenuation, and providing a water source for Hillsborough County and the City of Tampa. The proposed wetland impact area includes forested wetlands of lesser habitat quality, with the acquisition and preservation of 10 acres, the mitigation ratio will be 10:1.

E. A brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: A mitigation bank is not present or currently proposed within the Hillsborough River basin.

F. Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body : The only SWIM project within this basin is the Lake Thonotasassa Restoration Project. All available wetland components for that restoration project have been delegated to mitigate for wetland impacts associated with another DOT project.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: No construction activities are necessary
Contact Name: Mark Brown, WMD Environmental Scientist Phone Number: (352) 796-7211 ext. 4488

Entity responsible for monitoring and maintenance: Management, security, and maintenance will be conducted by the SWFWMD Land Management and Land Use Depts.

Proposed timeframe for implementation: Commence: Summer, 2000 Complete: April, 2001 (acquisition)
Project cost: $15,000 (acquisition, maintenance & management will be provided by the WMD)

Attachments

_X___1. Detailed description of existing site and proposed work. Refer to Attachment A - Existing Site

_X___2. Recent aerial photograph with date and scale. Figure D - infrared aerial (1995).

_X___3. Location map and design drawings of existing and proposed conditions. Figure A - Watershed Map, Figure B- Location Map, and Figure D- Site Conditions.

_X___4. Detailed schedule for work implementation, including any and all phases. Acquisition in spring, 2001.

_X___5. Proposed success criteria and associated monitoring plan. No monitoring or success criteria required or proposed.

_X__6. Long term maintenance plan. Maintenance activities are not required.

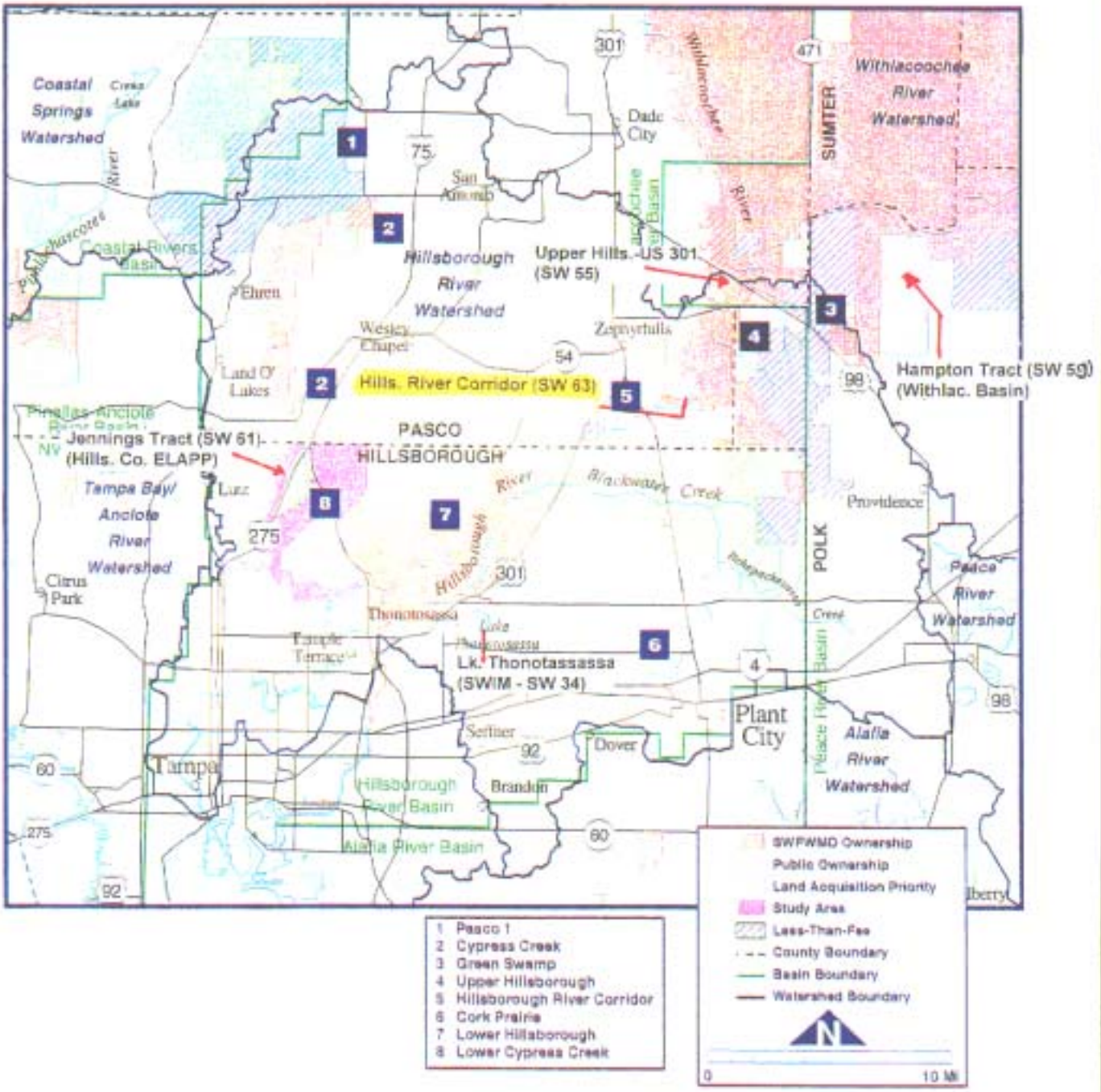
_X__7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). Refer to previous discussion.

ATTACHMENT A - Existing Site & Proposed Work

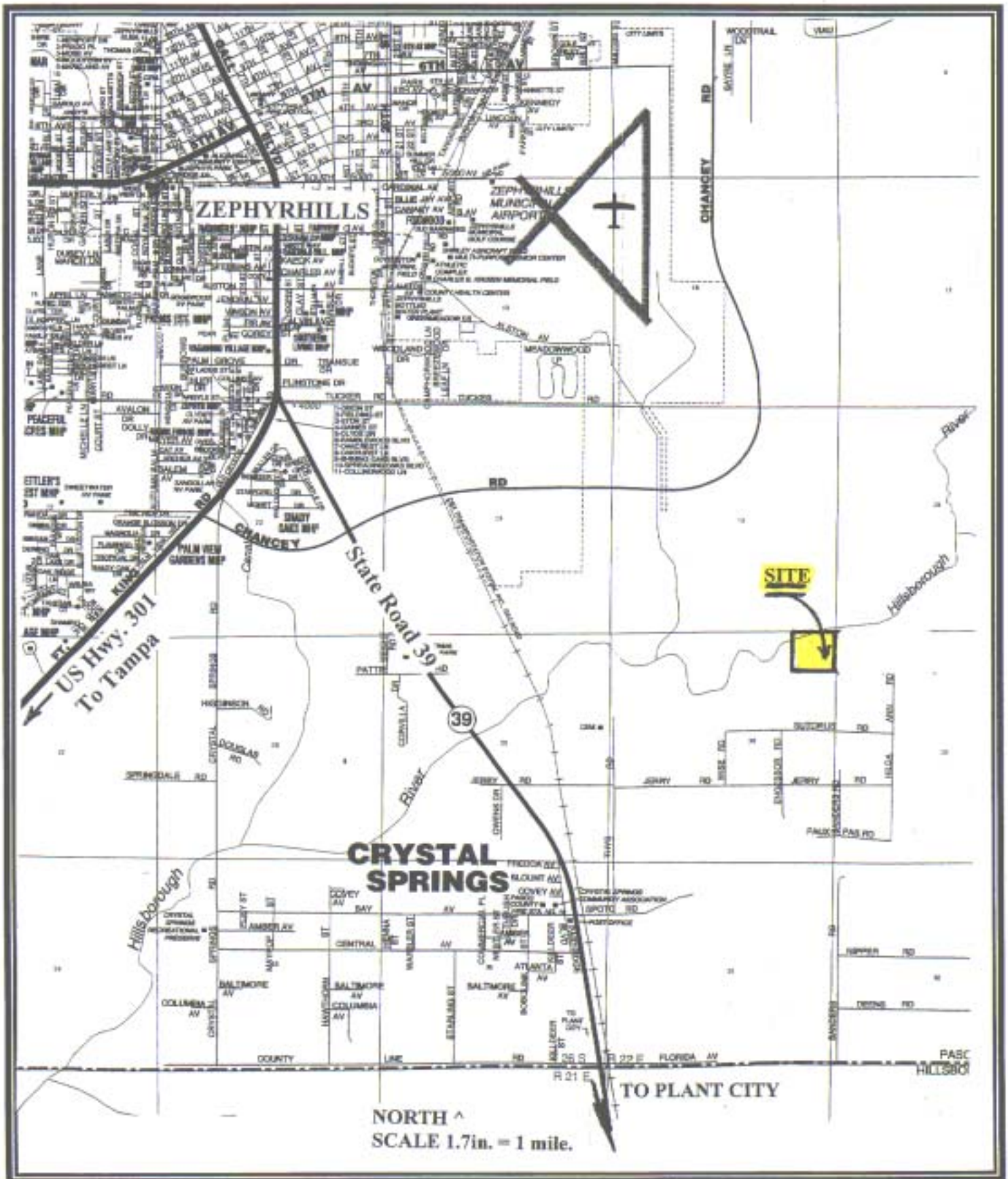
The entire 10 acres is mixed forested wetland floodplain with the Hillsborough River meandering through the southern portion of the site (refer to photos). The overstory (canopy >70%) is dominated by red maple, American elm, and laurel oak. Sub-dominants include sweet gum, hackberry, ironwood, bald cypress, and pop ash. Several small natural channels exist where river overflows during flood events. The cypress are dominant within these channels. A shrub canopy (50-70% cover) in combination with the overstory provides a dense cumulative canopy but still relatively open understory to provide easy wildlife movement. Shrub layer species include the same canopy species with a dominance of elm and additional cover of cabbage palm, Virginia willow, and wax myrtle. Understory vegetation includes smilax, poison ivy, Virginia creeper, wild coffee, and various, small *Panicum spp.* Observed wildlife species include deer, racoon, squirrels, and substantial bird activity. Periodic review of the site will be conducted to ensure these high quality habitat conditions are maintained and that no adjacent land use activity encroaches or impacts the habitat.

It's noted that this project previously proposed the acquisition of the adjacent 20-acres (Wahl Tract), removal of the existing fill road to restore wetland habitat, and provide a contiguous connection of riverine floodplain habitat under SWFWMD ownership. Unfortunately, negotiations with Mr. Wahl were not successful and the additional impacts proposed for mitigation at this project site were transferred for mitigation at Cypress Creek Preserve, West (SW 61). Hopefully the opportunity for public acquisition of the additional 20 acres will occur in the future.

Save Our Rivers
Preservation 2000
2000 Five-Year Plan



FDOT - District 7 MITIGATION SITE (HILLSBOROUGH BASIN)	HILLSBOROUGH RIVER CORRIDOR (SW 63) (WAHL & KREW TRACTS)	FIGURE A - WATERSHED BASIN MAP

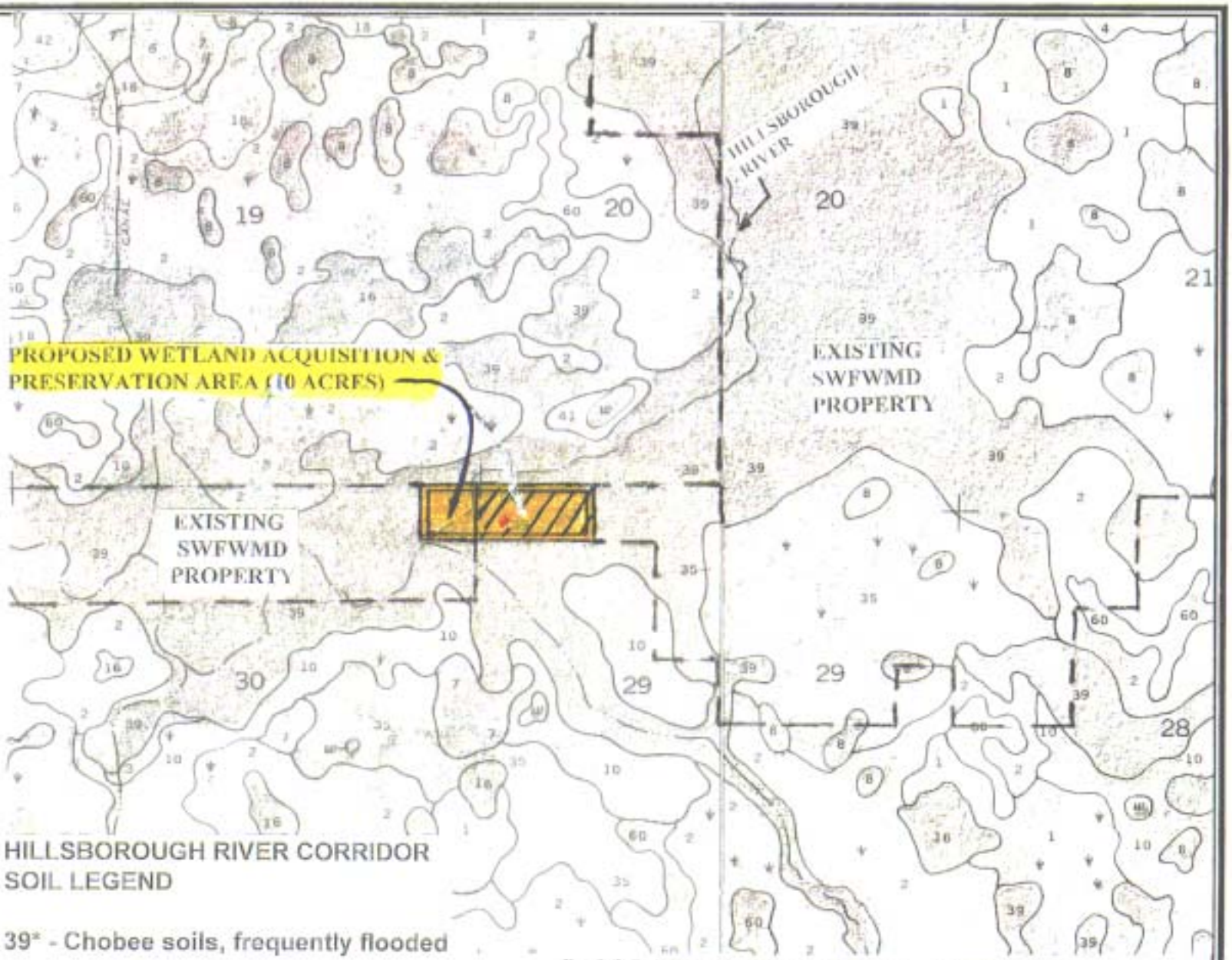


FDOT - District 7 MITIGATION SITE (HILLSBOROUGH BASIN)	HILLSBOROUGH RIVER CORRIDOR (SW 63)	FIGURE B LOCATION MAP

FDOT - District 7
MITIGATION SITE
(HILLSBOROUGH BASIN)

HILLSBOROUGH RIVER
CORRIDOR (SW 63)

FIGURE C
PASCO CO. SOIL SURVEY



HILLSBOROUGH RIVER CORRIDOR
SOIL LEGEND

39* - Chobee soils, frequently flooded

* Hydric Soils

NORTH ^
Scale - 3.75 inches = 1 mile

PASCO SOIL SURVEY AERIAL DATE - 1975

FDOT - District 7
MITIGATION SITE
(Hillsborough River Basin)

HILLSBOROUGH RIVER
CORRIDOR (SW 63)
(Crews Tract)

FIGURE D
LOCATION MAP
Scale 1in. = 366 ft.

View depicting the dense canopy & subcanopy coverage, yet still open ground area for wildlife movement. The white lichens on the cypress (left) delineates a flood elevation a few feet above surface grade.

Background depicts an area of very dense subcanopy however small pockets of less canopy (foreground) allow substantial cover of various herbaceous species.

FDOT - District 7 Mitigation Site (Hillsborough River Basin)	**HILLSBOROUGH RIVER CORRIDOR (SW 63)**

View of the Hillsborough River that substantially meanders through the property, averaging 40-60 ft. wide, very clear & clean water.

One of the many overflow channels within the floodplain, the cypress tend to be concentrated along the channels, various wetland hardwood species dominate the remaining floodplain area.

FDOT - District 7 Mitigation Site (Hillsborough River Basin)	**HILLSBOROUGH RIVER CORRIDOR (SW 63)**

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management District

Mitigation Project Name: **Baird Tract** (Withlacoochee State Forest, Richloam) Project Number: **SW 64**

Project Manager: Rose Poyner , Judy Ashton (FDEP-Tampa) Phone No: (813) 744-6100, Suncom 542-1042

County(ies): Sumter Location (central lat/long): 28 33' 0", 82 00', 00"

IMPACT INFORMATION

1 - FM: 2571641, SR 44-CR 470 to County Line	ERP #: 4310152.004	COE #: 199606491 (IP-KF)
2 - FM: 2571631, SR 44-US 41 to CR 470	ERP #: 4310152.003	COE #: 199606491 (IP-LM)
3 - FM: 2571841, SR 45 (US 41) – Watson St. to SR 44 East	ERP #: 44024198.000	COE #: 200206293 (NW-KCF)
4 - FM: 4092071, CR 470 (Gospel Isle)	ERP #:_____	COE #:_____
5 - FM: 2571651, US 41 (SR 45), SR 44 to SR 200	ERP #:_____	COE #:_____
6 – FM 4037811, SR 52 – Curley Rd. to Smith Rd.	ERP #:_____	COE#:_____

Drainage Basin(s): Withlacoochee River Water Body(s): Lake Henderson, Lake Tsala Apopka SWIM water body? N

Impact Acres / Types:

1- FM 2571641	3 - FM 2571841	5 – FM 2571651
4.9 ac. 617 (Fluccs)	0.1 ac. 641x (Fluccs)	0.5 ac. 617 (Fluccs)
4.1 ac. 630 (Fluccs)	**0.1 acres**	0.2 ac. 618 (Fluccs)
4.9 ac. 641 (Fluccs)		**0.7 acres**
13.9 acres		

2- FM 2571631	4- FM 4092071	6- FM 4037811
3.1 ac. 615 (Fluccs)	0.1 ac. 617 (Fluccs)	0.3 ac. 510 (Fluccs)
3.2 ac. 618 (Fluccs)	0.1 ac. 641 (Fluccs)	0.1 ac. 641 (Fluccs)
1.6 ac. 641 (Fluccs)	**0.2 acres**	**0.4 acres**
7.9 acres		

TOTAL – 23.2 Acres

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: ___ Creation ___ Restoration _X_ Enhancement ___ Preservation Mitigation Area: **1518 acres**
(Non-forested Wetlands - 970 acres, Forested Wetlands – 548 Acres)

SWIM project? N Aquatic Plant Control project? N Exotic Plant Control Project? N_ Mitigation Bank? N
Drainage Basin(s): Withlacoochee River Water Body(s): Giddon Lake, Merritt Pond, Goose Pond, Little Withlacoochee River SWIM water body? N

Project Description

A. Overall project goal: Enhancement of various wetland systems (1518 acres) within the Baird Tract (11,000 acres) and Richloam Management Area (49,000 acres). Benefits will include hydrologic enhancement of existing wetlands through culvert installation, geotextile crossings, constructing sills, plugging & backfilling ditches, and removal of various segments of fill road. Enhancement and attenuation of water sheet flow throughout these wetland systems and groundwater recharge will be achieved through reduction in channelization. Construction of cross-drains to reestablish flow patterns will also enhance various aspects for wildlife life cycles.

B. Brief description of current condition: Refer to Attachment A and 1995 infrared aerials.

C. Brief description of proposed work: Refer to Attachment B.

Mitigation Project – Baird Tract, Page 2

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): The proposed hydrologic enhancement will result in biological (flora & fauna) improvements to various wetland and upland habitats. Particular enhancement will result in various deep-water marshes associated with wetland systems at Baird Tract (i.e. Gidden Lake, Merritt Pond, Revel Pond, Goose Pond), similar to the deep-water marsh habitat conditions of the proposed SR 44 roadway impacts along Lake Henderson and Lake Tsala Apopka. Almost all the proposed wetland shrub habitat impacts are wax myrtle and Carolina willow generated along the existing SR 44 toe-of-sideslope areas. Beyond the proposed roadway construction limits, the willows transition into marsh habitat that represent actual wetland conditions prior to the construction of the existing SR 44. As for the proposed forested wetland impacts associated with SR 44 widening, hydrologic enhancement of Fender Swamp and other hydrologically impacted forested wetlands adjacent to the existing ditches will compensate for those impacts. Due to the large-scale of the proposed Baird Tract improvements, the loss of the SR 44 wetland habitats will be compensated by the significant ecosystem benefits from the proposed activities. The minor alterations (i.e. ditch plugs, culvert invert modifications and additions, etc.) required to enhance and restore hydrologic regimes provide more opportunity to increase the various wetland habitat functions and overall value than the combination of other restoration methods such as vegetative planting, herbicide maintenance, and extensive construction activities. In addition, retaining water within the wetlands and surface waters to restore a natural hydrology will result in significant secondary benefits such as attenuation and groundwater recharge within the entire area of Baird Tract. The final estimate of forested versus non-forested wetland enhancement will be conducted as part of the design. Conservative mitigation acreage are provided for the wetland systems (Attachment B) and includes **970 acres (non-forested)** and **548 acres (forested) for a total 1518 to mitigate for 23.2 wetland impact acres.**

E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: There are currently no existing or proposed mitigation banks within the Withlacoochee River Basin.

F. Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body : The only SWIM project within this watershed is the Lake Panasoffkee Restoration project, which has been designated to provide the mitigation for proposed DOT impacts to the lake, FM 548964, I-75 Lake Panasoffkee Bridge.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: Division of Forestry in cooperation with the Dept. of Environmental Protection

Contact Name: Rose Poyner, Judy Ashton (DEP-Tampa) Phone Number: 813-744-6100

Entity responsible for monitoring and maintenance: DEP and DOF

Proposed timeframe for implementation: Commence: January, 2001 Complete: Spring, 2004 -Construction commences, finished in 2006, followed by minimum 3 years of monitoring.

Project cost: $1,300,000 (total)

Design & Permitting - $120,000
Construction - $1,100,000
Maintenance & Monitoring - $80,000

Mitigation Project – Baird Tract, Page 3

Attachments

__x__1. Detailed description of existing site and proposed work. Refer to Attachment A.

__x__2. Recent aerial photograph with date and scale. Refer to attached 1995 infrared aerials.

__x__3. Location map and design drawings of existing and proposed conditions. Refer to Attachments 1 and 4 for site location, infrared aerials have potential structure locations, design drawings will be conducted in 2003.

__x__4. Detailed schedule for work implementation, including any and all phases. Schedule includes design and initial construction in 2003, proposed construction will continue through 2006, construction is followed by three years of monitoring.

__x__5. Proposed success criteria and associated monitoring plan. Monitoring will be conducted semi-annually (dry & wet season monitoring events) for a minimum of three years to monitor the wetland hydroperiod and vegetative trends as a result of the enhancement efforts. The results of the semi-annual monitoring will be documented in annual monitoring reports submitted for a minimum 3 years post-construction. The initial monitoring report will document pre-existing conditions and the construction activities. A monitoring plan will be conducted in coordination with the Div. of Forestry to evaluate strategically placed staff gauges and vegetative monitoring. Qualitative vegetative evaluation of the proposed wetland enhancement areas will be conducted as part of the hydrologic monitoring. Success criteria will include the demonstration of hydrologic and vegetative enhancement to the wetlands specified for proposed enhancement.

__x__6. Long term maintenance plan. Long-term maintenance will be associated with checking the proposed construction areas (i.e. ditch blocks, sills, culverts, geotextile crossings, etc.) to ensure proper function and no erosion or stabilization problems. Control of nuisance and exotic species will include herbicide management when and where necessary for the wetlands proposed for enhancement.

__x__7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). Refer to Response to Comment E.

ATTACHMENT A

Natural conditions within the subject areas have been significantly altered due to structures such as roads and railway grades which function as levees. Water is impounded or is diverted during periods of high water, altering the natural hydroperiods and flow patterns. Canals, drainage ditches, undersized culverts and culverts set with low inverts have also dewatered systems. Flows are channelized and bypassing occurs due to these alterations as opposed to the natural sheet flow which historically existed through these wetlands. In areas where very minor water elevation differences would be expected between pools which are proximal to each other, differences in excess of a foot have been observed due to blockages and diversions. Lake levels have shown in excess of 9 foot differences between the historic level as observed from indicators on site. Vegetation changes have occurred such as upland species moving into historically wetland areas. Some examples are described below:

- **The Van Fleet Trail** (a former railroad grade) is apparently restricting and diverting some of the high water flows which would otherwise move westward. The elevation of the Van Fleet Trail has been observed to be in excess of 4' above the seasonal high water elevation of adjacent wetlands. For example, in Section 24, water moving westward during periods of high flow must pass through a single concrete culvert approximately 31" wide, and 33" in height, and 48 feet in length. Flow is also restricted 1,000 feet to the west by a 30" corrugated metal pipe embedded in an elevated forest road which surrounds Fender Swamp. Flow is diverted and channelized resulting in bypassing of major areas.

- High water elevations from the **Davis Swamp** pool westward are described as follows: From the east side of the **Van Fleet Trail** (east) to the west side of the Trail, there was a 0.19 feet drop in water level based on lichen lines. From the west side of the Van Fleet Trail westward through a culverted forest road there was an additional drop of 0.87 feet. drop as measured within the **Fender Swamp** pool. The total elevation drop within a distance of 1,000 ft. was 1.06 ft.

- Historic flows westward from the Van Fleet Trail in Section 14 have been blocked by a road on private property which is presently without culverts.

- During the high water event in 94, several hundred acres of marsh and cypress wetlands bordering 1.5 miles of the Van Fleet Trail were somewhat shielded from flood flows due to the elevated grade of the Van Fleet Trail and adjacent forest roads to the west and a lack of culverts in strategic locations. The semi-impounded system west of the Van Fleet Trail had a high **water level 1.25 ft. below that of Davis Swamp**, and within one isolated pool located 600 ft. northwest of Davis Swamp the **water level was 1.44 ft. below that of Davis Swamp**. This is significant in this flat terrain where normal water levels may vary only fractions of a foot from one wetland to another.

- Within less than a mile north of Davis Swamp, along the forest road flanking the east side of the Van Fleet Trail, the high water level was 1/10 ft. lower on the east (Big Prairie) side of the East Railroad Grade.

- During the stronger flow events, some of the water discharged from **Davis Swamp** will bypass the **Van Fleet Trail** and move northward and northeastward, generally east of East Railroad Grade, through swales (6'x 1.75') and as sheet flow through some wooded wetlands and prairies over a span of two miles before connecting with the box culverts on **S.R. 50 (Big Prairie)**. Culverts and ditches are directing waters, east of East Railroad Grade, northward across S.R. 50.

- The wooded floodplain (live oak, swamp laurel oak) of **Davis Swamp** was covered with 1 ft. of water during the last high water event. This implies that a water level close to 95.50' would be expected during a normal wet period.

- In summary, from **Davis Swamp to S.R. 50** there was a drop between the high water marks of 2.26 feet.

- **Fender Swamp** is one of the larger flatwoods, pond cypress basin swamps (262 acres). High water lines were found to be identical both north and south of the south perimeter road of Fender Swamp (NE 1/4 of Section 26). Ditches have both (1) diverted flows and/or (2) caused excessive drainage of Fender Swamp.

- Base flows to **Gidden Lake** have been substantially interrupted. These base flows have been diverted by the Fender Swamp/Gidden Lake drainage canal which extends in a southwest direction from Fender Swamp. Instead of the water being allowed to sheet to the west, it is shunted to the southwest through this large canal toward the Little Withlacoochee. Extended lakebed areas in Gidden are dry and dominated by dog fennel. Limestone features within pooled areas are exposed. On site indicators showed an elevational difference of 9.33 feet between the existing lake level and high water line. While dry seasonal conditions may contribute to lower levels, these dramatic differences emphasize the artificial alterations which have occurred at the site.

- **Goose Pond** has been dewatered.

- **Merit Pond** which is a karst feature is overdrained. A ditch connects Merit pond to Gidden Lake.

- Approximately 150 acres of wetlands including **Goose Pond** have been adversely impacted by the canal which has breached the ridge line in Section 30.

- Revel pond (old borrow pit) recreation site has reduced water flow to it due to channelization of flows.

ATTACHMENT B

Significant hydrological impacts have occurred due to the construction of roads and ditches. By pursuing efforts to plug ditches, install additional culverts, bridges and remove selected secondary roadbeds, restoration of historic drainage patterns and extended wetland hydroperiods would result. Outparcel acquisition would also be pursued as targeted areas would be critical to the rehydration plan. These efforts would significantly benefit fish and wildlife, surface water storage and groundwater recharge. This can all be achieved without any adverse consequences to Forest Management. Restoration efforts would be prioritized to achieve the greatest benefits. Regional changes in groundwater levels and natural cycles are factors which must be taken into account while proceeding with the project activities. It should also be noted that while some specific actions are identified, a more detailed study of the areas hydrology would be pursued which may modify some of these proposals (such as size, type and location of structures to be installed). A drainage study has been included in the budget. Some examples of activity areas are identified below:

- **Van Fleet Trail-**This would be one of the primary project areas as the Van Fleet trail functions as one of the limiting factors in allowing water through this vast causeway. Additional culverts are recommended for the Van Fleet Trail. in Sections 24 and 14. A more detailed study of the areas hydrology would be implemented to determine the size, location and type of cross drains to be constructed. It would be anticipated that larger box culverts (3' x 6') may be required in major conveyance areas. If additional culverts were constructed at the Van Fleet Trail and within the forest roads, some of the **Davis Swamp** flow could flow northward and westward into the wetlands bordering the west side of the Van fleet Trail.

- The course of action recommended for **Fender Swamp** is to add inflow and outflow culverts from the southeast to the southwest of the swamp, to place several ditch blocks in the Fender Swamp outfall canal, and to install additional culverts in Canal Grade Road to restore flows to the west. In Section 24, two 30 inch culverts are needed west of the Van Fleet Trail. The first culvert would be installed in the East Railroad Grade and the second culvert would be installed through the south end of Front Pasture Grade. This would allow improved flows into Fender Swamp and allow the wetlands in Sections 14, 23 and 24 west of the Van Fleet Trail to exchange waters.

- Several 24 inch culverts are recommended along the south and southwest sides of **Fender Swamp.** Two 24 inch culverts should be placed immediately at the southwest corner of **Fender Swamp**. Four 24 inch culverts are proposed for wetland crossing located east of Canal Grade. For the present time and for the foreseeable future the culvert beneath Buzzard Roost Road connecting Fender Swamp to the Fender Swamp Canal along Canal Grade Road can remain in place, even though the canal is scheduled to be plugged approximately 60 feet to the south. The existing culvert could still function to convey waters in ditches cut parallel to the road which tie into established wetlands.

- Approximately 8 ditch blocks may be required on the **Fender Swamp** canal in Sections 26, 27 and 34 (Canal Grade). Several 24 inch culverts need to be replaced and (4) 30 inch culverts need to be installed on Canal Grade in the southeast corner of Section 27.

- **Gidden Lake and wetland complex**: Selectively plug the drainage canal along the east side of Canal Grade Road to improve flows to Gidden Lake and install additional culverts at the appropriate locations to restore more natural drainage to Gidden Lake. There is a natural outlet to Gidden Lake which will be left intact. Flows redirected to Gidden Lake will be monitored.

- **Section 14 and Merritt Pond:** A closer examination of Section 14 is needed to resolve the impact of a private road which is functioning as a levee. Negotiations with private land owners can result in restoration of flows to forest lands in the Merritt Pond area. Some localized flooding should also be

reduced if drainage is restored to the west. An overflow in an old road bed, local topography and excessive drainage to the west clearly indicates westerly flows need to be restored.

- **Merit Pond**: Potential of installing a control structure between the canal connecting Merit Pond and Gidden Lake.

- **Goose Pond:** Ditch blocks would be constructed to restore hydroperiod.

- Section 26 and Southwest of Fender Swamp: Removal of fill roadway to restore natural grade.

- Northwest corner of Fender Swamp-Creation of a ponded area within an existing spoil site.

- Several Geoweb crossings will be installed along main crossings such as canal grade where there are currently insufficient culvert crossings. This would allow for sheet flow across currently restricted areas.

- Swale checks/blocks would be installed at locations to maintain natural flow patterns and preclude or reduce the current diversion and channelization of water. These ditches may then be used as feeter/dispersion ditches with correct elevations applied to these ditch blocks.

- Construction of sills around altered wetlands to restore hydroperiods.

- **Revel Pond:** An existing culvert is set approximately ½ foot below the existing wetland grade. Alteration of the culvert invert elevation would reduce dewatering effects. Construction of a sill on west side of the pond to reduce overdrainage would enhance this system.

- Additional studies would be required prior to implementing culvert installations along the East Railroad Grade east of the Van Fleet Trail since the culverts could simply increase drainage of the wetlands eastward into wetlands already ditched and drained northward into Big Prairie and from the Little Withlacoochee River.

Land Acquisition and Preservation: less than Fee simple title transfer of outparcel areas would be pursued. Properties may also be encumbered with conservation easements.

Some of the major components of the Baird Tract wetland restoration project will include the following areas. The restoration efforts will primarily consist of ditch blocks, culverts and geoweb crossings within these systems to promote sheet flow and eliminate channelization and diversion. It is expected that significantly greater acreages of wetlands will actually receive benefits from these activities. The following are estimates of direct wetland enhancement which would be expected to occur through restoration efforts.

Sally Slough
Approximately 303 acres of wetland enhancement via the installation of ditch blocks and culverts. Wetlands consist of cypress, mixed wetland forest, hardwood forested wetlands. Land use codes included in enhancement area: 6300, 6150, 6210

Fender Swamp
Approximately 240 acres of wetland enhancemnt via culvert installations. Wetlands consist of cypress and herbaceous wetlands. Land use codes included in enhancement area: 6210, 6400

Gidden Lake
Approximately 422 acres of wetlands to be enhanced. Dewatered marsh adjacent cypress wetlands and hardwood forested wetlands will be enhanced. Land use codes included in enhancement areas: 6410, 6150, 6210

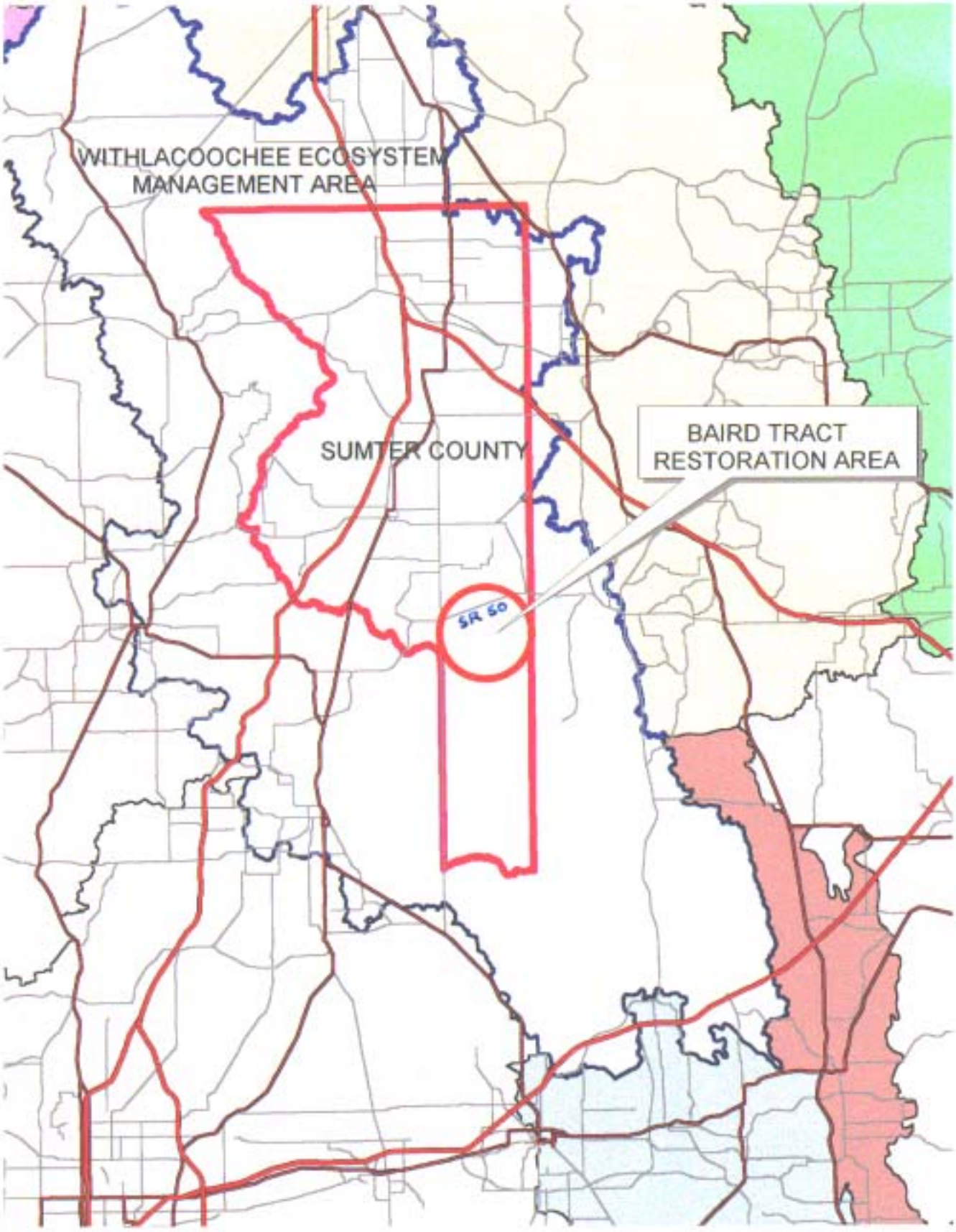
Merrit Pond
Approximately 185 acres of marsh will be enhanced, including openwater areas. Enhancement will include the blocking of the ditch draining from Merrit Pond into Gidden lake. Land use codes included in ehnancement areas: 6430, 6440, 6410, 6150

Van Fleet Trail
Approximately 316 acres of wetlands will be directly enhanced via the construction of culverts. Land use codes included in enhancement areas: 6410, 6200

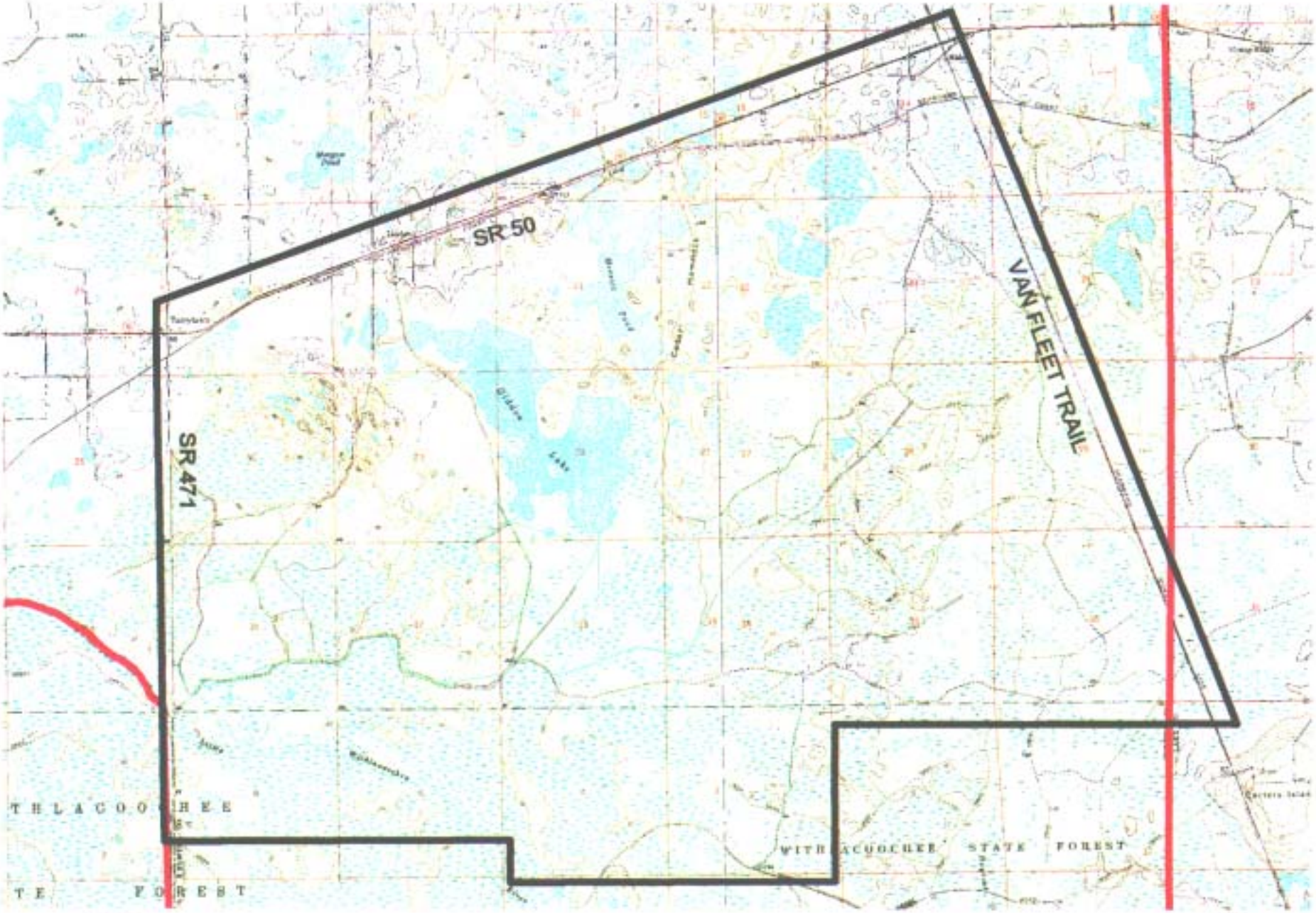
***Canal Grade**
Approximately 422 acres of wetlands will be directly enhanced via the installation of ditch blocks, geoweb and culverts. Land use codes included in enhancement areas: 6210, 6430, 6300, 6410
*(A Federal Grant has been applied for and received by the Department for this area. This area will not be included within this plan)

Goose Pond
Approximately 52 acres of wetlands will be directly enhanced. Land use codes in enhancement areas: 6430, 6210

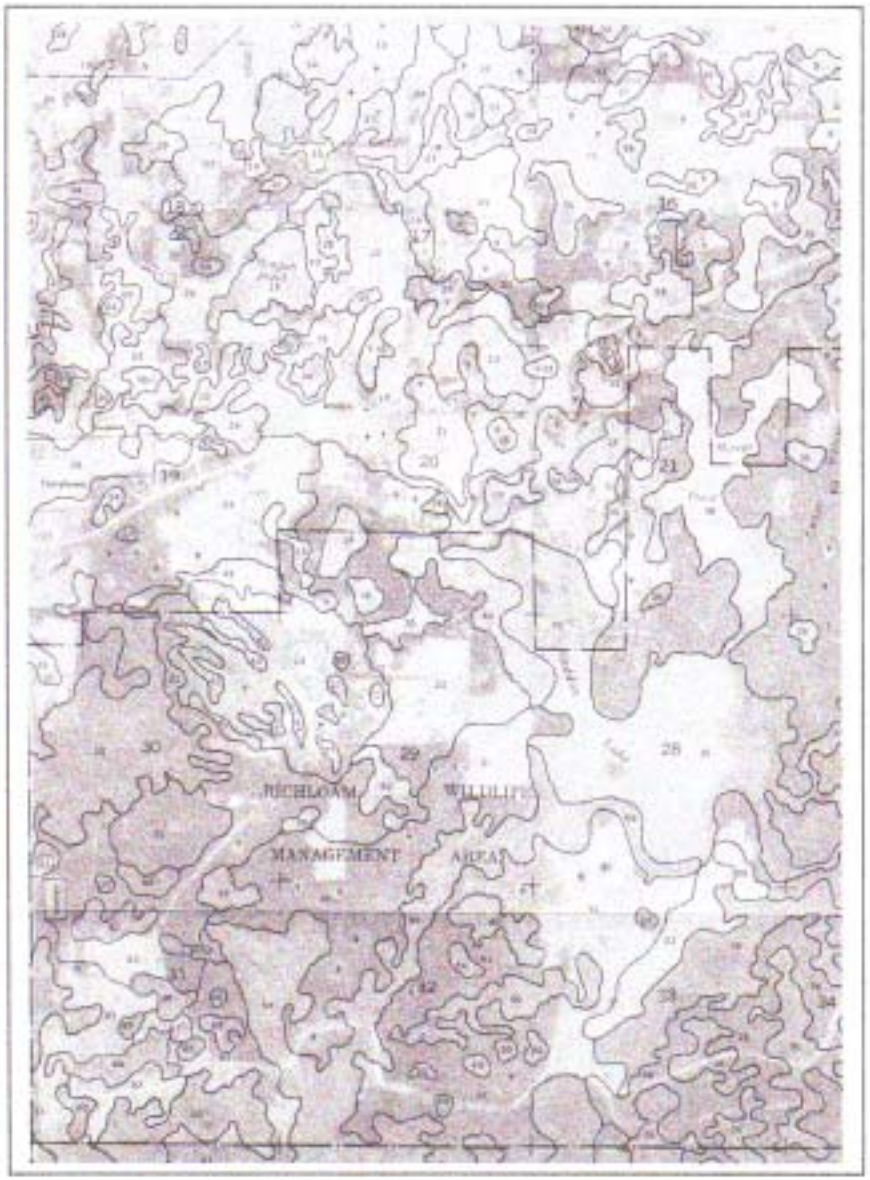
ATTACHMENT 1

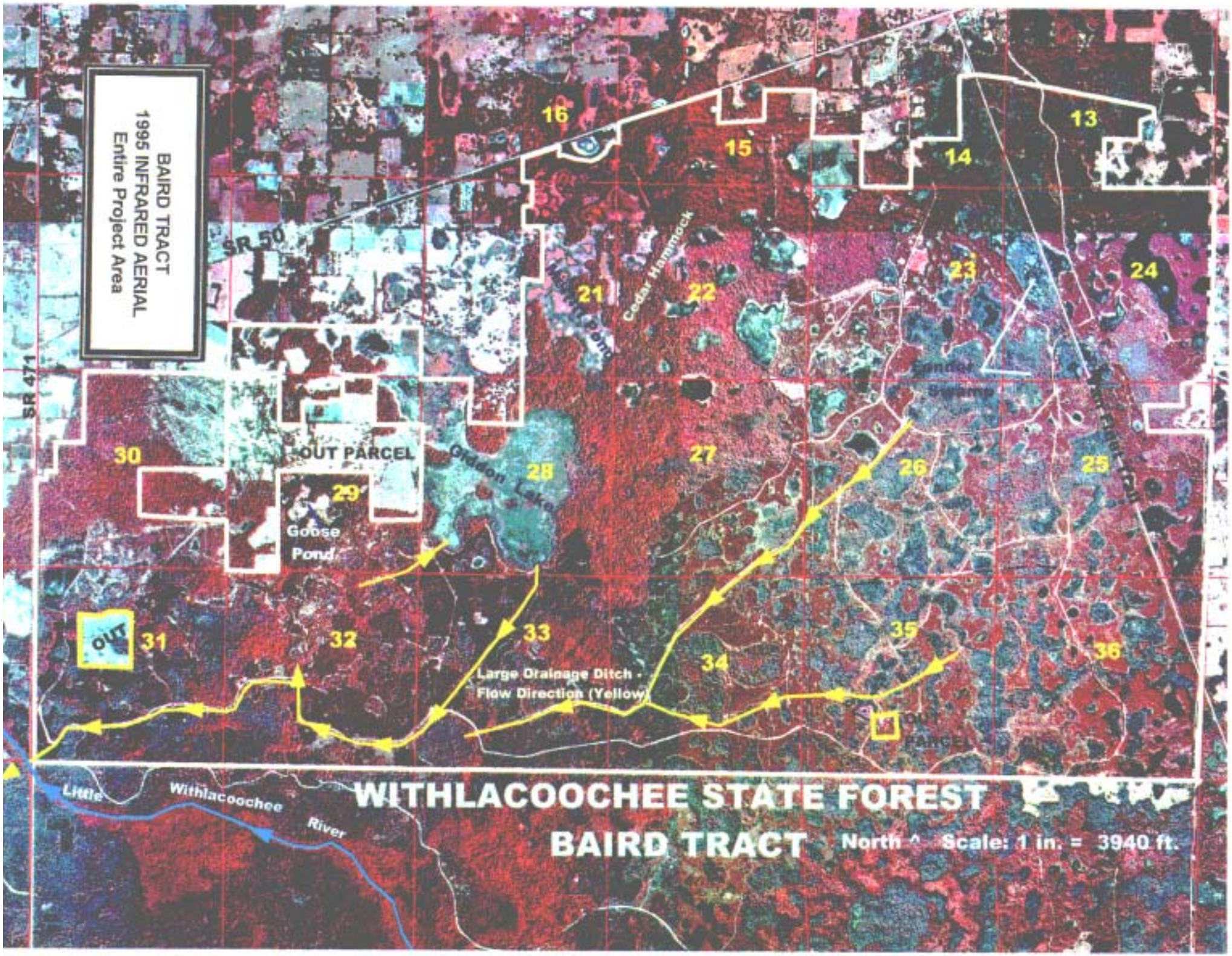


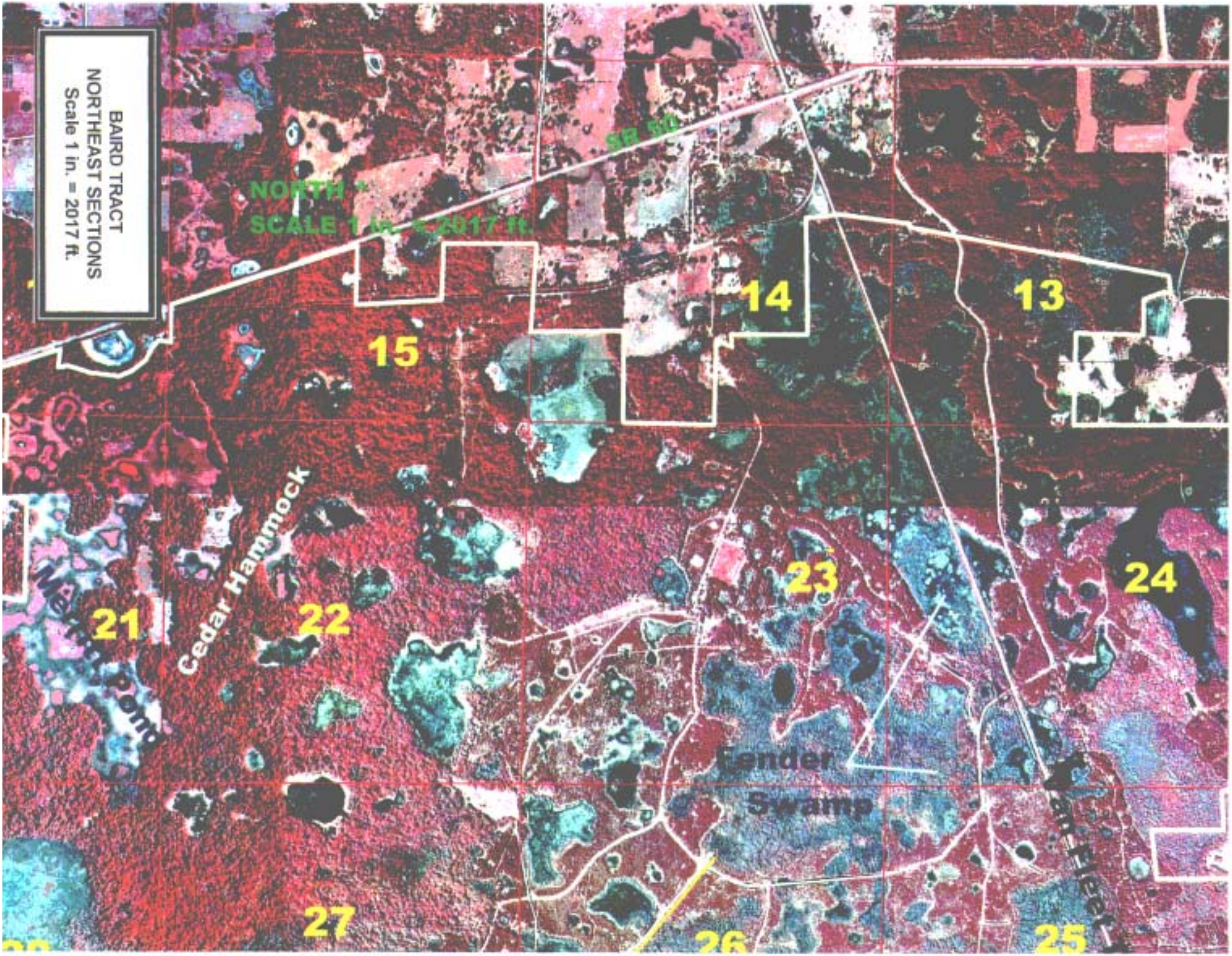
ATTACHMENT 4

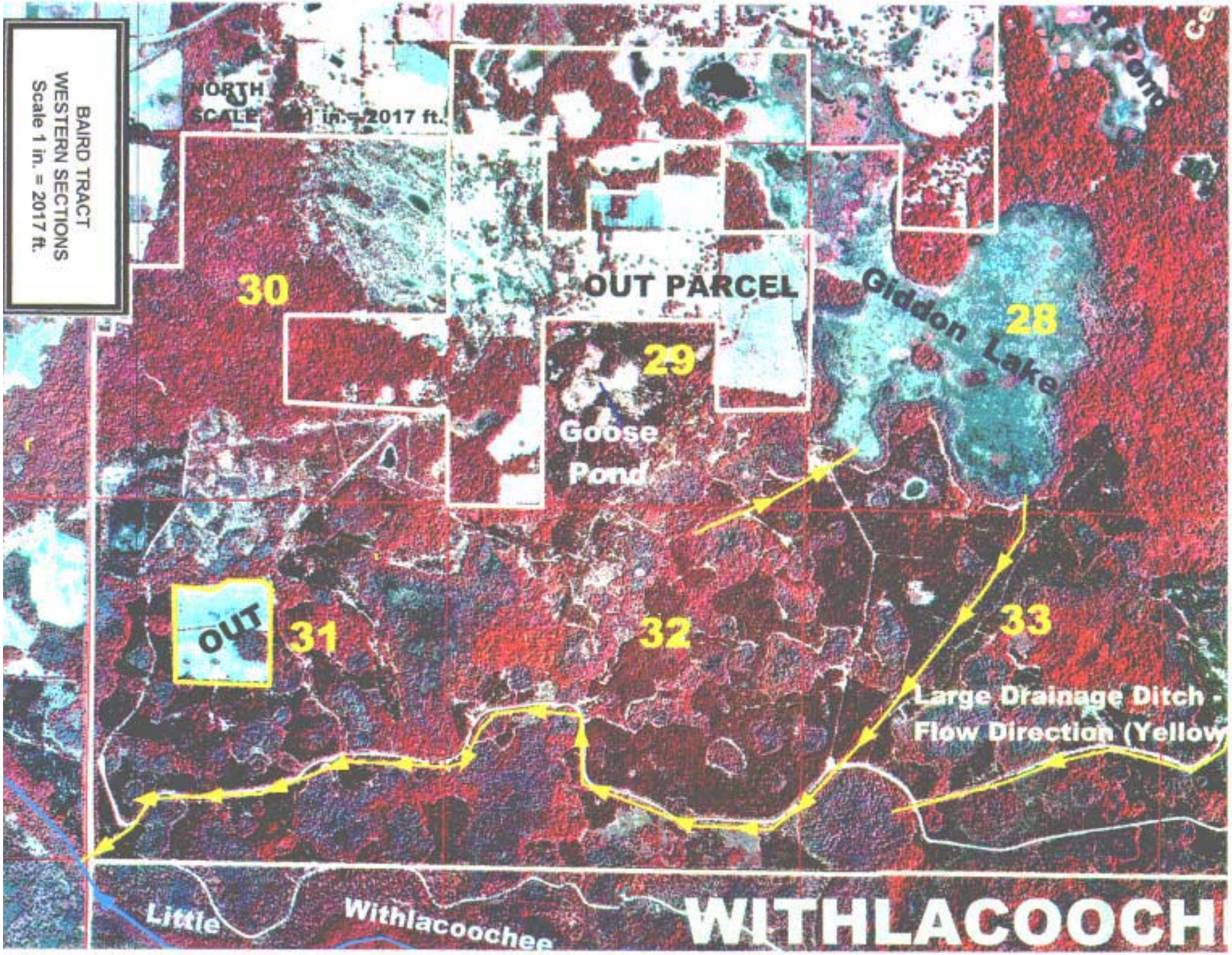


BAIRD TRACT
Natural Resource Conservation Survey November 1988

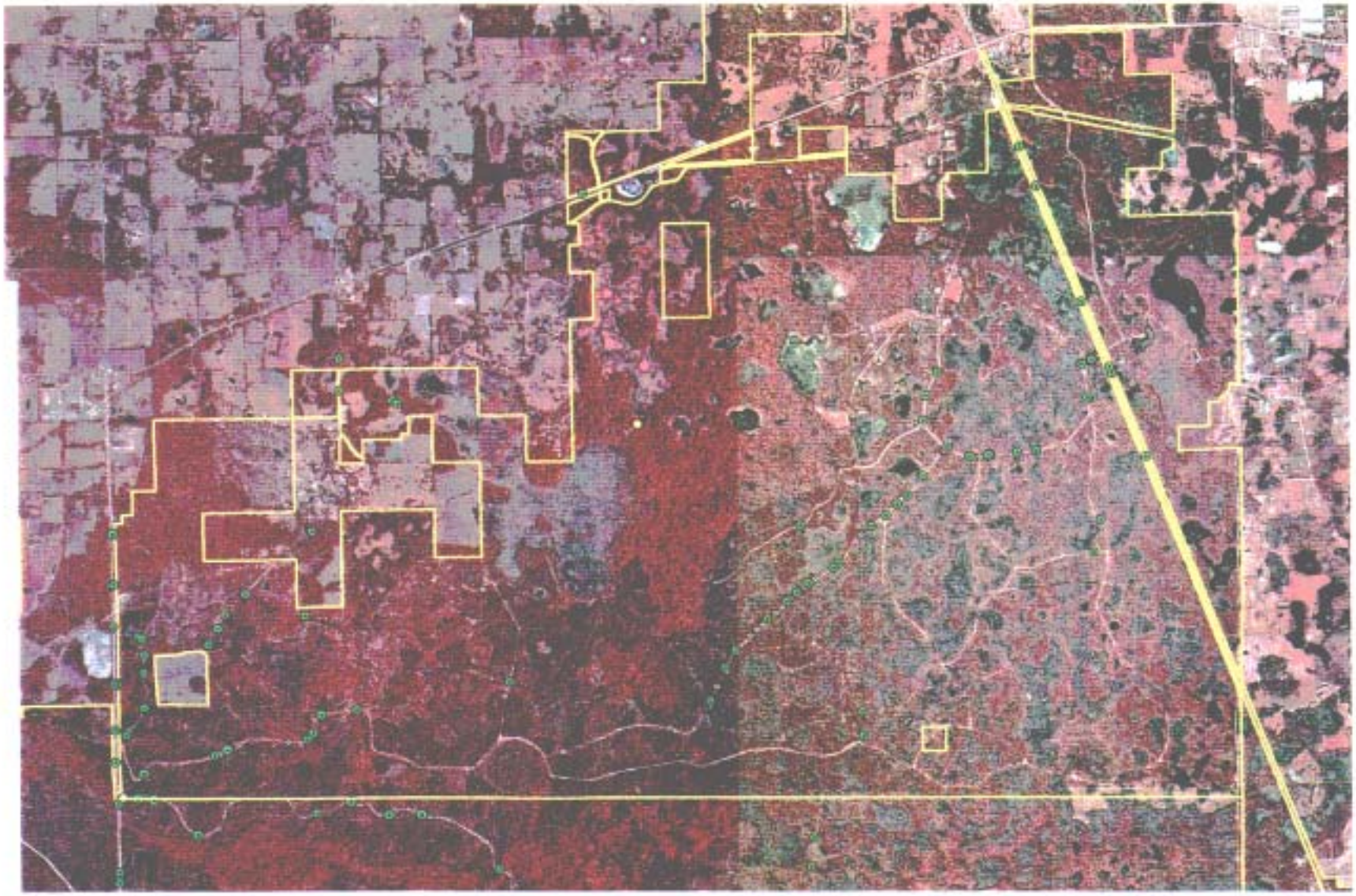



BAIRD TRACT
1995 INFRARED AERIAL
Entire Project Area
SR 50
SR 471
16
15
14
13
21
22
23
24
30
29
28
27
26
25
31
32
33
34
35
36
OUT PARCEL
Gobse Pond
Gideon Lake
Cedar Hammock
Large Drainage Ditch - Flow Direction (Yellow)
Little Withlacoochee River
WITHLACOOCHEE STATE FOREST
BAIRD TRACT
North ^ Scale: 1 in. = 3940 ft.


BAIRD TRACT
NORTHEAST SECTIONS
Scale 1 in. = 2017 ft.
NORTH ↑
SCALE 1 in. = 2017 ft.
SR 50
14
13
15
Cedar Hammock
21
22
23
24
Fender
Swamp
27
26
25


BAIRD TRACT
WESTERN SECTIONS
Scale 1 in. = 2017 ft.
NORTH
SCALE 1 in. = 2017 ft.
OUT PARCEL
30
29
28
Giddon Lake
Goose
Pond
OUT
31
32
33
Large Drainage Ditch -
Flow Direction (Yellow
Little
Withlacoochee
WITHLACOOCH


BAIRD TRACT
SOUTHEAST SECTIONS
Scale 1 in. = 2017 ft.
Sander
Swamp
27
26
25
35
36
34
OUT
PARCEL
DCHEE STATE FOREST



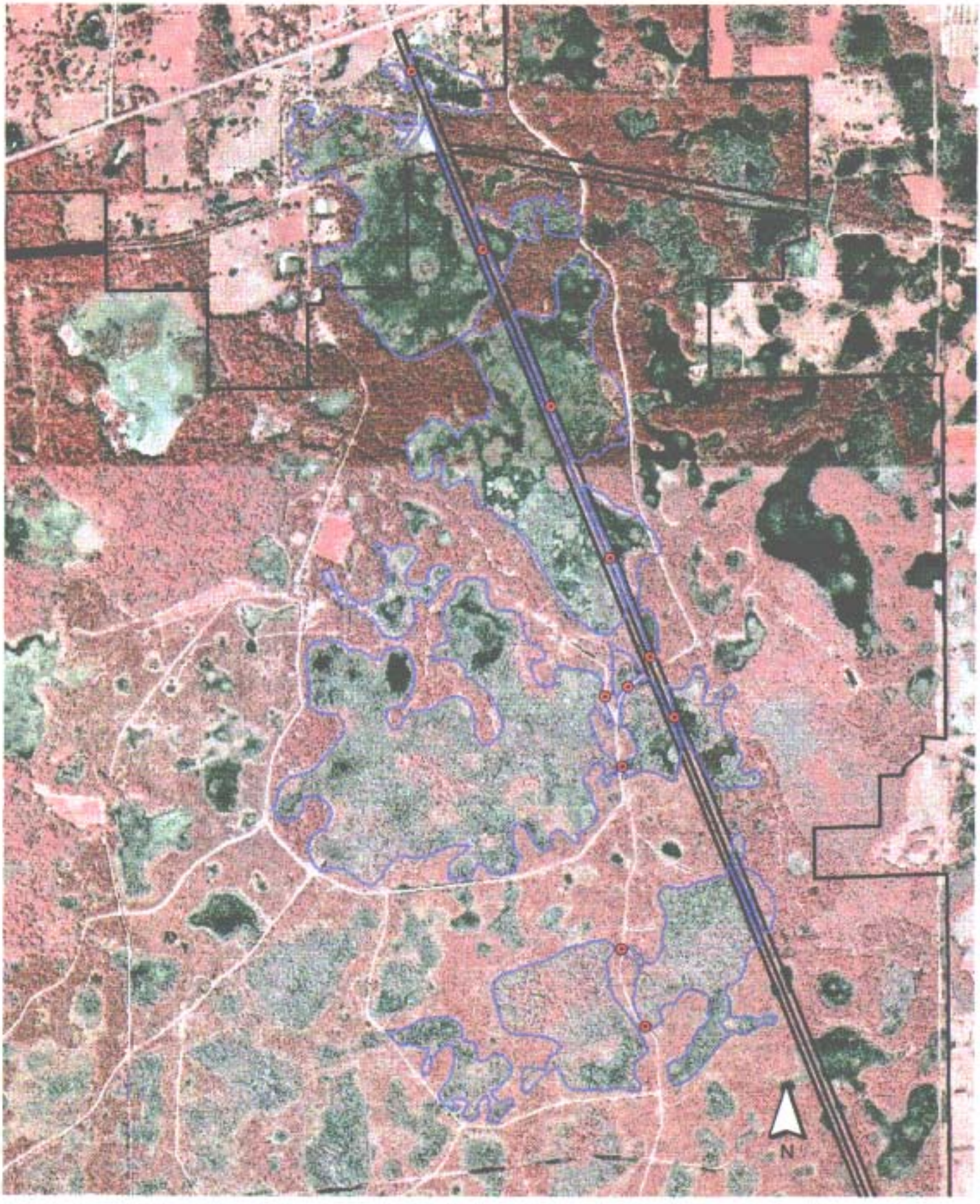
Overall Project Area W/Structures

Gidden Lake, Goose Pond, Merritt Pond
Restoration Area

N

700 0 700 1400 Feet

Gidden Lake-422 acres
Merritt Pond-185 acres
Goose Pond-10 acres



Van Fleet Trail/Fender Swamp Enhancement Area

1000 0 1000 2000 Feet

Proposed/Upgraded Structures

Enhancement Area 672 Acres

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management District
Mitigation Project Name: **Rutland Ranch – South Tract** Project Number: **SW 65**
Project Manager: Mark Brown, SWFWMD Environmental Scientist Phone No: (352) 796 – 7211 (ext. 4488)
County: Manatee

IMPACT INFORMATION

1 - FM: 1960222, SR 64, I-75 to Lena Rd. (Seg. 1)	ERP #:4302058.009	COE #: 199901379 (IP-KI)
2 - FM: 1960223, SR 64, Lena to Lakewood (Seg. 2)	ERP #:_____	COE #:_____
3 - FM: 1961211, SR 70, I-75 to Lakewood Ranch (Seg. 1)	ERP #:_____	COE #:_____
4 - FM: 4043232, SR 70, Lakewood to Lorraine Rd. (Seg. 2)	ERP #:_____	COE #:_____

Drainage Basin: Manatee River Water Body: Gates Creek, Manatee River SWIM water body? N

SR 64 Projects (4.38 acres)

1 (Seg. 1) – 0.68 ac. 617 (Fluccs)
1.29 ac. 640 (Fluccs)
0.80 ac. 641 (Fluccs)
TOTAL 2.42 acres

2 (Seg. 2) - 0.74 ac. 630 (Fluccs)
1.20 ac. 641 (Fluccs)
TOTAL 1.94 acres

SR 70 Projects (7.67 acres)

3 (Seg. 1) - 0.42 ac. 510 (Fluccs)
0.92 ac. 640 (Fluccs)
0.90 ac. 641x (Fluccs)
TOTAL 2.24 acres

4 (Seg. 2) - 2.08 ac. 615 (Fluccs)
1.25 ac. 631 (Fluccs)
1.54 ac. 640 (Fluccs)
TOTAL 4.87 acres

TOTAL 11. 47 Acres

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: X Enhancement X Restoration (Upland & Wetland Habitat) Mitigation : **115 ac.**
SWIM project? N Aquatic Plant Control project? N Exotic Plant Control Project? N
Mitigation Bank? N Drainage Basin(s): Manatee River Water Body: None SWIM water body? N

Project Description

A. **Overall project goal:** Over half of the Rutland Ranch – South Tract (total 900 acres) was historically used for row crop farming (Figure C). The site has 15 wetland areas, all but one were historically isolated marshes. The majority of these marshes have been interconnected with large ditches which have substantially altered the wetland hydrology and vegetative composition. The restoration includes completely filling some of those ditches and using ditch blocks in other areas to restore ground and surface water hydrology and subsequently enhance the wetland habitat. Upland buffers and filled ditches will also be planted to enhance upland & wetland habitat and corridors between the marshes within the pasture.

B. Brief description of current condition: The upland interior of the South Tract was historically flatwoods and palmetto prairie that was converted to row crop farming. The row crops were replaced with improved pasture (bermuda & bahia grass) that was subsequently allowed to go fallow, resulting in substantial generation of salt-bush, broomsedge, and dog fennel. The hydrology of the marshes were substantially altered by the deep cross and connector ditches, allowing broomsedge to heavily invade the marshes (photos). The western one-third portion of the tract is still covered with a palmetto prairie with scattered shallow marshes that have also been impacted by ditches. A mixed forested wetland tributary to Gilley Creek is located along the northern boundary. (Refer to Attachment A for details of existing and proposed conditions).

Mitigation Project – Rutland Ranch, Page 2

C. Brief description of proposed work: Initial effort included herbicide treatment of exotics and nuisance species within the ditches. Followed by construction activity to backfill the majority of the ditches (some ditchblocks) in order to restore groundwater and surficial hydrology of the majority of on-site wetlands. Supplemental herb planting was conducted in the exposed earthwork areas of those wetlands where the spoil was cut to backfill the ditches (refer to site photos). The existing upland buffers around Wetlands 1-4 and 12 had longleaf pine planted to increase buffer habitat. Native seed will be collected from upland habitat and dispersal within backfilled upland-cut ditches within the palmetto prairie (fall, 2003). Refer to Attachment A for additional information and Figure C for the mitigation plan design. Construction and planting activities were conducted in the spring and summer, 2002.

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): The anticipated FDOT wetland impacts (total 11.47 acres) includes 6.82 acres of non-forested and 4.75 acres of forested wetlands. The proposed mitigation plan will result in wetland enhancement (75 acres) from the hydrologic restoration, wetland restoration from grading the spoil material to historic wetland grade elevations and planting (5 acres), upland habitat restoration from grading ditches in the palmetto prairie (10 acres), upland habitat enhancement and restoration around Wetlands 1-4 and 12 (25 acres) which will establish and maintain upland habitat corridors. This results in a cumulative mitigation acreage of 115 acres to mitigate for the 11.47 acres (10-to-1 ratio). Detailed description of the mitigation ratios for each DOT impact is described under Attachment C.

E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: There are no existing mitigation banks within the Manatee River Basin.

F. Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body : The only SWIM project in this basin is Terra Ceia (SW50). The Terra Ceia project includes restoration and enhancement of salt-water and estuarine habitat, and is mitigating for salt-water wetland impacts associated with one DOT project to date (2003).

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: SWFWMD – Operations Dept.

Contact Name: Mark Brown, SWFWMD Environmental Scientist Phone Number: 352-796-7211, ext. 4488

Entity responsible for monitoring and maintenance: SWFWMD

Proposed timeframe for implementation: Commence: Hydrologic Monitoring, Spring – 2001 Complete: Const., Spring, 2002, followed by minimum 3 years of monitoring

Project cost: $ 171,000 (total);

$1,000	Herbicide Ditches
$120,000	Construction (Backfill Ditches)
$30,000	Planting (Wetland Herbs, Upland Seed Collection & Dispersal, Pine Tree Planting)
$20,000	Maintenance (Herbicide) & Monitoring (3 Years – Annual Reports)

Mitigation Project – Rutland Ranch, Page 3

Attachments

X 1. Detailed description of existing site and proposed work. Refer to Attachment A – Existing Site & Proposed Work

X 2. Recent aerial photograph with date and scale. Refer to Figure B (Vicinity Aerial) and Figure C (Site Aerial)

X 3. Location map and design drawings of existing and proposed conditions. Refer to Figure A (Location Map) & Figure C has the ditch backfill, ditchblock, & pond locations.

X 4. Detailed schedule for work implementation, including any and all phases. Attachment B – Work Schedule

X 5. Proposed success criteria and associated monitoring plan. Attachment C – Maintenance & Monitoring Plan

X 6. Long term maintenance plan. Figure E -Monitoring Plan & Attachment C – Maintenance & Monitoring Plan

X 7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). Refer to previous discussion to Comment D and Attachment D.

Attachment A – Existing & Proposed Site Conditions

The SWFWMD purchased the Rutland Ranch property in 1998 for a few major reasons. The tract is located within the Southern Water Use Caution Area (SWUCA), a designated area where groundwater resources are at critical levels that require limitations of water well withdrawals. The property provides contributing surface and ground water to the Manatee River and Lake Manatee. Located less than a mile south of the tract, the river and reservoir provide potable water to Manatee County. Land use changes from row crops to less intensive agricultural operations such as cattle (South Tract) and silviculture (North Tract) not only place less stain on consumptive use (water quantity) but results in less nutrients (water quality) that contribute to the watershed and the Manatee River. The SWFWMD and Manatee County are striving toward additional land acquisition and habitat restoration opportunities in the Lake Manatee watershed.

The SWFWMD is currently committed to minimal long-term cattle grazing on the existing pasture within the Rutland Ranch-South Tract. However, the activities associated with this mitigation plan will substantially lessen any associated impacts from cattle, enhance wetland habitat, improve water quality, retain surface water for groundwater recharge, and increase the habitat opportunities for wildlife. The following information pertains to major pre-construction site characteristics and improvements to the site. Refer to Figure C for aerial depiction and the site photographs to relate with the text.

Native Range - The native range designation pertains to the palmetto prairie within the eastern one-third of the site, pine flatwoods within the northeast quadrant near the floodplain forested wetland (Wetland 15), and within the southeast corner (surrounding Wetlands 13, 14). The vegetation of these prairies include a dominance by saw palmetto, broomsedge, and wiregrass. Ditches excessively drain surface and ground water conditions from the uplands and the majority of wetland marshes (particularly Wetlands 5 & 6 but also 7-11, and 13) located within the prairies. These marshes are shallow systems, with dominant cover of maidencane and relatively high percentage of St. John's-wort. Drainage ditch patterns lead northwest, west, south, and southeast to tributaries of Gilley Creek and the Manatee River.

The original construction plan proposed utilizing a dominance of ditch blocks within the western ditches and, where necessary, total ditch backfilling to enhance the hydrology of these shallow marshes. Upon evaluation it was determined that ditch blocks alone could not detain the substantial volume of groundwater drawdown caused by the deep ditches located adjacent to Wetlands 7-9, so total backfill of those ditch segments were conducted during July, 2002. In addition, total filling was conducted for the ditch segment crossing through Wetland 5 and a portion of Wetland 6. However, in order to protect existing trees and shrubs generated on the spoil while restoring hydrology in Wetland 6, the construction of ditch blocks were employed. The ditch block method also allows an open water source for wildlife during the dry season.

Temporary vegetation has been established due to millet seeding within the filled ditch segments. Many large scattered oaks, pines, and myrtles were preserved from the backfilling activity. Native seed transfer will be conducted in the fall, 2003 to supplement the natural recruitment of wiregrass and palmetto that will occur in the filled upland ditches. This will result in **10 acres of upland habitat (palmetto prairie) restoration** to replace the ditches and adjacent spoil material.

Improved Pasture – As of the summer, 2002, the improved pasture had been fallow for a couple years, allowing salt-bush and fennel to become prolific over the bahia and bermuda. A new cattle lease commenced late 2002, and the rancher will reseed bahia in the pastures. In order to minimize cattle use of the marshes for a water source, three large cattle ponds were dredged in the pastures (Fig. C). The excavated material was used to backfill ditches. The lease requires the exclusion of cattle from the palmetto prairies.

The existing upland habitat buffer (average width – 50 ft.) around Wetlands 1-4 and 12 will be maintained under existing conditions as part of the cattle lease. Supplemental plantings (1 gallon – 1000 longleaf pines) were planted within these palmetto buffers around Wetlands 1-4 and 12. An average 50 ft. wide upland corridor of native habitat has been enhanced between Wetlands 3, 4, and 12. Existing palmetto, pines, and myrtles located on spoil material within this corridor were preserved from the construction activity necessary to fill the adjacent ditches. Supplemental trees and native seed dispersal has replaced the deep ditches with desirable upland vegetation, resulting in **3 acres of upland habitat (pine flatwood) restoration** to replace the ditches. In addition, tree planting and introduction of prescribed burn management will provide enhancement of the upland buffers around Wetlands 1-3, resulting in **12 acres of upland habitat (pine flatwood) enhancement**. The upland buffers of Wetlands 4 and 12 are also being enhanced with planting and fire management, providing an additional **10 acres of upland habitat (pine flatwood) enhancement**. All the palmetto prairies, pine flatwoods, and wetland buffers will be incorporated into a prescribed burn management plan that will further enhance and maintain these upland habitats for wildlife use. The burn plan will be incorporated on a +/- 5 year cycle, pending growth rate of vegetation.

There is evidence that the removal of the large upland ditches have allowed substantial wildlife movement, including large deer, to travel through the buffer cover from the Gilley Creek tributary north of the site (Wetland 15) all the way to the forested ditch south of the property (Fig. C). The proposed corridors and low cattle stocking rates will allow wildlife to roam and forage throughout the tract.

Marshes – The majority of the marshes were bisected by drainage ditches. The smaller wetland cross ditches in Wetlands 2,14, and perimeter of Wetland 12 averaged 10-15 ft. wide, 2-3 ft. deep, and connected to moderate size drainage ditches that were 20-25 ft. wide, 5-8 ft. deep from natural grade elevations. The large drainage ditches such as through the center of Wetland 12 and east-west connecting ditch to Wetland 4 were 25-30 ft. wide, 6-8 ft. deep from top-of-bank. With the gradual size increase as the ditches proceed downstream and positive hydraulic gradient, they were capable of conveying a large volume of water off-site. These ditches not only drained surface water after rain events, but substantially dewatered the shallow groundwater table. Prior to construction, the marshes had very minimal duration and depth of surface water (hydroperiods) due to the ditches. This resulted in substantial alterations in the vegetative components of these wetlands. The marshes transitioned from maidencane-dominated systems to upland and facultative vegetative species such as broomsedge (*Andropogon virginicus* dominant, some *Andropogon glomeratus*). The most extensively ditched marsh was Wetland 12, which had few relic indicators of wetland functions and characteristics. Remnant pockets of maidencane within the cross-ditches were present due to intermittent periods of surface water drainage to the large interior collector ditch. Along with the broomsedge, other upland species that recruited into the marsh include gallberry, wax myrtle, and scattered pine.

The following wetland types and acreage are located on the South Tract. The wetlands proposed for enhancement include hydrologic restoration (HR) for the most impacted systems, hydrologic enhancement (HE) for the less disturbed systems, and minimally improved wetlands (MI) are not accounted for with mitigation credits.

Wet. 1 - marsh – 1.0 acres (HR)	Wet. 9 – marsh – 2.2 acres (HR)
Wet. 2 - marsh – 9.2 acres (HR)	Wet. 10 – marsh – 1.9 acres (MI)
Wet. 3 - marsh – 0.9 acres (HR)	Wet. 11 – marsh – 4.1 acres (HR)
Wet. 4 – marsh – 11.4 acres (HR)	Wet. 12 – marsh – 21.3 acres (HR)
Wet. 5 – marsh – 2.1 acres (HR)	Wet. 13 – marsh – 11.4 acres (MI)
Wet. 6 – marsh – 21.6 acres (HR)	Wet. 14 – marsh – 0.5 acres (MI)
Wet. 7 – marsh – 0.9 acres (HE)	Wet. 15 – mix forest – 19.5 acres (MI)
Wet. 8 – marsh – 2.1 acres (MI)	

TOTALS – Wetland Enhancement - 75 acres (total 110 wetland acres)

There are five wetlands that had spoil ridges as a result of constructed ditches. These spoil areas were covered with bahiagrass and saltbush. Once these spoil areas were graded to fill the adjacent ditches, supplemental herb plantings were conducted within these earthwork areas. An older spoil ridge through the middle of Wetland 12 is covered with oak trees and was not impacted by the construction activities. Subsequent to the hydrologic restoration, many of these oaks have not survived which has provided good snags for wading bird nesting and roosting opportunities. The graded spoil ridges were accounted as wetland restoration as follows:

Wet. 2 – 0.6 acre, Wet. 4 – 0.1 acre, Wetland 5 – 0.4 acre, Wetland 6 – 0.4 acre, Wetland 12 – 3.6 acres

TOTALS – Wetland Restoration - 5 acres

Hydrologic restoration and enhancement of the marshes have resulted in the enhancement of other wetland functions and attributes. Vegetative shifts are transitioning to more desirable and appropriate wetland species which have provided foraging opportunities for wildlife. Prior to construction, most of the marshes had so limited hydroperiods that they transitioned to vegetative characteristics more indicative of abandoned fallow fields (particularly Wetland 12), with minimal wildlife food resources. Opportunities for foraging wading birds were primarily limited to the few, small isolated marshes within the western palmetto prairie. Water and aquatic food resources within the pasture area were primarily limited to high nutrient ditch water. Restoring the wetlands into isolated systems has increased the water quality treatment opportunities compared to the existing drainage ditches that directly discharge into a nearby potable water source. Retaining surface water on-site will result in soil infiltration that will also improve water quality and groundwater recharge.

By restoring marsh hydrology, the gradual regeneration and recruitment of maidencane and other desirable hydrophytic vegetation will continue to improve the ecological balance of upland habitat with appropriate wetland habitat value. With the segregated habitat between Wetlands 3, 4, and 12, there wasn't a contiguous corridor of native habitat through the improved pasture. The re-established corridor for wildlife use won't conflict or restrict cattle mobility and grazing. The combination of the marsh restoration, existing native habitat, and the proposed upland corridor will attract and increase the wildlife opportunities across the property.

Attachment B – Work Schedule

Evaluation of habitat conditions and proposed improvements were conducted in 2001. Five monitor stations (Fig. C) were designated based on anticipated habitat improvement areas and monitor wells (70 inches deep) were installed to mark the locations. Herbicide treatment of exotic and nuisance species was conducted within the ditches during early, 2002 to allow sufficient period for vegetative mortality before conducting earthwork activities.

Construction commenced during the spring, 2002 and since there was no standing water in the deep ditches dredged through the central wetlands (Wetlands 2,4,12), there was no need to utilize pumps for temporary dewatering. A portion of the spoil within the core of Wetland 4 was not removed since it now provides an excellent upland island for wildlife use, particularly wading birds utilizing the island for secure resting and nesting. The remnant water hole adjacent to the spoil has a substantial frog population.

Construction sequence commenced north to south through the headwater ditches of the pasture wetlands, followed by the ditches within the palmetto prairie. As depicted in the photos, in less than a month, the combination of filling the ditches and receiving normal rainy season rainfall resulted in the groundwater tables rising from 70 inches below grade to the desired hydrologic range of 6-24 inches of surface water in the various marshes; more shallow in Wetlands 1-3,5,6,9, moderate levels in Wetlands 11 and 12, and deeper levels in Wetland 4. As the surface water levels increased, there has been a natural regeneration of maidencane along with supplemental plantings (37,000 units) of soft rush (shallow marshes), pickerelweed, arrowhead, and bulrush. In addition, 1000 longleaf pine saplings were planted within the upland buffers of Wetlands 1-4 & 12.

A wildlife seed mix and millet seed was placed in the graded upland areas to provide temporary vegetative cover. Upland native seed material will be collected from a WMD donor site in the fall of 2003 and disced into the filled upland ditch graded areas within the palmetto prairie.

Attachment C – Maintenance & Monitoring Plan, Success Criteria

Pre-construction monitoring has been conducted to document pre-existing marsh conditions (hydrology, vegetative coverage & diversity, wildlife use) exhibited in the summer, 2001 and winter, 2002 periods. This information will be used as baseline data to evaluate the anticipated hydrologic and vegetative restoration as a result of the earthwork activities. Qualitative monitoring and photographic documentation of vegetative, hydrologic, and wildlife conditions for the various proposed marsh enhancement areas will be conducted for the minimum three years post-construction. Figure C depicts monitoring stations for qualitative evaluation, and hydrologic monitoring stations. Qualitative evaluation will include vegetative, hydrologic, and wildlife use of the enhanced wetlands and uplands. Documentation of the two semi-annual monitoring events will be combined each year to produce an annual monitoring report to be submitted to the USACOE and SWFWMD. The anticipated maintenance activity will include herbicide control of all exotic and nuisance vegetation in the wetlands and periodic implementation of prescribed burn management.

Success criteria will be based on several conditions. The primary criteria include the demonstration of appropriate hydroperiods for the enhanced wetlands, with particular documentation for the more extensive dewatered wetlands (Wetlands 2, 4, 5, 6, 11, and the most damaged, Wetland 12). Success criteria requires 90% survivorship of planted stock, less than 10% coverage of exotic and nuisance species, and a minimum 85% coverage of desirable species (including existing, regenerated, recruited, and any planted material) within the enhanced and restored marshes. Shifts in vegetative cover and diversity will be noted in the monitoring reports, but specific success criteria for species transition are not proposed since the majority of those changes will naturally occur over a 10-20 year period.

Attachment D – FDOT Mitigation

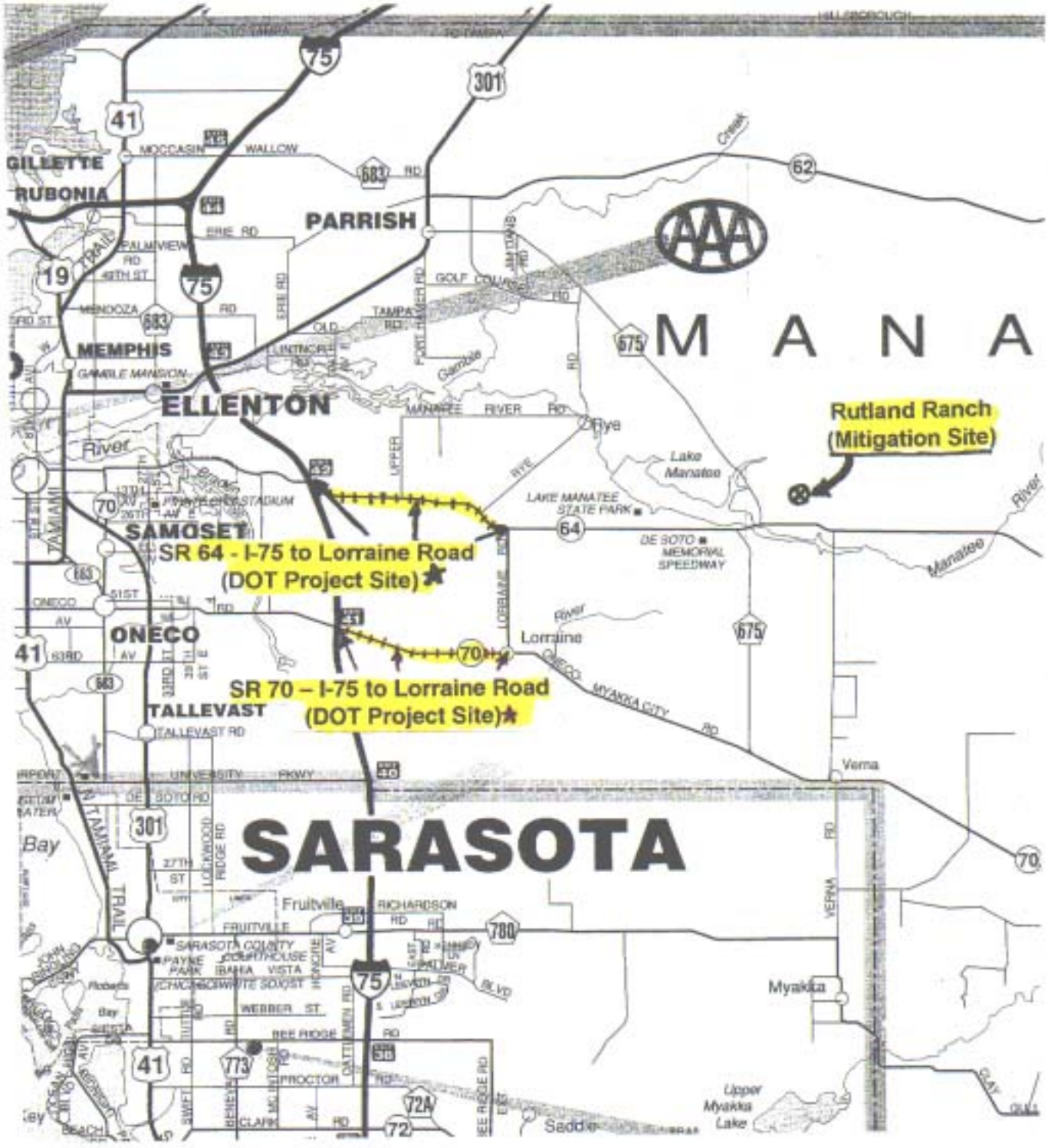
A comparison of the type of wetland impacts was conducted and compared to the proposed restoration activities. Rather than scatter the various activities to mitigate for a variety of wetland impacts, they were slightly combined based on the site location and proposed activities relative to the anticipated impacts. These include the uplands and wetland enhancement in the vicinity of Wetlands 1-3 (mitigation for SR 64-Seg. 1), Wetlands 7, 9, 11 enhancement and adjacent palmetto prairie restoration (SR 64 – Seg. 2), Wetland 4 enhancement adjacent upland buffer enhancement (SR 70 – Seg. 1), Wetlands 5, 6, 12 enhancement and adjacent upland buffer enhancement (SR 70 – Seg. 2). The following details the correlation of mitigation with the impacts:

SR 64 – Seg. 1 - The proposed impacts include 0.68 acre of mixed forested wetland (#617) and 1.74 acres of marsh (#640). The proposed mitigation includes enhancement of Wetlands 1-3 (11.1 acres), restoration portion of Wetland 2 (0.6 acres), and enhancement of the adjacent pine flatwoods around Wetlands 1-3 (12 acres). This results in a total **impact of 2.42 acres and compensation of 23.6 acres** (ratio 9.8-to-1).

SR 64 – Seg. 2 – The proposed impacts include 0.74 acres of mixed forested wetland (#630) and 1.2 acres of marsh (#641). The mitigation includes enhancement of Wetland 7 (0.9 acres), Wetlands 9 & 11 (6.3 acres) and restoration of the adjacent palmetto prairie from the filled ditches (10 acres). This results in a total **impact of 1.94 acres and compensation of 17.2 acres** (ratio 8.8-to-1).

SR 70 – Seg. 1 – These impacts include 0.42 acre to a waterway (#510), 0.92 acre to marsh habitat (#640), and 0.9 acre of ditches. The ditch impacts may or may not require mitigation by the regulatory agencies. The proposed mitigation includes enhancement (11.4 acres), restoration (0.1 acre), and associated upland buffer enhancement of Wetland 4 (4.5 acres). This results in a total **impact of 2.24 acres and compensation of 16.0 acres** (ratio 7-to-1).

SR 70 – Seg. 2 – The wetland impacts include 2.08 acres of stream swamp (#615), 1.25 acres of mixed wetland forest (#631), and 1.54 acres of marsh (#640). Due to the higher quantity of impacts and forested wetland impacts associated with this roadway segment compared to the other three segments, the habitat improvements of the most disturbed wetlands on the mitigation site (Wetlands 5, 6, 12) are designated to provide the mitigation. The proposed mitigation includes enhancement (2.1 acres) and restoration (0.4 acre) of Wetland 5, enhancement (21.6 acres) and restoration (0.4 acre) of Wetland 6, and enhancement (21.3 acres), restoration (3.6 acres), and associated upland buffer enhancement (5.5 acres) of Wetland 12. This results in a total **impact of 4.87 acres and compensation of 54.9 acres** (ratio 11.3-to-1).



^ NORTH, SCALE 1.4 in. = 5 miles

FDOT - District 1 MITIGATION SITE (Manatee River Basin)	RUTLAND RANCH - SOUTH TRACT (SW 65)	FIGURE A LOCATION MAP

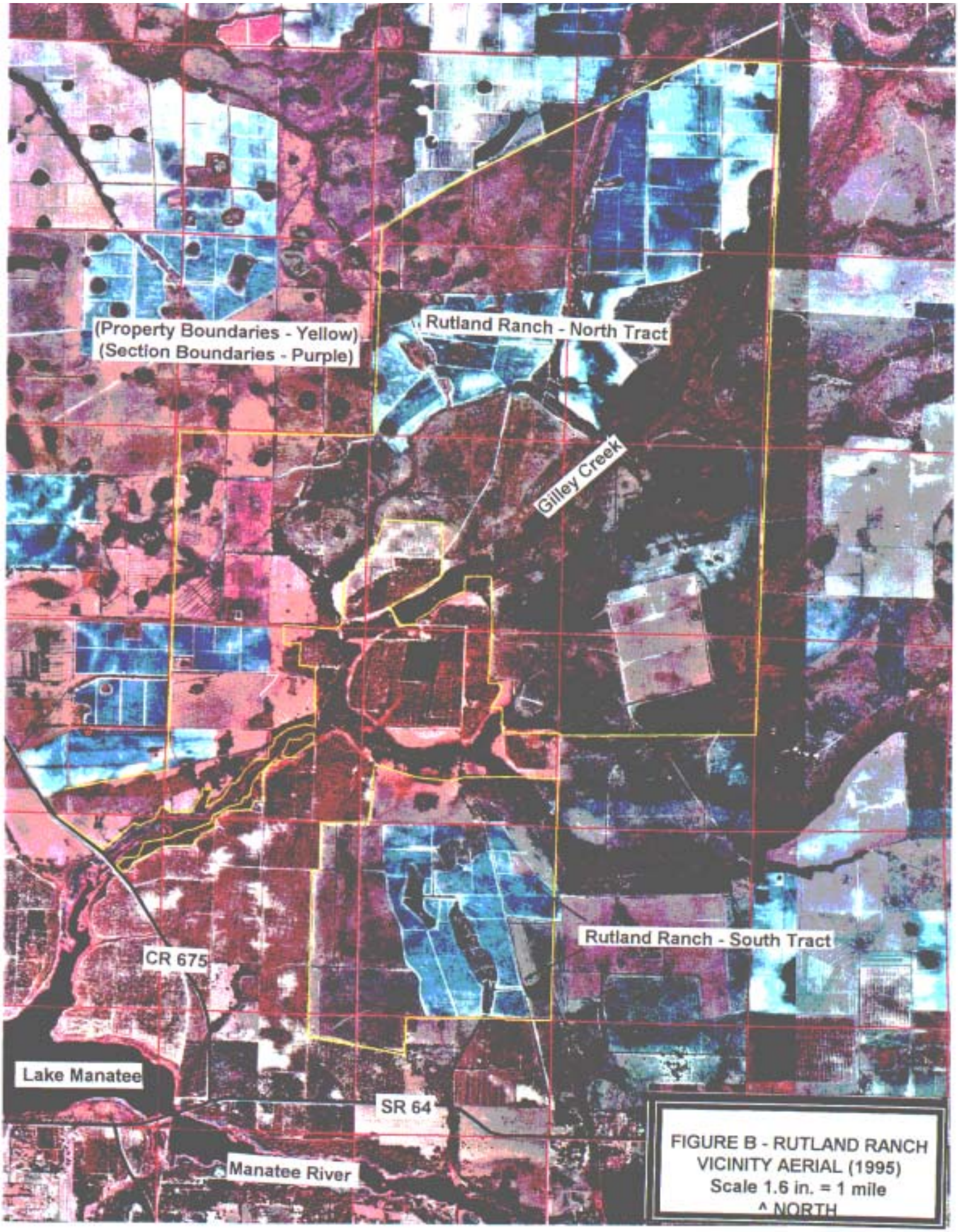
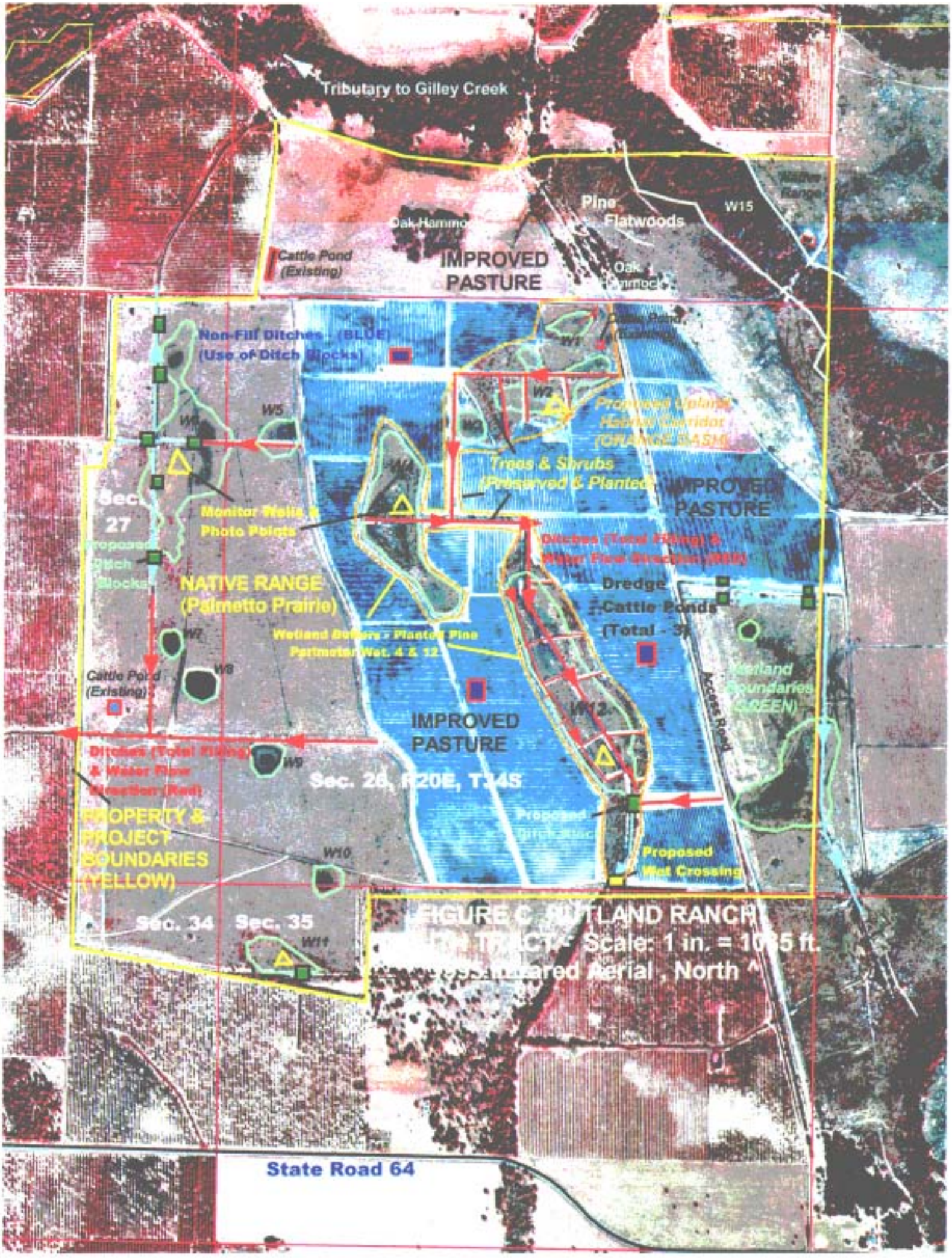


FIGURE B - RUTLAND RANCH
VICINITY AERIAL (1995)
Scale 1.6 in. = 1 mile
^ NORTH

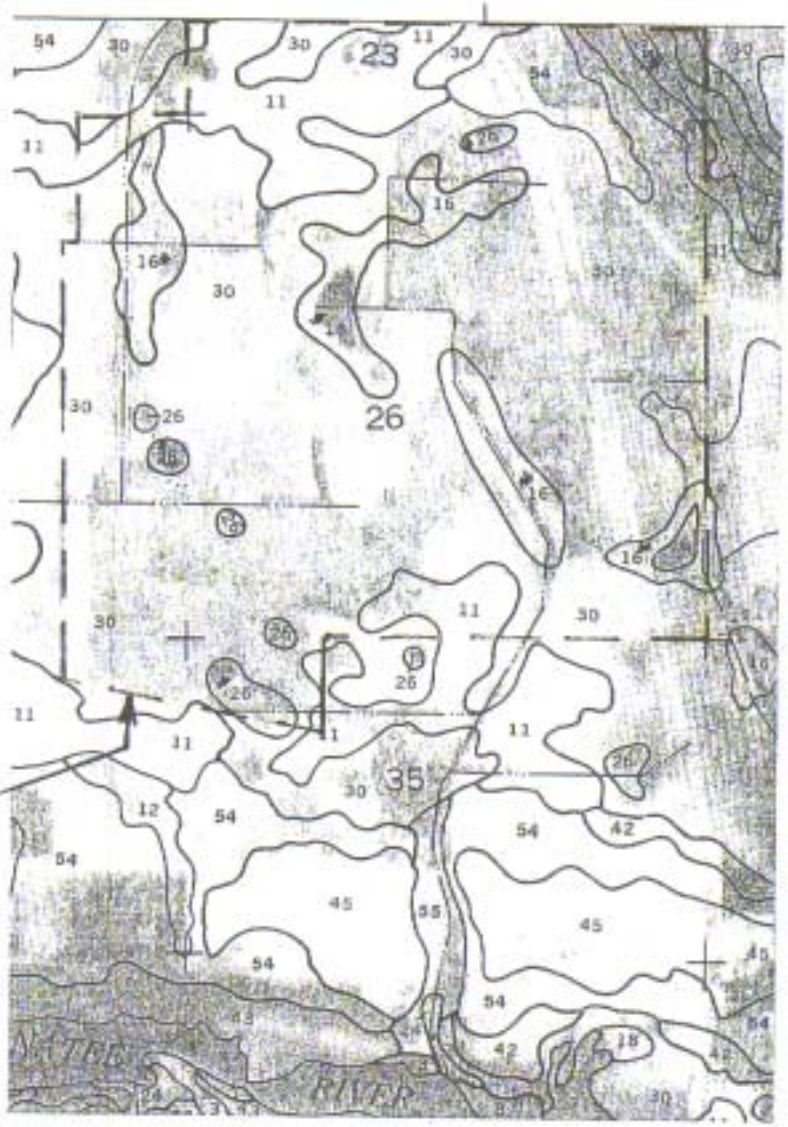

Tributary to Gilley Creek
Pine Flatwoods
W15
Oak-Hammo
Cattle Pond (Existing)
IMPROVED PASTURE
Non-Fill Ditches - (BLUE) (Use of Ditch Blocks)
W1
W2
W5
W6
W3
W4
Trees & Shrubs (Preserved & Planted)
IMPROVED PASTURE
Monitor Wells & Photo Points
Sec. 27
Proposed Ditch Blocks
Ditches (Total Filling) & Water Flow Direction (RED)
NATIVE RANGE (Palmetto Prairie)
Dredge
Cattle Ponds (Total - 3)
W7
W8
Wetland Buffers - Planted Pine
Cattle Pond (Existing)
Wetland Boundaries (GREEN)
W12
Access Road
IMPROVED PASTURE
Ditches (Total Filling) & Water Flow Direction (Red)
W9
Sec. 26, R20E, T34S
PROPERTY & PROJECT BOUNDARIES (YELLOW)
Proposed
Proposed Mat Crossing
W10
Sec. 34
Sec. 35
W11
Scale: 1 in. = 1
Aerial , North
State Road 64

SOILS LEGEND

11-Cassia f.s.
*16-Delray Complex
*24-Felda-Wabasso Assoc.
Frequently Flooded
*26-Floridana-Immokalee-
Okeelanta Assoc.
30-Myakka f.s. (0-2% slope)
31-Myakka f.s. (2-5% slope)
54-Zolfo f.s.

*- Hydric Soils

Rutland Ranch
(South Tract)
Project Boundaries



^ NORTH Scale 1.6 in. = 1 mile

FDOT - District 1 MITIGATION SITE (Manatee River Basin)	RUTLAND RANCH - SOUTH TRACT (SW 65)	FIGURE D MANATEE COUNTY SOIL SURVEY 1979 Aerial Date

June, 2002 - Wetland 12 – View from the south, looking north at former ditch area (20 feet against tree line) & previous spoil material (center 30 –40 ft.) graded to backfill the ditch.

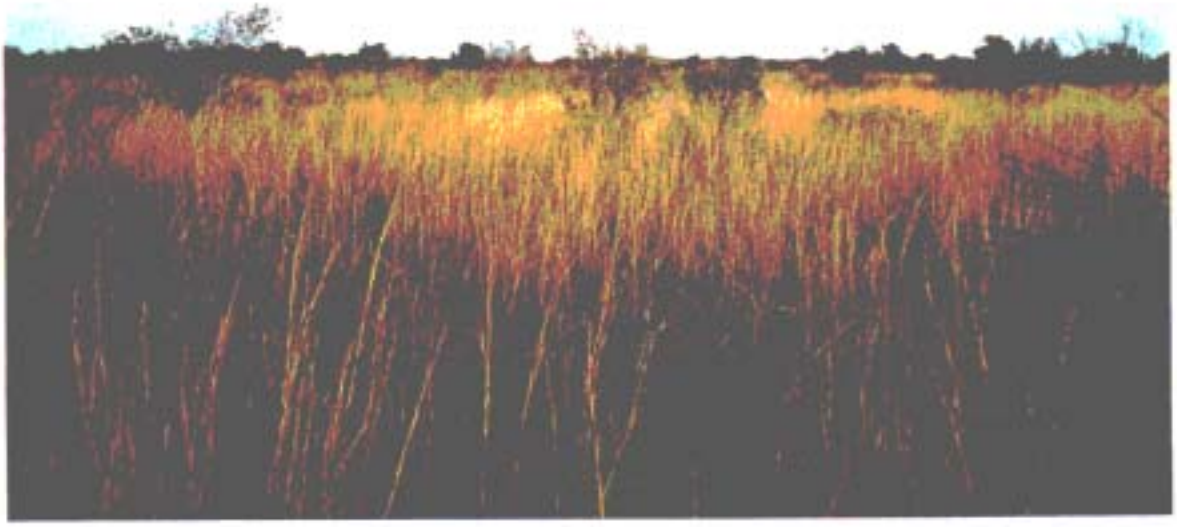
July, 2002 – Same view as above, wetland hydrology has been restored with maximum surface water depth of 18 inches in the marsh core. Natural regeneration of maidencane occurring with supplemental plantings of pickerelweed, arrowhead, and bulrush. Some of the oaks and pines that generated on the low elevation spoil will not survive the restored hydrology and becoming snags for wading bird resting (e.g. left oak tree).

FDOT – District 1 MITIGATION SITE (Manatee River Basin)	**RUTLAND RANCH – SOUTH TRACT (SW 65)**

Wetland 12 Monitoring Station – Typical pre-construction condition of the drained marsh included broomsedge, bahia, dog fennel, gallberry, wax myrtle, and some exposed areas due to hog activity which have been removed from the site.

August, 2002 – Same view as above, just after backfilling the center ditch and the marsh's perimeter ditch (right), hydrology has been restored and mortality of upland vegetation has commenced.

FDOT – District 1 **MITIGATION SITE** **(Manatee River Basin)**	**RUTLAND RANCH – SOUTH TRACT** **(SW 65)**



Pre-construction conditions near the core of Wetland 4 included substantial coverage of broomsedge mixed with the maidencane, as well as scattered wax myrtle.

August, 2002 – Same view as above, restored hydrology has resulted in surface water core depths of 18-24 inches, resulting in mortality of the broomsedge and wax myrtles.

FDOT – District 1 **MITIGATION SITE** **(Manatee River Basin)**	**RUTLAND RANCH – SOUTH TRACT** **(SW 65)**

June, 2002 – Wetlands 5 & 6 – View from the east side of the marshes, looking west at the filled ditch (center) and graded spoil material (right) to restore hydrology.

July, 2002 – Same view as above, wetland hydrology has been restored with maximum surface water depth of 8 inches in both marshes. Natural regeneration of maidencane occurring with supplemental plantings of soft rush.

FDOT – District 1 **MITIGATION SITE** **(Manatee River Basin)**	**RUTLAND RANCH – SOUTH TRACT** **(SW 65)**

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management District

Mitigation Project Name: **Lk. Hancock Reserve** Project Number: **SW 66**

Project Manager: Mark Brown, SWFWMD Env. Scientist Phone No: (352) 796-7211 ext. 4488

County(ies): Polk Location: Sect. 1, 2, T29S, R24E, Sec. 6, T29S, R25E

IMPACT INFORMATION

1 – FM 1975331, US 27 – Towerview Rd. to SR 540	ERP #: 43023431.002	COE #: 200205668 (IP-JF)
2 - FM 1976791, US 27 – SR 544 to Blue Heron Bay*	ERP #: 43023431.000	COE #: 200202574 (IP-JF)
3 - FM 1940931, US 17 (SR 35) – Peace River to Tropicana	ERP #: 43016955.001	COE #: 200102990 (IP-JF)
4 - FM 1938991, US 17 – Livingston to Hardee County	ERP #: 43022736.000	COE #: 200105669 (IP-MN)
5 –FM 1971681, SR 60A (Van Fleet Dr.)-CR 555 to Broadway	ERP #: 44023032.000	COE #: 2002000069 (NW-MS)
6- FM 1977061, US 27 – SR 540 to SR 542	ERP #: _____	COE #: _____
7- FM 1977071, US 27 – SR 542 to SR 546	ERP #: _____	COE #: _____
8- FM 1976381, US 98 – Carpenter's Way to Daugherty Rd.	ERP #: 44013552.003	COE #: 200206904 (NW-JF)
9- FM 4084411, Kelly Roberts Rd. at Bridge #064043	ERP #: _____	COE #: _____
10 - FM 1977051, US 27 – SR 60 to Towerview Rd.	ERP #: _____	COE #: _____

Drainage Basin : Peace Water Body(s): Tower Lake, Thompson Branch, McBride Br., Mare Branch, Sand Gully Br., Peace Creek Canal, SWIM water body? N

Impact Acres / Habitat Types (FLUCCS):

1- FM 1975331 2.35 ac. 640
1.11 ac. 641x
TOTAL 3.46 acres

2- FM 1976791* 0.59 ac. 631
0.89 ac. 641
TOTAL 1.48 acres

3- FM 1940931 3.00 ac. 630
0.49 ac. 640
0.93 ac. 641
TOTAL 4.42 acres

4- FM 1938991 0.48 ac. 618
6.18 ac. 630
0.74 ac. 631
0.59 ac. 640
0.20 ac. 641
3.40 ac. 641x
TOTAL 11.59 acres

5- FM 1971681 0.46 ac. 630

6 – FM 1977061 0.28 ac. 618
6.28 ac. 641
10.42 ac. 641x
TOTAL 16.98 acres

7- FM 1977071 0.34 ac. 530
3.60 ac. 618
0.82 ac. 641
TOTAL 4.76 acres

8- FM 1976381 0.09 ac. 615

9- FM 4084411 1.00 ac. 615

10- FM 1977051 1.08 ac. 641

TOTAL –45.32 Acres

* Additional impacts for this project are within the Ocklawaha Basin and will be mitigated at Lake Lowery (SW 76).

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: ___ Creation X Restoration X Enhancement ___ Preservation Mitigation Area: **473 acres**
SWIM project? N Aquatic Plant Control project? N Exotic Plant Control Project? N Mitigation Bank? N
Drainage Basin(s): Peace Water Body(s): Banana Creek Canal, Lake Hancock SWIM water body? Y

Project Description

A. Overall project goal: Historically, surface water from Banana Lake maintained a sheet flow hydrology east through forested and marsh wetland habitat into Lake Hancock (Figure C, 1927 Soil Survey). During the 1940's, the construction of the Banana Creek Canal between the two lakes, along with connector ditches, excessively drained the floodplain area to convert forested wetlands and marshes into pastures. The substantial differences in habitat transition before and after canal construction are exhibited between the 1941 aerial (Figure D-1) and 1952 aerial (Figure D-2). In 2000, Polk County & SWFWMD co-purchased approximately 1256 acres (formerly Circle B Bar Ranch) to convert into a passive recreational park with a long-term objective to restore and enhance upland and wetland habitat throughout the property. The proposed wetland enhancement will be primarily achieved by filling the majority of the Banana Creek Canal and other contributing ditches to restore the wetland floodplain to a sheet flow hydrology, replanting to the historical limits of the forested wetlands, and supplementing the planting of regenerated marsh habitat. This will allow the wetlands provide water quality treatment and attenuation of surface water flow from Banana Lake before discharging into Lake Hancock. Both these lakes are included in the Surface Water Improvement and Management (SWIM) program and the property was designated an acquisition priority under the SWFWMD Save Our Rivers and Polk County's acquisition programs (Fig.A).

B. Brief description of current condition: Of the entire Lk. Hancock Reserve (Figure F), the majority of the remnant wetlands are associated with wet improved pastures adjacent to the Banana Lake Canal (site photos). For purposes of site description, the designated project area (473 acres) is delineated into west (Fig. G) and east (Fig. H) of the central access road crossing. The pastures still have sufficient percent cover of hydrophytic species, presence of hydric soils, and minimal groundwater hydrology to be designated as wetlands per state and federal criteria. Bahiagrass, carpetgrass, and pigweed provide dominant cover but scattered soft rush is also common (predominantly southeast pasture). The northeast pasture (Fig. H) has a diverter ditch along the northern boundary and a triple ditch/canal complex that separates it from the southeast pasture. Two seepage maple / bayheads are still present, one along the southeast project boundary, the other located along the western boundary (Figure G). Two smaller remnant cypress wetlands are within the eastern area. However, the total forested wetlands within the project area is half of the historic limits because of the dewatering impacts from the canal, resulting in tree fall and up to two feet of muck oxidation in the remnant western swamp (photo) and a foot of oxidation in the southeastern swamp. A large levee was constructed along the western property boundary (Figure G), impounding water in the wetland west of the project area and diverting ground and surface water from the remnant forested wetland within the project area. A tributary canal was constructed along the southwestern project boundary, dewatering the on- and off-site wetlands. Both the western levee and southwestern canal divert surface and groundwater flow directly into the Banana Creek Canal. The extensive over-drainage and previously incorporated dewatering pump system have substantially altered the wetland functions and conditions of the entire site, converting the area to a dominance of upland pasture grasses, minimal species diversity,

and minimal hydroperiods to adequately support appropriate hydrophytic species and generate habitat conditions for wildlife.

C.Brief description of proposed work: The two existing access road berms (Fig. H – east and central roads) will be reinforced (synthetic liner, additional fill cap, limerock road base, sodded sideslopes) and utilized to restore the wetland hydrology while still maintaining access across the property. Both access roads will be slightly elevated and widened to construct structurally sound water control facilities (culverts, wide overflow swales). The ditches and segment of the Banana Creek Canal within the western portion of the project will be backfilled to restore hydrologic sheet flow patterns throughout the wetland floodplain. The historic limits of the forested wetland will be planted with tree, shrub, and herb species. The wet pastures will also be planted with herb species. Maintenance & monitoring will be conducted for a minimum five years post-construction. Long-term management of the property will be conducted by the Polk County Natural Resources Department. The enhancement & restoration plan include the following proposed activities and associated acreage per habitat type:

Marsh Enhancement	339 acres (Predominantly within the eastern portion)
Forested Wetland Enhancement	40 acres (Adjacent to western and southeastern project boundary)
Forested Wetland Restoration	50 acres (Within the west / central portion)
Upland Habitat Restoration	24 acres (Predominantly along the wetland boundary, west portion)
Upland Habitat Preservation	19 acres (Preservation of oak habitat on east canal spoil ridge area)
TOTAL	**473 acres**

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): The majority of the proposed impact acreage includes a substantial percentage of ditch impacts. Some of the wetland impacts will decrease and not all the ditch impacts are anticipated to require mitigation per state and federal regulatory criteria. Additional proposed impacts submitted by FDOT in the future will be evaluated to determine if they can be appropriately mitigated at the Reserve. Considering the low quality habitat conditions and functions of the existing wetlands, the proposed wetland enhancement is substantial and more closely resembles major wetland restoration activities (ERP ratio range 1.5:1 to 5:1) due to the minimal existing wetland functions and values. A wetland functional assessment (WRAP) was conducted for the mitigation area and it was determined that the ecological "lift" associated with the improvements will result in 142 functional credits, an overall mitigation ratio of acreage- to- credits of 3.3-to-1. As the functional assessment of the proposed impacts are conducted, these credits will be debited from the total. Not all the available credits will be utilized, approximately 20 credits have been debited from the FDOT projects permitted through the summer, 2003.

E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: The only mitigation bank currently (2003) selling credits in the Peace River basin is Boran Ranch (BRMB), located within the lower portion of the basin (DeSoto County). The BRMB has been selected to provide mitigation for wetland impacts associated with several FDOT mitigation projects in the basin (refer to SW 53 in the plan, $670K provided in purchased credits through 2003, $30K per credit). Upon the wetland functional assessment (WRAP) of the Lake Hancock Reserve, depending on the quality of the proposed wetland impacts, the proposed mitigation activities within the 473-acre designated mitigation area will be able to compensate for approximately 142-180 acres of anticipated wetland impacts. Even though not all of the available credits will be utilized, using the same 1 impact acre –

to – 1 credit ratio applied for BRMB, the anticipated costs of mitigation at the Lk. Hancock Reserve ($1,930,000) will equate to an average of $13,000 per impact acre, which is less than half the cost of purchasing mitigation bank credits from BRMB. The enhancement of the entire Peace River watershed has required substantial emphasis on the restoration of the headwater areas. This has been and will continue to be a major goal and objective of many existing and proposed public restoration projects in the basin (e.g. Tenoroc (SW 47), Saddle Creek, Lake Hancock, Banana Lake, Peace Creek Canal, Lake Lena Run, Winter Haven Chain-of-Lakes). The DOT Mitigation Program can provide necessary funds for this major and important wetland restoration and enhancement opportunity, adequately and appropriately mitigate the proposed impacts with a more ecologically beneficial project for the entire Peace Basin compared to traditional DOT mitigation methods, and still result in substantial savings of public funds.

F. Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body : Even though enhancement and restoration of the wetland floodplain is not considered a SWIM project, the site is located between two SWIM projects, Banana Lake Restoration (conducted in the late 1980's) and the current evaluation of Lake Hancock. The Banana Lake restoration removed high nitrogen and phosphorus-laden sediments that accumulated due to the direct discharge of untreated sewage for 60 years. During the last few years, recent studies have indicated high phosphorus levels within Banana Lake are re-occurring due to phosphate that naturally occurs within the surrounding soil matrix (north side of Banana Lake was mined for phosphate ore in the 1920's and 30's). By restoring and enhancing the wetland vegetation and hydrology of the proposed project area, additional water quality treatment and attenuation can lessen the nutrients flowing directly into Lake Hancock via the Banana Lake Canal.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: SWFWMD Operations Dept.
Contact Name: Mark Brown, SWFWMD Env. Scientist Phone Number: (352) 796-7211, ext. 4488
Entity responsible for monitoring and maintenance: SWFWMD contract for short-term monitoring & maintenance, perpetual management conducted by Polk County Natural Resources Dept.
Proposed timeframe for implementation: Commence: January, 2001 Complete: Summer, 2004 (Construction & Planting, followed by minimum 5 years of maintenance & monitoring)

Project cost: $1,930,000 (total);
Surveying & Design - $150,000
Construction - $800,000
Planting – $900,000
Maintenance & Monitoring - $80,000

Attachments

__X__ 1. Detailed description of existing site and proposed work. Refer to previous discussion and Attachment A.

__X__ 2. Recent aerial photograph with date and scale. 1995 Infrared Aerials are depicted on Figures F-H.

__X__ 3. Location map and design drawings of existing and proposed conditions. Location maps are depicted on Figures A, B. Existing conditions and conceptual design plans depicted on Figures F-H.

__X__ 4. Detailed schedule for work implementation, including any and all phases.

January – October, 2004 – Field work (environmental, surveying) and surface water modeling conducted to ensure no off-site impacts, as well as hydrologic restoration for the project area.

October, 2004 – February, 2004 – Finalize reports, ACOE permitting, WMD review, pre-construction field work and equipment orders.

February, 2004 – August, 2004 – Earthwork construction by WMD-Operations Dept. during the dry season, followed by planting during the rainy season.

August, 2004 – August, 2009 – Monitoring and maintenance for a minimum 5 years.

__X__ 5. Proposed success criteria and associated monitoring plan. Refer to Attachment B, Maintenance & Monitoring Plan, Success Criteria

__X__ 6. Long term maintenance plan. Refer to Attachment B, Maintenance & Monitoring, Success Criteria.

__X__ 7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). Refer to previous discussion and Attachment C – DOT Mitigation.

Attachment A – Existing Site Conditions & Proposed Work

West Portion (Figure G) - The surface water models (conducted 2004) determined the quantity, sizes, elevations, and locations of the culverts and swales. Organic soil oxidation due to the dewatering effects of the ditch network has lowered the site's grade elevations compared to historic conditions. There has been 18-24 inches of soil oxidation within the remnant western forested wetland, and slightly less oxidation within the southeastern forested wetland. The objective will be to increase the duration of groundwater hydrology in these systems to allow continuous soil seepage yet retain minimal duration of surface water (hydroperiods) to avoid additional damage. This seepage hydrology is typical of maple & bayhead systems with substantial muck depths. Restoring groundwater seepage and sheet-flow hydrology in the existing forested and reforested wetland will be primarily achieved by backfilling the western portion of the Banana Lake Canal and contributing ditches with the adjacent spoil material. As opposed to the eastern portion of the canal (Figure H), the adjacent spoil material doesn't have any tree cover and therefore will be used to backfill the ditches. The levee along the western boundary will be breached at a few locations to allow groundwater seepage and surface water to overflow into the remnant forested wetland. Along with the filling of the southwest ditch, this will restore the hydrology of approximately 100 acres of impounded off-site forested wetlands adjacent to the Reserve. This forested wetland is owned by the City of Lakeland and USF (Polk Co. Campus) who have reviewed and concurred with the proposed restoration plan. The Banana Creek Canal enters the project by outfalling into a dredged pond, then forms back into a canal that continues eastward to Lake Hancock. The pond will be maintained as a catchment sump, but then overflow swales will be constructed to allow the current canal flow to outfall into an existing spreader swale that will allow seepage into the remnant forested wetland.

The wet pasture west of the center access road berm has variable grade elevations so the restored hydrology will provide for the regeneration and planting of obligate species (pickerelweed, arrowhead, maidencane, bulrush, spikerush). The higher pasture grade elevations will provide for the regenerate and planting of more facultative species (soft rush, sand cordgrass), and surface water will result in mortality of the bahia and other pasture grasses. By restoring the marsh ground and surface water hydrology in the existing pasture, this will also reduce the hydraulic gradient and increase the duration that groundwater seepage is maintained in the adjacent headwater forested wetland.

East Portion (Figure H) – Unlike the west portion, the proposed construction doesn't propose filling of the Banana Creek Canal because of the habitat value of the oak hammocks on the adjacent spoil and excessive volumes of off-site fill material required to fill the substantial voids in the canal and adjacent ditches. Instead, a series of ditch blocks will be installed at three proposed access road crossings.

The proposed enhanced wetlands in the west portion will operate as one system controlled by the proposed structures in the central access road. However, due to the different elevation and soil conditions for the southeastern pasture in comparison to the northeastern pasture, and the preservation of the existing trees along the Banana Lake Canal, separate hydrologic conditions will be adopted for each pasture in the east portion. The southeastern pasture is bordered to the south by a maple/bayhead system that is down gradient of deep sandy soil ridge. This ridge provides groundwater seepage for the bayhead and the southeastern wet pasture. As a result, the northeastern pasture is almost exclusively dense bahia, in direct contrast to the wet pasture grasses and soft rush in the southeastern pasture.

However, the contributing basin flow is just one reason for the drastic vegetative difference between these two pastures. As noted on the NRCS soil survey (Figure E), the southeastern pasture is located on muck soils (32-Kaliga muck). Muck is rapidly permeable so with the contributing groundwater seepage from the south, there is adequate hydrology to maintain hydrophytic species. In contrast to the muck, the northeastern pasture has a dominance of mineral soils (24-Nittaw sandy clay loam, 44-Paisley fine sand). Soil borings indicated the northeastern pasture has heavy clays commencing an average 18 inches below grade, and extending below a depth of 70 inches. The wetland hydrology of the hydric mineral soils depend more on contributing surface water runoff (in this case, from a very limited and diverted contributing basin) and direct rainfall as opposed to groundwater seepage. Along the northeastern boundary of the east portion of the project, the diverter ditch collects the contributing basin surface and ground water and diverts the flow to another collector ditch bordering Lake Hancock (photo), by-passing the northeastern pasture. Since the Banana Lake Canal cannot overflow into the adjacent pastures due to spoil material height and the collector ditch diversion, the hydrology of the northeastern pasture substantially depends on direct rainfall and static groundwater conditions. With the introduction of the bahia and previous use of pumps, this adequately removed the conditions needed to support hydrophytic vegetation except for the scattered remnant pockets of smartweed within slightly lower elevations.

One objective of the design includes maintaining the same overflow volumes into the lake as currently established for the outfall of Lake Hancock. The existing overflow conditions have high and low volume peaks due to the canal and pumps, the restored overflow will mimic historic sheet flow conditions with gradual and consistent releases of surface water. Current evaluations are being conducted to possibly elevate the water levels of Lake Hancock 1-2 feet for certain periods to provide minimal flow conditions for the Peace River during dry seasons. This issue will require more years of evaluation than the current proposed construction of the Lake Hancock mitigation project. However, the design of all structures and associated elevations within the mitigation project will accommodate any potential current or proposed lake elevations. Elevating the lake will allow water to backflow into the mitigation area, providing the opportunity for additional water quality and attenuation within the enhanced wetland systems.

Access Roads – The central and eastern access roads will be elevated and the berm toe-of-slope extended for more structural support. Since the two access roads were constructed primarily from adjacent muck soils, a permeable synthetic liner will be installed across these berms to provide structural support, followed by placing a clean fill cap and bahia sod. The fill material will be obtained from two sources. The majority will be from expanding an existing upland-cut pond adjacent on the property that is adjacent to SR 540 (refer to Figure F). Creation of a small obligate pond (2-3 acres) dredged within a high elevation of the western bahia pastures will be another minor source (Figure G). The obligate pond will have a maximum depth of 4-5 feet below grade with minimum 10:1 slopes, providing some open water for wildlife use during dry season conditions.

The quantity and location of culvert crossdrains and swale connections will be sized to allow proper volumes of water at desired elevations. Access road berm sideslopes will be a maximum 4:1 gradient, with bahia sod for stabilization. A 10 ft. wide limerock road will be constructed along the top of the center and eastern access berms, and the northeastern berm adjacent to the Banana Lake Canal (Figures H). Except over the culverts, the swale connections will predominantly cross the entire roadway length, and be stabilized with a synthetic material such as geoweb with small limerock placed in the web cells.

An existing limerock road crosses the western pasture (referred to as west road crossing on Figure G). To maintain access across the enhanced wetland, this limerock road will be lowered to match surrounding existing grade. This will maintain the sheet flow hydrology. This wet crossing will have maximum water elevations of 3-6 inches above grade during the wet season, which can still allow vehicular access if necessary.

Planting – The restored forested wetland in the western portion will have tree, shrub, and herb plantings. Tree species to be planted (1 gallon stock on 10 ft. centers) will include red maple (dominant), cypress (dominant), sweet bay, sweet gum, tupelo, dahoon holly, and laurel oak (outer zone). Shrub species (1 gallon stock on 20 ft. centers) will include Virginia willow, buttonbush, and wax myrtle (outer zone). Herb plantings for the forested and marsh (bare root material on avg. 4 ft. centers) will include sand cordgrass, soft rush, maidencane, pickerelweed, arrowhead, and spikerush. Plantings will be concentrated in areas where natural regeneration of desirable hydrophytic species are least likely to occur, particularly the dense bahia covered areas within the western and northeastern pastures. Since herbicide eradication of the bahia and pigweed prior to rehydration will also eradicate any desirable plant seed sources and expose the soil to erosion, the restored hydrology will be allowed to eradicate these species while natural regeneration of desirable species.

There are two upland open pastures that border the proposed restored and enhanced wetlands. One area is along the northwest project boundary, the other along the south-central project boundary (Figure G). To restore the forested upland buffer habitats bordering the wetlands, live oaks, water oaks, and longleaf pine (1 gallon, 10 ft. centers) will be planted in these areas. After the hydrologic modeling and surveying, the planting plan will be finalized during the summer, 2003. Polk County is preparing and conducting a revegetation plan for the remainder of the property. Construction level details of the mitigation area can be obtained from Mark Brown (SWFWMD).

Attachment B – Maintenance & Monitoring, Success Criteria

Maintenance will be conducted primarily to control exotic and nuisance species. Maintenance will include herbicide treatment, anticipated to be quarterly for the first two years prior to and after construction, quarterly to semi-annually as needed for an additional three years, and semi-annual applications thereafter. Herbicide application will be conducted by a licensed applicator under contract with Polk County and SWFWMD. Any maintenance of structures will also be conducted in cooperation between Polk County and WMD-Operations Department.

Monitoring will be conducted semi-annually for the minimum 5 years. Ten monitor stations have been designated (Figures G & H) to evaluate the hydrologic and qualitative vegetative conditions across the project area (refer to site photos). These areas will be photographed from pre-construction through the minimum 5 years of monitoring post-construction. Qualitative evaluation of hydrologic conditions, vegetative cover, and wildlife use will be conducted for the entire project area.

Success criteria includes a minimum 30% canopy of the restored forested wetland, measuring trees over 10 ft. tall and shrubs over 5 ft. tall. Herb cover for the forested wetland and marsh will include 80% cover of desirable species and less than 10% cover of exotic and nuisance species. Wildlife use and restored hydrology will be documented and within the anticipated ranges specified per the final design. Existing and proposed vegetative conditions, and specific design criteria and success conditions will be finalized in the summer, 2003, followed by ACOE permitting, construction in Spring, 2004, planting in Summer, 2004.

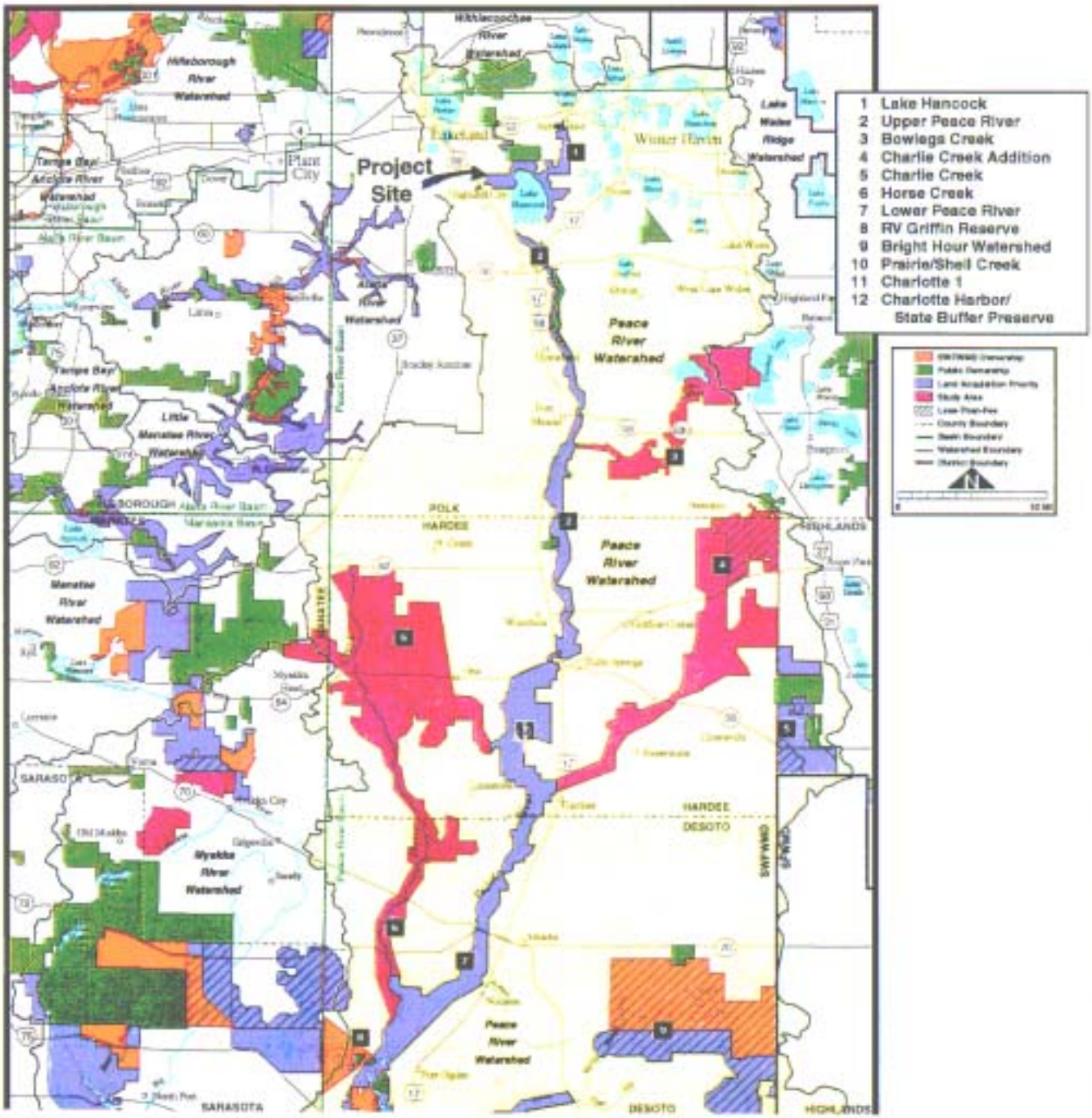
Attachment C – DOT Mitigation

The following information summarizes the proposed wetland impacts for those projects proposed for mitigation through construction activities at Lake Hancock Reserve. The DOT impacts have been decreasing as these projects go through the design and permitting stages. During the permitting of each of these DOT projects, some of the associated impacts have WRAP evaluations that are tabulated and debited from a credit ledger for the mitigation project, which also has a WRAP evaluation. For those DOT projects without WRAP evaluations, the wetland impacts are evaluated as providing highest quality and functions. Subsequently, those impacts and associated credits are debited based on the 1:1 ratio for credits-to-impact acreage. The following mitigation information pertains to projects permitted by September, 2003.

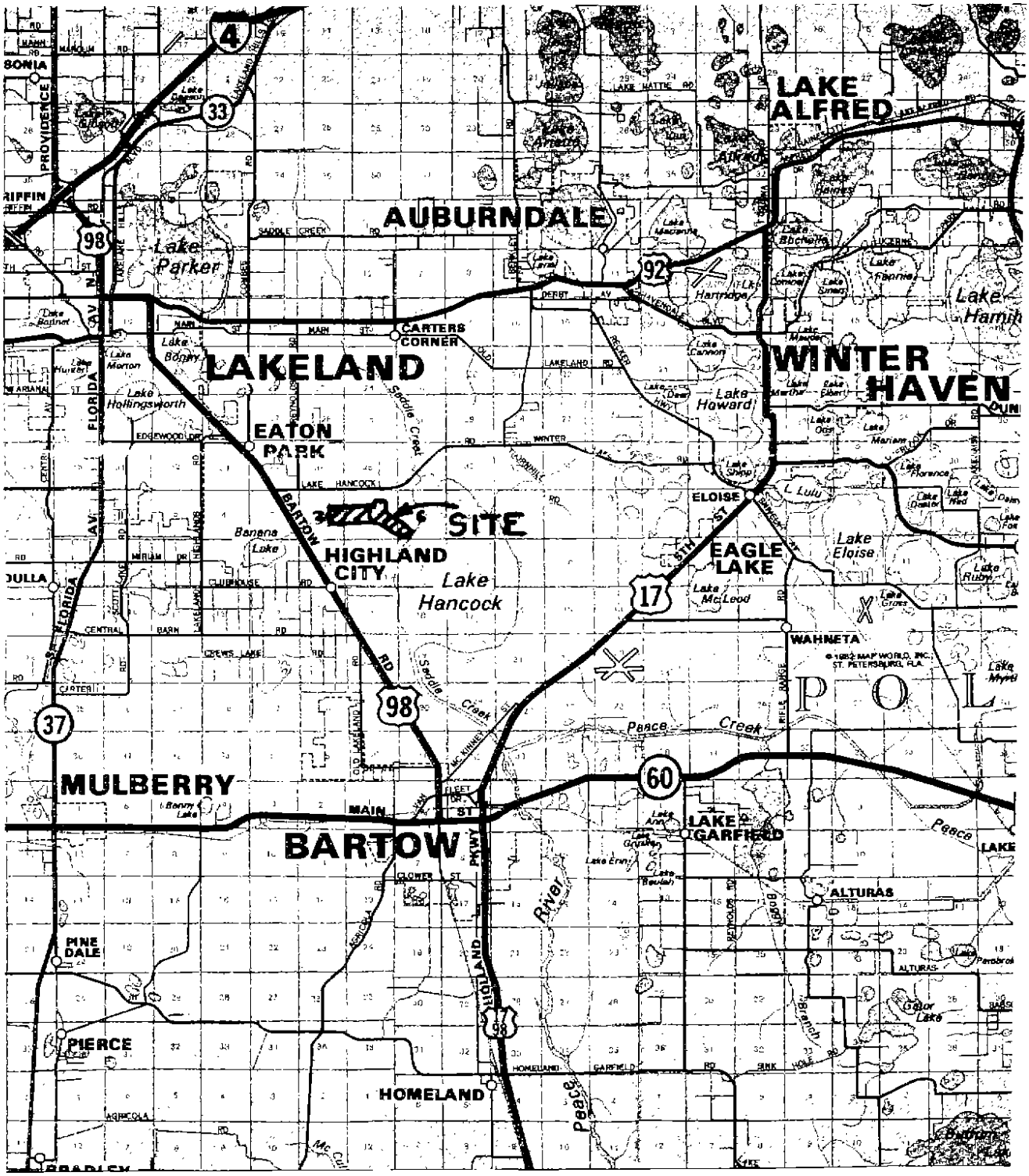
DOT Wetland Impacts	Proposed Mitigation
1- US 27 – Towerview Rd. to SR 540 Freshwater Marsh – 2.35 Acres Marsh (Ditches) – 1.11 Acres **TOTAL – 3.46 Acres**	Marsh Enhancement – 6.28 Acres Upland Buffer Habitat Restoration – 5.0 Acres **TOTAL – 11.28 Acres (ratio 3.2:1)**
2 – US 27 – SR 544 to Blue Heron Bay Shrub Wetland – 0.45 Acres Freshwater Marsh – 1.03 Acres **TOTAL – 1.48 Acres**	Marsh Enhancement – 2.3 Acres Upland Buffer Habitat Restoration – 5.0 Acres **TOTAL – 7.3 Acres (ratio 5:1)**
3 – US 17 – Peace River to Tropicana Mixed Forested Wetland – 3.00 Acres Freshwater Marsh – 1.42 Acres **TOTAL – 4.42 Acres**	Forested Wetland Enhancement – 12.0 acres Marsh Enhancement – 4.0 acres Upland Buffer Habitat Restoration – 6.0 acres **TOTAL – 22.0 Acres (ratio 4.9:1)**
4 – US 17 – Livingston to Hardee Co. Mixed Forested Wetland – 6.92 Acres Shrub – 0.48 Acres Freshwater Marsh – 0.79 Acres Freshwater Marsh (Ditch) – 3.40 Acres **TOTAL – 11.59 Acres**	Forested Wetland Enhancement – 13.8 Acres Forest Wetland Restoration – 13.5 Acres Marsh Enhancement – 11.7 Acres Upland Buffer Habitat Restoration – 6.0 Acres **TOTAL – 46.3 Acres (ratio 4:1)**
5 – SR 60A – CR 555 to Broadway Mixed Forested Wetland – 0.46 Acres **TOTAL – 0.46 Acres**	Forested Wetland Restoration – 1.8 acres Upland Buffer Habitat Restoration – 2.0 acres **TOTAL – 3.8 Acres (ratio 4.9:1)**
6 – US 27 – SR 540 to SR 542 Shrub – 0.28 Acres Freshwater Marsh – 6.28 Acres Freshwater Marsh (Ditch)– 10.42 Acres **TOTAL – 16.98 Acres**	Future determination when impacts are evaluated and finalized.

FDOT Mitigation – Lk. Hancock Reserve

7 – US 27 – SR 542 to SR 546 Stormwater Pond – 0.34 Acres Shrub – 3.6 Acres Freshwater Marsh – 0.82 Acres **TOTAL – 4.76 Acres**	Final determination when impacts are evaluated and finalized.
8 – US 98 – Carpenter's Way to Daugherty Road Stream Swamp – 0.09 Acres **TOTAL – 0.09 Acres**	Marsh Enhancement – 0.3 acres Upland Buffer Habitat Preservation – 0.5 acres **TOTAL – 0.8 Acres (ratio 8:1)**
9 – Kelly Roberts Rd. at Bridge #06043 Stream Swamp – 1.00 Acre **TOTAL – 1.00 Acres**	Forested Wetland Restoration – 3.9 acres Upland Buffer Habitat Preservation – 2.0 acres **TOTAL – 5.9 Acres (ratio 5.9:1)*** * Note – Anticipated quantities, permitting proposed late, 2003
10 – US 27 – SR 60 to Towerview Rd. Marsh – 1.08 Acres **TOTAL – 1.08 Acres**	Marsh Enhancement – 3.02 acres Upland Buffer Habitat Preservation – 1.5 acres **TOTAL – 1.08 Acres (ratio 4.1:1)*** * Note – Anticipated quantities, permitting proposed late, 2003.
TOTALS – 45.32 Impact Acres	**GRAND TOTALS – 473 Mitigation Acres** Forested Wetland Enhancement – 40.3 Acres Forested Wetland Restoration – 50.6 Acres Marsh Enhancement – 339.0 Acres Upland Habitat Restoration – 24.0 Acres Upland Habitat Preservation – 19.4 Acres

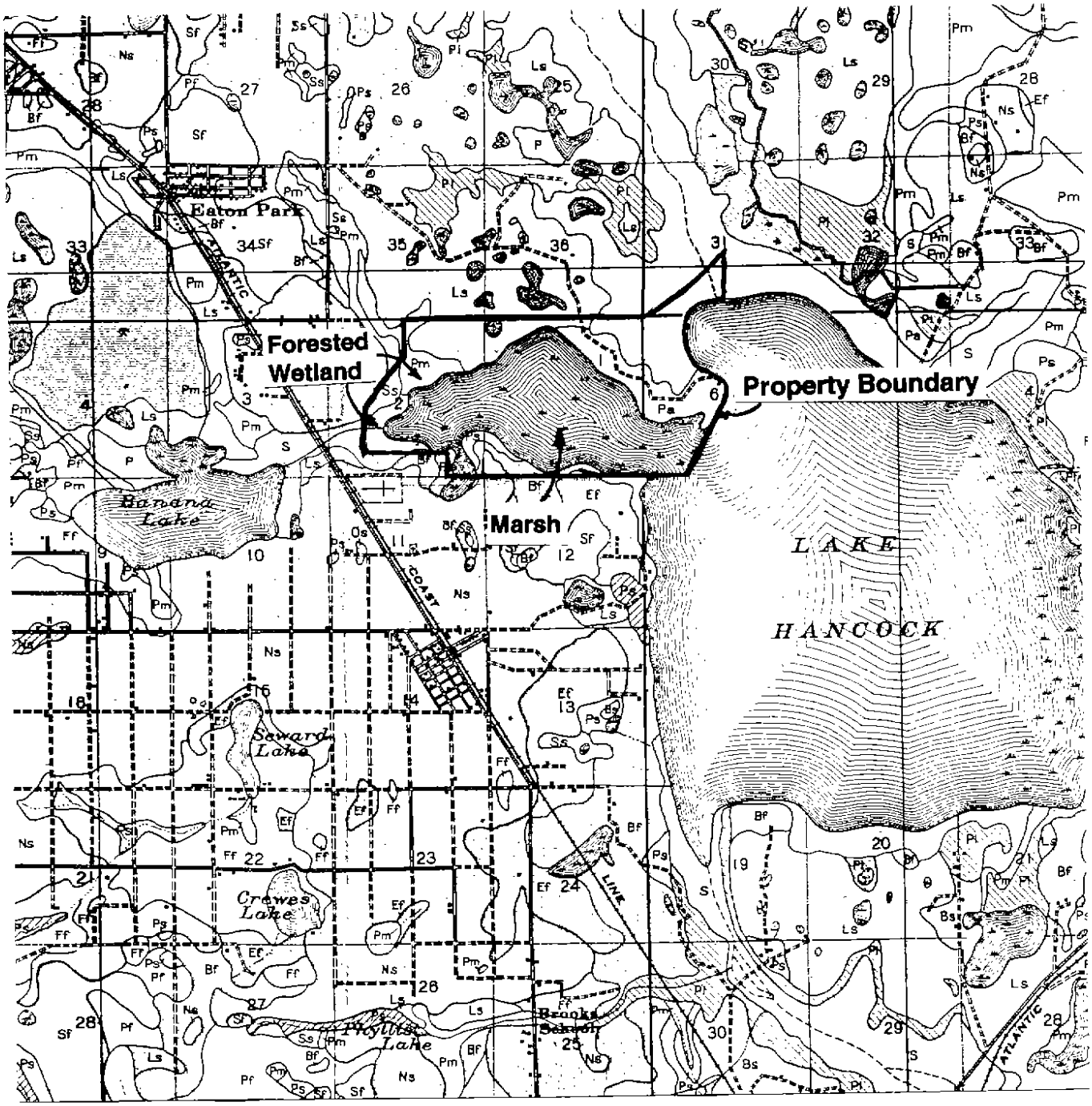


FDOT - District 1 MITIGATION SITE (Peace River Basin)	**LAKE HANCOCK / CIRCLE B BAR RESERVE (SW 66)**	**FIGURE A WATERSHED BASIN MAP**



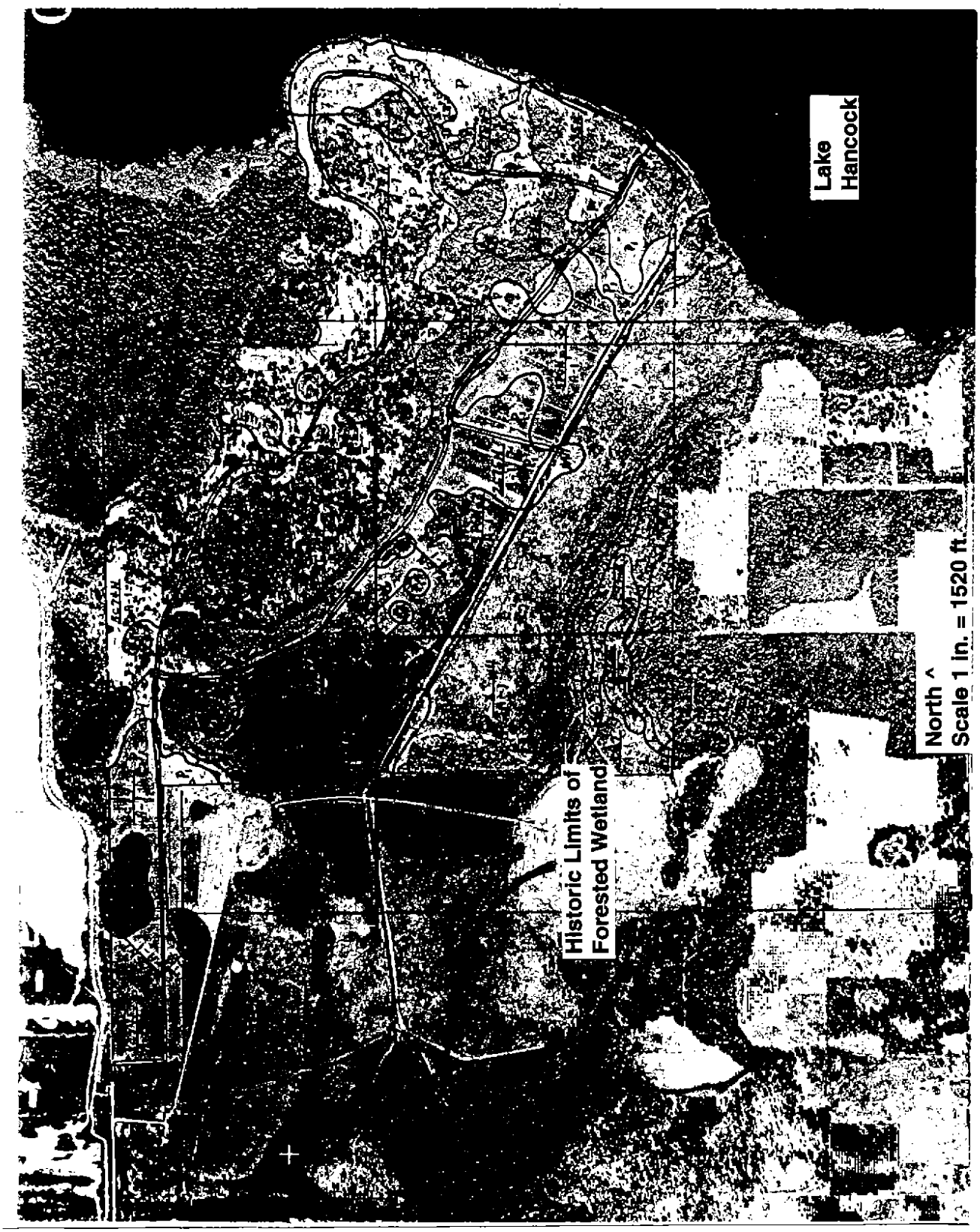
North ^
Scale 1 in. = 3 miles

FDOT - District 1 MITIGATION SITE (Peace River Basin)	LAKE HANCOCK / CIRCLE B BAR RESERVE (SW 66)	FIGURE B LOCATION MAP



FDOT - District 1 **MITIGATION SITE** **(Peace River Basin)**	**LAKE HANCOCK /** **CIRCLE B BAR RESERVE** **(SW 66)**	**FIGURE C** **1927 SOIL SURVEY**

FDOT - District 1 MITIGATION SITE (Peace River Basin)	**LAKE HANCOCK / CIRCLE B BAR RESERVE (SW 66)**	**FIGURE D-1 1941 AERIAL**



FDOT - District 1
MITIGATION SITE
(Peace River Basin)

LAKE HANCOCK /
CIRCLE B BAR RESERVE
(SW 66)

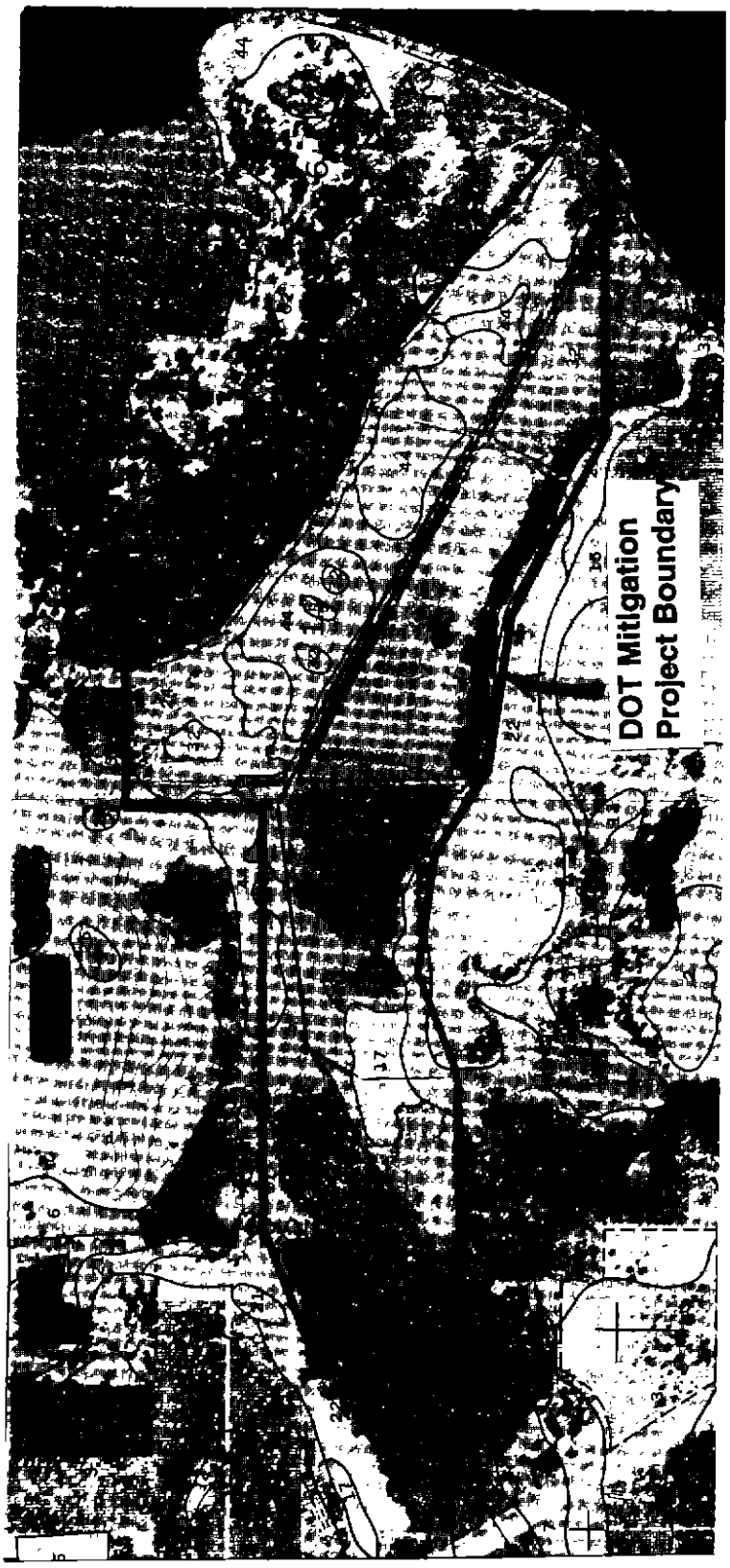
FIGURE D-2
1952 AERIAL

Soils Legend

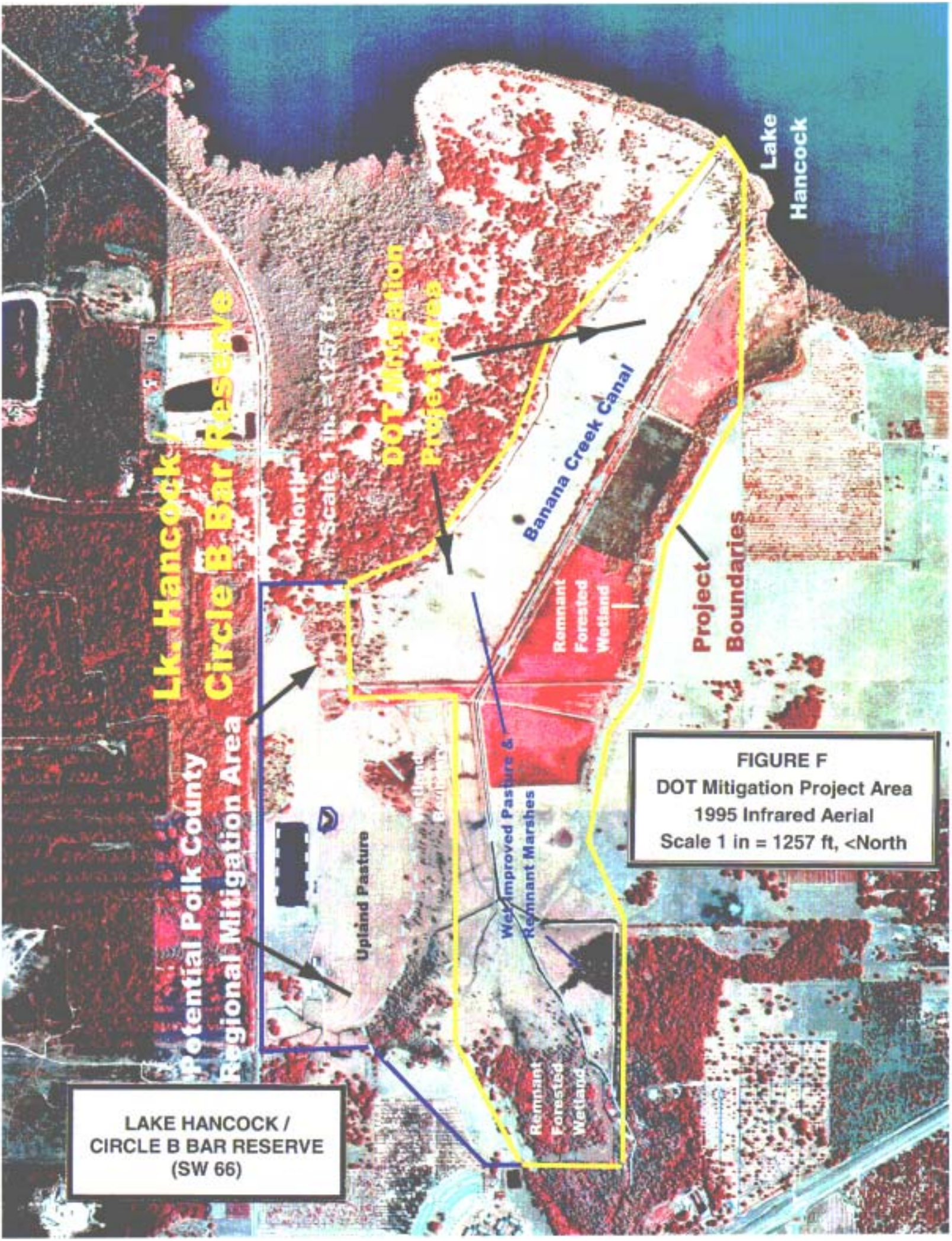
7 - Pomona f.s.
13 - Samsula muck *
17 - Smyrna & Myakka f.s.
21 - Immokalee s.
22 - Pomello f.s.
24 - Nittaw s.c.l.*
32 - Kaliga muck *
35 - Hontoon muck *
44 - Paisley f.s. *

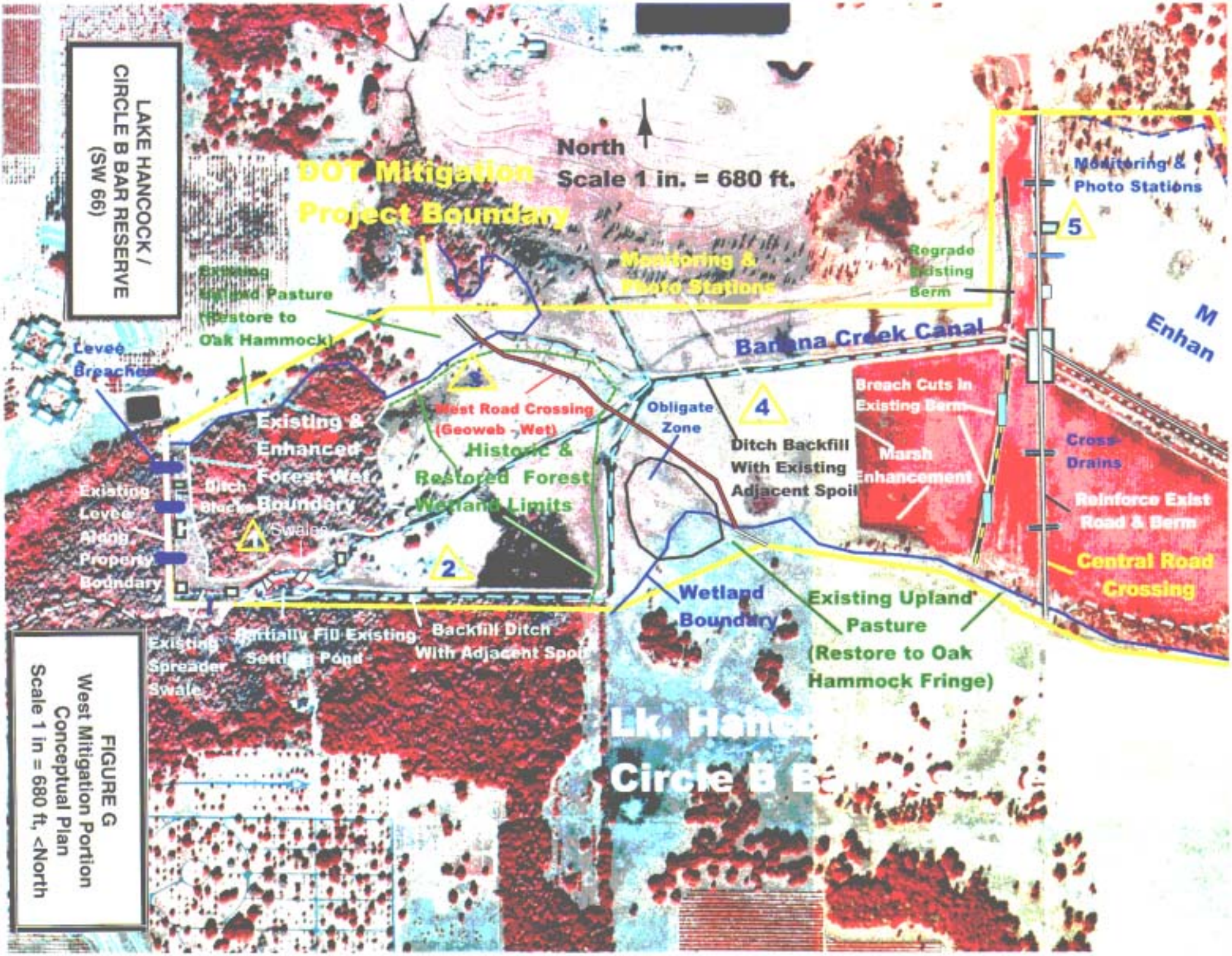
* - Hydric Soils

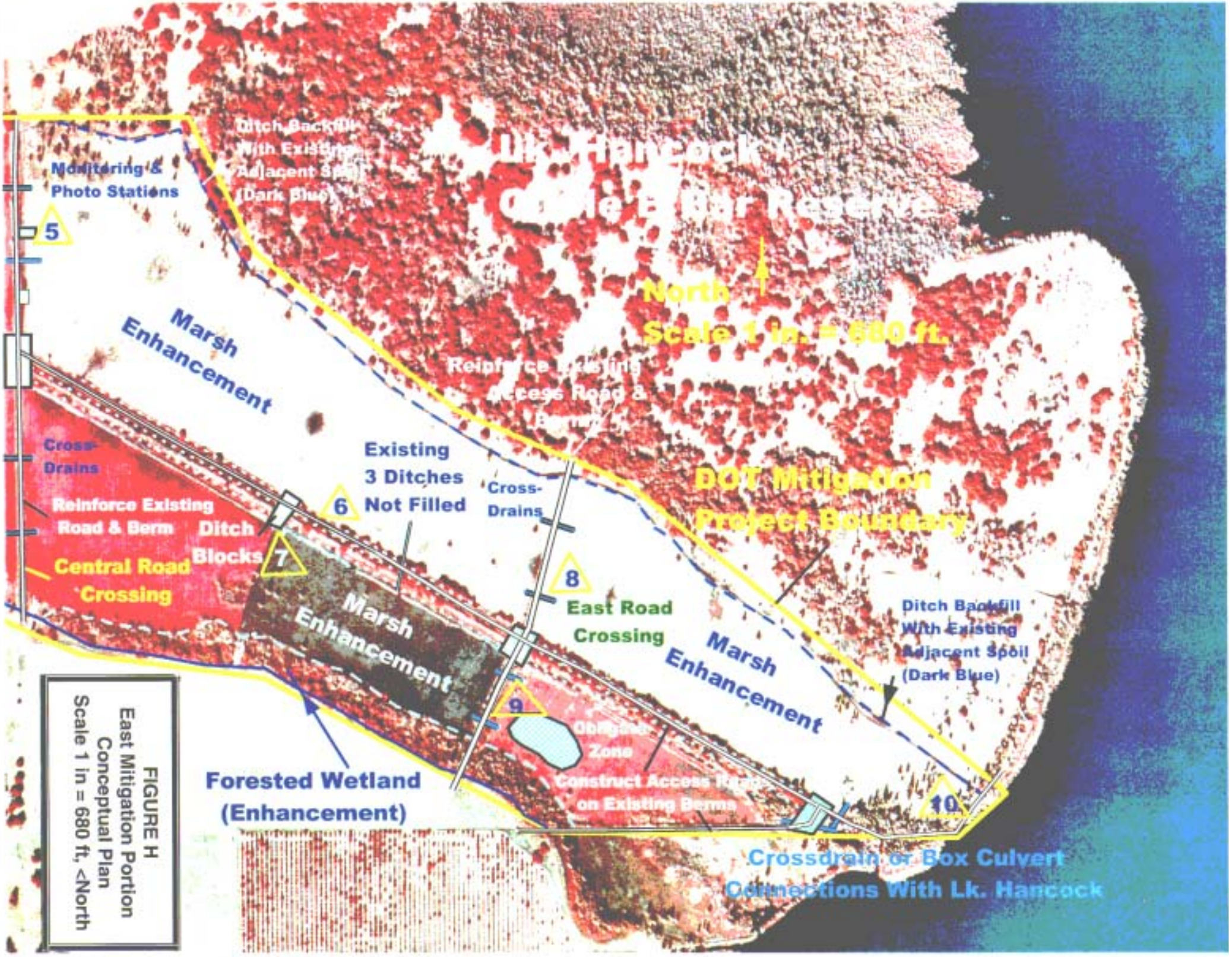
North ^
Scale 1 mile = 3.13 in.



FDOT - District 1 MITIGATION SITE (Peace River Basin)	LAKE HANCOCK / CIRCLE B BAR RESERVE (SW 66)	FIGURE E NRCS - POLK COUNTY SOIL SURVEY


Lake Hancock
Banana Creek Canal
DOT Mitigation Project Area
Project Boundaries
Remnant Forested Wetland
Lk. Hancock / Circle B Bar Reserve
Potential Polk County Regional Mitigation Area
Upland Pasture
Wet Improved Pasture & Remnant Marshes
Remnant Forested Wetland
FIGURE F
DOT Mitigation Project Area
1995 Infrared Aerial
Scale 1 in = 1257 ft, <North
LAKE HANCOCK / CIRCLE B BAR RESERVE (SW 66)


LAKE HANCOCK / CIRCLE B BAR RESERVE (SW 66)
North
Scale 1 in. = 680 ft.
DOT Mitigation Project Boundary
Monitoring & Photo Stations
Regrade Existing Berm
Existing Upland Pasture (Restore to Oak Hammock)
Levee Breaches
Banana Creek Canal
West Road Crossing (Geoweb , Wet)
Obligate Zone
Breach Cuts in Existing Berm
Ditch Backfill With Existing Adjacent Spoil
Marsh Enhancement
Cross Drains
Existing & Enhanced Forest Wet Boundary
Historic & Restored Forest Wetland Limits
Ditch Blocks
Swales
Existing Levee Along Property Boundary
Reinforce Exist Road & Berm
Central Road Crossing
Wetland Boundary
Existing Upland Pasture (Restore to Oak Hammock Fringe)
Existing Spreader Swale
Partially Fill Existing Settling Pond
Backfill Ditch With Adjacent Spoil
Lk. Hancock
Circle B Bar
2
4
5
FIGURE G
West Mitigation Portion
Conceptual Plan
Scale 1 in = 680 ft, <North

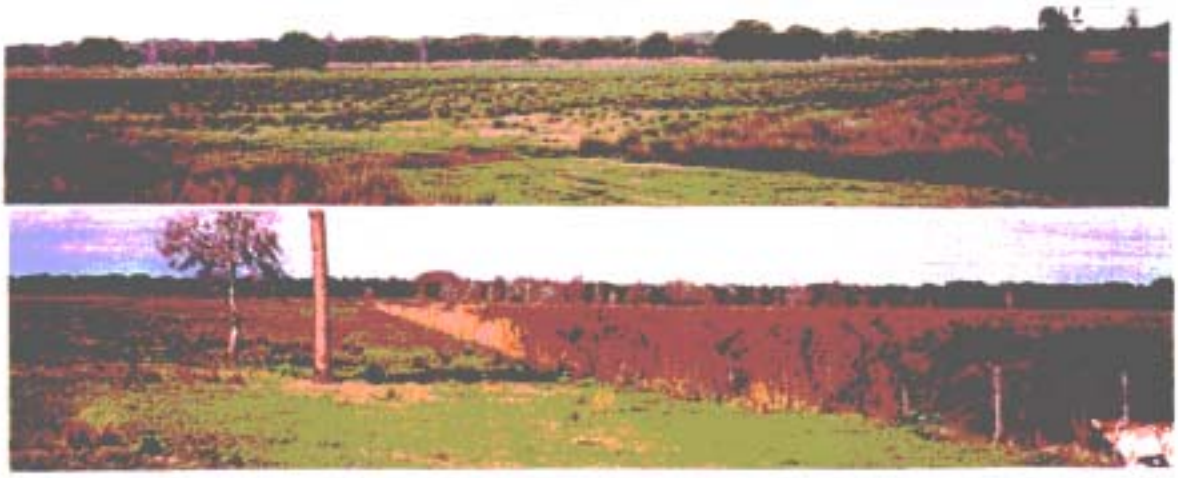

Monitoring & Photo Stations
5
Ditch Backfill With Existing Adjacent Spoil (Dark Blue)
Marsh Enhancement
North
Scale 1 in. = 680 ft.
Reinforce Existing Access Road & Berm
Cross-Drains
Reinforce Existing Road & Berm
Central Road Crossing
Existing 3 Ditches Not Filled
6
Cross-Drains
Ditch Blocks
7
Marsh Enhancement
8
East Road Crossing
Marsh Enhancement
DOT Mitigation Project Boundary
Ditch Backfill With Existing Adjacent Spoil (Dark Blue)
9
Obliterated Zone
Construct Access Road on Existing Berms
Forested Wetland (Enhancement)
10
Crossdrain or Box Culvert Connections With Lk. Hancock
FIGURE H
East Mitigation Portion
Conceptual Plan
Scale 1 in = 680 ft, <North

Monitoring Station 1 – Typical condition of the western remnant forested wetland. As exhibited by the exposed roots, the dewatered condition has resulted in 18-24 inches of muck oxidation. Dominant vegetation includes maple, some sweet bay, tupelo, but no sapling generation.

Monitoring Station 3 – View south over proposed forested wetland restoration area Dominant cover of bahia with minimal coverage provided by pigweed, thistle, and within the lower elevations (right), scattered soft rush and smartweed.

FDOT – District 1 **MITIGATION SITE** **(Peace River Basin)**	**LAKE HANCOCK / CIRCLE B BAR RESERVE** **(SW 66)**

Monitoring Station 4 - View east over proposed enhanced marsh, typical conditions of the west portion pasture. Bahia is very dominant cover, with bermuda, pennywort, carpet grass, and a few pockets of soft rush and smartweed (right background).



Southeast Pasture – View from southern project boundary looking north over southeast pasture. This pasture is slightly lower in elevation and has sufficient hydrology to allow more soft rush to generate than the other pastures (top), but lack of maintenance during dry periods allows this pasture to generate dense coverage of fennel (bottom). Restoring appropriate wetland hydroperiods will eradicate the fennel.

FDOT – District 1 MITIGATION SITE (Peace River Basin)	**LAKE HANCOCK / CIRCLE B BAR RESERVE (SW 66)**

Central Access Road – View south along the access road berm to be reinforced (right) and adjacent ditch (center) that will be have ditchblocks installed to direct surface water flow to the northeast pasture (left and photo below).

Monitoring Station 5 – View from atop the existing central berm (shown in top photo) looking over adjacent ditch and northeast pasture. Bahia very dominant with pigweed, soda apple, and few small pockets of slightly lower elevations with scattered smartweed. Area to be enhanced into marsh habitat to replace the wet improved pasture.

FDOT – District 1 **MITIGATION SITE** **(Peace River Basin)**	**LAKE HANCOCK / CIRCLE B BAR RESERVE** **(SW 66)**

Monitoring Station 10 – Area adjacent to bottom photo, view west over northeast bahia pasture and proposed marsh enhancement area. Banana Creek Canal under oaks (left, south) and upland oak hammock (right, north) border the proposed marsh.

Monitoring Station 10 – View from atop the berm bordering Lake Hancock, Looking west at the northeast pasture (left background) and diverter ditch (center). This ditch diverts contributing ground and surface water flow from reaching the northeast pasture, and will be filled to aid in restoring wetland hydrology.

FDOT – District 1 MITIGATION SITE (Peace River Basin)	**LAKE HANCOCK / CIRCLE B BAR RESERVE (SW 66)**

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management District
Mitigation Project Name: **Apollo Beach Nature Preserve** Project Number: **SW 67**
Project Manager: Xinjian Chen, SWIM Engineer Phone No: (813) 985-7481, ext. 2215
County: Hillsborough Location: Sec. 16, T31S, R19E

IMPACT INFORMATION

DOT FM: 2557031 – SR 60, Cypress to Fish Creek ERP #: 43002958.003 COE #: 200205816 (IP-MN)

Drainage Basin: Tampa Bay Water Body(s): Spruce Street Drainage Canal SWIM water body? N

Impact Acres /Types : 5.3 ac. 642 (Fluccs code)

This SR 60 project has a total proposed impact of 16.6 acres, 5.3 acres to be mitigated at Apollo Beach, 5.1 acres to be mitigated at Tappan Tract (SW 62), 5.4 acres to be mitigated at Cockroach Bay – Saltwater (SW 75), and 0.8 acres to be mitigated at Cockroach Bay – Freshwater (SW 56).

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: X Creation __ Restoration ___ Enhancement ___ Preservation Mitigation Area**: 13.8 ac.**
SWIM project? Y Aquatic Plant Control project? N Exotic Plant Control Project? N
Mitigation Bank? N Drainage Basin: Tampa Bay Water Body(s): Tampa Bay SWIM water body? Y

Project Description

A. Overall project goal: The creation of various coastal habitats within an area of spoil constructed (1955) from adjacent dredged material from Tampa Bay. The total project area is 38 acres, on a site owned and managed by Hillsborough County Parks Dept., with the habitat creation conducted through the WMD-SWIM Dept. The habitats and associated proposed acreage include intertidal low marsh and mangroves (13.8 acres), intertidal high marsh (7.2 acres), intertidal open water (10.8 acres), dunes (1.2 acres), and upland preservation & enhancement (5.0 acres). The restoration area proposed to mitigate for the DOT wetland impacts include the creation of 13.8 acres of low marsh and mangrove species will naturally recruit in this area during the initial growing season.

B. Brief description of current condition: The majority of the site includes a relatively level spoil "plateau" essentially covered with a monoculture of cogon grass and minor cover provided by goldenrod, beggar's-tick, dog fennel, ragweed, and several upland grasses (refer to site photos). A narrow strip of white and black mangroves have established along the southern shore's waterline, couple areas of dense concentrations as well as scattered Brazilian pepper, with scattered cabbage palm, salt-bush, wax myrtle, and Australian pine. Overall, very low quality habitat dominated by exotic vegetation and minimal opportunities for wildlife use.

C. Brief description of proposed work: The majority of the spoil material will be removed, graded to create low and high marsh habitat. The design emphasizes an interconnected network of open water channels and deeper pools, a myriad of planting platforms at various elevations, sinuous edge communities, and areas of upland preservation and enhancement. The open water component was particularly important in the design to offer feeding and resting habitat for the Florida manatee which frequent the area due to the neighboring warm-water discharge from the Tampa Electric Company's (TECO) Big Bend Power Station.

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): The 5.9 acres of the saltwater marsh impacts will be compensated by the creation of 13.8 acres of saltwater low marsh habitat. The DOT funds will be sufficient to reimburse the construction and maintenance of this 13.8 acres, which will be buffered with the creation of other saltwater habitats.

E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: The Tampa Bay Mitigation Bank (TBMB) is the only mitigation bank within the Tampa Bay Drainage Basin. TBMB will be under construction and not anticipated to sell credits until at least 2005.

F. Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body : The Apollo Beach restoration project is a SWIM project. Constructed through the WMD-SWIM Dept., the site is owned and will be managed by the Hillsborough County Parks Department.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: A private contractor selected by the SWFWMD – SWIM Dept.
Contact Name: Xinjian Chen, SWIM Engineer Phone Number: (813) 985-7481, ext. 2215

Entity responsible for monitoring and maintenance: SWFMWD- SWIM Dept. and Hills. County Parks Dept.
Proposed timeframe for implementation: Commence:Design complete, Construction commences summer, 2003
Complete: Construction complete be mid-2004, followed by 3 years maintenance & monitoring

Project cost: $ 1.5 million (total); the DOT funds ($450,000) will reimburse for the construction, maintenance & monitoring for the 13.8 acres of intertidal low-marsh.

Attachments

X 1. Detailed description of existing site and proposed work. Refer to Attachment A.

X 2. Recent aerial photograph with date and scale. Refer to Figure B.

X 3. Location map and design drawings of existing and proposed conditions. Refer to Figure A (Location Map) and Figure C (Design Drawings).

X 4. Detailed schedule for work implementation, including any and all phases. Construction scheduled to commence in the summer, 2003, finish by mid- 2004, followed by three years maintenance & monitoring.

X 5. Proposed success criteria and associated monitoring plan. Refer to Attachment B.

X 6. Long term maintenance plan. Refer to Attachment B.

X 7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). Refer to previous text and Attachment C.

Attachment A – Site Conditions & Proposed Plan

The vast majority of the existing site is classified as upland. Numerous plant species have colonized the upland portions of the site in the 47 years since construction of the Apollo Beach peninsula. With sterile dredged soils and minimal seed source of desirable upland species, the "plateau" (average elev. 9-10 ft.) offers little opportunity for desirable species to colonize. Cogon grass (*Imperata brasiliensis*) is the most dominant ground cover species (refer to site photos). Other herbs include purple sedge (*Cyperus ligularis*), hurricane grass (*Fimbristylis spathacea*), licorice weed (*Scoparia dulcis*), seaside evening primrose (*Oenothera humifusa*), and camphor daisy (*Haploppus phyllocephalus*). Shrub and tree species are present in the form of scattered individuals and small, dense pockets. Dominant species include Brazilian pepper (*Schinus terebinthifolius*), salt-bush (*Baccharis angustifolia*), wax myrtle (*Myrica cerifera*), lantana (*Lantana camara*), cabbage palm (*Sabal palmetto*), and Australian pine (*Casuarina equisetifolia*). A narrow strip of intertidal wetland exists along the outer, waterward edge of the site. Woody vegetation in this zone consists mainly of white mangroves (*Lagucularia racemosa*) and black mangroves (*Avicennia germains*) with scattered Brazilian pepper and coinvine (*Dalbergia castaphyllum*). Herbs include sea purslane (*Sesuvium portulacastrum*), saltmeadow cordgrass (*Spartina patens*), and saltwort (*Batis maritima*).

Several proposed habitats will be constructed. The open water component (10.8 acres) includes sub-tidal, mudflats, and salterns created between elevations 0.5 to deeper than -2.0 feet. The interconnected deepwater channels will provide tidal flows into the interior of peninsula. Deeper pools (greater than 3.0 ft.) will be created to provide refuge for manatees and juvenile fish. Topographic ridges will be constructed in the intertidal zone to trap tidal flows and encourage development of saltern zones.

The intertidal low marsh and mangroves (13.8 acres) will be the community proposed to compensate for the proposed wetland impacts. This zone (elevations 0.5 to +2.0 ft.) will be planted with *Spartina alterniflora* and mangrove species will recruit and generate during the initial growing seasons. The existing eastern shoreline is dominated by mangroves and will be preserved to inhibit erosion and provide a seed source for recruitment. Excavation to provide hydrologic connections for the proposed channels will occur in areas where erosion has eliminated mangrove coverage.

The intertidal high marsh (7.2 acres) will be constructed between elevations +2.0 to +3.0, with proposed plantings of *Iva spp., Spartina patens, Batis maritima, Borrichia frutescens,* and *Sesuvium portulacastrum.* Mangrove recruitment will also occur within this zone to further diversify the installed plant communities.

A portion of the excavated material will be used to construct sand dune habitat along the northern top-of-bank. The dunes and surrounding areas will be enhanced by plantings of sea oats (*Uniola paniculata*), railroad vine (*Ipomoea pes-caprae*), beach sunflower (*Helianthus debilis*), along with transplanted cabbage palms and prickly pear cactus.

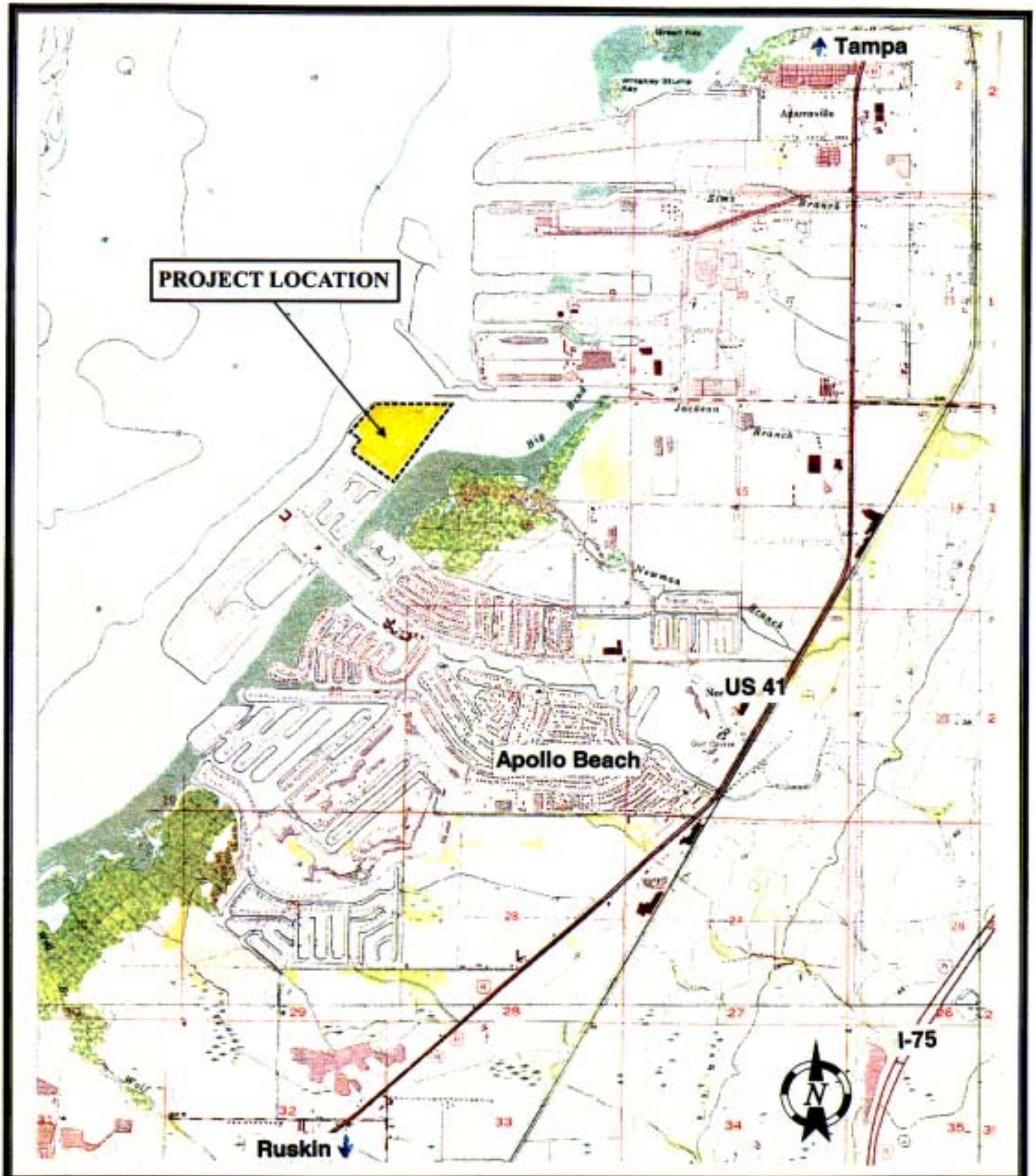
Selected upland areas will be enhanced to increase community diversity and offer roosting & nesting areas for a wide variety of bird species that will frequent the site. Brazilian pepper will be manually cleared and stumps will receive a herbicide application using an approved treatment method. The few remaining Australian pines will be girdled, herbicide treated, and left as dead snags for additional habitat value.

Attachment B – Maintenance & Monitoring Plan, Success Criteria

For estuary creation and restoration projects, with proper construction of appropriate wetland grades to allow for sufficient tidal action, the planted vegetation will survey and recruit throughout the wetland. Salt water limits the re-establishment of exotic vegetation that is more of a concern with freshwater restoration projects. Maintenance for the wetlands will be primarily associated with control of any debris and replacement of herbs that didn't survive the initial planting.

Maintenance to control exotic and nuisance species are generally associated with upland habitat, which is a low percentage of the project area, and will be maintained through the use of herbicide. Maintenance will be conducted as necessary, expected to be quarterly for 2-3 years after planting. Afterward, Hillsborough County staff will continue maintenance as necessary to retain the success criteria. Inspections on a semi-annual basis are anticipated to evaluate vegetative conditions, debris, and any nuisance/exotic vegetation. After each inspection, proper maintenance activities will be conducted to correct any problems.

Monitoring will be conducted semi-annually, followed by annual reports conducted for a minimum three years post-construction. Monitoring will include qualitative evaluation and photo documentation of the portions proposed for mitigation, as well as general habitat conditions of the entire project area. The success criteria will reflect a minimum 90% survivorship for planted material and a total 85% cover of planted and recruited desirable species.



FDOT - District 7 **MITIGATION SITE** **(Tampa Bay Drainage Basin)**	**APOLLO BEACH** **(SW 67)**	**FIGURE A** **LOCATION MAP** **Scale 1 in. = approx. 3200 ft.**

REGIONAL MITIGATION PLAN{PRIVATE }
BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management District
Mitigation Project Name: **Brooker Creek to Starkey Wilderness Park Corridor** Project Number: **SW 68**
Project Manager: Not designated at this time, joint project between Pinellas Co., Hillsborough Co., Pasco Co., USACOE, FFWCC, & SWFWMD
County: Pasco Location: Sec. 21, 28, 33, T26S, R17E

IMPACT INFORMATION

(1) FM: 4037711, US 19-Republic Drive to CR 816 (Alderman) ERP #: 44022085.001 COE #: NW 14 PCN
(2) FM: 2571741, US 98 – Hernando Co. Line to US 19 ERP #: 4323430.000 COE #: 199803481 (IP-KF)
(3) FM: 2570501, SR 688 (Ulmerton) – Oakhurst Rd. to 119th St. ERP #: 44012347.010 COE #:_____
(4) FM: 2563221, SR 52 – Moon Lake to Suncoast Parkway ERP #: 43007396.001 COE #:_____
(5) FM: 2563321, SR 54 – Rowan Rd. to Mitchell Bypass MSW #: 4011641.004 COE #: 199302010 (IP-ML)
(6) FM: 2568151, SR 586 (Curlew Rd.) – CR 1 to Fisher Rd. ERP #: 44009837.008 COE #: 200205245 (NW)

Drainage Basin(s): Upper Coastal Water Body(s): Anclote River, Curlew Creek, Church Creek, McKay Creek, Buckhorn Creek SWIM water body? N

Impact Acres / Types:

(1) FM 4037711 0.1 ac. 618 (Fluccs code)

(2) FM 2571741 1.4 ac. 621 (Fluccs code)

(3) FM 2570501 0.2 ac. 630 (Fluccs code)

TOTAL 11.7 Acres

(4) FM 2563221 3.2 ac. 617 (Fluccs code)
0.9 ac. 618 (Fluccs code)
2.1 ac. 621 (Fluccs code)
0.1 ac. 641 (Fluccs code)
TOTAL 6.3 ac.

(5) FM 2563321 0.10 ac. 617 (Fluccs code)
0.20 ac. 618 (Fluccs code)
3.30 ac. 641 (Fluccs code)
TOTAL 3.60 ac.

(6) FM 2568151 0.10 ac. 618 (Fluccs code)

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: ___ Creation X Restoration X Enhancement X Preservation Mitigation Area: **20-30 acres**
SWIM project? N Aquatic Plant Control project? N Exotic Plant Control Project? N Mitigation Bank? N
Drainage Basin(s): Upper Coastal Water Body(s): None

{PRIVATE }Project Description{tc \l 1 "Project Description"}

A. Overall project goal: Acquisition, habitat enhancement & restoration, maintenance, and long-term management of a portion of a proposed corridor between Brooker Creek Preserve (5,000 acres) in Pinellas County and the Starkey Wilderness Area (15,000 acres) in Pasco County (Figure A).

{ADVANCE \R 1252.20}
{ADVANCE \R 1236.15}B. Brief description of current condition: As of the summer, 2003, the exact dimensions and acreage of the proposed corridor is under negotiation with the existing landowners. The corridor length will be slightly longer than two miles, and cover an area of 200-600 acres. The existing conditions of the corridor area is approximately evenly divided between cypress wetlands and upland improved pastures. A small area of pine flatwoods is located within the southeast corner of the corridor (Figure B).

C. Brief description of proposed work: The corridor area will require a joint acquisition effort between several public and private entities, potentially providing mitigation for several projects. The existing wetland habitat has good

conditions, but the upland pasture will require planting of appropriate tree, shrub, and herb species to provide buffers between the corridor and the adjacent upland pastures proposed for future residential communities. The actual area designated to provide the mitigation for the DOT wetland impacts will be determined as the corridor dimensions are finalized. Due to the importance of this proposed corridor, DOT has committed additional funds (anticipated to be $1million) toward the design and construction of a major wildlife undercrossing at SR 54 to provide a continuous corridor. This corridor will not only provide habitat conditions suitable for wildlife movement, but a pedestrian trail that will connect Brooker Creek Preserve to Starkey Wilderness Area. Long-term maintenance & management will be conducted by one of the County entities and/or the SWFWMD Land Management Dept.

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): The DOT impacts will be adequately mitigated through the enhancement and restoration of habitat conditions within the corridor. The importance of this corridor to the region is acknowledged by the various federal, state, and local agencies and the general public in the area. DOT's commitment toward the corridor has already been documented with the proposed acquisition of an expensive five acres of SR 54 frontage and the proposed construction of a SR 54 under-crossing if the associated land acquisition of the corridor is successful.

E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: There are currently no proposed or existing mitigation banks in the Upper Coastal Basin.

F. Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body : There are currently no proposed or existing SWIM projects within the Upper Coastal Basin.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: No construction activities required or proposed at this time.
Contact Name: Mark Brown, SWFWMD Env. Scientist Phone Number: (352) 796-7211, ext. 4488
Entity responsible for monitoring and maintenance: Long-term maintenance & management activities by one or all of the appropriate County Departments and the SWFWMD-Land Management Dept.
Proposed timeframe for implementation: Commence: January, 2001 Complete: August, 2004

Project cost:	**$1,100,000 (total)**
Land Acquisition	$1,000,000 (By August, 2004)
Enhancement	$100,000 (Initial planting costs, long-term management costs encumbered by the Counties & WMD- Land Mgmt.)

{PRIVATE } Attachments {tc \l 1 " Attachments "}

X 1. Detailed description of existing site and proposed work. Refer to previous text, additional information of the designated area for the DOT mitigation will depend on the final corridor acquisition area, and will be included in the 2004 DOT Mitigation Plan.

X 2. Recent aerial photograph with date and scale. Figure B is a 1995 infrared aerial of the proposed conceptual corridor.

X 3. Location map and design drawings of existing and proposed conditions. Figure A is a location map and Figure B depicts the aerial of existing conditions. The final corridor location will determine the proposed vegetative

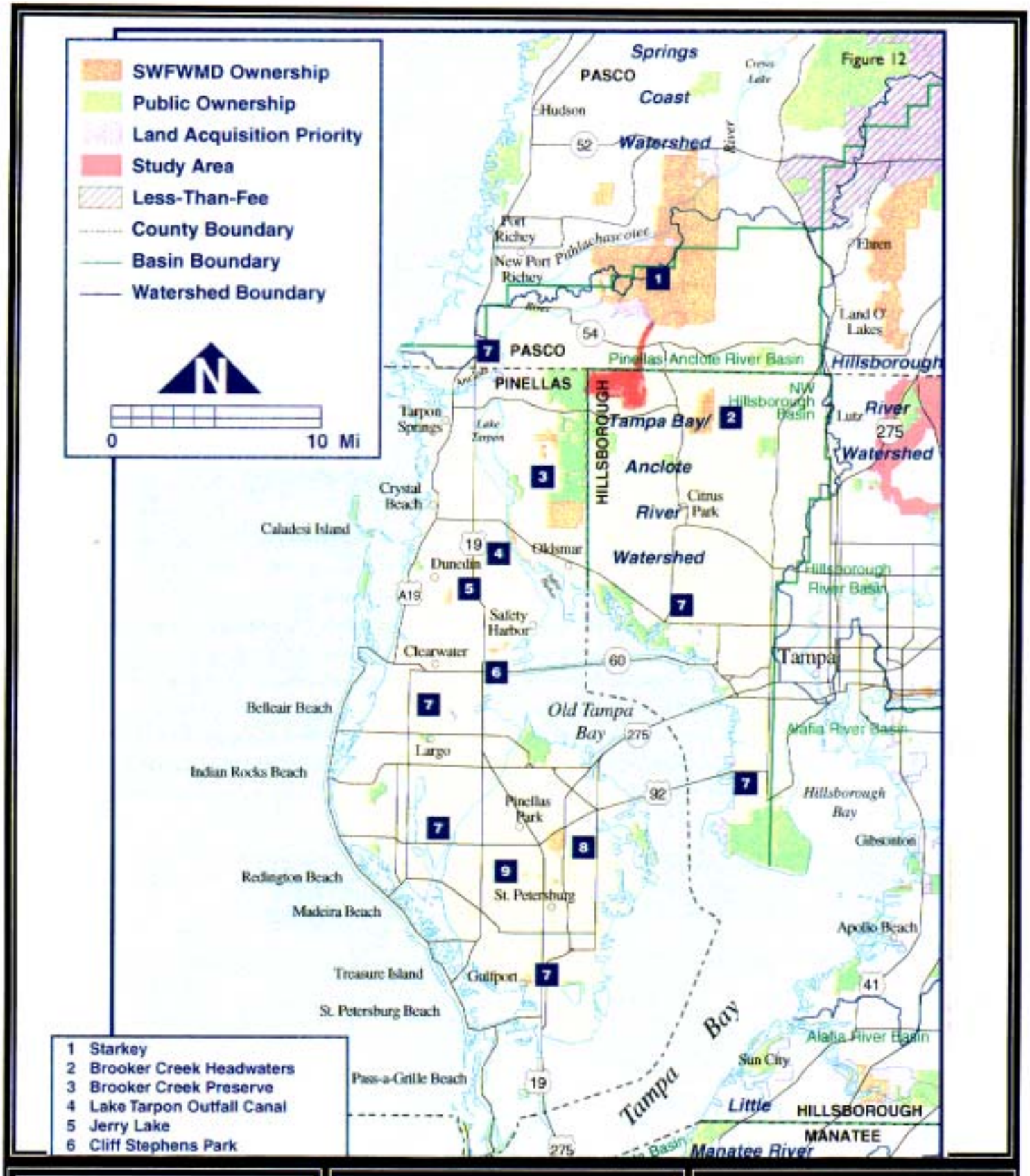
conditions. Any improved pasture within that portion of the corridor designated for DOT mitigation will be restored to pine flatwood conditions. Any wetlands within the corridor that are designated for DOT mitigation will be evaluated and, if necessary, enhanced to the degree possible. This could include hydrologic improvements if such conditions do not result in any off-site impacts.

_X_ 4. Detailed schedule for work implementation, including any and all phases. Final schedule for acquisition, restoration, and enhancement conditions will be determined by early 2004, and included in the 2004 DOT Mit. Plan. If by mid-2004, it appears acquisition of property within the corridor doesn't seem possible, in coordination with the multi-agency mitigation review group, the WMD will evaluate transferring the mitigation credits within the proposed corridor to another mitigation nomination in the Upper Coastal Basin. Such transfer will require modifications of the previously issued ERP and ACOE permits for the DOT projects.

_X_ 5. Proposed success criteria and associated monitoring plan. Proposed success criteria will require extensive cover of vegetative conditions in order to provide an appropriate buffer and habitat conditions to encourage and protect wildlife use of the corridor area. The vegetative details will be included in the 2004 DOT Mitigation Plan. Since any habitat improvements of the entire corridor will be a part of a multi-agency decision making process, the success criteria and associated monitoring plan will be finalized as part of agency agreements. At a minimum, any upland restoration activity would be expected to have 80% ground cover of desirable species, and where the upland forested component is necessary, a minimum 30% canopy closure. Monitoring will be conducted semi-annually for a minimum three years, with an annual monitoring report to document vegetative and wildlife conditions during the previous year.

_X_ 6. Long term maintenance plan. The maintenance will be conducted by one of the associated County Depts. and/or the SWFWMD Land Management Dept. Due to the planned adjacent residential communities, maintenance will probably not include low intensity prescribed burning. Instead, any exotic or nuisance species will be controlled with herbicide, mechanical, and hand removal.

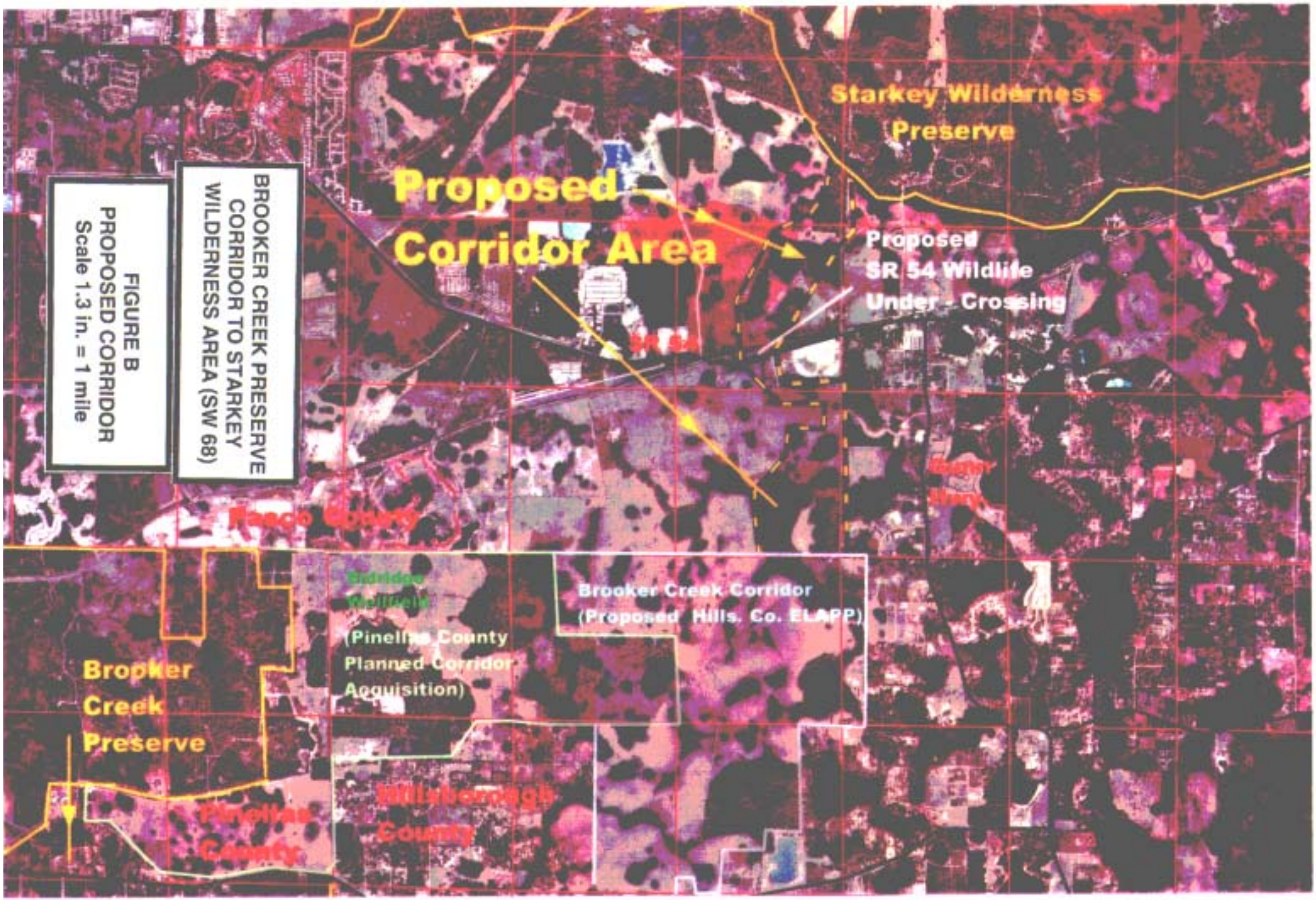
_X_ 7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). Refer to previous description.



FDOT - District 7
MITIGATION SITE
(Upper Coastal Basin)

BROOKER CREEK PRESERVE
CORRIDOR TO STARKEY
WILDERNESS AREA (SW 68)

FIGURE A
LOCATION MAP


Starkey Wilderness Preserve
Proposed Corridor Area
Proposed SR 54 Wildlife Under - Crossing
Brooker Creek Corridor (Proposed Hills. Co. ELAPP)
(Pinellas County Planned Corridor Acquisition)
Brooker Creek Preserve
Pinellas County
Hillsborough County
Pasco County
BROOKER CREEK PRESERVE CORRIDOR TO STARKEY WILDERNESS AREA (SW 68)
FIGURE B
PROPOSED CORRIDOR
Scale 1.3 in. = 1 mile

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management District
Mitigation Project Name: **I-75 Peace River Bridge Restoration** Project Number: **SW 69**
Project Manager: Mark Brown, WMD Environ. Scientist Phone No: (352) 796-7211, ext. 4488
County(ies): Charlotte

IMPACT INFORMATION

WPI: 4046971 – I-75 Bridge Widening over Peace River ERP #: 43021917.00 COE #: NPR (USCG)
Drainage Basin(s): Peace River Water Body(s) : Peace River SWIM water body? Y

Impact Acres / Types: 0.08 ac. 619 / 612 / 642 (Fluccs code) – Permanent Impacts from Bridge Embankment Fill:
0.72 ac. 612 / 642 (Fluccs code) - Permanent Impacts from Shading
2.51 ac. 612 / 642 (Fluccs code) – Temporary Impacts from Construction

TOTAL 3.31 Acres

Note: The total proposed impact associated with the bridge construction is 6.06 acres. In addition to the 3.31 acres of impact listed above, there will be 2.75 acres of mangrove & estuarine permanent impacts from shading that will be mitigated through the purchase of mangrove credits from the Little Pine Island Mitigation Bank (SW 52).

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation: 2.51 ac. Restoration (temp. impacts) 2.06 ac. Enhance. (under removed bridge) Mitigation: **4.57 acres**
SWIM project? N Aquatic Plant Control project? Y Exotic Plant Control Project? N Mitigation Bank? N
Drainage Basin(s): Peace River Water Body(s): Peace River SWIM water body? Y

Project Description

A. Overall project goal: DOT is constructing a new northbound I-75 bridge over the Peace River. The new span will be located between the existing northbound and southbound bridges (refer to Figures 13-16 for plan views). To remove the existing northbound bridge, construction equipment will require access adjacent to the eastern side of the existing span, resulting in 2.51 acres of temporary wetland impact. Once the bridge span is removed, the existing non-vegetated, shaded area under the existing span (2.06 ac.) and temporary impact area (2.51 ac.) will be planted with appropriate species of mangrove, rush, and cordgrass.

B. Brief description of current condition: Underneath the existing northbound bridge span, the non-riverine portions include a dominance of non-vegetated, exposed sand conditions (refer to site photos). For Site C, under the outer edges of the bridge span, ground and small shrub-size white mangroves are present due to limited sunlight exposure. Trimmed mangroves are dominant within the proposed temporary impact area of Site C. For Site B (Bird Key), the temporary impact area has some small trimmed mangroves, scattered leather-fern, and some non-vegetated areas where previously cut limbs are prevalent over the ground. For Site A, the temporary impact area includes a mixture of white & red mangrove along with a dominance of black rush (refer to site photos).

C. Brief description of proposed work: The Contractor will construct the new bridge span before removing the existing northbound span. Once the existing span is removed, the Contractor is responsible for ensuring the pre-construction grade elevations are restored within the temporary impact and enhancement areas. Within two weeks after the Contractor finishes grading, the enhanced and restored wetlands at Sites A, B, and C will be planted with black rush & marsh hay cord grass (3 ft. centers) and white & red mangroves (10 ft. centers). Natural seed source recruitment and generation of additional mangroves are anticipated from the adjacent mangrove habitat. Maintenance & monitoring will be conducted for a minimum 3 years to guarantee success criteria is met.

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): For the on-site mitigation, the permanent loss of 0.8 acres of mangrove/estuarine marsh habitat will be adequately and appropriately compensated by the enhancement of 2.06 acres of non- to minimally-vegetated wetlands under the existing northbound span to be removed. The 2.51 acres of temporary impact to mangrove and saltmarsh habitat will be restored in place. To compensate for the additional 2.75 acres of permanent impact, the impacts are mitigated though purchasing 2.75 credits from the Little Pine Island Mitigation Bank

E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: Due to habitat conditions, proximity to the proposed impact, and economical value, the Little Pine Island Mitigation Bank was selected to compensate for some of the proposed wetland impact associated with this project. However, the I-75 Bridge is within the Peace River Basin and the mitigation bank is within the adjacent and downstream Charlotte Harbor Basin. Selection of an appropriate mitigation project within the basin is required to partially mitigate for wetland impacts, in order to avoid cumulative wetland habitat function and value losses occurring within the Peace basin. Since the on-site wetland restoration and enhancement adequately compensates for a portion of the impacts, the mitigation bank can adequately and appropriately mitigate for the remaining habitat loss.

F. Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body : There are no existing or currently proposed saltwater restoration SWIM projects proposed in the Peace River basin.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: Contractor for the bridge construction is responsible for the necessary earthwork to restore grade elevations. Contact Name: Mark Brown, WMD Environ. Scientist Phone Number: (352) 796-7211

Entity responsible for monitoring and maintenance: The wetland planting, maintenance, and monitoring will be conducted by SWFWMD environmental staff or an appropriate contractor selected by the WMD.

Proposed timeframe for implementation: Commence: After completion of bridge construction, which is commenced in 2001 and expected to complete construction in late, 2003 or early , 2004 Complete: 3 years post-construction

Project cost: $60,000 (total)
Planting (4.57 acres) Mangroves - $15,000, Herbs - $22,000 = $37,000
Maintenance – 3 years = $15,000
Monitoring – 3 years = $8,000

Attachments

X **1. Detailed description of existing site and proposed work.** Refer to previous discussion and site photos.

X **2. Recent aerial photograph with date and scale.** Refer to Figure B, 1995 infrared aerial.

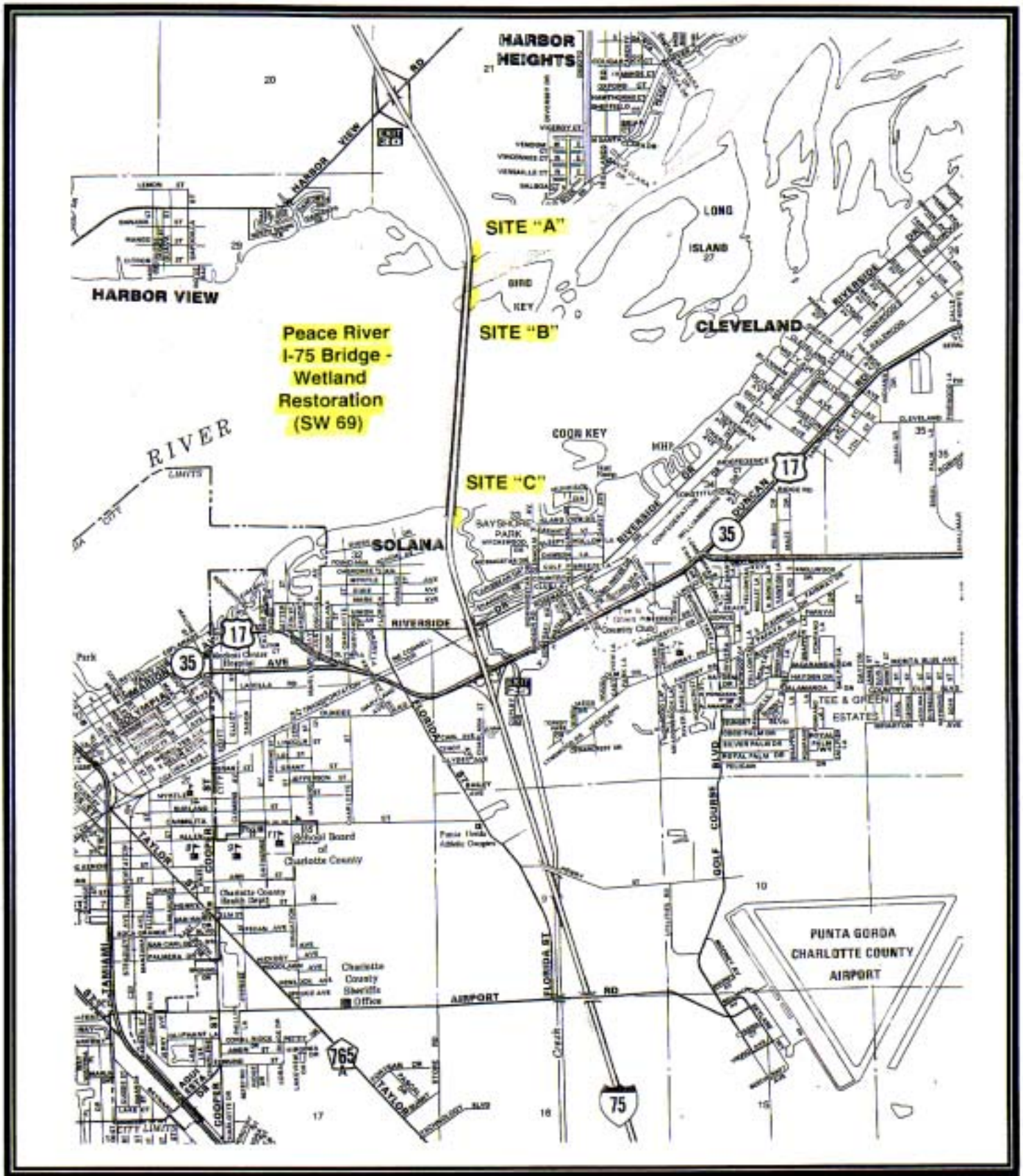
X **3. Location map and design drawings of existing and proposed conditions.** Refer to Figure A (Location Map) and Figures 13-16 (bridge plan views) for existing & proposed conditions.

X **4. Detailed schedule for work implementation, including any and all phases.** Refer to previous discussion on activities.

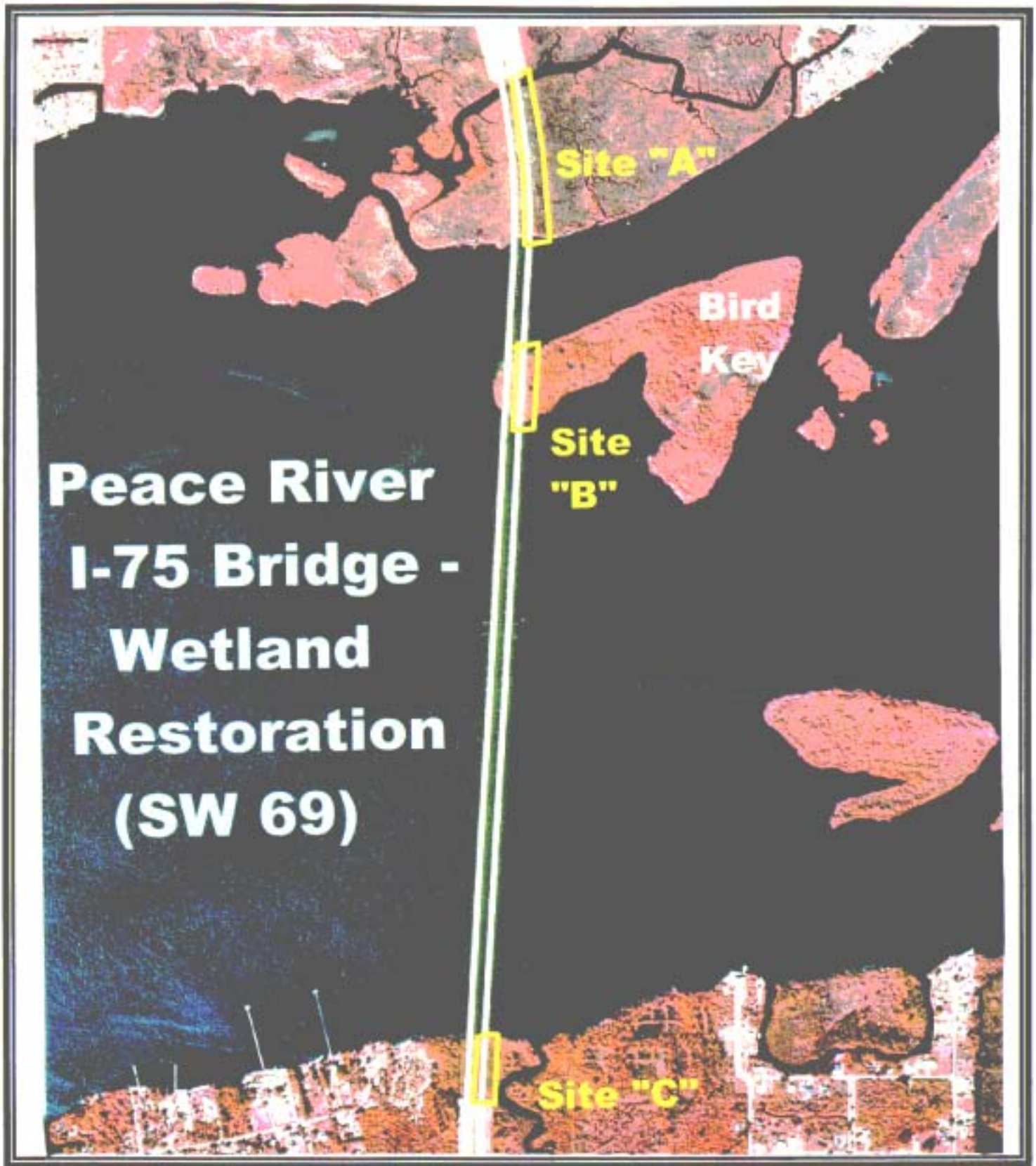
X **5. Proposed success criteria and associated monitoring plan**. Proposed success criteria includes 90% survivorship of planted mangroves, which includes white mangroves (*Laguncularia racemosa*, 1 gallon, 10 ft. centers) within the higher grade elevations of Sites B and C, red mangroves (*Rhizophora mangle*) along the river for both these sites and Site A. Black rush (*Juncus roemerianus*, 4" bare root, 3 ft. centers) will be planted throughout Site A and adjacent to the river at Sites B and C. To provide soil stabilization and transition to mature mangrove communities, marsh-hay cordgrass (*Spartina patens*) will be planted within the higher elevations of Sites B and C. As evidenced by the existing mangrove communities at these two sites, white mangroves are anticipated to recruit, generate, and fill in the restored and enhanced wetland area; eventually shading and replacing the cordgrass. Success criteria will require a minimum 80% cumulative cover of desirable vegetation, since ground cover within mature mangrove systems are generally sparse. With proper grading, tidal waters will restrict the generation of exotic/nuisance species, which will be required to be eradicated during the minimum 3 -year monitoring period. The monitoring will be conducted on a semi-annual basis for a minimum 3-years post-construction. The monitoring will be qualitative, noting species coverage, photo documentation, and vegetative trends and required maintenance activities. The results of the semi-annual monitoring will be prepared within annual monitoring reports and submitted to the ACOE and SWFWMD.

X **6. Long term maintenance plan.** Maintenance activities will be conducted as needed for a minimum 3-years post construction. This will include a minimum of quarterly inspections the first year and semi-annual thereafter to conduct a review of the site conditions, herbicide any exotic/nuisance species, trash removal, and photo documentation of conditions to be included in the annual monitoring reports.

X **7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s).** Refer to previous discussion.

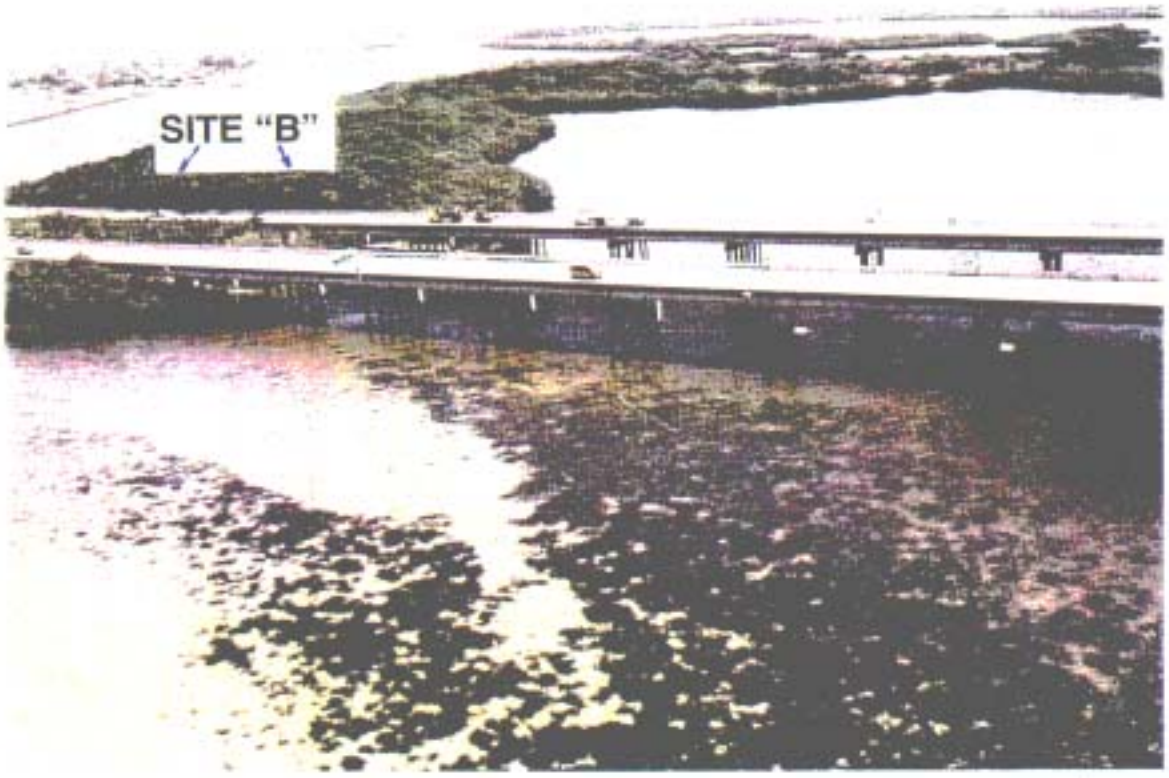


FDOT - District 1 **MITIGATION SITE** **(Peace River Basin)**	**PEACE RIVER / I-75 BRIDGE** **RESTORATION** **(SW 69)**	**FIGURE A** **LOCATION MAP** **^North, Scale 1.7 in. = 1 mile**

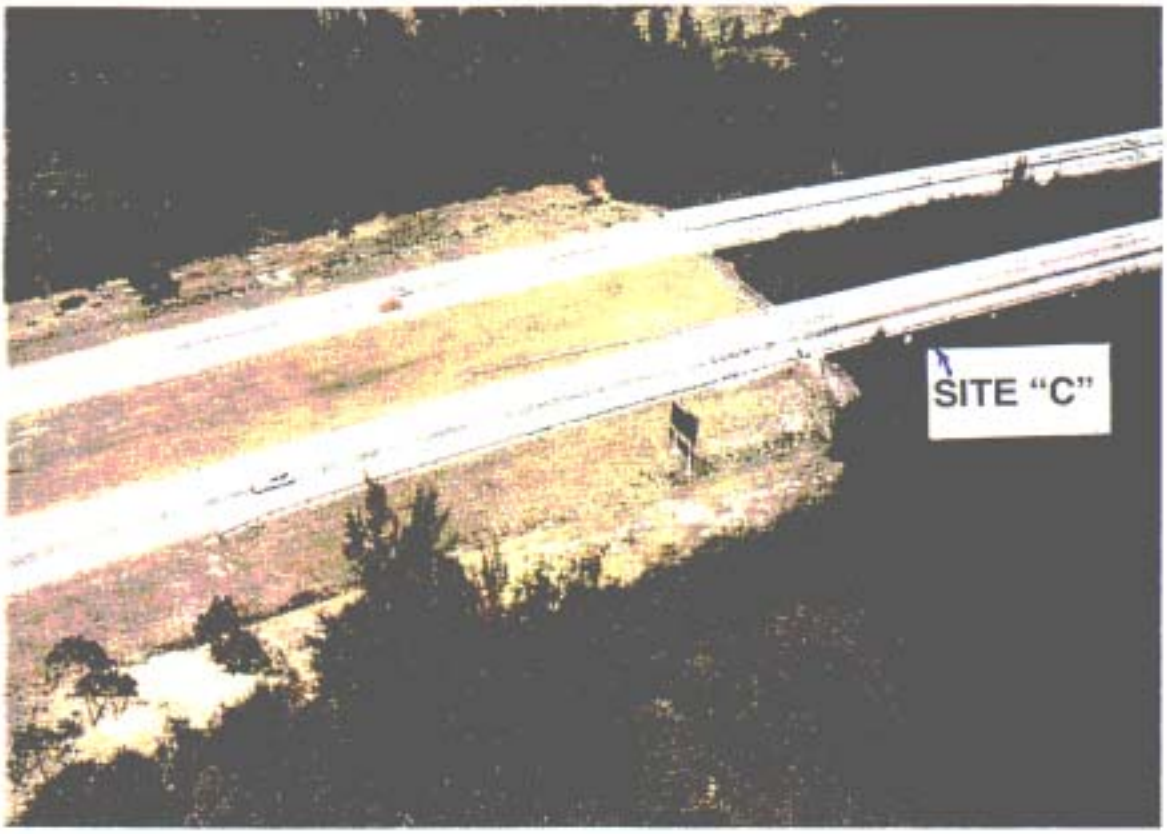


FDOT - District 1 MITIGATION SITE (Peace River Basin)	PEACE RIVER / I-75 BRIDGE RESTORATION (SW 69)	FIGURE B 1995 INFRARED AERIAL ^North, Scale 1in. = 1075 ft.

Wetland S1
Facing South



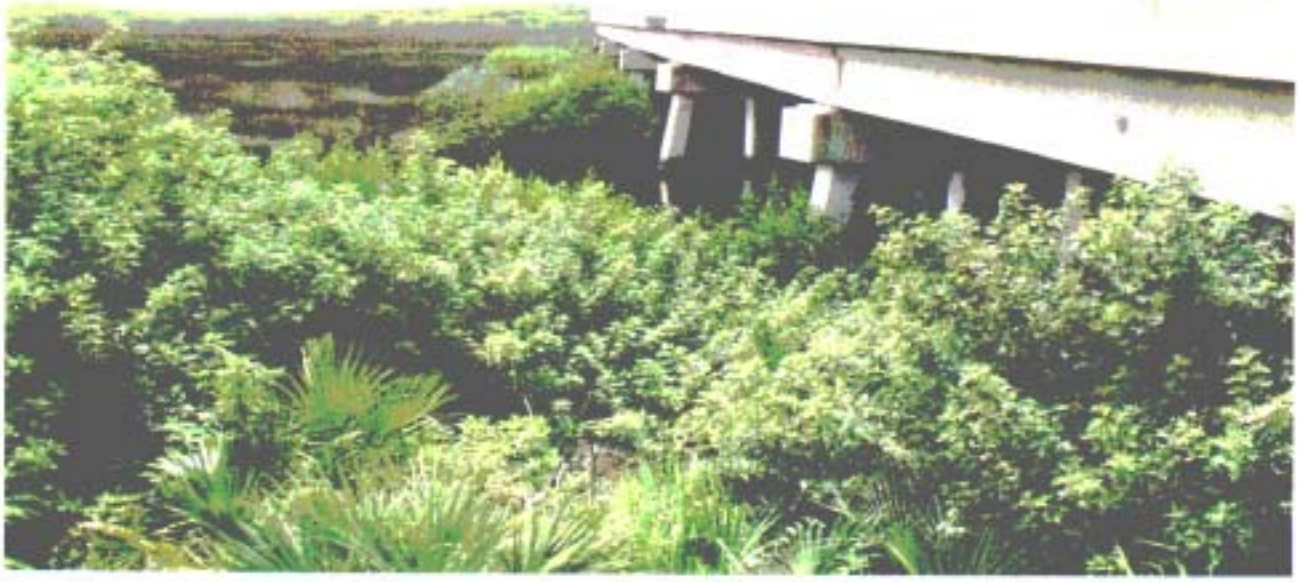
Seagrass bed
on west side
of bridge



Wetland I
Facing West

Wetland J
Facing North

Site A - View from top of the northbound bridge, looking south at mangroves and black rush alongside the bridge within the proposed temporary impact area. These species will be planted to restore the temporary impact and to enhance a portion under the bridge span proposed for removal.



Site A - View from the northern bridge embankment area, looking south over the tidal branch (refer to Figure B for aerial depiction). Brazilian pepper along the embankment (foreground) with mangroves and black rush south of the open water and adjacent to the bridge.

FDOT - District 1 Mitigation Site (Peace River Basin)	**Peace River / I-75 Bridge Restoration (SW 69)**

Site B - View from top of the northbound bridge, looking south at the large mangroves on Bird Key. Note the proposed temporary impact area has minimal coverage of mangroves and ground cover vegetation, primarily scattered leather fern and previously cut mangroves.

Site B - Opposite view from top photo, looking north at the temporary impact area adjacent to the bridge, the temporary impact area and enhancement area under the existing span will be planted with mangroves.

FDOT - District 1 Mitigation Site (Peace River Basin)	**Peace River / I-75 Bridge Restoration (SW 69)**

Site C - View from the northbound bridge's southern embankment, looking north at the proposed temporary wetland impact area associated with access of construction equipment. The temporary impact limits approximate the area where the mangroves are trimmed adjacent to the existing bridge span.

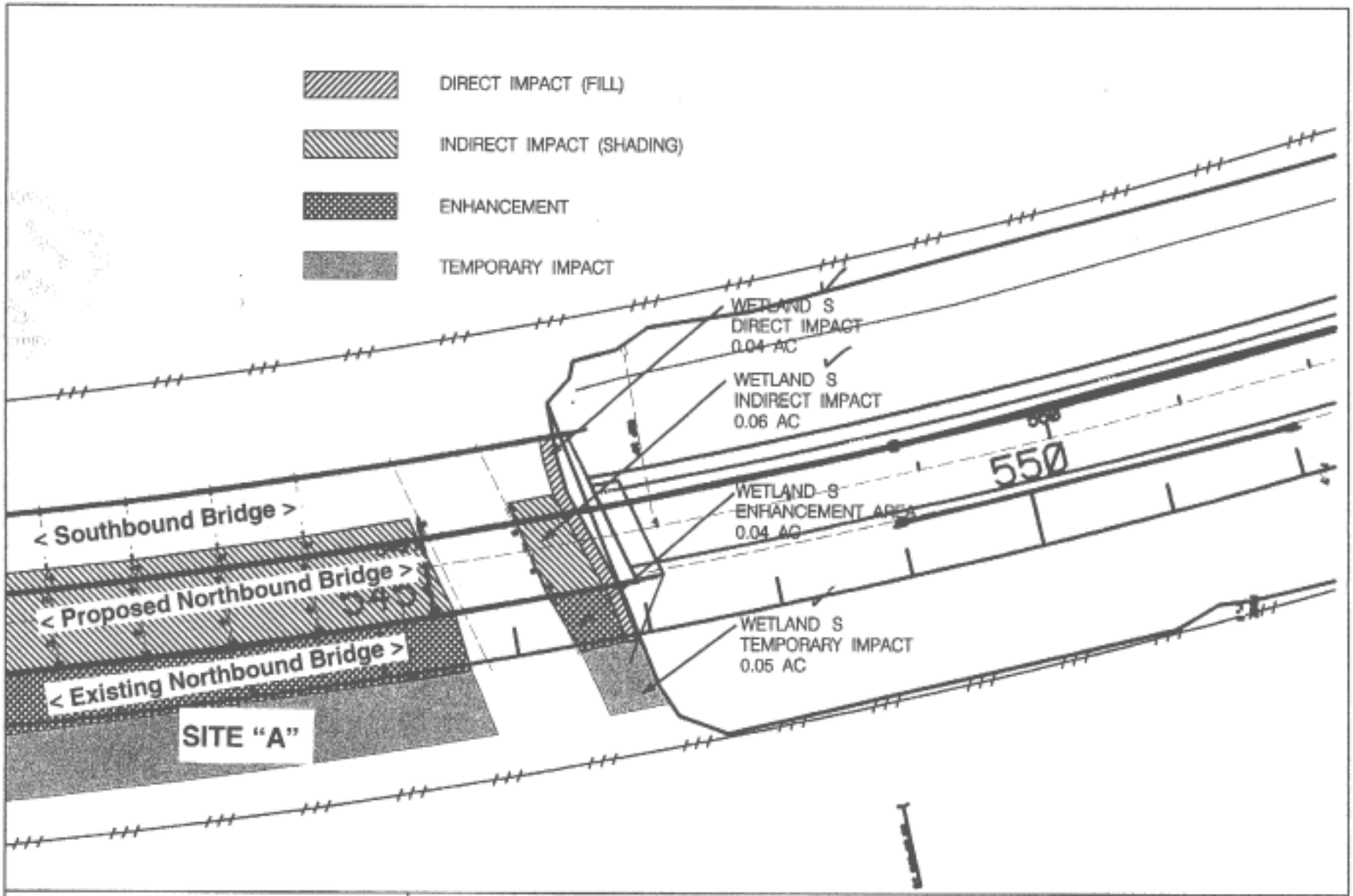
Site C - View of the temporary impact area (right) and proposed span removal (left). The temporary impact area is dominated by white mangrove, including shrub-size mangroves that have generated under the edge of the existing bridge span.

FDOT - District 1 Mitigation Site (Peace River Basin)	**Peace River / I-75 Bridge Restoration (SW 69)**

Site C - View under the northbound bridge, minimal vegetation within the area under shade. Once this bridge span is removed, white mangroves are proposed for planting, along with natural generation of mangroves. Stain lines on the bridge pilings indicate normal tidal fluctuations.

Site C - View from the southern shoreline of the Peace River, underneath the northbound bridge proposed for removal. Some red mangrove along the banks, seagrass beds witin the river will not be impacted by bridge construction.

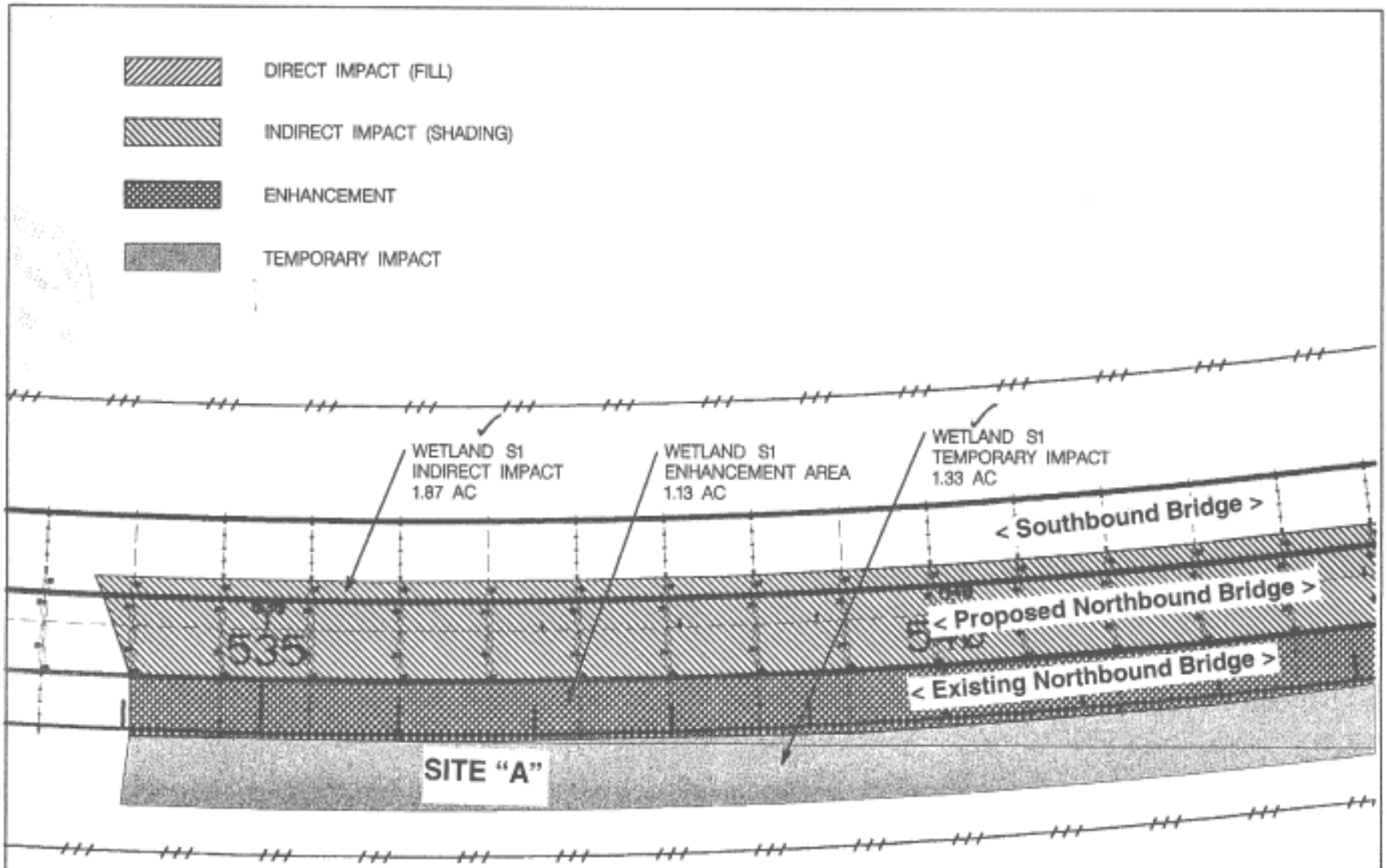
FDOT - District 1 Mitigation Site (Peace River Basin)	**Peace River / I-75 Bridge Restoration (SW 69)**



I–75 (S.R.93) OVER THE PEACE RIVER
REDECKING AND WIDENING
DESIGN–BUILD PROJECT

WETLAND IMPACT AREAS

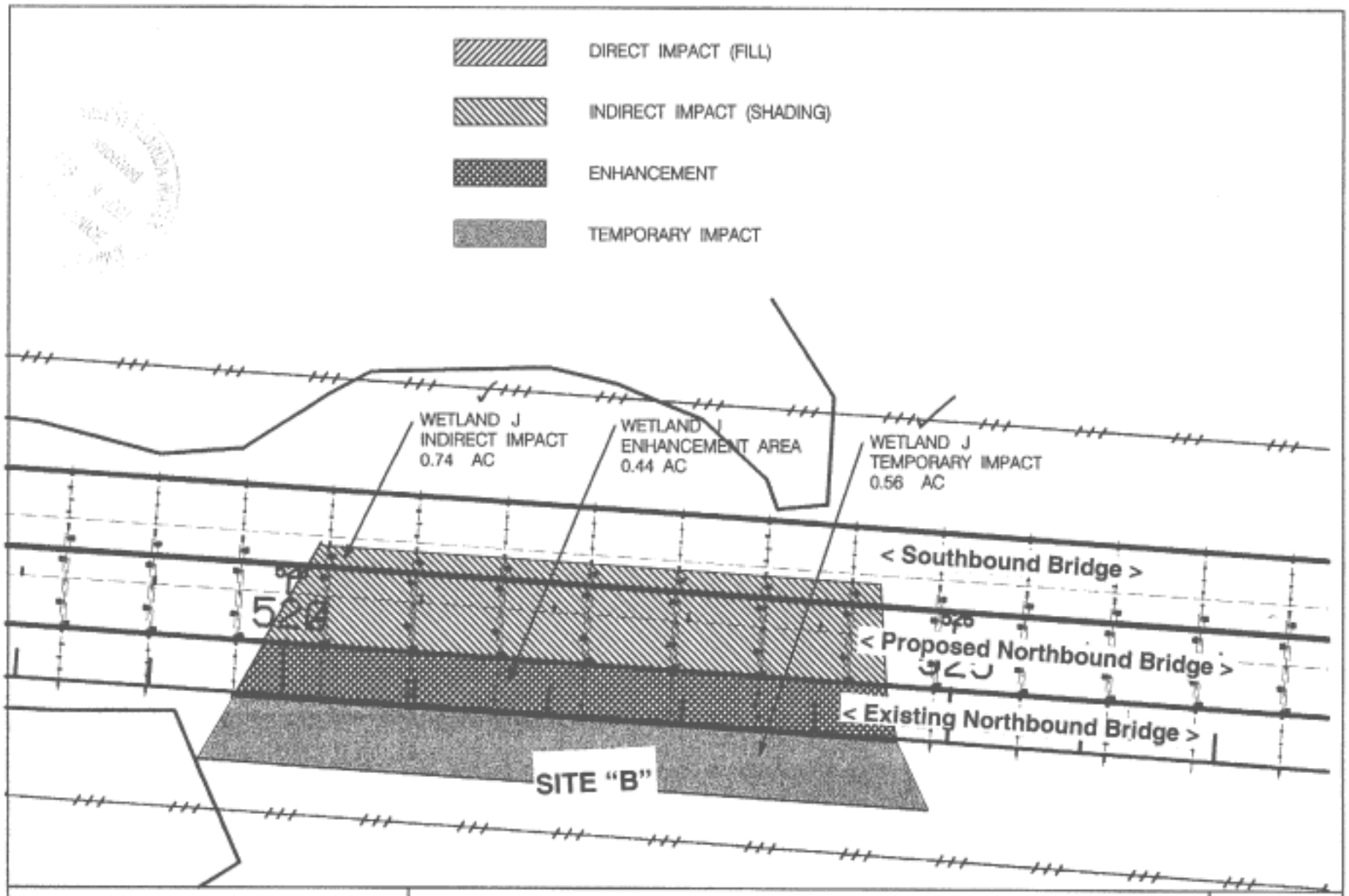
FIGURE 16



I-75 (S.R.93) OVER THE PEACE RIVER
REDECKING AND WIDENING
DESIGN-BUILD PROJECT

WETLAND IMPACT AREAS

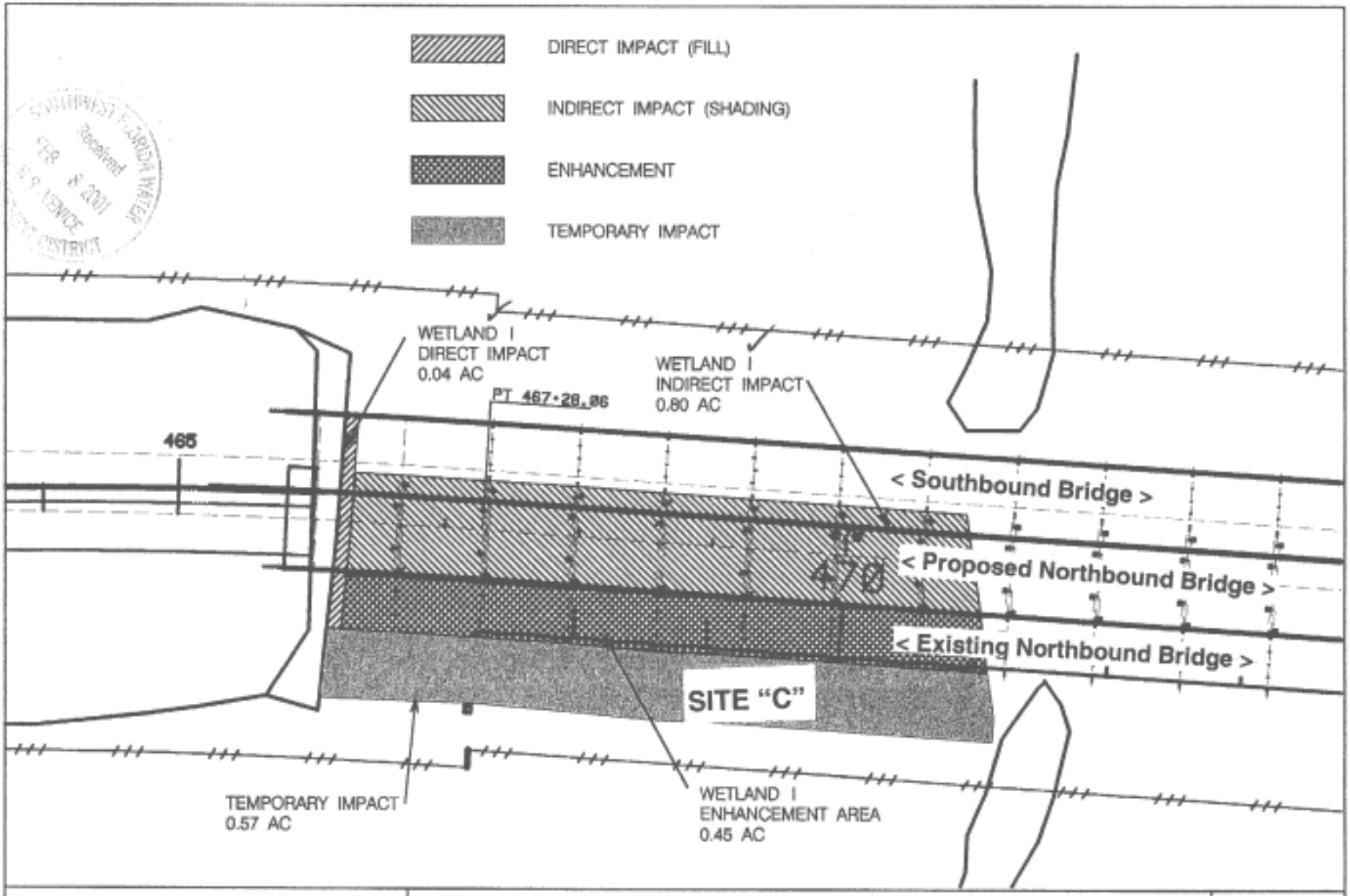
FIGURE 15



I–75 (S.R.93) OVER THE PEACE RIVER
REDECKING AND WIDENING
DESIGN–BUILD PROJECT

WETLAND IMPACT AREAS

FIGURE 14



I–75 (S.R.93) OVER THE PEACE RIVER
REDECKING AND WIDENING
DESIGN–BUILD PROJECT

WETLAND IMPACT AREAS

FIGURE 13

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management District
Mitigation Project Name: **Ft. DeSoto Park** Project Number: **SW 70**
Project Manager: Eric Fehrmann, Pinellas County Phone No: (727) 464-4761
County: Pinellas Location: Section 8, 9, T33S, R16E

IMPACT INFORMATION

1 -FM: 2569031, SR 682 (Bayway Bridge), SR 679 to W. Toll Plaza ERP #: 4423532.000 COE #: NA (USCG)
2 -FM: 4064741, SR 699 (Gulf Blvd.), Johns Pass Bridge Replacement ERP #: _____ COE #: _____
3 -FM: 2571551, SR 688 (Ulmerton Rd.), 119th St. to Long Beach Canal ERP #: _____ COE #: _____
4-FM: 2571541, SR 688 (Ulmerton Rd.), El Centro / Ranchero to US 19 ERP #: _____ COE #: _____
5-FM: 2571521, SR 679 (Bayway), Intercoastal to Bridge ERP #: _____ COE #: _____
6-FM: 2571371, Alt. 19 (SR 595), Meres Blvd. to Pasco County Line ERP #: _____ COE #: _____
7-FM: 2570831, SR 699 (Gulf Blvd.) – 192nd Ave. to Walsingham/Ulmer. ERP #: _____ COE #: _____
8-FM: 4091541, SR 688 (Ulmerton) – Wild Acres to El Centro/Ranch. ERP #: _____ COE #: _____
9-FM: 2570781, US Alt. 19 (SR 55) – Harry St. to Meres Blvd. ERP #: _____ COE #: _____
10-FM: 4037661, Alt. US 19 (SR 595) – Pinellas Co. Line to US 19 ERP #: _____ COE #:_____

Drainage Basin: Upper Coastal Water Body(s): Boca Ciego Bay, John's Pass, Long Beach Canal, Intercoastal Waterway, Anclote River, Pinellas Aquatic Preserve SWIM water body? N

Acres / Impact Types:

1- 0.1 ac. 540 (Fluccs)
0.3 ac. 641 (Fluccs)
0.4 ac. 911 (Fluccs)
TOTAL: 0.80 acres

2 – 0.1 ac. 540 (Fluccs)

3 – 0.2 ac. 641x (Fluccs)

4 – 0.1 ac. 641 (Fluccs)

5 – 0.3 ac. 540 (Fluccs)

6 – 0.1 ac. 641x (Fluccs)
0.1 ac. 612 (Fluccs)
TOTAL: 0.2 acres

7 – 0.1 ac. 612 (Fluccs)

8 – 0.2 ac. 510 (canal)

9 – 0.1 ac. 618 (Fluccs)

10- 0.1 ac, 617 (Fluccs)

TOTAL – 2.4 Acres

–

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: ___ Creation ___ Restoration _X_ Enhancement ___ Preservation Mitigation Area: **24 acres**
SWIM project? Y (cost-share funds from SWIM) Aquatic Plant Control project? N Exotic Plant Control Project? N
Mitigation Bank? N Drainage Basin(s): Upper Coastal Water Body(s): Mullet Key Bayou SWIM water body? Y

Project Description

A. Overall project goal: The Ft. DeSoto Park Aquatic Habitat Management Area has a couple islands that were connected to Mullet Key 40 years ago by the construction of causeway roads. These causeways have blocked historic tidal circulation patterns to the inner portion of the bays, resulting in severe stress and mortality of seagrass habitat. With construction of two – 40 foot bridge spans to place channels through the causeways, flow patterns will be restored to the inner bays and enhance the health and survivorship of seagrass beds. The minimal area of anticipated seagrass enhancement will be 200 acres (Figure B). Secondary enhancement will include hydrologic improvements to the adjacent mangrove habitat and additional seagrass beds further from the proposed bridges.

B. Brief description of current condition: Tidal flow patterns fill the inner bays, then empty with a slow and often stagnant condition, not conducive to flushing which leads to elevated water temperatures in the summer, water quality degradation, and seagrass mortality.

C. Brief description of proposed work: With assistance from eight agency funding sources, Pinellas County will construct the bridge spans (Figures D,E, F) in the locations of historically open water breaks between the islands (Figure C). These spans will allow significant hydrologic flow between the back bays to improve the areas with the worst water quality and stagnation problems. As part of an evaluation for the USEPA, Pinellas County conducted an evaluation of the extent of the minimal anticipated seagrass enhancement, which is depicted on Figure B.

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): The majority of the proposed wetland impacts are associated with minor encroachments from bridge pilings within open water (Fluccs #540), heavily disturbed remnant marsh (#640, #641) & ditch habitat (#641x) commonly found within the highly urbanized areas of Pinellas County. Many of these wetland impacts will be determined to not require mitigation. Through 2006, additional minor FDOT within the Pinellas Co. portion of the Upper Coastal Basin will be evaluated to determine if they can be appropriately mitigated at Ft. DeSoto. The most noteworthy anticipated impact includes the 0.4 acre shading impact to a seagrass bed (#911) associated with the widening of the Pinellas Bayway Bridge. The Bayway Bridge crosses the Intercoastal Waterway along Boca Ciega Bay and is 7miles north of Ft. DeSoto Park. A potential 0.1 acre mangrove (#612) impact is anticipated for the US 19 bridge widening over the Anclote River. The Ft. DeSoto Park project was nominated to compensate for these impacts due to the very important and large-scale enhancement opportunities to alter the continuous degradation of seagrass beds within a designated aquatic habitat management area. Secondary benefits include restoring tidal conditions to other habitats including adjacent mangroves that border the bays. Appropriate and adequate DOT impacts and associated funds will be sufficient to compensate for 10% of the final construction budget, therefore DOT will be designated 10% of the total minimal anticipated enhancement as mitigation credit.

E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: There are no existing or currently proposed mitigation banks within the Upper Coastal Basin.

F.Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body : Ft. DeSoto Park is located at the mouth of Tampa Bay, which is a SWIM water body, within the Tampa Bay National Estuary Program, Pinellas County Aquatic Preserve, and a TMDL High Priority Water Body. This project is within the Pinellas County Capital Improvement Plan. In addition to Pinellas County funds, the various other agencies and funds necessary and designated toward cost-sharing the project include SWFWMD-SWIM ($416,750), Gulf of Mexico Program ($100,000), USEPA ($50,000), Pinellas County Environmental Foundation ($250,000), NOAA ($75,000), FDCA ($153,000) , USFWS (potential, $50,000), and the FDOT mitigation funds ($200,000 - $300,000, pending construction budget). Construction is scheduled to commence on at least one of the bridge spans in late fall, 2004, and be completed by spring, 2004. Construction of the second bridge span may be delayed an additional year pending budget constraints.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: A private contractor selected by Pinellas County

Contact Name: Eric Fehrmann Phone Number: (727) 464-4761

Pinellas County Dept. of Environmental Management
512 S. Ft. Harrison Avenue
Clearwater, FL 33756

Entity responsible for monitoring and maintenance: Pinellas County Department of Environmental Management

Proposed timeframe for implementation: Commence: Construction – Fall, 2003 Complete: Spring, 2004, followed by water quality and vegetative monitoring

Project cost: Construction: $2 – 3 million, DOT impacts and funds will provide 10% of the construction budget.

Attachments

X 1. Detailed description of existing site and proposed work. Refer to Attachment A, the Pinellas County narrative of the project. Site photos with vegetative conditions are attached. Some minimal mangrove and salt-marsh fringe impacts will have to occur to construct the bridge approaches (refer to photos). These impacts will be mitigated by grading some of adjacent causeway spoil, planting salt grass and saltmarsh cordgrass, and allowing the mangroves to recruit.

X 2. Recent aerial photograph with date and scale. Refer to Figure B, 1995 Infrared aerial.

X 3. Location map and design drawings of existing and proposed conditions. Refer to Figure A - location map, Figure D - bridge locations, and Figures E&F - bridge plan view designs. It's noted that the bridge spans are proposed to only have 4 ft. clearance during high tide, limiting the use of the inner bays to small boats and kayaks, motor boats are restricted from use in the project areas in accordance with Pinellas County habitat protection goals. The use of rubble rip-rap aprons and under the bridges are necessary to minimize channel and bridge scouring. Bridge hydraulic studies indicate flow may be more than one would expect in a back bay area, as survey elevations have indicated up to a few inches difference in water elevations bordering each side of the causeways, reiterating the importance of restoring tidal flows. The existing dredged channels within the proposed enhancement areas (Fig. B) are not included in the mitigation acreage.

X 4. Detailed schedule for work implementation, including any and all phases. Construction is scheduled to commence in the fall, 2003 and finish by spring, 2004. In late, 2003, Pinellas County will evaluate budget constraints and whether they will need to delay construction of one bridge span until 2005.

X 5. Proposed success criteria and associated monitoring plan. No specific success criteria is proposed however periodic monitoring of seagrass health and water characteristics will be conducted post construction. A monitoring plan for water quality and seagrass conditions has been proposed and accepted by Pinellas County. A copy of the proposed plan is provided as Attachment B. Along with this post-construction monitoring plan, additional pre-construction monitoring will be conducted including summer water temperatures, salinity, etc.

X 6. Long term maintenance plan. Maintenance of the seagrass beds is not necessary. The salt-tolerant species planted near the bridge spans will be periodically evaluated to make sure survivorship and recruitment of herbs and mangroves occur, and that no erosion is taking place.

X 7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). Refer to previous discussion. Except for the Bayway Bridge project with the seagrass impact, the majority of the remaining wetland impacts per project are very minor (0.1-0.2 acre). These low-quality Pinellas County wetland and surface water impacts are ecologically compensated with this worthwhile enhancement project. In order to assist Pinellas County with

the necessary funds to construct the project, these minor impacts have to be pooled together and maximized to assist in achieving the project's budget.

PROJECT: Construction of Bridges to Restore Circulation and Provide Ecological Enhancement in the Ft. DeSoto Park Aquatic Habitat Management Area

LEAD ORGANIZATION: Pinellas County Dept. of Environmental Management

CONTACT PERSON: Eric Fehrmann
512 S. Ft. Harrison Ave
Clearwater, FL 33756
Phone(727)464-4761
Fax (727)464-3174
E-mail: efehrman@co.pinellas.fl.us

COOPERATING ORGANIZATIONS: Southwest Florida Water Management District
Tampa Bay Estuary Program

PROJECT LOCATION: Ft. DeSoto Park Aquatic Habitat Management Area
Located at the mouth of Tampa Bay - HUC - 03100206
Tampa Bay is a SWIM,unified watershed assessment, National Estuary Program and a TMDL High Priority Water Body

WATERSHED RESTORATION ACTION STRATEGY: The poor circulation patterns were first identified in a study performed by Dr. Norman Blake with the University of South Florida in 1985. Dismantling of the waste treatment plants in the Management Area and pumping sewage to mainland treatment plants did not sufficiently solve the water quality problems. This project was then placed in the Pinellas County Capital Improvement Plan and is consistent with the Water Quality, Bay Habitats and Fish & Wildlife components of the Tampa Bay CCMP.

ESTIMATED POLLUTANT LOAD REDUCTION: While this project does not propose to reduce pollutant load from terrestrial sources, water quality improvements will be accomplished through restoration of historical circulation patterns and improved health of the submerged plant community within the back bays of the Management Area. Instead of the summer die-off of seagrass contributing pollutants loads they will function as a sink through continued uptake of nutrients and sediment trapping. Preliminary modeling predicts a 100% exchange of water during an average tidal cycle in the smaller bay and 25% for the larger bay.

PROJECT OBJECTIVES: The objective of this project is to restore circulation to the inner portion of the bays that was severed during the dredging and filling activities that occurred in the late 1950's. Summertime temperatures become extremely elevated in these areas leading to very low dissolved oxygen levels as well as severe seagrass stress resulting in blade necrosis. Restored circulation patterns will lead to improvement in water quality parameters and a healthier seagrass and faunal community. The improved health and viability of seagrasses result in continued seasonal uptake of nutrients and sediment trapping instead of adding pollutant load to the water body due to decaying seagrasses.

PROJECT DESCRIPTION: The project will include the construction and performance evaluation of 40 foot span bridges to replace portions of the filled causeways at Ft. DeSoto Park in Pinellas County. The Park was once a group of separate islands. During the Park=s development in the late 1950's and early 1960's the main island was connected to the smaller islands by dredging and filling two causeways, one to provide access to the mainland and the other to create a maintenance area and Park Manager residence. This activity cut off circulation between the back bays.

Data obtained during a 1985 study of water quality, circulation and benthic fauna of the area support the theory that the causeways are restricting flow and reducing water exchange within the back bays of the Park. This study was conducted as a result of the not optimal operation of the four sewage treatment plants located at the park. Water quality was poor bad due to the incomplete treatment of sewage during peak use and suspected entrapment in the back bays.

Tidal surge and flow patterns were mapped to determine if the back bays were flushing or if they were stagnant. As expected, although the tidal flux travels from east to west, the flow patterns merely fill the bays then empty them in a very calm manner not conducive to flushing which led to elevated water temperatures, water quality degradation and sea grass mortality.

Although the plants were dismantled and the sewage pumped to mainland treatment plants, water quality still was poor in comparison with surrounding waters. Field visits confirmed stagnant conditions and at times one can observe differences in the tidal and wind driven water levels between the cells of Mullet Key. If water could pass between the cells pocketing and stagnation would be reduced. Opening the causeways by partial replacement with bridges will restore east-west circulation to the semi-enclosed embayments and will improve ecosystem health.

Pinellas County has started to perform pre-construction water quality monitoring to document the improved conditions. Allowing the natural tidal flux and wind driven gulf/bay water to pass between the cells will help modulate water temperature and improve water quality by restoring the historic circulation patterns that existed prior to the filling of the passes. The bridges will be designed to allow non-motorized vessels to travel between the bays and provide a Acanoe trail@ within the park as an added public benefit.

The project directly affects a SWIM priority water body and a high priority TMDL water body. It affects water quality and habitat value at a regional park facility. The Southwest Florida Water Management District has committed $416,750 to this project. The project is consistent with the Pinellas County Comprehensive Plan, SWIM, the goals of the National Estuary Program and the CCMP. It is also contained within the Pinellas County Capital Improvement Project Program.

Pinellas County is designing the project Ain house@. Pinellas County proposes to design and permit the project during F.Y. 99/00 with construction to follow. Discussions with permitting personnel revealed that the project is very desirable and that permitting should pose no problems.

SPECIFIC OUTPUTS/DELIVERABLES: Pinellas County will design the hydrologic reconnections and bridges in-house with SWFWMD and consultant assistance to model the hydrodynamic flow patterns. The bridges/supports and other technical aspects will be designed by Pinellas County in-house.

The Pinellas County Department of Environmental Management has already begun to perform water quality testing for the basic parameters over incoming and outgoing tidal cycles. These will be compared to analyses performed after the hydrologic reconnections are established. A comparison will be made and a summary report submitted to funding partners. In addition, Pinellas County is in the process of contacting the local Universities to provide graduate students to perform faunal studies in the areas of the bridges

The project will entail the complete design, permitting (SWFWMD, ACOE) and construction of bridges to a maximum span of 40 feet. This span will allow significant hydrologic flow between the back bays to improve water quality in the areas that currently exhibit the worst water quality. In addition, the structure's size will allow the creation of a public canoe trail that would foster better appreciation of the natural resources of the Aquatic Habitat Management Area. Motor boats are restricted from use in the areas of the project in accordance with Pinellas County=s habitat protection goals. Signage will be installed on the bridges specifying the partnership and explanation of how water quality will be improved due to the project. Fishing would also be encouraged with the construction of access areas (ADA accessible).

Ft DeSoto Park Aquatic Habitat Management Area
Tidal Exchange Restoration:
Event precedent collection.

Participants

Entities:

University of South Florida College of Marine Science, St. Petersburg, Florida
Delta Seven Inc., St. Petersburg, Florida

Principle Investigators:

Dr. Thomas R. Cuba, University of South Florida Research Adjunct.

Roles of Participants:

University of South Florida College of Marine Science scientists will direct interns and staff on loan from Delta Seven Inc in the collection of data and samples as described below.
Delta Seven Inc. is supports the effort and pledges the following in kind support. Delta Seven will acquire necessary permits, is donating the use of some field equipment and the services of field staff. Equipment includes both field equipment and computer programs (ArcMap GIS, Primer-5, etc). Delta Seven will provide ArcMap files of the limits of the seagrass as of November 23, 2000.

Project Narrative

Context of existing restoration project

Pinellas County has initiated a major restoration project within the Ft. DeSoto Park Aquatic Habitat Management Area. This project will open tidal connections which were closed approximately 40 years ago by causeways and which resulted in serious degradation of the system. Please refer to the scope of the restoration project titled "Restoration of circulation to provide ecological enhancement in the Ft. DeSoto park aquatic habitat management area." for details (NA17F21553). The proposal hereby submitted builds on the already funded project and will allow for an effective evaluation of the effort.

Context of synoptic and associated studies

Participating and advising researchers have identified numerous potential effects of the restoration of the circulation including changes to ichthyofauna, infauna, epifauna, macro-invertebrates, epilithic fauna, macro flora and micro flora, epiflora, water chemistry, sediment chemistry, and water exchange. The restoration will effect a change in virtually every aspect of the ecosystem. The magnitude of such effects is expected to change along gradients created by the restructuring of the tidal flux patterns. Of critical importance in the success of many of these investigations is the necessity to collect certain data prior to the actual opening of the channels. The analysis of these data have been pursued separately because of the time constraints of the funding process pitted against the timing of the restoration effort.

Context of event synoptic data collection

Pinellas county has dedicated an effort equivalent to $12,822 in in kind service to meet the need to collect water quality data during time period immediately before and after the opening of the channels. The data and samples collected by USF will be temporally consistent with the water quality data collected by the county.

Abstract of proposed work:

In the weeks and hours immediately preceding the establishment of the tidal connections, USF and Delta Seven scientists will visit up to 44 stations located in the project area. At 11 stations, sediment cores will be collected using standard vibra coring protocols. Surficial sediment grabs will be collected at all 44 stations and preserved for subsequent analysis (grain size, TOC). At the time of collection, surface sediments will be tested for sulfide content using an ion specific probe. Twenty four permanent transects will be established for the evaluation of sea grass populations. Along each transect the frequency of necrosis, species composition, blade length, blade width, shoot density, and visual-census macro invertebrate data will be collected. Where *Thalassia testudinum* occurs, ten leaves will be randomly collected and preserved for epiphyte analysis. Along the transect, an area up to one square meter will be harvested by hand to collect entire plants with shoots and rhizomes intact. Harvesting will cease when 15 plants have been collected. These will be preserved for later morphometrics. Ten sites are located in habitats of unconsolidated sediments and ten sites are located along mangrove fringes or in mangrove channels. Ichthyofauna will be collected using seines and traps at each of the 44 sites. Infauna will be collected, field seived, bagged, stained, and fixed using a 15 cm Eckman box core. Fixed transects equivalent to those established in grass beds will be established in unconsolidated sediments and along mangrove edges for visual census of macro invertebrates. Photographs will be taken to document site conditions. If possible, long term in situ temperature loggers will be pegged into place at each site. During site visits, measurements of salinity, temperature, turbidity, dissolved oxygen, and PAR will be recorded.

Samples will be preserved and stored for later analysis and reduction.
Cost: $10,000

FDOT - District 7
MITIGATION SITE
(Upper Coastal Basin)

FORT DE SOTO
(SW 70)

FIGURE A
LOCATION MAP

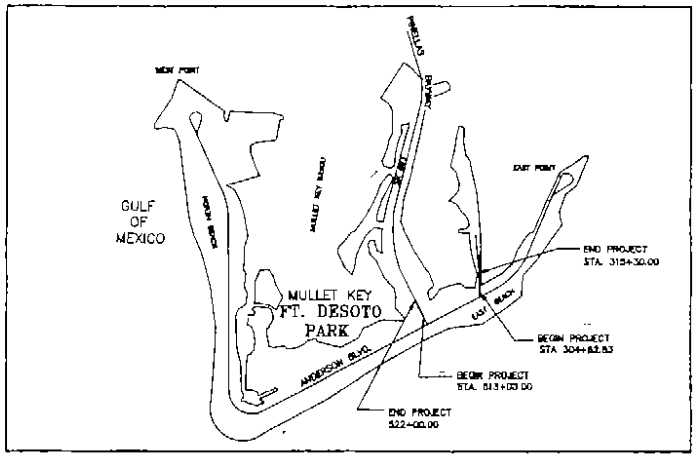
PINELLAS COUNTY ENGINEERING DEPARTMENT
STATE OF FLORIDA

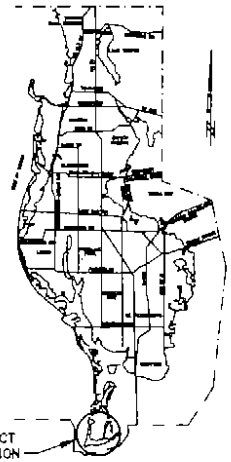
PLANS OF PROPOSED

FORT DESOTO WATER CIRCULATION IMPROVEMENT

SERVING YOU EVERY DAY

P.I.D. NO. 921573





SECTION No. 8, 9
TOWNSHIP No. 33 S RANGE No. 16 E

RELATED STANDARDS AND SPECIFICATIONS

DOCUMENT	DESCRIPTION
D-1	FLORIDA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", 2000 AND ALL SUPPLEMENTAL SPECIFICATIONS THERETO.
D-2	STATE OF FLORIDA "MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION AND MAINTENANCE FOR STREETS AND HIGHWAYS", MAY, 2000.
D-3	FEDERAL HIGHWAY ADMINISTRATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS".
D-4	PINELLAS COUNTY "SPECIFICATIONS FOR NEW SUBDIVISION WATER & SEWER PLANT MECHANICAL EQUIPMENT AND CONSTRUCTION METHODS", JULY, 1990. NOTE: THE PROVISIONS OF DOCUMENT D-4 SHALL SUPERSEDE CONFLICTING PROVISIONS OF DOCUMENT D-1.
D-5	FLORIDA DEPARTMENT OF TRANSPORTATION "ROADWAY AND TRAFFIC DESIGN STANDARDS", JANUARY, 2000.
D-6	PINELLAS COUNTY ENGINEERING DEPARTMENT "SPECIFICATIONS FOR ROAD AND DRAINAGE CONSTRUCTION" (FOR CONFLICT CORRESPONDING TO THESE PLANS)
D-7	PINELLAS COUNTY, DEPARTMENT OF PUBLIC WORKS "STANDARD CONSTRUCTION DETAILS" (JANUARY, 1990).

ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN REDUCED IN SIZE BY REPRODUCTION. THEY MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

UTILITY WARNING NOTE

Summary of Revisions	
DATE	DESCRIPTION

LENGTH OF PROJECT	STA.
BEGIN PROJECT	304+82.83
TOTAL LENGTH OF PROJECT	1,720.17
END PROJECT	522+00.00

ROAD CLASSIFICATION: PARK
DESIGN SPEED: 40 MPH

STEVEN M. BURGE, P.E.
FLORIDA REGISTERED PROFESSIONAL ENGINEER No. 59430
440 COURT STREET
CLEARWATER, FLORIDA 33756
(727) 464-3434
DATE

PROJECT PRODUCTION TEAM (CORE MEMBERS)

DESIGN:	STEVE BURGE (TEAM LEADER) (464-3434)
RIGHT-OF-WAY:	BONEY MAJOR
CONSTRUCTION:	ROB BERTRAM
SURVEY:	DANNY BURGER
TRAFFIC:	ROBERT DAVIS
HIGHWAY:	DONNIE GROSSELL
UTILITY COORDINATION:	ROBERT JANOWSKI

INDEX OF PLANS

SHEET NO.	SHEET DESCRIPTION
1	KEY SHEET
2	SUMMARY OF QUANTITIES
3	DRAINAGE MAP
4	GENERAL NOTES, MAINTENANCE OF TRAFFIC NOTES & SEDIMENTATION CONTROL NOTES
5	TYPICAL SECTIONS
6	CHANNEL CONSTRUCTION GENERAL NOTES & TYPICAL SECTIONS
7-8	DREDGING PLAN
9-10	PLAN & PROFILE OF MIDDLE CHANNEL
11-12	PLAN & PROFILE OF EAST CHANNEL
13	PLAN & PROFILE OF NORTHWEST CHANNEL
14	PROFILE RELOCATED BIKE PATH
15-22	CROSS SECTIONS
23	DRAINAGE DETAILS
24	RAMP DETAILS
25	TEMPORARY ENTRANCE ROAD PLAN & PROFILE
26	TEMPORARY MAINTENANCE ROAD PLAN & PROFILE

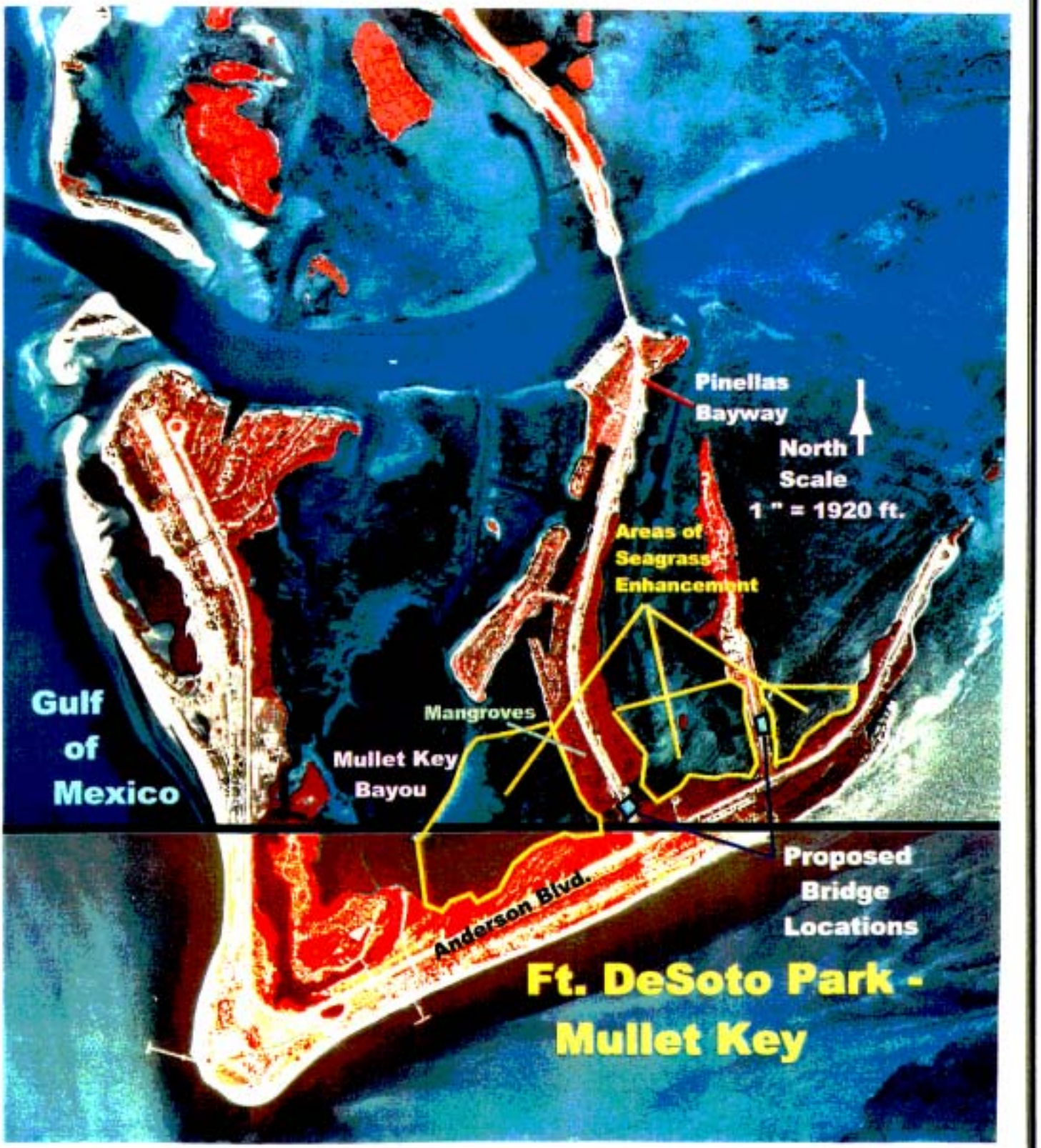
SUBMITTED BY & RECOMMENDED FOR APPROVAL BY: _____ DATE
ALEX SPEDIA, DIVISION DIRECTOR

RECOMMENDED FOR APPROVAL BY: _____ DATE
ELIZABETH WARREN, DIRECTOR OF PARK DEPARTMENT

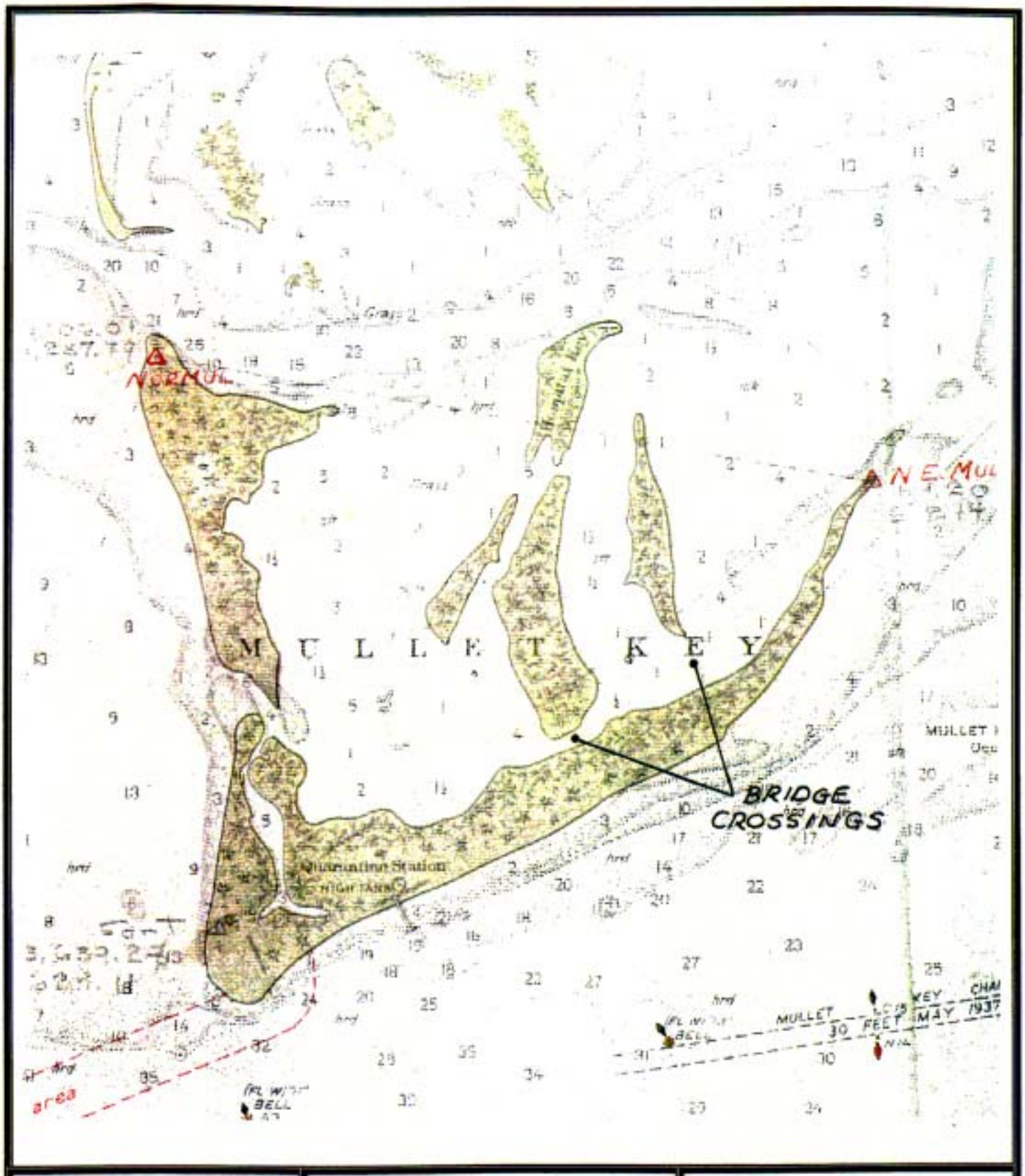
RECOMMENDED FOR APPROVAL BY: _____ DATE
JAN A. HERBST, P.E., DIRECTOR OF ENGINEERING

APPROVED BY: _____ DATE
J. KEITH WIDES, P.E., DIVISION OF PUBLIC WORKS

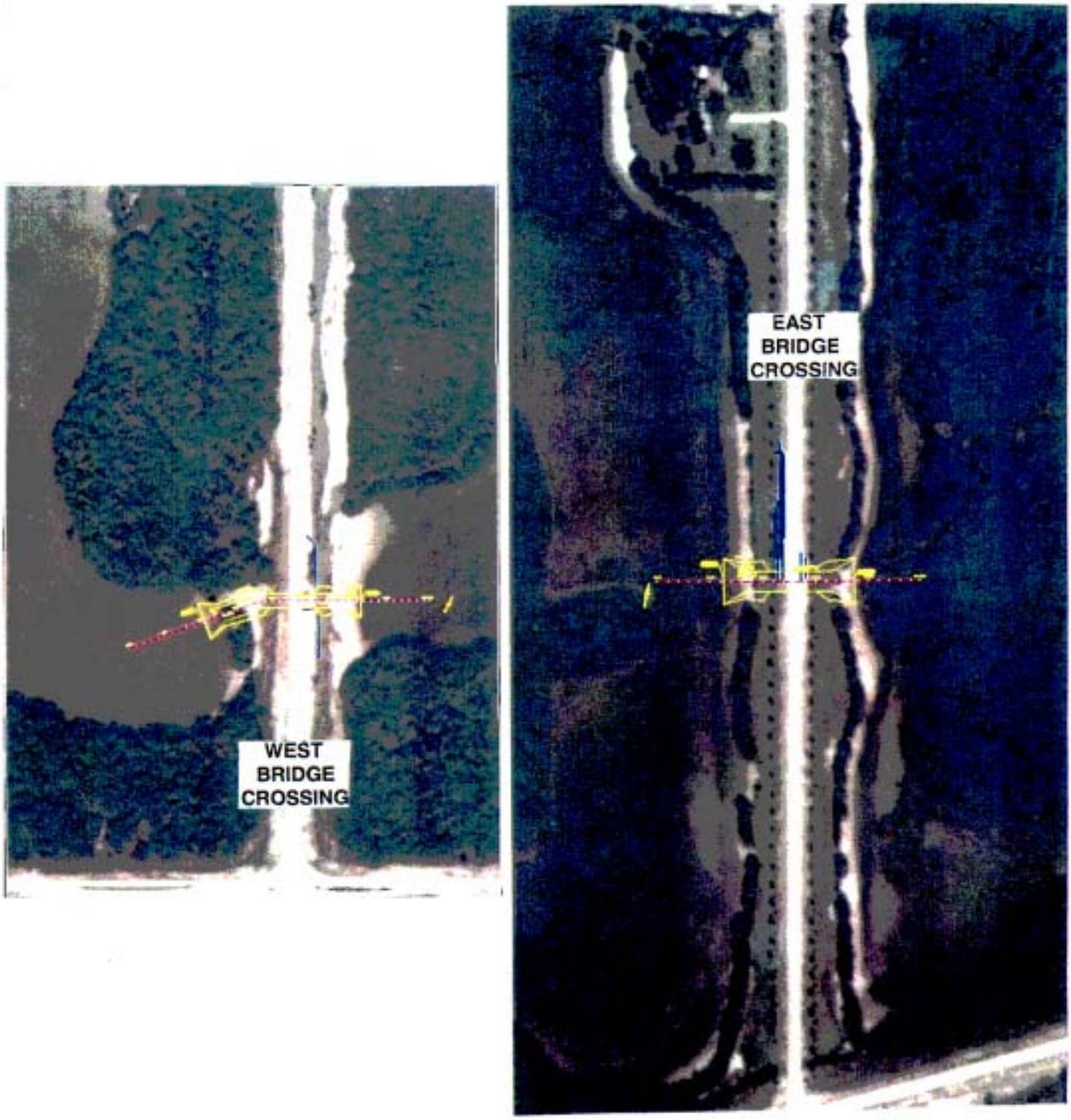
SHEET 1 OF 26



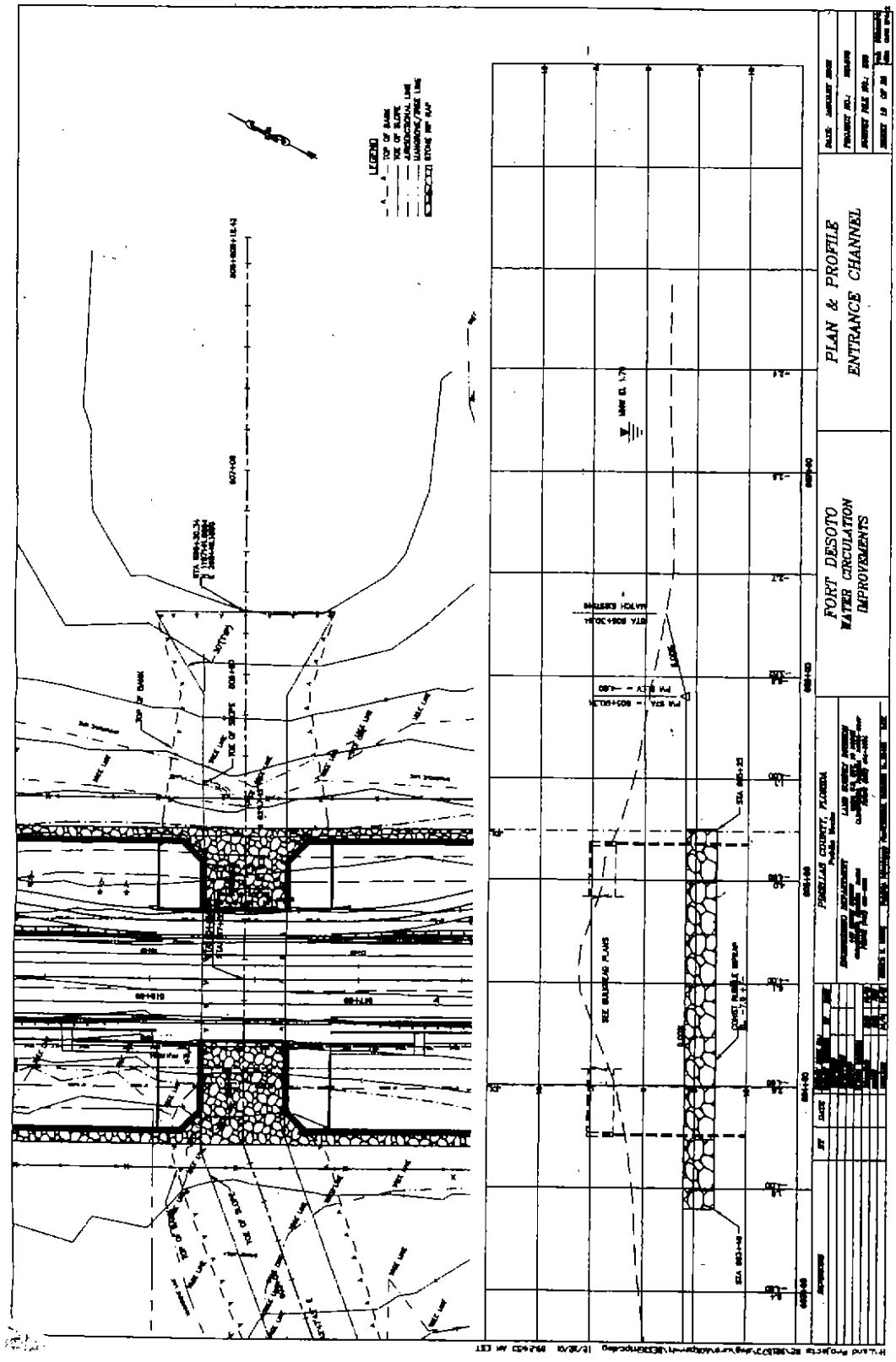
FDOT - District 7 MITIGATION SITE (Upper Coastal Basin)	FORT DE SOTO (SW 70)	FIGURE B 1995 INFRARED AERIAL



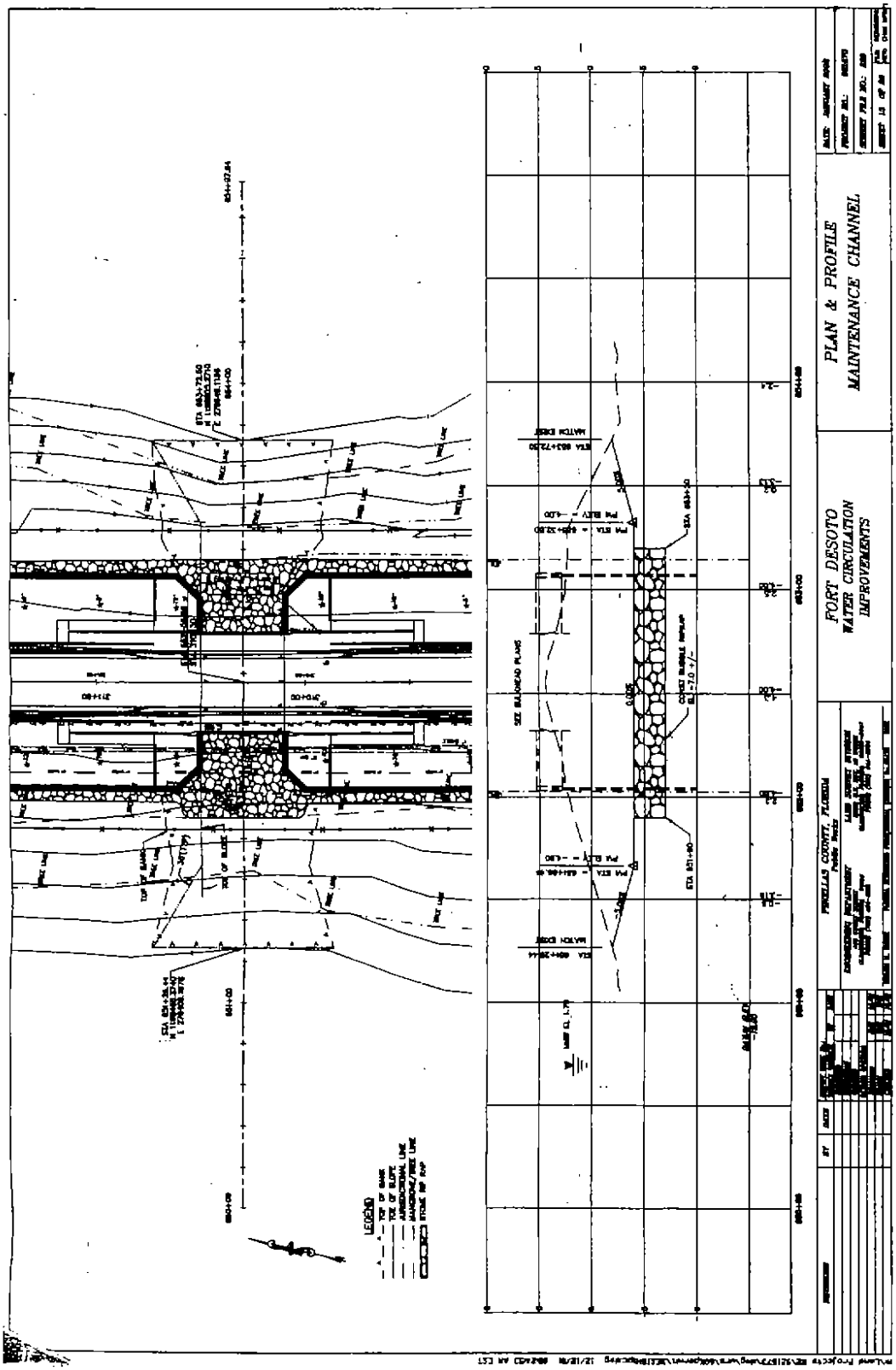
FDOT - District 7 MITIGATION SITE (Upper Coastal Basin)	**FORT DE SOTO (SW 70)**	**FIGURE C HISTORICAL CONDITIONS**



FDOT - District 7 **MITIGATION SITE** **(Upper Coastal Basin)**	**FORT DE SOTO** **(SW 70)**	**FIGURE D** **PROPOSED BRIDGE** **CROSSING LOCATIONS**



FDOT - District 7 **MITIGATION SITE** **(Upper Coastal Basin)**	**FORT DE SOTO** **(SW 70)**	**FIGURE E** **Design Plan & Profile** **Entrance Channel Bridge**



FDOT - District 7 **MITIGATION SITE** **(Upper Coastal Basin)**	**FORT DE SOTO** **(SW 70)**	**FIGURE F** **Design Plan & Profile** **Maintenance Channel Bridge**

View of the proposed bridge crossing, looking east from the entrance road toward one of the inner bays. Some minor impacts associated with removing removing red & white mangroves, and salt grass will occur. The bicycle path (foreground) will have to be relocated alongside the bridge.

View of the entrance road (Pinellas Bayway) south toward the park's visitor center along Anderson Road. This portion of the roadway will have to be slightly elevated to accommodate bridge height clearance. Bicycle path to the left.

FDOT - District 7 **MITIGATION SITE** **(Upper Coastal Basin)**	**FORT DE SOTO PARK (SW 70)** **West Bridge Crossing** **(Entrance Channel)**

View of the proposed bridge crossing, looking east from the maintenance road toward an inner bay. Some minor impacts associated with removing red & white mangroves, and Brazilian pepper will occur.

View of the maintenance road, north toward some of the park's maintenance facilities. This portion of the roadway will have to be slightly elevated to accommodate bridge height clearance.

FDOT - District 7 **MITIGATION SITE** **(Upper Coastal Basin)**	**FORT DE SOTO PARK (SW 70)** **East Bridge Crossing** **(Maintenance Channel)**

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management District
Mitigation Project Name: **Boyd Hill Nature Park** Project Number: **SW 71**
Project Manager: Linda Seufert, Park Supervisor Phone No: (727) 893-7317
County: Pinellas Location: Sec. 16, 35, T31S, R16E

IMPACT INFORMATION

(1)	FM: 4037701 – US 19, CR 816 to SR 582	ERP #: 44022085.001	COE #: NW 14 PCN
(2)	FM: 2568881 – US 19, Coachman Rd. to Sunset Point	ERP #: 4411760.011	COE #: 200104383 (LP-PB)
(3)	FM: 4082011 – Himes Avenue to Hillsborough Avenue	ERP #: 44002448.002	COE #: 200208419 (NW-MS)
(4)	FM: 4062561 – East-West Trail, Coopers Bayou - Bayshore	ERP #: 4422718.001	COE #: 200105298(NW-PB)
(5)	FM: 2570701 – US 19, 49th St. to 118th Avenue	ERP #: _____	COE #: _____
(6)	FM: 2555991 – SR 676 (Causeway Blvd.) US 301 to US 41*	ERP #: _____	COE #: _____
(7)	FM: 2558932 – SR 574(MLK Blvd.)-Highview to Parsons	ERP #: _____	COE #: _____
(8)	FM: 2558881 – US 301 – Sligh Ave. to Tampa Bypass*	ERP #: 43024246.000	COE #: 200206711 (IP-JF)
(9)	FM: 2569311 – Gandy Blvd., US 19 to 4th Street	ERP #: _____	COE #: _____
(10)	FM: 2569951 – SR 686 (Roosevelt) – Ulmerton to 40th St.	ERP #: _____	COE #: _____

Drainage Basin: Tampa Bay Water Body: Curlew Creek, Cross Bayou Canal, Cooper's Bayou Canal, Old Tampa Bay
SWIM water body? N, except for Old Tampa Bay

Impact Acres /Types :

(1) FM 4037701 0.1 ac. 618 (Fluccs)
(2) FM 2568881 0.3 ac. 617 (Fluccs)
0.2 ac. 618 (Fluccs)
TOTAL 0.5 acres
(3) FM 4082011 0.1 ac. 618 (Fluccs)
(4) FM 4062561 0.1 ac. 618 (Fluccs)
(5) FM 2570701 0.1 ac. 617 (Fluccs)
(6) FM 2555991 0.8ac. 610 (Fluccs)
(7) FM 2558932 0.4 ac. 610 (Fluccs)
(8) FM 2558881 7.6 ac. 617 (Fluccs)
1.7 ac. 618 (Fluccs)
TOTAL 9.3 acres

(9) FM 2569311 0.5 ac. 530 (Fluccs)
0.3 ac. 617 (Fluccs)
4.0 ac. 619 (Fluccs)
0.1 ac. 641x (Fluccs)
0.1 ac. 642 (Fluccs)
TOTAL 5.0 acres

(10) FM 2569951 0.5 ac. 510 (canal)
0.3 ac. 530 (Fluccs)
0.4 ac. 618 (Fluccs)
0.1 ac. 619 (Fluccs)
0.6 ac. 641 (Fluccs)
0.2 ac. 641x (Fluccs)
TOTAL 2.1 acres

TOTALS – 18.5 Acres

* The freshwater marsh and ditch impacts associated with these projects will be mitigated with activities proposed at Cockroach Bay – Freshwater (SW 56).

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: __ Creation ___ Restoration X Enhancement ___ Preservation Mitigation Area**: 92 acres**
SWIM project? N Aquatic Plant Control project? N Exotic Plant Control Project? Y
Mitigation Bank? N Drainage Basin: Tampa Bay Water Body(s): Lake Maggiore SWIM water body? Y

Project Description

A. Overall project goal: The enhancement of freshwater hardwood wetlands (69.6 acres) with buffers of upland forested habitat (21.4 acres), and ponds (1 acre) by removal of the extensive cover of exotic and nuisance species. Enhancement activities are part of an overall plan of eradication and maintenance control of undesirable vegetation within the 300-acre preserve owned and managed by the City of St. Petersburg Parks Dept.

B. Brief description of current condition: The proposed enhancement areas include four designated portions of the Park (Figures B, D, E). Areas 1, 2 and 3 include hardwood hammock wetlands, dominated by laurel oak with additional coverage provided by Brazilian pepper, water oak, live oak, red maple, cabbage palm, and sparse

understory dominated by ferns. In addition to the wetlands, Areas 1 and 3 have upland hardwood hammocks that buffer the adjacent forested wetlands, dominated by live oak, scattered longleaf pine, Brazilian pepper, extensive vines, and where the pepper is not dense, an understory of scattered saw palmetto. The southeast enhancement area includes approximately half (27 acres) of a forested wetland (Figures B & E, Area 4). This wetland has a more extended hydroperiod than the wetlands in the northeast part of the park. Dominant vegetation within Area 4 includes red maple, Brazilian pepper, sweet bay, Carolina willow, primrose willow, elderberry, and grapevine over much of the outer shrub components. Ground cover is sparse due to the heavy cover shade from B. pepper, elderberry and grapevine, but there are various fern species present.

C. **Brief description of proposed work:** The Park will use City and/or contract staff to eradicate the extensive cover of nuisance and exotic vegetation. The dominant species to be removed from all the areas will be Brazilian pepper, which has moderate to very dense cover within the wetland and upland habitats (refer to site photos). Secondary species control will include herbicide control and long-term maintenance of primrose willow, elderberry, and grapevine. Pepper eradication will include a phased approach of herbicide treatment (Garlon) for initial mortality, hand tools and mechanical removal, and transport to either the on-site mulching facility or Pinellas County incinerator. A follow-up schedule of herbicide applications will be extensive to minimize regeneration of exotic & nuisance species. Areas of previous eradication in the Park have exhibited good regeneration of desirable tree and herb species. However, funds have been budgeted to provide supplemental tree and shrub planting in those areas where B. pepper have become most prolific. This minimizes the time lag of forested wetland regeneration. Where practical and feasible, small ditches cut through the southeast wetland will be backfilled with adjacent spoil material.

D. **Brief explanation of how this work serves to offset the impacts of the specified DOT project(s):** The DOT impacts proposed to be mitigated at the Park include freshwater forested and shrub wetlands, the majority occurring within the peninsular area of Pinellas County. The proposed wetland enhancement areas at the Park include a couple of the largest freshwater forested wetlands within peninsular Pinellas County. The park is essentially an oasis for wildlife and wetland functions that has been substantially diminished by the nuisance & exotic species problem, which is extensive and will only worsen if not brought under control. The Park provides opportunities to mitigate the proposed impacts with large-scale and extensive habitat improvements.

E. **Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost:** The Tampa Bay Mitigation Bank (TBMB) is the only mitigation bank within the Tampa Bay Drainage Basin. It will require a few years before construction and planting will achieve the permitted requirements to allow credit sales, anticipated in 2005.

F. **Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body :** SWIM projects (SW 45-Gateway, SW 56 & SW 76 -Cockroach Bay, SW 70-Apollo Beach) have been selected to mitigate for saltwater wetland and freshwater marsh impacts in this basin. None of these or any other current SWIM projects in the basin have the opportunity to provide appropriate mitigation for forested freshwater wetland impacts. However, the adjacent Lake Maggiore Restoration Project proposes a $12 million project to hydraulically dredge sediments from the lake, and that project is a SWFWMD and City of St. Petersburg sponsored project. The Boyd Hill Park project

was selected due to the opportunity to appropriately mitigate the proposed wetland impacts, and the City has limited funding resources for this extensive and ecologically beneficial activity.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: Either City of St. Petersburg Parks Dept. and/or contractor selected by the City
Contact Name: Linda Seufert, Nature Park Supervisor Phone Number: (727) 893-7317
Boyd Hill Nature Park
1101 Country Club Way South
St. Petersburg, FL 33705

Entity responsible for monitoring and maintenance: City of St. Petersburg, Boyd Hill Nature Park
Proposed timeframe for implementation: Commence: Fall, 2003 Complete: Initial Eradication - Fall, 2004, followed by minimum 3 years maintenance & monitoring

Project cost: $ 1,373,000 (total);
Evaluation & Design - $20,000
Exotic & Nuisance Species Eradication (Areas 1, 2, 3) - $8,000/acre x 65 acres = $520,000
Exotic & Nuisance Species Eradication & Minor Grading (Area 4) - $12,000 x 27 acres = $324,000
Supplemental Tree & Shrub Plantings - $2000/acre x 60 acres = $120,000
Minimum 3 years Maintenance - $1000/acre/year x 92 acres = $276,000
One Time Fee for Perpetual Maintenance Assistance - $100,000
Minimum 3 years Monitoring - $2000/year = $6000
Additional 7 years of Annual Reporting - $1000/year = $7000

Attachments

X 1. Detailed description of existing site and proposed work. Refer to previous discussion and Attachment A.

X 2. Recent aerial photograph with date and scale. Refer to Figures B, D, and E.

X 3. Location map and design drawings of existing and proposed conditions. Refer to Figure A (Location Map) and Figures B, D, and E (Work Area).

X 4. Detailed schedule for work implementation, including any and all phases. Refer to Attachment B.

X 5. Proposed success criteria and associated monitoring plan. Refer to Attachment B.

X 6. Long term maintenance plan. Refer to Attachment B.

X 7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). Refer to previous text.

Attachment A – Existing Site and Proposed Work

Freshwater wetlands are less common than saltwater wetlands within the Tampa Bay Drainage Basin, particularly forested wetlands and freshwater systems within Pinellas County. As a result, locating freshwater wetland mitigation opportunities within this basin is difficult, particularly on existing public lands. The Park has historically had extensive problems with exotic and nuisance species, particularly Brazilian pepper that has heavily invaded all the habitat areas. The Park staff has been diligent in it's efforts to eradicate exotic and nuisance species, but lack of funding sources has limited such opportunities to small segments of usually 10 acres at any one time. In order to minimize the recruitment and generation of exotic seed sources within the Park, the ability to eradicate these species within large segments is particularly important.

Areas 1, 2, and 3 – These areas are part of a historically contiguous forested wetland bordered by upland habitat. There are a couple main ditches that partially drain this wetland to Lake Eli, but modification of those

ditches will unfortunately result in off-site flooding. However, small interior cross ditches that contribute flow to the main ditch will be evaluated for potential backfilling and/or install ditchblocks where deemed feasible. The density of B. pepper varies within Areas 1 and 2, but probably an average sub-canopy cover of 30%. The pepper is much larger and more coverage within the southern portions of Area 3, which will require more supplemental planting after eradication. Within Areas 1-3, the dominant exotic or nuisance species throughout the wetlands and uplands is Brazilian pepper. The pepper will receive herbicide treatment (Garlon).

After mortality and drying, the pepper will be cut and removed to the existing nearby mulching or incinerator facility. With limited ground cover vegetation within the wetlands, spreading the mulch would minimize natural regeneration of herbs expected to grow as a result of opening more canopy. Herbicide treatment of any pepper regeneration and other existing and generated exotic & nuisance species will be conducted as necessary, and additional tree and shrub species will be planted in areas with minimal tree cover due to existing dense pepper. Supplemental wetland trees and shrubs will include laurel oak, red maple, cypress, and wax myrtle. The two small ponds within Area 1 have some exotic & nuisance coverage (primarily cattails). These will receive herbicide treatment and desirable species such as pickerelweed, arrowhead, and bulrush will be planted. The Park periodically implements prescribed burns as needed within the uplands to maintain appropriate vegetative coverage and density. Along with the pepper removal, grapevine is the most prolific nuisance species that will be initially controlled by hand and mechanical means. Afterward, the prescribed burning will keep the exotic and nuisance species under control. Supplemental plantings of longleaf pine, wax myrtle, and gallberry are proposed where necessary within the uplands.

Area 4 - The 57-acre hardwood swamp within the southeast section of the property will be partially utilized for DOT mitigation, and approximately half of the swamp's enhancement (30 acres) has been designated to provide mitigation for wetland impacts (6 acres) associated with a nearby Lowe's Department Store. This hardwood swamp is one of the largest freshwater forested wetland habitats within peninsular Pinellas County, which requires the system to provide more wetland and wildlife functions than would be expected of a similar system in a less congested urban setting. This wetland receives direct stormwater flow from the contributing basin, which like all the surrounding land use is very high density residential. The wetland treats and attenuates these flows before overflowing into Lake Maggiore. During high water conditions, the lake overflows into this wetland, providing even more opportunity for water quality treatment and flood attenuation. Due to the extended hydroperiod for this wetland compared to the northeast wetland, much of the pepper grows on the minor spoil mounds that were historically dredged for mosquito control. After herbicide and removal of the pepper, the minor cross-ditches will be backfilled below seasonal high water elevations to minimize the opportunity for pepper regeneration. Some of the spoil mounds also have desirable species intermixed with the pepper. To the degree possible, the minimal earthwork will avoid impacts to the desirable species. However, the maple and Carolina willow will quickly regenerate so any necessary removal would be considered temporary.

Due to the muck and seasonally high water conditions of this swamp, any necessary construction and mechanical removal of B. pepper will be conducted during dry season periods, and temporary matting will be placed for stable footing of equipment. Erosion control measures (hay bales, silt screens) will be installed at the construction locations to minimize sedimentation into Lake Maggorie. As expected within one of the most developed areas in the state, Lake Maggiore's water quality conditions are poor. Current plans propose hydraulic dredging of lake bottom sediments. The costs associated with this activity include an anticipated cost of $12 million split evenly between the WMD and the City of St. Petersburg. When the Lake Maggiore hydraulic dredging of sediments is conducted, there will be a partial drawdown of the lake water elevations. This drawdown could be for 2-3 years, which could allow for easier and more stable equipment access into the southeast swamp. This drawdown period also allows the opportunity for any exposed soil to stabilize. The combination of the lake dredging and wetland enhancement for mitigation purposes will provide a substantial ecological improvement and inter-relationship of wetland and surface water habitats. In addition, the Park is currently applying for grants toward funding exotic and nuisance species within an additional 100 acres of the Park, which is primarily upland habitat.

Wildlife species depend on many habitat conditions for various functions and values within their life cycles. With the lake improvement, wetland and upland enhancement activities conducted in the Park, this will

provide an exponential increase of ecological value compared to just enhancing one habitat component. The following information depicts the proposed mitigation acreage for enhancement areas:

	Upland Enhance.	**Wetland Enhance.**	**Pond Enhance.**	**TOTAL**
Area 1	10.0 ac.	9.0 ac.	1.0 ac.	20.0 ac.
Area 2	2.0 ac.	26.0 ac.	--	28.0 ac.
Area 3	9.4 ac.	7.6 ac.	--	17.0 ac.
Area 4	--	27.0 ac.	--	27.0 ac.
	21.4 ac.	**69.6 ac.**	**1.0 ac.**	**92.0 ac.**

Attachment B – Schedule, Maintenance & Monitoring, Success Criteria

Eradication activities are scheduled to commence during the summer 2003, potentially within the northeast Areas 1, 2 and 3. Herbicide treatment can start at Area 4, but construction equipment access will partially depend on the schedule of the Lake Maggiore drawdown and/or lower lake elevations in the spring. Each area will receive some supplemental planting necessary to achieve the desired success criteria, followed by a minimum three years of maintenance & monitoring activities.

The City Parks Dept. (or designated contractor) will be responsible for maintenance activities. The maintenance activities to control exotic and nuisance species regeneration will include manual removal and herbicide. Such regeneration is generally more prolific within the first few years after initial eradication. At a minimum, maintenance is expected to occur every other month for the first year post-construction, and quarterly in years 2 and 3. After the third year, periodic maintenance activities will be required to minimize regeneration. After the minimum three-year maintenance & monitoring period for mitigation credit, the Park will be responsible to continue maintenance activities to maintain the same level of success criteria. Some DOT funds will be provided so that the Park can place into an escrow account toward cost-sharing future maintenance costs. The City has exhibited substantial efforts toward eradication of exotic and nuisance species from the upland and wetland habitats throughout the Park (refer to site photos). Since the initial eradication costs for any particular area on this tract are expensive, limitations have required the Park to concentrate such activities on relatively small areas every year.

Monitoring will include qualitative analysis of the enhanced habitat on a semi-annual basis, commencing with pre-eradication conditions at various monitoring stations to be established prior to activities. The qualitative information will be compiled into annual reports, which will also document maintenance activities and efforts toward achieving success. These semi-annual inspections will be conducted for a minimum three years after the initial eradication. The Park will provide annual updates of habitat functions and current conditions of the wetland, and associated maintenance activities for an additional 7 years after the initial 3-year monitoring period, to document the efforts to maintain the same level of success. Success criteria will require less than 10% cover of Brazilian pepper, elderberry, grapevine, and primrose willow, and a minimum 90% survivorship of planted stock within each of the designated mitigation areas.

Boyd Hill Nature Park

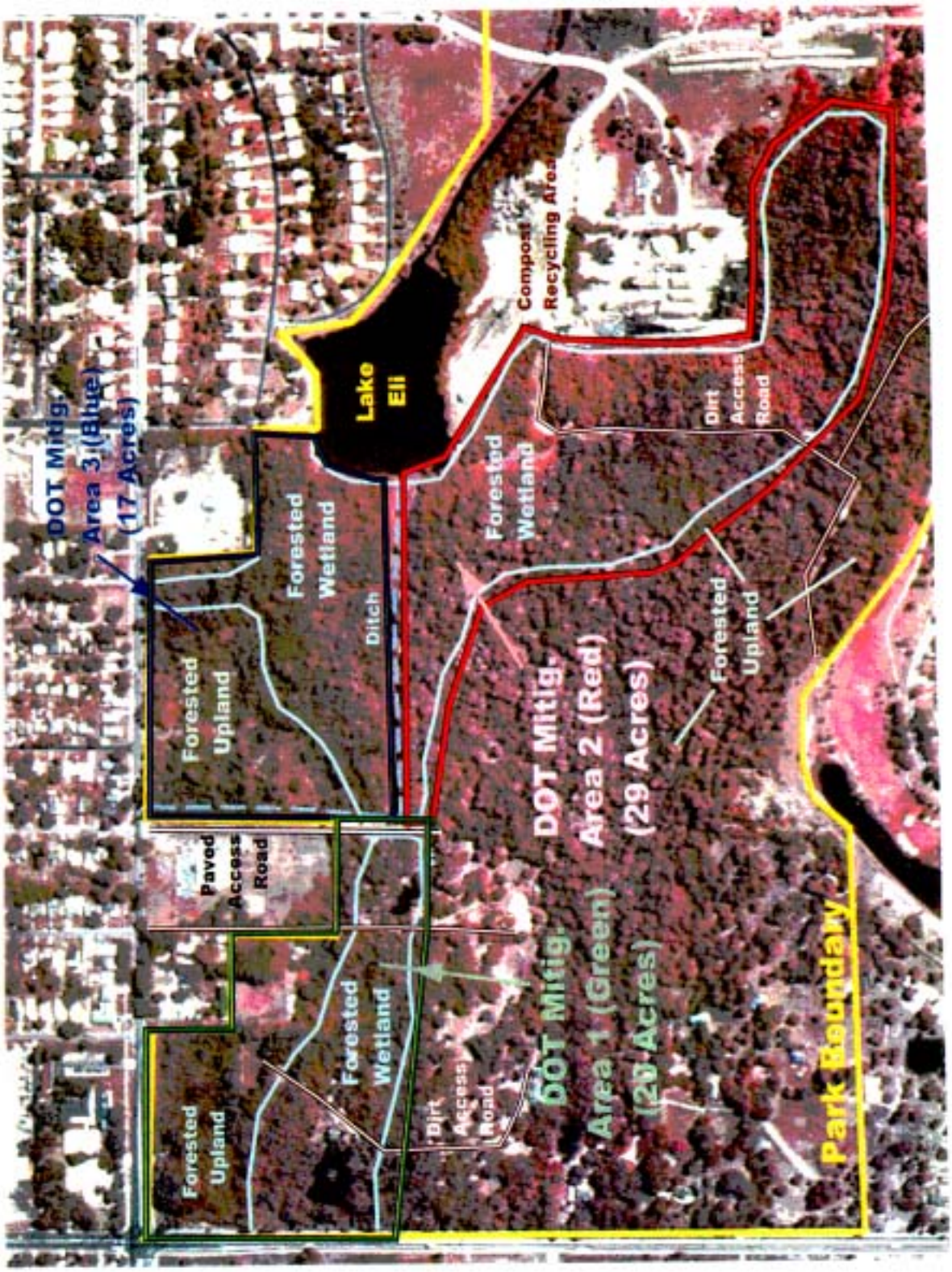
FDOT - District 7 MITIGATION SITE (Tampa Bay Drainage Basin)	**BOYD HILL NATURE PARK (SW 71)**	**FIGURE A Location Map**

BOYD HILL NATURE PARK (SW 71)	FIGURE B – 1995 Infrared Aerial Entire Park & DOT Mit. Areas Scale 1 in = 1000 feet, < North

FDOT - District 7
MITIGATION SITE
(Tampa Bay Drainage Basin)

BOYD HILL
NATURE PARK
(SW 71)

FIGURE C
Park's Exotic & Nuisance Species Coverage



FDOT – District 7 MITIGATION SITE (Tampa Bay Drainage Basin)	BOYD HILL NATURE PARK (SW 71)	FIGURE D – 1995 Infrared Aerial DOT Mitigation Areas 1-3 Scale 1 in = 500 feet, < North

FDOT – District 7 MITIGATION SITE (Tampa Bay Drainage Basin)	BOYD HILL NATURE PARK (SW 71)	FIGURE E – 1995 Infrared Aerial DOT Mitigation Area 4 Scale 1 in = 440 feet, ^ North

Owned and managed by the City of St. Petersburg, Boyd Hill Nature Park is one of largest parks in Pinellas County and known for having one of the most active environmental educational programs in the region.

For a narrow fringe of the southeast forested wetland that borders Country Club Way and M.L. King Street, the Park has conducted exotic & nuisance species eradication and planted trees. For the DOT mitigation, this same activity is proposed for the remaining portion of the same forested wetland (background).

FDOT - District 7 **MITIGATION SITE** **(Tampa Bay Drainage Basin)**	**BOYD HILL NATURE PARK** **(SW 71)**

Even though there are desirable tree species within the southeast forested wetland, this recently cut area of B. pepper within the same system is representative of some pockets where the extensive exotics coverage limit the opportunity for desirable species to generate.

This wetland within the northwest portion of the Park recently received mechanical removal of the Brazilian pepper. The remaining trees represent the minimal cover of what otherwise was a dense, closed canopy of B. pepper. Maple saplings and fern species are starting to regenerate, supplemental tree planting may be initiated, with an extensive herbicide maintenance plan to minimize B. pepper regeneration.

FDOT - District 7 **MITIGATION SITE** **(Tampa Bay Drainage Basin)**	**BOYD HILL NATURE PARK** **(SW 71)**

Forested Uplands – The uplands within Areas 1-3 have a dominance of live oaks over saw palmetto, but scattered individuals and pockets of Brazilian pepper (above right) are common. Pepper eradication followed where necessary with native tree and shrub plantings will be conducted.

Forested Uplands – Some of the uplands include dense vine coverage within oak dominated hammocks. The vines will be removed by mechanical and herbicide treatment. All the enhanced uplands will receive periodic prescribed burns to minimize regeneration of undesirable species and maintain proper vegetative cover.

FDOT – District 7
MITIGATION SITE
(Tampa Bay Drainage Basin)

BOYD HILL NATURE PARK
(SW 71)

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management District
Mitigation Project Name: **Greer Tract - Cypress Creek Preserve, West (ELAPP)** Project Number: **SW 72**
Project Manager: Forest Turbiville, Resource Manager Phone: 813-672-7876
Hillsborough County Parks & Recreation
10940 McMullen Road County: Hillsborough
Riverview, FL 33569 -6226 Location: Sections 4, 5, T27S, R19E

IMPACT INFORMATION

(1) FM: 2555851, SR 39 (Alexander St.), I-4 to Knights Griffin ERP #: _____ COE #:_____
(2) FM: 4037801, SR 52, I-75 to Curley Road ERP #: _____ COE #:_____
(3) FM: 4112771, US 301, Holloman's Branch to Hills./Pasco C.Line ERP #: _____ COE #:_____

Drainage Basin(s) : Hillsborough River Water Body(s): Westside Canal, Bayou Branch SWIM water body? (Y/N) N
Impact Acres/ Wetland Types:

(1) FM 4054921 6.5 ac. 617 (Fluccs)
(2) FM 4037801 0.1 ac. 510 (Fluccs)
0.1 ac. 641 (Fluccs)
TOTAL 0.2 acres
(3) FM 4112771 0.2 ac. 641 (Fluccs)
TOTAL 6.8 acres

* Note: This SR 39 project has a total of 14.2 impact acres, the forested wetland impacts are designated to be mitigated at the Greer Tract. The remaining 7.7 acres are freshwater marsh impacts proposed to be mitigated separate from the DOT Mitigation program on property owned by DOT (tract referred to as "Vicker's Swamp").

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: ___ Creation ___ Restoration _X_ Enhancement _X_ Preservation Mitigation Area: **99.5 acres**
SWIM project? N Aquatic Plant Control project? N Exotic Plant Control Project? Y Mitigation Bank? N
Drainage Basin(s): Hillsborough River Water Body(s): Cypress Creek SWIM water body? N

Project Description
{tc \l1 "Project Description}

A. Overall project goal: The acquisition, enhancement, and management of a 99.5-acre tract that includes a high quality mosaic of native upland (38 acres) & wetland (61.5 acres) habitat within the Cypress Creek floodplain. The property has been a high priority for acquisition by the Hillsborough County Parks Dept., under the Environmental Lands Acquisition and Protection Program (ELAPP). The County presently owns several hundred acres southeast of the site, referred to as Cypress Creek Preserve East, and a 298-acre parcel adjoining the southern boundary. The southern parcel (Jennings Tract) also provides mitigation for 24 impact acres associated with 10 FDOT projects (Refer to Figure B). This additional acquisition is part of a corridor evaluation by Hillsborough County and the SWFWMD (Save Our Rivers / Florida Forever). This acquisition will help connect other property owned by the SWFWMD (Cypress Creek) in Pasco Co., the Hills. Co. Cypress Ck. Preserve tracts, the SWFWMD Lower Hillsborough property, and FDEP Hillsborough River State Park. Both the Jennings and Greer Tracts were proposed for residential development before public acquisition and protection.

B. Brief description of current condition: The native habitat components of the site represent high quality functions relative to wildlife habitat, species richness & diversity, and especially habitat connectivity to both on-site and off-site native habitat conditions. These habitats include mixed forested wetlands surrounding the upland hardwood hammocks. A discussion of species and habitat conditions are provided within Attachment A.

C. Brief description of proposed work: The proposed activity includes land acquisition, with preservation of the wetland habitat and enhancement of the upland hardwood hammocks. Enhancement activities include land management and maintenance activities such as prescribed burning and herbicide control of exotic vegetation (skunk vine) within the hardwood hammocks. Construction activities are not necessary. Hillsborough County Parks will supplement the adjacent Jennings Tract management plan to depict necessary activities for the Greer Tract.

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): Almost all the proposed wetland impacts will be to forested wetlands (6.5 acres). The proposed mitigation protects high quality mixed forested wetlands and upland hardwood hammock buffers that appropriately compensate for the impacts to the forested wetland habitat. This acquisition & enhancement will result in an overall mitigation ratio of 15 acres of compensation for every 1 acre of wetland impact. There will no additional FDOT projects to be proposed for mitigation at the Greer Tract.

E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: There are no existing or currently proposed mitigation banks within the Hillsborough River basin.

F.Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body : The only SWIM project in the Hillsborough Basin is the Lake Thonotasassa Restoration Project. The habitat restoration associated with that project has already been delegated as the mitigation option for another DOT project.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: No proposed construction, management by Hillsborough County Parks & Recreation
Contact Name: Forest Turbiville, Resource Manager, Hills. Parks & Rec. Phone Number: (813)-672-7876
Entity responsible for monitoring and maintenance: Hillsborough County Parks & Recreation
Proposed timeframe for implementation: Commence: Reimbursement - Summer, 2004 Complete: Summer, 2004

Project cost: $100,000 (total) - For acquisition; maintenance & management activities funded by Hills. Parks & Rec.

Attachments

__X__1. Detailed description of existing site and proposed work. Refer to Attachment A - Existing Site & Plan, Figure B - habitat units plotted on the 1995 infrared aerial.

__X_ 2. Recent aerial photograph with date and scale. Figure B - Infrared aerial (1995).

__X_3. Location map and design drawings of existing and proposed conditions. Figure A - Location Map, Figure B.

__X_4. Detailed schedule for work implementation, including any and all phases. Acquisition was completed in 2002, reimbursement to be conducted in 2004, after the SR 39 project receives permits. Long-term maintenance & management conducted by the Hills. Co. Parks & Recreation Department.

__X_5. Proposed success criteria and associated monitoring plan. Refer to Attachment B.

__X_6. Long term maintenance plan. Refer to Attachment B.

_X__7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). Refer to previous discussion.

ATTACHMENT A - Existing Site Conditions & Proposed Plan

The mixed forested wetlands (61.5 acres) have dominant tree cover provided by a diverse assemblage of laurel oak, sweet gum, red maple, American elm, sweet bay, cabbage palm, and ironwood; with additional cover of bald cypress and tupelo within the lower elevations. The percentage of these two species are not as prevalent compared to the adjacent Jennings Tract. Subcanopy species include a dominance of the same tree species along with *Viburnum* spp., wax myrtle, and Virginia willow; and ground coverage of various sedges and ferns. The wetlands are high quality habitats that provide excellent buffers for the interior upland hammocks.

The upland hardwood hammocks have dominant cover of live oak, Southern magnolia, sweet gum, cabbage palm, and water oak; a sub-canopy of saw palmetto, cabbage palm, beautyberry, salt-bush, and buckthorn; and ground cover dominated by sedges and small panicums *(Dicanthelium spp)*. There are fewer live oaks and more cabbage palm in the hammocks of the Greer Tract compared to the adjacent Jennings Tract. This more open canopy has allowed more understory vegetation, as well as the invasion of skunkvine. The habitat conditions of the upland hammocks include a diverse assemblage of vegetative cover and species. The cover and landscape position of upland hammock islands that buffer wetlands allow substantial use by wildlife for foraging, nesting, and denning. In addition to the upland and wetland habitat designated for mitigation credit, there is a 0.5 acre area of bahia pasture that borders County Line Road. This area may be used for future parking to allow the public to have an access point to the Greer Tract.

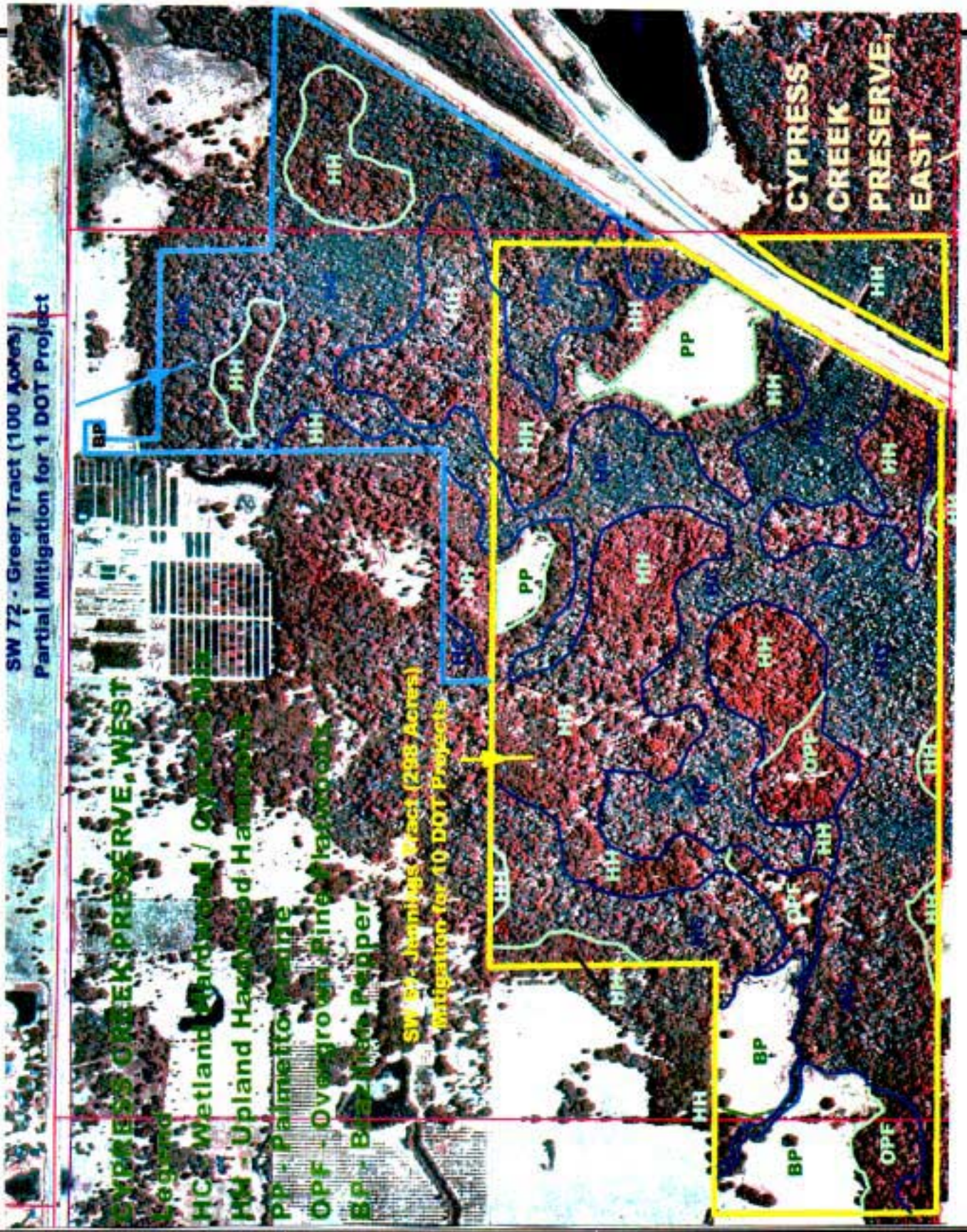
The proposed plan concentrates on herbicide control of any undesirable, exotic, and nuisance vegetation, which is primarily limited to skunkvine under current conditions. The plan also includes implementing a prescribed burn plan for the upland habitat. By implementing a burn plan, understory growth will not achieve a density that limits wildlife movement, generation of undesirable vegetation is controlled, and minimizes the chance of habitat damage from potential wildfires. The implementation of the prescribed burn plan will be dependent on the growth and percent cover of understory vegetation, but expected to be every 5-10 years. Management activities of the Greer Tract will be conducted concurrent with the adjacent Jennings Tract. Security of the Cypress Creek Preserve property is conducted through a Parks staff person who lives adjacent to the Preserve.

ATTACHMENT B – Maintenance & Monitoring Plan, Success Criteria

Maintenance activities will be conducted concurrent with similar activities on the adjacent Jennings Tract. Maintenance activities will primarily concentrate on herbicide treatment of skunkvine and periodic prescribed burns to enhance the upland hammocks. As with the Jennings Tract, maintenance activities will also include herbicide control of any other exotic, nuisance, and undesirable species that invade the site. No additional planting is necessary or proposed for the Greer Tract.

Monitoring includes an annual update of activities conducted at the Greer Tract as a part of the monitoring activities and associated reporting for the adjacent Jennings Tract. Qualitative assessment of the habitat conditions will be conducted and assessment of necessary management and maintenance activities to maintain success criteria will be documented. This annual update will be prepared for a minimum 3 years after approval of the site as a mitigation option. Success criteria includes implementing periodic prescribed burns and a herbicice management program to maintain less than 1% vegetative cover of exotic, nuisance, and undesirable species.

FDOT – District 7 **MITIGATION SITE** **(Hillsborough Basin)**	**GREER TRACT** **CYPRESS CREEK** **PRESERVE WEST** **(SW 72)**	**FIGURE A** **Location Map** **Scale 1 in = 1 mile, ^ North**



FDOT – District 7 MITIGATION SITE (Hillsborough Basin)	GREER TRACT CYPRESS CREEK PRESERVE WEST (SW 72)	FIGURE B – 1995 Infrared Aerial HABITAT MAP Scale 1 in = 910 feet, <North

Upland Hardwood Hammock – These hammocks have diverse canopy species such as live oak, laurel oak, Southern magnolia, sweet gum, cabbage palm, over saw palmetto, small cabbage palm, beautyberry, and buckthorn. These hammocks have fewer live oaks and more cabbage palm than the hammocks on the adjacent Jennings Tract, providing more open canopy.

Mixed Forested Wetland – The wetlands have a dominance of laurel oak, maple, sweet gum, American elm, and elm. Understory vegetation includes various sedges, ferns, with lizard's-tail and golden club (above) within the drainageways. There are fewer obligate areas of tupelo and cypress compared to the adjacent Jennings Tract.

FDOT – District 7 **MITIGATION SITE** **(Hillsborough River Basin)**	**CYPRESS CREEK PRESERVE WEST (SW 72)** **(Greer Tract, Hills. Co. ELAPP)**

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management Distict

Mitigation Project Name: **Hillsborough River State Park – Bulkhead Removal** Project Number: **SW 73**

Project Manager: Manny Lopez, WMD Environmental Scientist Phone No: (352) 796-7211, ext. 4270

County: Hillsborough Location: Sect. 7, T27S, R21E

IMPACT INFORMATION

DOT FM: 4037601, US 301 (SR 41) at McIntosh Road ERP #: _____ COE #: _____
Drainage Basin: Hillsborough Water Body(s): None SWIM water body? NA

Impact Acres /Types : 0.3 ac. 617 (Fluccs code)
0.1 ac. 641 (Fluccs code)
TOTAL 0.4 acres

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: ___ Creation X Restoration ___ Enhancement ___ Preservation Mitigation Area: **0.5 acre**
SWIM project? N Aquatic Plant Control project? N Exotic Plant Control Project? N
Mitigation Bank? N Drainage Basin: Hillsborough Water Body(s): Hillsborough River SWIM water body? Y

Project Description

A. Overall project goal: Removal of a bulkhead wall located along the shores of the river within Hillsborough River State Park. Once the wall is removed, grading will restore the sideslopes which will include a combination of natural and man-made materials and plantings. This is part of a joint project to provide FDEP- Parks with financial and tecnical assistance to enhance the river shoreline, as well as implement various options to provide water quality treatment of parking facilities. Only the bulkhead portion is proposed to compensate for the DOT wetland impacts.

B. Brief description of current condition: The concrete bulkhead (170 ft. long x 10 ft. high, refer to photos) was constructed over an original wall of sand-cement bags, to control erosion along the banks of the Hillsborough River where an extreme river oxbow is located (Figure B).

C. Brief description of proposed work: The wall will be removed, some rubble will be required below the waterline to control erosion and bank stabilization. The upper sideslopes will require a combination of man-made materials, potentially some terracing for stabilization, and extensive tree, shrub, and herb plantings for habitat restoration. The various alternatives of terracing and vegetation will be evaluated prior to construction, and presented in the 2003 DOT Mitigation Plan.

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): The majority of the proposed minor wetland impact includes 0.3 acres of mixed hardwood forested, similar to the proposed habitat conditions proposed for this restoration project. The DOT impacts will occur to wetlands located less than 2 miles from the restoration area. Considering the ecological improvement of restoring habitat along the Hillsborough River (OFW) and within a State Park, the activity appropriately and adequately compensates for this minor impact. No additional FDOT projects' impacts will be mitigated with the bulkhead removal project.

DOT Mitigation Plan, Hills. River State Park, Page 2

E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: There are currently no existing or proposed mitigation banks within the Hillsborough Basin.

F. Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body: There are currently no SWIM designated restoration projects proposed for implementation within the Hillsborough Basin. With limited DEP funds necessary to implement various water quality and natural habitat improvements proposed for the Park, several funding sources such as SWIM, Basin Board, and the DOT mitigation program are being evaluated as potential opportunities.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: Contractor selected by DEP and the WMD

Contact Name: Manny Lopez, WMD Environmental Scientist Phone Number: 352-796-7211, ext. 4270

Entity responsible for monitoring and maintenance: DEP – Hillsborough River State Park staff

Proposed timeframe for implementation: Commence: 2004 – site design Complete: 2005 - Construction

Project cost: $100,000; includes construction and planting costs, maintenance costs covered by DEP.

Attachments

X 1. Detailed description of existing site and proposed work. Refer to previous discussion and Attachment A.

X 2. Recent aerial photograph with date and scale. Refer to Figure B, 1995 infrared aerial.

X 3. Location map and design drawings of existing and proposed conditions. Refer to Figure A, Location Map, project evaluation and design will be complete in 2003.

X 4. Detailed schedule for work implementation, including any and all phases. Site evaluation and design (2004), construction & planting (2005), followed by 2 years maintenance & monitoring.

X 5. Proposed success criteria and associated monitoring plan. Refer to Attachment B.

X 6. Long term maintenance plan. Refer to Attachment B.

X 7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). Refer to previous discussion.

Attachment A – Site Conditions & Proposed Work

The grade elevations between the Hillsborough River and the adjacent floodplain are variable as the river meanders through the Park. For the bulkhead area, the natural scouring conditions of the river oxbow resulted in a naturally steep escarpment. Evaluation of the natural floodplain sideslopes adjacent to the bulkhead finds a transition of vegetation, from cypress along the lower banks to elms, maple, and hickory along the upper slopes. Shrubs such as wax myrtle, sugarberry, and saltbush provide a subcanopy, and ground cover includes various fern and sedge species. The slope rises 10-12 feet over a limited horizontal distance of 70-100 feet.

The original cement bag wall was capped with the concrete wall bulkhead after major storm events started eroding the capacity of the cement bags to maintain the slopes. The Park facilities include a concrete block picnic shelter less than 100 feet from the bulkhead, somewhat limiting the capacity to maximize slope restoration to an angle that can be naturally maintained. As a result, the proposed restoration will require a combination of man-made and natural stabilization methods. Depending on the evaluation of river hydraulics, historical flood elevations, and slope gradient restrictions to the shelter, the most likely design will include a series of slightly sloped terraces, with small walls of either reinforced fill, wood, cements bags, rubble, and or other material. A staircase, not funded through the DOT program, will probably be constructed to keep visitors from walking down the restored slope to the river.

No matter what kind of man-made material may be used to stabilize the slope, an extensive planting plan of trees, shrubs, and herbs will be adopted after construction. The aforementioned tree and shrub species that are currently found along the sideslopes will be the dominant species proposed for planting. Depending on the final slope design, some form of temporary cover such as rye or millet will be required for quick stabilization. This will be followed by planting of a permanent herb species such as wiregrass, broomsedge, or some other species deemed suitable for the soil, slope, and hydrologic conditions of the site. The desired outcome is to provide a earthwork design and associated revegetation plan that over the course of 5-10 years, there will be a blending of restored toward matching the natural habitat conditions that currently exist along the sideslopes adjacent to the wall.

Attachment B – Maintenance & Monitoring, Success Criteria

Maintenance activities are expected to be minimal, and primarily within a couple years of the construction. Exotic and nuisance species are currently not a problem for the site. Even though not anticipated as part of the restoration effort, generation of such species will be eradicated by herbicide. Any terracing, rubble along the waterline, or other man-made conditions of the site will be periodically checked to ensure stabilization is being maintained while not interfering with the integrity or transition of the habitat restoration components or functions.

Qualitative monitoring will be conducted semi-annually, followed by an annual monitoring report conducted for a minimum 2 years post-construction. The initial monitoring report will include photo and narrative documentation of conditions pre-, during, and post- construction. The monitoring reports will document the health, functions, and values of the restoration effort; and the maintenance activities and events necessary to achieve and maintain success.

Success criteria shall include a minimum 90% survivorship of planted material, and any tree and shrub mortality will be replaced with similar species. Tree canopy cover for the restored slope shall exceed 30% closure. Ground cover vegetation shall exceed 70% for all areas not covered with unnatural material (e.g. rubble rip-rap, terraces, staircase, etc.). Exotic, nuisance, and undesirable species shall not exceed 10%.

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management District

Mitigation Project Name: **Serenova – Sites 2, 3, 4, 8** Project Number: **SW 74**

Project Manager: Patricia Dooris, PhD., WMD-Manager, Environmental Section Phone No: 352-796-7211, ext. 4267

County: Pasco Location: Sec. 23, R17E, T26S
Sec. 34, R17E, T25S

IMPACT INFORMATION

DOT FM: 2563161, SR 52 – Hicks to Moon Lake MSSW #: 4011641 WRP#: 4111626 COE #: 199302010 (IP-ML)

Drainage Basin: Upper Coastal Water Body(s): Buckhorn Creek SWIM water body? N

Impact Acres /Types : 1.6 ac. 617 (Fluccs code)

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: ___ Creation ___ Restoration x Enhancement ___ Preservation Mitigation Area: **26 acres**
SWIM project? N Aquatic Plant Control project? N Exotic Plant Control Project? N
Mitigation Bank? N Drainage Basin: Upper Coastal Water Body(s): Pithlachascotee River SWIM water body? N

Project Description

A. Overall project goal: The Serenova Preserve is owned and managed by the SWFMWD (Figure A), and has several wetland enhancement opportunities being evaluated (Figure B). Enhancement activities at four areas are being proposed to mitigate for the DOT wetland impact. The Pithlachascotee River and Five Mile Creek are tributary systems that cross east-west through the Serenova property. The Pithlachascotee River has two berm road crossings (Site 2 - actively used, Site 4 - abandoned) and Five Mile Creek has one crossing (Site 3). Each crossing requires improvements to restore surface water flow conditions through the floodplains. Site 8 is a large outfall ditch of a cypress system, requiring a ditch block in order to enhance wetland hydrologic conditions.

B. Brief description of current condition: The Pithlachascotee River and Five Mile Creek are forested wetland floodplains of relatively high-quality with a diverse canopy cover dominated by laurel oak, sweet gum, cypress, red maple, cabbage palm, and tupelo. A sub-canopy has saplings of the above species as well as Virginia willow, buttonbush, and wax myrtle. Ground cover is sparse due to canopy cover and periodic flooding conditions, dominated by various fern and sedge species. However, hydraulic characteristics of these two floodplains have been altered by the berms and undersized culverts. The abandoned Pithlachascotee River crossing has a berm that currently blocks and diverts surface water flow along the berm and through a dredged channel segment of the river (Figure B, Site 4, refer to site photos). Another berm crossing of the river is used for management access, and has three undersized 48" CMP's for the main channel flow, and only one 24" overflow pipe (Site 2). The Five Mile Creek crossing has such an undersized culvert, the supporting fill material has eroded and deposited downstream (Site 3). The cypress system associated with Site 8 has a dense canopy and fern understory, but hydrologic indicators demonstrate minimal hydroperiods due to the outfall ditch.

C. Brief description of proposed work: To restore the primary flow patterns of the Pithlachascotee River, a surface water modeling effort will be conducted to determine the appropriate size replacement and supplemental culverts required for Site 2. Culvert expansions will include stabilization methods such as the addition of rubble, sand-cement bag rip-rap, and/or other material. This will eliminate the current undermining of the culverts and downstream sedimentation. The abandoned Pithlachascotee River floodplain berm crossing will have two breaches installed to restore the floodplain flow patterns. These breaches will have gradual slopes, graded to match historic surface grade elevations, and installed to minimize impacts to the laurel oaks along the sideslopes. As the dilapidated bridge continues to decay and drop debris into the river channel, limbs and other debris are caught which restricts flow. Eventually the entire bridge will fall into the river so it will also be removed during construction of the berm breaches. The Five Mile Creek crossing will be evaluated to either have the undersized culvert replaced with appropriately sized culverts and associated berm stabilization, or an at-grade wet crossing stabilized with aggregate or another compatible material. The ability to maintain vehicular access for land management activities will be a major factor in determining the type of crossing and material. The outfall ditch from the cypress system (Site 8) will have two ditch blocks installed to enhance hydrologic conditions of the cypress wetland, as well as create and maintain ephemeral marsh habitat within the ditch (Figure D).

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): The DOT-SR 52 project is close to the northern limits of the Serenova Tract. The roadway has been constructed and the forested wetland impacts have occurred. But it has been determined that even though the on-site wetland mitigation project constructed by DOT has ecological value and will be preserved, it will not be able to maintain all the wetland functions due to unforeseen hydrologic limitations. Therefore, this additional mitigation option at Serenova will regionally enhance the hydrologic characteristics of forested wetland habitats, which in turn will enhance the other wetland functions and values. This mitigation project will only be used to compensate for wetland impacts associated the SR 52 project.

E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: There are currently no existing or proposed mitigation banks within the Upper Coastal Basin.

F. Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body : There are no existing or proposed SWIM projects in the Upper Coastal basin that can appropriately provide the mitigation for the proposed impacts.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: SWFWMD Operations Department
Contact Name: Patricia Dooris, PhD., WMD-Manager, Environmental Section Phone No: 352-796-7211, ext. 4267

Entity responsible for monitoring and maintenance: Monitoring not necessary, any structure maintenance will be coordinated through the WMD Land Management and Operations Departments
Proposed timeframe for implementation: Commence: Surface Water Modeling – mid-late, 2004 Complete: Construction, either spring of 2005 or 2006, pending river hydrologic conditions to avoid turbidity.

Project cost: $130,000 (total); Hydraulics Study & Design - $40,000, Construction - $90,000

Attachments

_X_ 1. Detailed description of existing site and proposed work. Refer to previous discussion and Attachment A.

_X_ 2. Recent aerial photograph with date and scale. Refer to Figures B, C, and D, 1995 aerials.

_X_ 3. Location map and design drawings of existing and proposed conditions. Refer to Figure A for location map, design drawings of any culvert crossings will be conducted as part of the hydraulics study and presented in the 2003 DOT mitigation plan.

_X_ 4. Detailed schedule for work implementation, including any and all phases. The hydraulics study should be complete by mid-late, 2004. Actual construction to install the culverts and breach the berm will depend on final design plans and weather conditions. Construction will be attempted to coincide with no river flow conditions to avoid potential turbidity, anticipated in the spring of 2005 or 2006.

_X_ 5. Proposed success criteria and associated monitoring plan. No success criteria or monitoring is proposed, the restoration of hydraulic and hydrologic patterns will be documented as part of the hydraulics study.

_X_ 6. Long term maintenance plan. Specific maintenance activities are not anticipated, but periodic inspection of the structures, rip-rap, etc. will be conducted to make sure they function as intended.

_X_ 7**.** Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). Refer to previous discussion.

Attachment A – Existing & Proposed Work

The following information provides additional details of the site conditions and anticipated improvements. The acreage of direct versus secondary wetland enhancement opportunities are difficult to quantify and qualify, particularly prior to hydraulic modeling of the crossings. A minimal acreage of anticipated direct wetland enhancement is proposed for mitigation credit. This minimal enhancement is based on wetland floodplain limits of 350 ft. upstream and downstream of each crossing (Sites 2, 3, 4), and the most northern 300 ft. perimeter of the cypress wetland associated with Site 8. The enhancement acreage are presented for each site.

Site 2 – This access road berm over the Pithlachascotee RIver is used for maintenance and management of the Serenova property. The three existing 48-inch culverts have stain indicators that demonstrate normal flow conditions that exceed 70% of the available flow capacity, resulting in pooling of water upstream of the crossing and detaining flow from reaching the downstream wetland floodplain. The crossing is also very wide (700 ft.) and with only one additional small overflow culvert, the contributing flow is funneled through the large culverts which substantially minimize the expansion of surface water patterns throughout the downstream floodplain, while extending the hydroperiods of the upstream floodplain wetlands. The existing culverts are undersized and without rip-rap material, scouring of berm material has resulted in downstream sedimentation. Anticipated enhancement will include replacing the corrugated metal pipe with concrete pipe, probably additional and larger pipes at the main river channel. Additional overflow culverts will be installed within other areas of the berm to restore surface water flow conditions to the downstream wetlands. Rip-rap material will be placed around the culverts along the berm as well as underneath each pipe to eliminate undermining and dissipate velocities. Anticipated direct wetland enhancement (length 700 ft. x width 700 ft. = 11 acres).

Site 3 – This crossing of Five Mile Creek cannot be accessed by vehicles due to the scouring and loss of berm material from around the culvert (refer to photo). Even though this crossing is shorter than Site 2, the condition of the berm is actually less stable than the much larger berm of Site 2. The scouring has resulted in more downstream sedimentation so if culverts are replaced, additional berm stabilization will have to occur. It is also possible that a wet crossing with aggregate or other material may be installed in lieu of the culverts. Anticipated direct wetland enhancement (length 700 ft. x width 150 ft. = 2 acres).

Site 4 – This remnant tram road has a dilapidated bridge and considering the accessibility of the other Pithlachascottee River crossing, neither replacing the bridge nor placing culverts within the access berm are necessary. Since there are no existing culverts in the berm, like the other two crossings, flow conditions are detained upstream and more contained within the main channel within downstream areas. In order to restore normal floodplain flow patterns, a minimum of one wide breach cut is anticipated within each berm segment north and south of the main channel. There is evidence that snags, limbs and other debris periodically get caught in the bridge debris within the river that also alters flow conditions. The remaining bridge debris will eventually drop into the river so it will be removed. Anticipated direct wetland enhancement (length 700 feet x width 700 feet = 11 acres).

Site 8 – This is a large outfall ditch, with a bottom width over 10 ft, and top-of-bank width varying 30-50 ft. The ditch depth from top-of-bank varies because most of the ditch was dredged through elevated topography to provide positive flow. But because of the excessively drained, sandy soil conditions, the ditch hydroperiods are intermittent. Even though the cypress wetland is large, the area of direct wetland enhancement is anticipated near the northern extent of the system. Along with a ditch block along the wetland / upland interface, another ditch block is anticipated to maintain the upland ground water conditions and create and maintain ephemeral marsh habitat within the wide ditch. Anticipated direct wetland enhancement (length 300 feet x width 350 length = 2 acres).

Summary

The Serenova parcel (7000 acres) was purchased by the Florida Turnpike and deeded to the SWFWMD for public ownership and management to provide partial mitigation for wetland impacts associated with the construction of the Suncoast Expressway. In a settlement agreement between the Turnpike Authority and the Florida Audubon Society, the Turnpike provided $50,000 to the WMD toward evaluating potential wetland enhancement opportunities, and to conduct as many of the approved activities within those funding limits. The evaluation resulted in 13 sites that had various levels of wetland impacts due to historic man-made alterations (Figure B - Sites 1 through 13). Once located, additional evaluation was conducted to see which sites justified enhancement or restoration. All but one of Sites 9-13 are associated with dredged ponds within cypress wetlands. These impacts occurred over 30 years ago, and natural generation of mature cypress has occurred on the dredged spoil material and the open water components have coverage of desirable species. As a result, the evaluation indicated that backfilling these ponds would result in the loss of the minimal and very desirable open water habitat of the Serenova property. As a result, Sites 1-8 will be the only wetland hydrologic improvement projects proposed at Serenova.

Additional evaluation was conducted to determine which of the desired restored sites (Sites 1-8) could be enhanced with the available Turnpike funds and which sites would be appropriate to mitigate for the SR 52 wetland impacts. There are adequate funds to conduct the enhancement activities associated with Sites 1, 5, 6, and 7 and these enhancement activities will be designated toward fulfilling the mitigation agreement with the Turnpike and Audubon. In order to compensate for the proposed SR 52 wetland impacts, Sites 2, 3, 4, and 8 were evaluated and nominated to provide the mitigation for the DOT impacts, and the DOT funds provide just enough to fulfill the budget requirements for activities necessary to enhance those four sites.

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management District
Mitigation Project Name: **Cockroach Bay Restoration - Saltwater** Project Number: **SW 75**
Project Manager: Brandt Henningson, PhD. SWIM Environmental Scientist Phone No: (813) 985-7481 ext. 2202
County: Hillsborough Location : Sec. 16, T32S, R18E

IMPACT INFORMATION

(1) FM: 2557031, SR 60 – Cypress St. to Fish Creek * ERP #:43002958.003 COE #:200205816 (IP-MN)
(2) FM: 2571391, Ulmerton Road, US 19 to 49th St. ERP #:_____ COE #:_____

Drainage Basin(s): Tampa Bay Drainage Basin Water Body(s): None SWIM water body? N

Impact Acres / Types: (1) FM 2557031 - 5.4 acres 642 (Fluccs code)*
(2) FM 2571391 - 0.2 acres 612 (Fluccs code)
TOTAL 5.6 acres

*The ditch, pond, freshwater marsh, and mangrove impacts of this project (4.9 acres) are being mitigated at Tappan Tract (SW 62). Approximately half of the saltwater marsh impacts (5.3 acres) are being mitigated at Apollo Beach (SW 67), the remaining saltwater marsh impacts (5.4 acres) at Cockroach Bay - Saltwater.

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: X Creation __ Enhancement __ Restoration Mitigation Area: **15.1 ac.** SWIM project? __Y
Aquatic Plant Control project? N Exotic Plant Control Project? N Mitigation Bank? N Drainage Basin(s):
Tampa Bay Drainage Water Body(s):Tampa Bay, Cockroach Bay SWIM water body? Y

PROJECT DESCRIPTION

A. Overall project goals: Cockroach Bay includes a multi-agency (USACOE, SWFWMD, FDEP, Hills. Co. Parks) wetland and upland habitat restoration effort on property (total 651 acres) acquired by Hillsborough County. The SWFWMD is responsible for the initial wetland habitat creation & restoration activities, Hillsborough Co. Parks is responsible for the perpetual management of the site. The saltwater marsh impacts (5.4 acres) will be mitigated through grading an existing fallow farm field to create saltwatermarsh habitat (7.9 acres), and open water tidal pools and channels (7.2 acres). The minor mangrove impacts (0.2 acre) will be mitigated with natural recruitment of mangrove habitat within the created marsh habitat.

B. Brief description of current condition: As depicted on the infrared aerial (Figure B), the proposed wetland creation site is currently an upland fallow field and historically a row crop area. The site is bordered along the west by an upland oak hammock adjacent to the mangrove fringe of Tampa Bay. There is a Brazilian pepper fringe along the eastern boundary (to be removed), and a separate freshwater wetland creation to be constructed within another upland fallow field south of the tract.

C.Brief description of proposed work: The plan proposes dredging the uplands to create saltwater marsh habitat, tidal pools and channels that connect to other wetland creation areas south and east of the project site (Fig. C). The saltwater marsh habitat includes low marsh (4.6 acres) that will be planted with smooth cordgrass (*Spartina alteniflora*), marshhay cordgrass (*Spartina patens*). The high marsh habitat includes planting of knotgrass (*Paspalum distichum*) and sand cordgrass (*Spartina bakeri*) (Fig. D). The intertidal pools and channels will encompass 7.2 acres. The dredged material will be placed into an existing adjacent mine cut east of the site (referred to as the Southeast Pit) to create additional saltwater wetland habitat not associated with the mitigation plan.

D.Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): The proposed wetland impacts include 5.4 acres of saltwater marsh habitat (Fluccs #642) and a minor 0.2 acre of mangrove impact (Fluccs #612). The proposed creation of saltwater marsh habitat (minimum 7.9 acres) and connecting intertidal pools and channels (7.2 acres) will appropriately mitigate for these DOT impacts at a minimum ratio of 2.7:1. This creation effort will be buffered within an existing oak hammock (west), creation of freshwater marsh habitat (south), and upland restoration east of the site.

E.Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: The only mitigation bank in the basin is theTampa Bay Mitigation Bank, which is also within the Cockroach Bay area. The mitigation bank has not been constructed and available credits are not anticipated until at least 2005.

F.Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body : This project is part of a large SWIM restoration effort for the Cockroach Bay area. The Cockroach Bay restoration effort has been guided by the Cockroach Bay Restoration Alliance, made up of stakeholders including the agencies, landowners, and the Tampa Bay Mitigation Bank. The SWFWMD - SWIM Section has coordinated the wetland creation and restoration, and the majority of the upland habitat activities of the project. Hillsborough County Parks is responsible for the stormwater facilities, some upland restoration, and perpetual maintenance & management activities. Even though there are various restoration phases throughout the Cockroach Bay Habitat Restoration area, they are all inter-related based on site conditions, an ecological transition of upland habitat to palustrine wetlands, followed by salinity gradients of various marsh habitats toward estuarine wetlands. Because of the extensive planning and evaluation of the restoration, being co-located with on-going restoration efforts that are managed and maintained by Hillsborough County, the mitigation portions are expected to be very successful.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: Southwest Florida Water Management District or designee

Contact Name: Brandt Henningson, PhD, SWIM Environ. Scientist Phone Number: (813) 985-7481ext. 2202

Entity responsible for monitoring and maintenance: SWFWMD, Hillsborough County or designee

Proposed timeframe for implementation: Commence: Design, 2002 Complete: Const., Commence late 2003, followed by minimum 3 years maintenance & monitoring

Project cost: $ 420,000 (total); $100,000 for design, $320,000 for construction, planting, and maint. & monitoring

Attachments

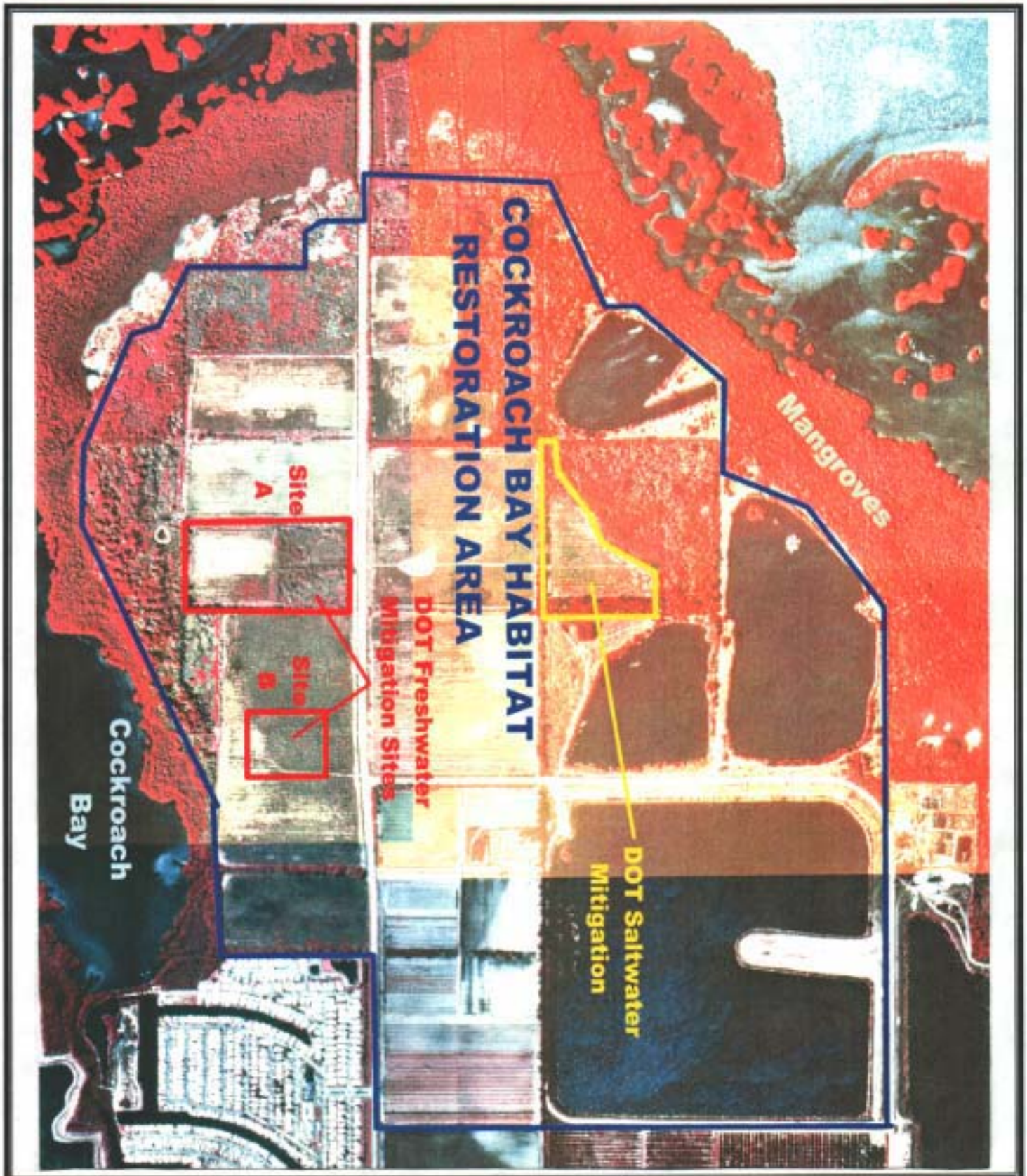
- x 1. Detailed description of existing site and proposed work. Refer to previous discussion.
- x 2. Recent aerial photograph with date and scale. Figure B - 1995 Infrared Aerial.
- x 3. Location map and design drawings of existing and proposed conditions. Figure A - Location Map, final design plans on Figures C,D,E.
- x 4. Detailed schedule for work implementation, including any and all phases. The final design for this portion of the Cockroach Bay plan was completed at the end of 2002, with construction commencing in late, 2003. Construction and planting is anticipated to be complete by mid-2004, followed by a minimum 3 year monitoring period.
- x 5. Proposed success criteria and associated monitoring plan. Refer to Attachment A.

X	6. Long term maintenance plan. Refer to Attachment A.
x	7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). Refer to previous discussion under Comment D.

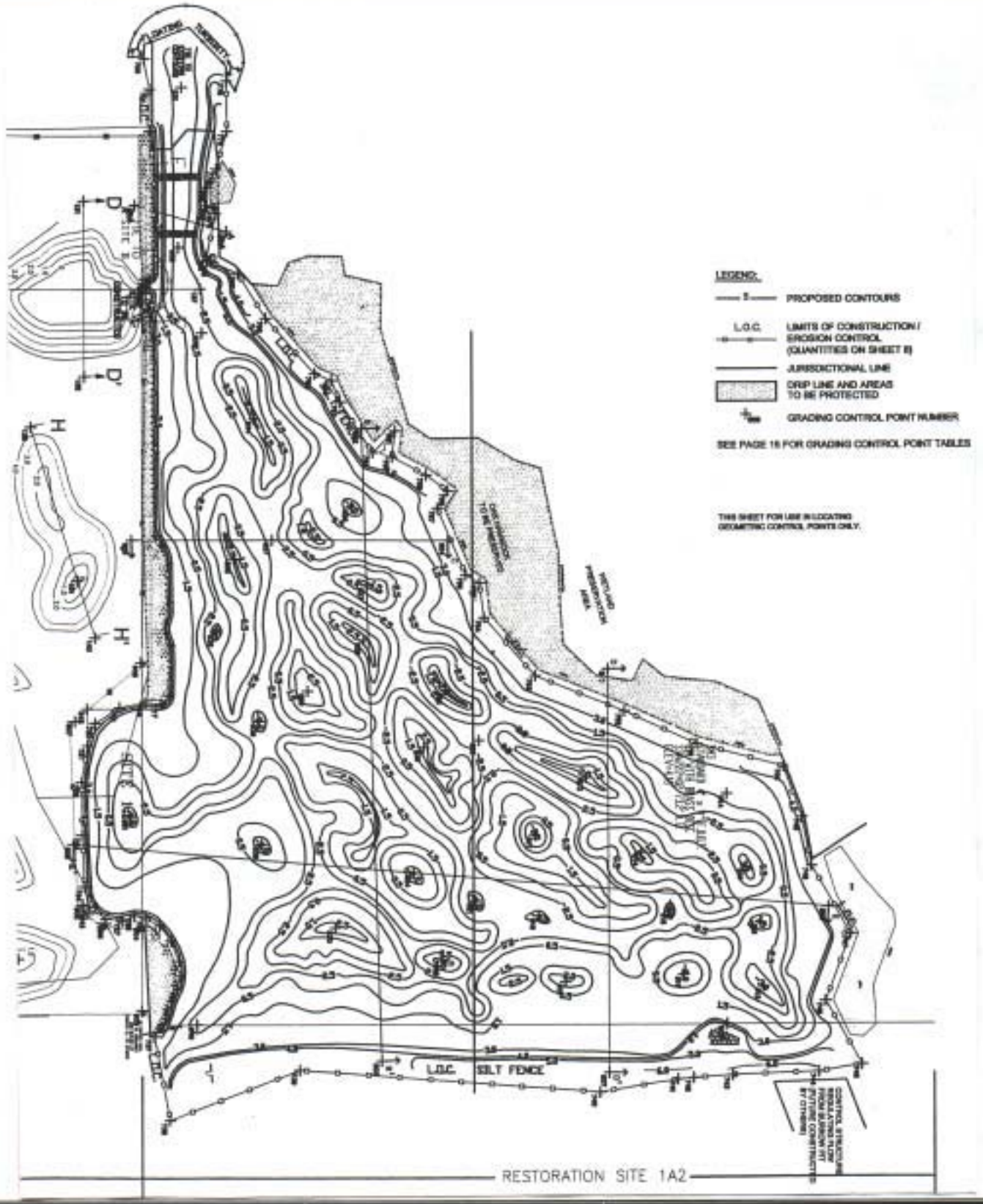
Attachment A – Maintenance & Monitoring, Success Criteria

The maintenance activities will be conducted by Hillsborough County staff with assistance from the SWFWMD, and be primarily related to control of invasive exotic vegetation. Maintenance will be a more intensive effort during the first couple years after planting to allow for establishment of desirable plant species, and less frequent maintenance as the project matures. Maintenance will be conducted as necessary, expected to be quarterly for two to three years. After this period, maintenance activities will be conducted as needed by Hillsborough County staff to maintain the success criteria. Inspections on a semi-annual basis are anticipated to evaluate vegetative conditions, debris, and any nuisance & exotic vegetation. After each inspection, proper maintenance activities will be conducted to correct any problems.

Monitoring will be conducted by a SWFWMD consultant on a semi-annual basis, followed by annual reports conducted for three years post-construction. Monitoring will include qualitative evaluation and photo documentation of the mitigation area, to evaluate and document species survival, coverage, wildlife use, exotic & nuisance species coverage, and recommended actions needed to ensure or enhance success. The success criteria will reflect a minimum 90% survivorship for planted material for one-year post planting, a total 85% cover of planted and recruited desirable species, and less than 10% exotic and nuisance species cover.



FDOT – District 7 MITIGATION SITE (Tampa Bay Drainage Basin)	COCKROACH BAY- SALTWATER (SW 75)	FIGURE B – Infrared Aerial Scale 1 in = 1070 feet, >North



FDOT – District 7 **MITIGATION SITE** **(Tampa Bay Drainage Basin)**	**COCKROACH BAY-** **SALTWATER** **(SW 75)**	**FIGURE C – Grading Plan** **Scale 1 in = 200 feet, > North**

LEGEND

L.O.C. — LIMITS OF CONSTRUCTION / EROSION CONTROL (QUANTITIES ON SHEET 8)

— — — JURISDICTIONAL LINE

AREAS TO BE PROTECTED

NOTE: DESIGN HIGH WATER = 2.18 NGVD (25 YEAR STORM)

MHHW = 1.48

MHW = 1.20

MLW = -0.4

MLLW = -0.70

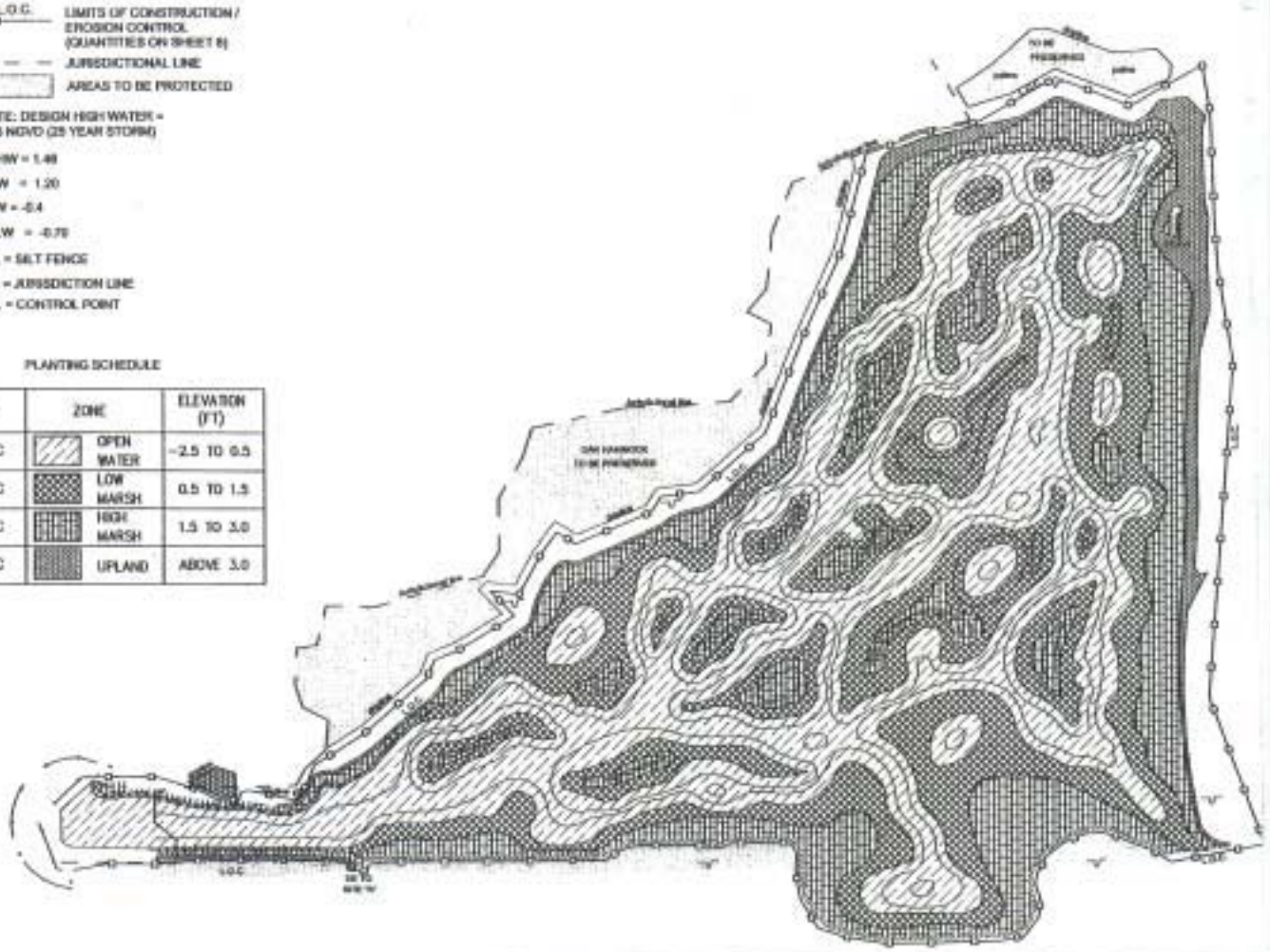
S.F. = SILT FENCE

J.D. = JURISDICTION LINE

C.P. = CONTROL POINT

PLANTING SCHEDULE

AREA	ZONE	ELEVATION (FT)
7.2 AC	OPEN WATER	-2.5 TO 0.5
4.8 AC	LOW MARSH	0.5 TO 1.5
3.3 AC	HIGH MARSH	1.5 TO 3.0
0.8 AC	UPLAND	ABOVE 3.0



PLANTING SCHEDULE

AREA	ZONE	ELEVATION (FT)	SPECIES		SIZE	SPACING	QTY.
7.2 AC	OPEN WATER	-2.5 TO 0.5	N/A		N/A	N/A	N/A
4.8 AC	LOW MARSH	0.5 TO 1.5	SMOOTH CORDGRASS	Spartina alterniflora	4" potted	3' o.c.	17,250
			MARSHHAY CORDGRASS**	Spartina patens	4" potted		5,750
3.3 AC	HIGH MARSH	1.5 TO 3.0	KNOTGRASS	Paspalum distichum	4" potted	3' o.c.	12,500
			SAND CORDGRASS*	Spartina bakeri	4" potted		3,500
0.8 AC	UPLAND	ABOVE 3.0	BAHIA GRASS	Paspalum notatum	ACRES	HYDROSEED	0.8

FDOT – District 7
MITIGATION SITE
(Tampa Bay Drainage Basin)

COCKROACH BAY-
SALTWATER
(SW 75)

FIGURE D – Planting Plan
Scale 1 in = 150 feet, ^North

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Souhwest Florida Water Management District

Mitigation Project Name: **Lake Lowery Tract** Project Number: **SW 76**

Project Manager: Gaye Sharpe, Polk Co. Env. Lands Coordinator Phone No: (863) 534-7377

County: Polk Location: Sec. 10 T27S, R26E

IMPACT INFORMATION

(1) FM: 1976791, US 27 - SR 544 to Blue Heron Bay * ERP#: 43023431.000 COE #: 200202574 (IP-JPF)
(2) FM: 4038901, US 27 - Blue Heron Bay to CR 547 ERP#: 43023431.001 COE #: 200205885 (IP-JPF)
(3) FM: 2012041, I-4, CR 557 to Osceola Co. Line (Seg. 6,7,9)** ERP#: _____ COE #: _____

Drainage Basin: Ocklawaha Water Body(s): Tower Lake SWIM water body? N

Impact Acres / Types:

(1) FM 1976791 0.02 ac. 510 (Fluccs code)
0.29 ac. 630 (Fluccs code)
0.14 ac. 631 (Fluccs code)
TOTAL 0.45 acres

(2) FM 4038901 0.29 ac. 630 (Fluccs code)
0.16 ac. 631 (Fluccs code)
TOTAL 0.45 acres

(3) FM 2012041 2.32 ac. 621 (Fluccs code)
2.00 ac. 640 (Fluccs code)
TOTAL 4.32 acres

TOTAL: 5.22 acres

*Note – A portion of this US 27 segment is within the Peace Basin and the associated wetland impacts will be mitigated at the Lk. Hancock Reserve (SW 66).

** Note – A portion of this I-4 project is within the Withlacoochee Basin and the associated wetland impacts will be mitigated at the Hampton Tract (SW 59). Another portion of this project is within the Kissimmee Ridge Basin and the associated wetland impacts will be mitigated at the Reedy Creek Mitigation Bank (SW 49).

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: ___ Creation __ Restoration __ Enhancement _X_ Preservation Mitigation Area: 198 **ac**.
SWIM project? N Aquatic Plant Control project? N Exotic Plant Control Project? N Mitigation Bank? N
Drainage Basin: Ocklawaha Water Body(s):Lake Lowery SWIM water body? N

Project Description

A. Overall project goal: The primary goal includes acquisition, preservation, and management of high quality wetlands within the Lake Lowery floodplain. The 198 acres is part of a 397-acre parcel purchased in Feb., 2002 in a joint acquisition between the SJRWMD and Polk County. In addition to providing mitigation for FDOT wetland impacts, the site fulfills overall objectives of acquisition of many parcels within the 100-year flood zone of Lake Lowery. The benefits of this acquisition are further enhanced since the tract is adjacent to 5700 acres of habitat owned and managed by the FFWCC (Fig. B, Hilochee Wildlife Management Area, Osprey Unit), as well as within the Green Swamp Area of Critical State Concern.

B. Brief description of current condition: The majority of the entire 397-acre tract is a large palustrine marsh with forested wetland and shrub wetland islands, and a partial perimeter of forested wetlands within the southern portion of the tract (Fig. C). Dominant cover of the marsh includes pickerelweed and maidencane. Other common species include smartweed, arrowhead, and sand cordgrass. There are separate pockets of sawgrass and Carolina willow. The forested wetland areas have dominant canopy and sub-canopy species of bays, tupelo, and cypress; with additional cover provided by red maple and dahoon holly. The ground cover includes a dominance of lizard's-tail and various fern species. A buffer of pine flatwoods is located along the northeast and southeast portion of the marsh. An improved pasture is located along the western and northern boundary of the marsh. The tract is an undivided interest between the WMD and Polk County, therefore it was determined that the mitigation credit would be designated within a 198-acre area of the wetland. The upland buffers provide important functions for the wetland area, but are not designated for mitigation credit (refer to Figure C). The wetland conditions represent high quality conditions with minimal exotic and nuisance species coverage. Wildlife use is substantial, foraging opportunities for wading birds are high, and sandhill crane nesting has been documented for the marsh. Amphibian presence is substantial with a particularly high frog population.

C. Brief description of proposed work: The wetlands are of high quality and no direct enhancement is necessary. Indirect enhancement has been provided by removal of cattle and the threat of potential development activities along the perimeter of the marsh through public lands acquisition. Without the development threat, there is substantially less potential for invasion of exotic/nuisance vegetation and water quality degradation that is often associated with residential development (i.e. septic tanks, fertilizers, etc.). The potential of silviculture activities of the forested components are also removed through public acquisition, protection, and management.

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): The proposed wetland impacts include cypress (2.3 acres), marsh (2.0 acres), and mixed forested (0.9 acres). The proposed mitigation includes the preservation of 198 acres of marsh, shrub, and mixed forested wetland habitat. Wetland functional assessment (WRAP) has been conducted for the site and the ratio of 38 acres of preservation to 1 acre impact has been determined to be appropriate to compensate for these impacts. No additional DOT projects' impacts are proposed to be mitigated at the site.

E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: The SJRWMD considered the use of a mitigation bank to compensate for the anticipated impacts. The only mitigation bank in the basin (Lk. Louisa/Green Swamp Mitigation Bank) includes a dominance of xeric habitat restoration and bayhead enhancement. The proposed wetland impacts and mitigation area include a dominance of cypress, mixed forest, and marsh habitat. Therefore, the Lake Lowery mitigation project was deemed by the SJRWMD and the multi-agency mitigation review group to be a more appropriate mitigation option for the proposed impacts.

F. Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body : There are no SWIM water bodies within this basin.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: No construction activities necessary or proposed
Contact Name: Gaye Sharpe, Polk Co. Env. Lands Coordinator Phone No: (863) 534-7377
Entity responsible for monitoring and maintenance: No monitoring or maintenance necessary or proposed
Proposed timeframe for implementation: Commence: Evaluation, 2000 Complete: Acquisition, 2002

Project cost: $255,436 (total); SJRWMD reimbursed by FDOT in 2002
$126,953 – Acquisition Costs – 50% Ownership
$69,000 – Administrative Costs
$59,482 – Long-Term Management Costs (Transferred to SWFWMD, to be returned to DOT)

Attachments

X 1. Detailed description of existing site and proposed work. Refer to previous text and Attachment A.

X 2. Recent aerial photograph with date and scale. Refer to Figures B and C.

X 3. Location map and design drawings of existing and proposed conditions. Refer to Figure A for the location, Figure C for existing and proposed wetland mitigation conditions.

X 4. Detailed schedule for work implementation, including any and all phases. Joint land acquisition was conducted by the SJRWMD and Polk County in 2002. The SJRWMD were reimbursed by FDOT for their portion of the acquisition, administrative costs, and long-term management to designate 198 acres of mitigation for FDOT impacts. Additional information in Attachment B.

X 5. Proposed success criteria and associated monitoring plan. No success criteria or monitoring necessary or proposed due to the high quality of existing wetland habitat conditions.

X 6. Long term maintenance plan. No specific maintenance activity necessary or proposed for the wetland area designated for mitigation purposes, additional information in Attachment B.

X 7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). Refer to previous discussion in Item D.

Attachment A – Existing and Proposed Activities

Lake Lowery is a 900-acre lake surrounded by thousands of acres of wetlands and floodplains, including the large wetland associated with this project. The lake and associated wetlands are located in the Green Swamp Area of Critical State Concern and a headwater area for the Palatlakaha, Withlacoochee, and Peace basins. A little of the Lake Lowery Tract's northwestern portion is within the Withlacoochee basin (Figure C), but the designated mitigation area is within the Palatlakaha basin, a sub-basin of the Ocklawaha River Basin. The topography for the floodplain wetlands in the vicinity is relatively flat, which has resulted in flooding of homes, septic tanks, wells, and roads. In coordination and cooperation with the SJRWMD, Polk County initiated a priority of land acquisition in the area to minimize the threat of future residential development and associated impact and loss of native habitat, additional flooding, and the inherent water quality degradation caused by such land use conversion.

The wetland associated with the Lake Lowery Tract is high quality in terms of ecological functions and values. There is substantial species richness, diversity, and dense coverage. The majority of the marsh component is dominated by pickerelweed (*Pontederia cordata*), maidencane (*Panicum hemitomon*), smartweed (*Polygonum* spp.), and a perimeter of sand cordgrass (*Spartina bakeri*). Other common species include arrowhead (*Sagittaria lancifolia*), spikerush (*Eleocharis baldwinii*), and bacopa (*Bacopa caroliniana*).

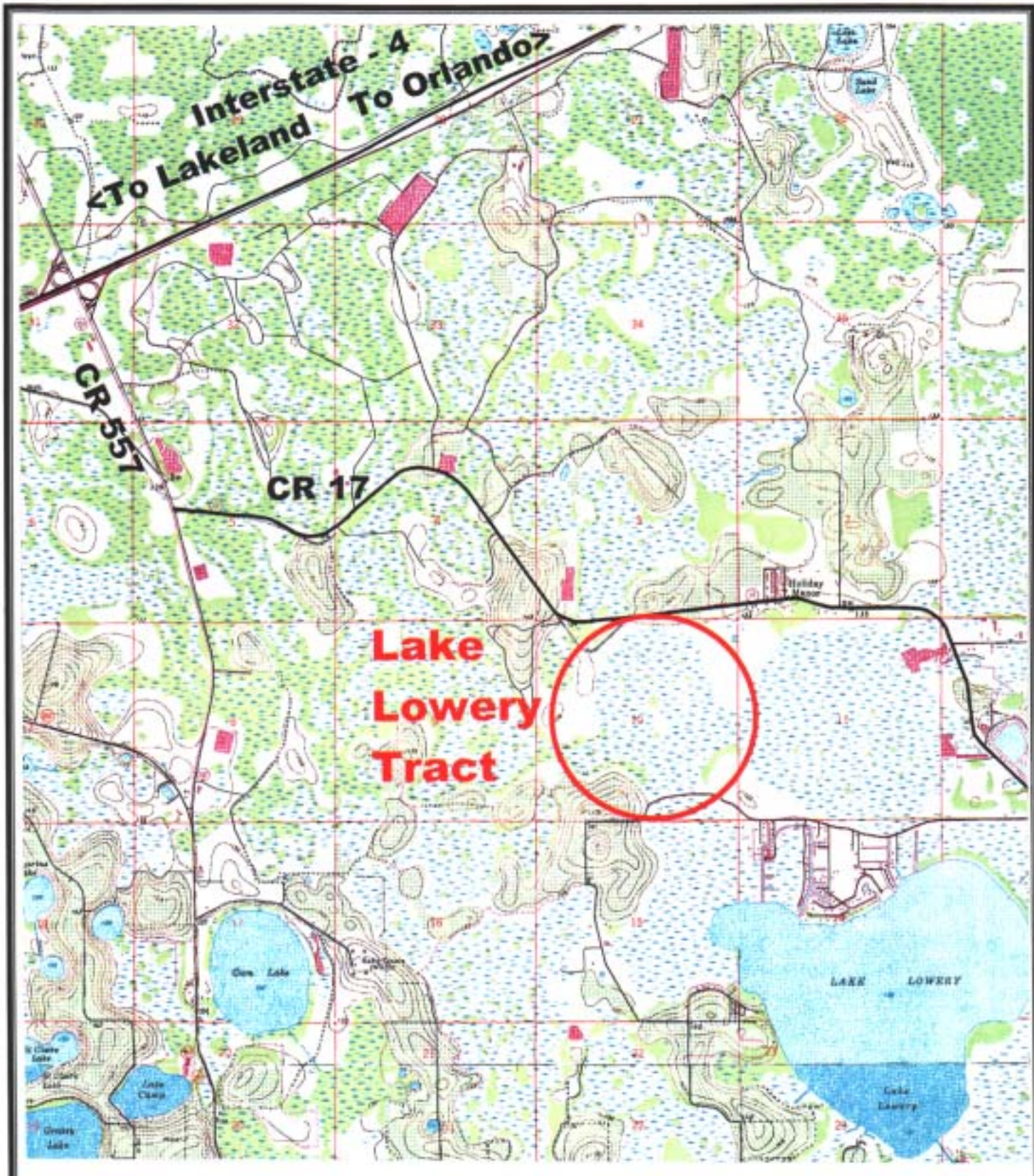
There are scattered small pockets (various sizes of less than 30 ft. diameter to 1-2 acres) of sawgrass (*Cladium jamaicense*) and separate pockets of small Carolina willow (*Salix virginica*). The forested wetland components have a diverse mix of cypress (*Taxodium distichum*) and hardwoods. The most dominant species in the canopy and sub-canopy include bays (*Persea palustris, Magnolia virginiana*), and tupelo (*Nyssa aquatica* var. *biflora*); less coverage is provided by red maple (*Acer rubrum*) and dahoon holly (*Ilex cassine*). Due in part to high water conditions and shading, the understory varies in coverage but generally averages 30-60%. The dominant coverage is provided by ferns (*Woodwardia virginica, Thelypteris palustris*), and lizard's-tail (*Saururus cernuus*); duckweed (*Lemna* spp.) is common along the water surface.

The adjacent upland buffers of the tract are not designated for DOT mitigation credit, and even though the acreage is minor, the buffers are important components of the acquisition toward maintaining appropriate functions and values of the wetland. The pine flatwoods along the western perimeter of the wetland include a dominance of saw palmetto (*Serenoa repens*), gallberry (*Ilex glabra*), fetterbush (*Lyonia ferruginea*), wax myrtle *(Myrica cerifera*), and scattered slash pine (*Pinus elliottii*). The upland buffers for the northern and eastern side of the marsh include a dominance of improved pasture with bahiagrass (*Paspalum notatum*) and scattered fennel (*Eupatorium capillifolium*), euthamia (*Euthamia* sp.), and blue maidencane (*Amphicarpum muhlenbergianum*). As the pasture and pine flatwoods transition into the wetland, various sedges (*Cyperus* spp.), broomsedge (*Andropogon glomeratus*, *A. virginicus*), and goldenrod (*Solidago* spp.) are present. The presence of dead fennel within the pasture buffer/wetland edge is due to high water conditions associated with the 2003 "El Nino" weather patterns.

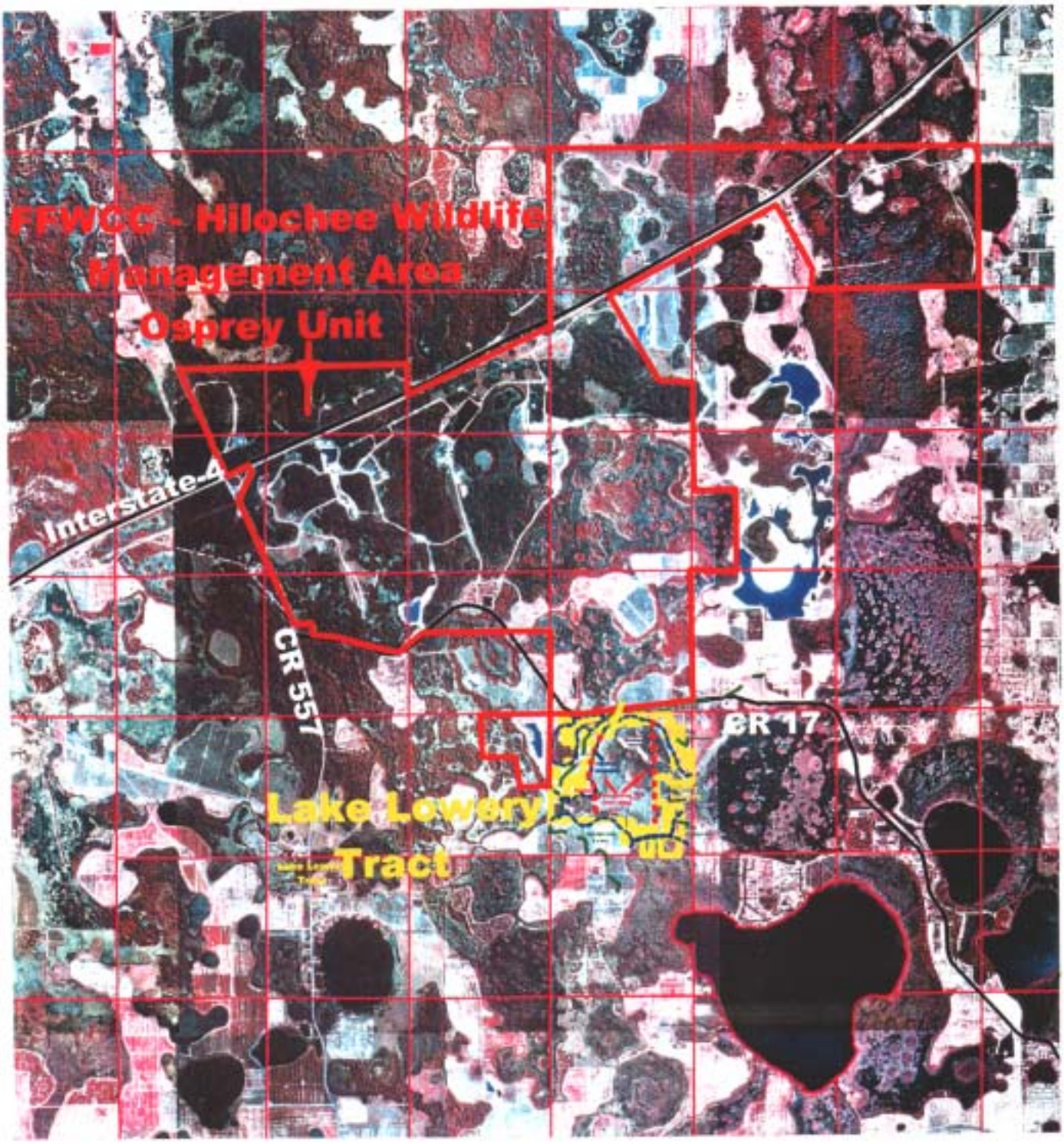
Beyond periodic inspections and the potential of prescribed burns in the uplands, there are no maintenance or management activities currently proposed or adopted for the site. There are still some outparcels between the western boundary of the property and the FWC Hilochee Wildlife Management Area (refer to Figs. B & C). Polk County has considered restoring the pastures to upland habitat conditions. However, until if and when such time that hopefully the adjacent landowners are willing to sell their property to the County, attempting to restore the buffers is problematic. These remnant upland outparcels cannot be developed due to lack of access but cattle grazing operations can still be conducted. However, the limitation of potential upland restoration does not downgrade the habitat value of the tract or the buffers. Since it is unknown whether the buffers will be further enhanced and/or restored, that condition does not influence the mitigation credits since the designated mitigation area is within the wetland portion of the tract. The ecological "lift" and associated mitigation credit would be slightly increased with upland restoration activities. However, the ecological value and functions of the wetland and buffers under existing conditions are sufficient to compensate for the minor wetland impact acreage proposed for mitigation at the Lake Lowery Tract.

Attachment B – Mitigation and Ownership Issues

As noted, the Lake Lowery Tract was a joint acquisition pursuit (50/50 split) with the SJRWMD and Polk County. The site was an undivided interest, and the SJRWMD received approval from the regulatory and commenting agencies to designate their 50% interest to also mitigate for DOT wetland impacts. As of the 2003 Legislative session, the area of the Palatlakaha basin within Polk County was transferred to the SWFWMD. This transfer includes a wide range of issues, including permitting and the transfer of property holdings to the SWFWMD. At the time of the transfer (July, 2003), the SJRWMD and Polk County were discussing the potential sell and/or title transfer of the SJRWMD's 50% ownership to Polk County. As of the summer, 2003, there hasn't been sufficient time to evaluate the SWFWMD's goals and priorities concerning land ownership and future acquisitions in this sub-basin. Therefore, this issue has not been discussed between the SWFWMD and Polk County. If and/or when such a transfer were to occur in the future, this transfer will not influence the previously agreed upon mitigation designation for a portion of the tract.



FDOT – District 1 MITIGATION SITE (Ocklawaha River Basin)	LAKE LOWERY TRACT (SW 76)	FIGURE A - Location Map Scale 1.5 in. = 1 mile, ^North



FDOT – District 1 MITIGATION SITE (Ocklawaha River Basin)	LAKE LOWERY TRACT (SW 76)	FIGURE B – Adjacent Public Lands Scale 1 in. = 1 mile ^North

FDOT – District 1 MITIGATION SITE (Ocklawaha River Basin)	LAKE LOWERY TRACT (SW 76)	FIGURE C – Habitat Scale 1 in. = approx. 1080 ft. ^North

The majority of the tract is covered with a high quality marsh with a dominance of maidencane and sand cordgrass along the outer zone (foreground). Pickerelweed, smartweed, and maidencane dominate the interior, with scattered pockets of sawgrass, Carolina willow and forested wetland islands (background).

The forested wetlands are located along the southwestern portion of the property and islands within the marsh. Dominant overstory and sub-canopy is provided by sweet bay, swamp bay, tupelo, cypress, and red maple. Understory vegetation includes a dominance of lizard's-tail and various fern species.

FDOT – District 1 **MITIGATION SITE** **(Ocklawaha River Basin)**	**LAKE LOWERY TRACT** **(SW 76)**

Within the property boundary, the upland buffers (foreground) along the western and northern perimeters of the marsh (background) have a dominant cover of bahiagrass. Other species include broomsedge, euthamia, dog fennel, blue maidencane, and goldenrod. Scattered myrtles and live oaks are also present.

Within the property boundary, the upland buffers along the eastern and southeastern perimeter of the marsh are pine flatwoods that have dominant cover of saw palmetto, gallberry, fetterbush, wax myrtle and scattered slash pine. A forested perimeter dominated by cypress (background) is present along the marsh within the southeastern and southwestern portion of the property.

FDOT – District 1 **MITIGATION SITE** **(Ocklawaha River Basin)**	**LAKE LOWERY TRACT** **(SW 76)**

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management District
Mitigation Project Name: **Bahia Beach** Project Number: **SW 78**
Project Manager: SWFWMD - SWIM (PM to be determined late, 2003) Phone No: (813) 985-7481
County: Hillsborough Location: Sec. 1, T32S, R18E

IMPACT INFORMATION

(1) FM: 4143481, Tampa Inter. Airport, Runway 17-35 ERP #: 49008387.01 COE #: 200101521 (IP-MN)
(2) FM: 2583982, I-275, Howard Franklin to Himes Ave. ERP #: _____ COE #: _____

Drainage Basin: Tampa Bay Water Body(s):Sweetwater Creek, Tampa Bay, Fish Creek SWIM water body? Yes
Impact Acres /Types :

(1) FM 4143481
- 3.40 ac. 510 (Fluccs)
- 0.30 ac. 530 (Fluccs)
- 0.40 ac. 618 (Fluccs)
- 0.70 ac. 617 (Fluccs)
- 2.80 ac. 619 (Fluccs)
- 0.30 ac. 621 (Fluccs)
- 1.50 ac. 630 (Fluccs)
- 3.40 ac. 640 (Fluccs)
- 0.40 ac. 641 (Fluccs)
- 6.30 ac. 641x (Fluccs)
- 0.80 ac. 642 (Fluccs)

TOTAL 20.10 acres

(2) FM 2583982 0.40 ac. 612 (Fluccs)

TOTAL: 20.5 acres

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: X Creation X Restoration X Enhancement ___ Preservation Mitigation Area: **110-120 ac**.
SWIM project? Y Aquatic Plant Control project? N Exotic Plant Control Project? Y
Mitigation Bank? N Drainage Basin: Tampa Bay Drainage Water Body(s): Tampa Bay SWIM water body? Y

Project Description

A. Overall project goal: The Bahia Beach project site (120 acres) was acquired in 2001 by Hillsborough County through their Environmental Lands Acquisition and Protection Program (ELAPP), one of several contiguous habitat tracts owned and managed by the County west of Ruskin (Fig. B). The WMD-SWIM Dept. will be cooperating with Hillsborough County Parks and Hillsborough Co. Env. Protection Commission (EPC) to evaluate the opportunities to conduct wetland creation with buffers of upland habitat restoration within existing upland areas, as well as enhancement of coastal wetland hammock habitat, restoration of salt-marsh habitat, and enhance salt marsh/mangrove habitat.

B. Brief description of current condition: As part of the acquisition agreement, the previous landowner removed the citrus grove and the uplands are presently fallow fields dominated by invasive and nuisance species (refer to Figure C and site photos). The field is bordered by a coastal wetland hammock dominated by an overstory of cabbage palm with scattered red juniper, live and laurel oaks, and slash pine. The subcanopy of the hammock includes minor to moderate coverage of Brazilian pepper, cabbage palm, salt-bush, wax myrtle, and saw palmetto. Small pockets of black needle rush, cordgrass, and sawgrass are located in the interior of the hammock. A large mosaic of salt-marsh and mangrove habitat is located west of the hammock. Vegetation in the marsh portion is dominated by saltwort, glasswort, and salt-grass. The mangrove portion is dominated by white mangrove with

scattered black mangrove and buttonwood. Shrub-size mangroves transition into the marsh component. This saltwater habitat has interconnecting mosquito ditches with adjacent spoil piles covered with Brazilian pepper. In part due to the altered hydrology from the ditching, the transition between the hammock and saltwater habitat has become a very dense stand of Brazilian pepper. Additional site information is provided in Attachment A.

C. **Brief description of proposed work:** The fallow fields will be converted to an inter-related mix of created wetlands and upland habitat restoration of primarily oak hammocks and pine flatwoods. The created wetlands (estimated 30-40 of the total 61 field acres) will include a dominance of freshwater wetland creation, with the potential of transitioning to oligohaline wetland creation closer to the hammock. Piezometers have been installed in the uplands to monitor and evaluate the surficial groundwater conditions. For wetland creation design, this information will be important to determine appropriate hydroperiods and proximity of saltwater influence. The created wetlands (forested and non-forested) will be buffered by restored upland habitat, and the combination of wetland and upland habitats will provide corridors for wildlife utilizing the adjacent native ecosystems. The coastal hammock will be enhanced with the eradication of Brazilian pepper. The mosquito and drainage ditches within the coastal hammock and saltwater wetland habitat will be evaluated to determine the most appropriate locations for backfilling spoil material into the ditches. With the use of additional site evaluation, the mitigation design will be prepared in 2004, and presented in the 2004 FDOT Mitigation Plan.

D. **Brief explanation of how this work serves to offset the impacts of the specified DOT project(s):** The primary project proposed for mitigation at the Bahia Beach project includes low quality wetlands associated with expansion activities at Tampa International Airport (TIA). Due to the close proximity to Tampa Bay and high quantity of ditched systems, the proposed wetland impact areas at TIA are low quality systems with a variety of salinity levels; a third of the proposed impacts are ditches and canals. Before the addition of the TIA impacts to the FDOT impact inventory, mitigation for these impacts were permitted (WMD, ACOE, HCEPC, 2003) to be located with a combination of minor habitat improvements at Bahia Beach and the majority within another tract owned by Hillsborough County (NW Wastewater Treatment Plant Site). At the time of the TIA permitting, there were no long-range plans established for Bahia Beach site. Additional site evaluation has determined that the combination of various wetland creation, restoration, and enhancement; along with buffers of upland habitat restoration activities can be appropriately conducted at the Bahia Beach project. Once a mitigation design has been approved by the regulatory agencies, the permits issued for TIA will be modified (expected 2005-2006, construction, 2007) to designate all the TIA mitigation be conducted at Bahia Beach. Due to the major habitat improvements and anticipated ecological lift, additional future DOT projects with proposed freshwater and saltwater wetland impacts will be evaluated for potential mitigation at Bahia Beach.

E. **Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost:** The only existing or proposed mitigation bank within the Tampa Bay Drainage Basin at this time is the Tampa Bay Mitigation Bank (TBMB). Shell mining activity is being conducted at TBMB, and available credit sales are not anticipated until at least 2005.

F. **Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body:** The Bahia Beach project is a SWIM project adjacent to a SWIM water body (Tampa Bay), to be constructed on property owned and managed by the Hillsborough County Parks, Recreation & Conservation Dept.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: SWFWMD – Operations Dept. and/or a selected private contractor
Contact Name: Brandt Henningsen, Ph.D., SWIM Senior Scientist Phone Number: (813) 985-7481, ext. 2202

Entity responsible for monitoring and maintenance: Monitoring conducted by SWFWMD, Minimum 3 years maintenance under contract with SWFWMD, perpetual management conducted by Hills. County Parks.

Proposed timeframe for implementation: Commence: Design and Permitting 2004-2005, Construction 2005-2006, followed by minimum 3 years maintenance & monitoring

Project cost: $2,800,000 (estimate total);

Design & Permitting	$150,000
Construction & Planting	$2,500,000
Maintenance & Monitoring	$150,000

Attachments

_X_ 1. Detailed description of existing site and proposed work. Refer to Attachment A.

_X_ 2. Recent aerial photograph with date and scale. Refer to Figures B and D, 1999 infra-red aerials.

_X_ 3. Location map and design drawings of existing and proposed conditions. Refer to Figure A (Location Map) and Figure C of existing and conceptual mitigation plan.

_X_ 4. Detailed schedule for work implementation, including any and all phases. Refer to Attachment B – Schedule.

_X_ 5. Proposed success criteria and associated monitoring plan. Refer to Attachment C – Maintenance & Monitoring Plan, Success Criteria.

_X_ 6. Long term maintenance plan. Refer to Attachment C – Maintenance & Monitoring Plan, Success Criteria.

_X_ 7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). Refer to previous text. As part of the final design and permitting process, a functional wetland assessment will be conducted, and a mitigation credit/debit table will be established to properly designate the appropriate mitigation for each of the proposed DOT impacts.

Attachment A – Existing Site & Proposed Work

The proposed Bahia Beach project is one of a series of public land acquisitions along Tampa Bay west of Ruskin (Figure B). The property was acquired in the summer, 2001 through the Hillsborough County ELAP program, with partial reimbursement by the FDEP and USFWS. Coordination with the SWFWMD-SWIM Dept., Hillsborough Parks, Hillsborough EPC, and a design consultant will be contracted to prepare a plan to include creation, restoration, and enhancement of habitat conditions on the site. Upon approval of the mitigation design, FDOT mitigation funds will be utilized to reimburse costs incurred for design, construction, and short-term maintenance & monitoring activities. The following information describes the site conditions and possible scenarios of habitat improvements that will be further evaluated with various alternatives. This information will be adopted in a design plan that will be included in the 2004 FDOT mitigation plan.

Fallow Field Conversion to Wetland Creation and Upland Habitat Restoration (Approx. 61 Acres)

The existing site conditions for the Bahia Beach tract includes 120 acres of upland fallow fields and wetland habitat. The upland area was historically pine flatwoods that were converted to citrus groves. The groves were removed as part of the agreement of public acquisition. Subsequently, the former groves have converted to fallow field conditions with a variety of nuisance and exotic vegetation. The dominant cover is provided by bahiagrass (*Paspalum notatum*), natalgrass (*Rhynchelytrum repens*), and dog fennel (*Eupatorium capillifolium*). Other species include smutgrass (*Sporobolus poiretii*), chickweed (*Richardia scabra*), beggar's-tick (*Bidens alba*), nutsedge (*Cyperus esculentus*), ragweed (*Ambrosian artemisiifolia*), and lantana (*Lantana* spp.).

According to soil borings and the NRCS Soil Survey (Figure D), the soils underlying the fallow field are poorly drained with seasonal high water tables within one foot of the surface grades. Large east-west ditches drain on-site and off-site contributing flow toward the adjacent hammock. For drainage purposes, the grove had shallow swales between the citrus beds. Positive drainage flow from the swales are no longer maintained to the east-west ditches, which has allowed nuisance hydrophytic species to invade with a dominance of torpedograss (*Panicum repens*), sedges (*Cyperus* spp.), frog fruit (*Phylum nodiflora*), bacopa (*Bacopa monnieri*) and scattered pockets of primrose willow (*Ludwigia octavalis*), para grass (*Brachiaria mutica*), sesbania (*Sesbania exaltata*), foxtail (*Setaria* spp.), and cattails (*Typha* sp.). Saplings of Brazilian pepper (*Schinus terebinthifolius*) are generating within the fallow field.

The conceptual design for the upland fallow fields will include the creation of wetland habitats. The surficial groundwater conditions can support wetland habitat conditions, however on- and off-site contributing watershed conditions will have to be evaluated to determine the adequacy and appropriateness of hydroperiods and water budgets for the constructed wetlands. Piezometers have been installed to measure annual groundwater conditions in terms of both elevations and potential salinity levels. The majority of the created wetlands will be freshwater systems since that is a unique and substantially lost habitat community within such close proximity to Tampa Bay and the Bahia Beach area. However, oligohaline wetland systems are also a rare ecosystem within the basin. Site conditions will be evaluated and the creation of oligohaline wetlands may be adopted in the design plan. There are also east-west ditches that convey off-site contributing water flow through the fallow fields and into the large ditches along the western perimeter of the coastal hammock. These off-site contributing flows will be evaluated (quantity and quality) to determine if and where the flow can be directed into created wetlands. If this opportunity can be incorporated in the design, it can provide an added benefit of additional freshwater source, water quality treatment, and attenuation of surrounding grove run-off before reaching the wetland habitat. The created wetlands will include a dominance of common species found within similar systems in the basin. The grading and planting plan will be designed and updated in 2004.

The mosaic and inter-relationship with upland habitat will provide corridor opportunities for wildlife utilizing the adjacent hammock and salt-water wetland areas. These corridors will surround the constructed wetlands and will include a variety of oak hammock and pine flatwood restoration opportunities. Some of the dredged material from the constructed wetlands may remain on site, and configured to create slightly elevated mounds suitable for drier oak hammock creation opportunities. Common oak and pine flatwood species will be planted within the upland corridor areas. The created wetland and upland corridor areas and configuration depicted on Figure C are only conceptual; this design will be revised based on additional site evaluations, mitigation criteria, and updated for submittal in the 2004 FDOT mitigation plan.

Coastal Wetland Hammock Enhancement (Approx. 17 Acres)

The coastal hardwood hammock has dominant canopy coverage of cabbage palm (*Sabal palmetto*), with scattered slash pine (*Pinus elliottii*), red cedar (*Juniperus virginiana*), and oaks (*Quercus virginiana, Q. laurifolia*). Depending on the competition from the surrounding vegetation, the B. pepper provides minor to moderate canopy and sub-canopy cover within the hammock. Other sub-canopy species include cabbage palm, salt-bush (*Baccharis halmifolia*), wax myrtle (*Myrica cerifera*), and saw palmetto (*Serenoa repens*). Ground cover varies depending on the shade factor, but includes sawgrass (*Caladium jamaicense*), broomsedge (*Andropopon glomoratus*), swamp fern (*Blechnum serrulatum*), fleabane (*Pluchea odorata*), and various other sedges. Where the canopy has slightly opened, there are also a few pockets of sawgrass, black needle rush (*Juncus roemerianus*), and cordgrass (*Spartina patens*) within the hammock.

The boundary between the fallow field and the hammock has two large parallel drainage ditches with spoil ridges covered with Brazilian pepper (refer to Figure C and photo). These ditches connect with the mosquito ditches dredged through the salt-marsh and mangroves, allowing saltwater intrusion to occur further inland than historic conditions. Enhancement opportunities will be evaluated to determine if and which ditches can be backfilled without off-site hydrologic impacts. As one alternative, if the ditches cannot be totally backfilled due to potential hydraulic conveyance problems, the ditches may be graded to form shallow swales that would at least minimize salt-water intrusion. If left in their current condition, the dense B. pepper and deep ditches would substantially limit wildlife movement between the hammock and the upland restoration and

wetland creation areas. Ditch filling or constructing shallow swales will minimize that current wildlife restriction for corridor connections.

Mangroves have recruited along the ditches' sideslopes. Backfilling ditch segments will unfortunately result in unavoidable mangrove impacts. There will be a designated amount of on-site saltwater wetland enhancement that will be designated to mitigate for these impacts. This mitigation credit will be debited separate from any mitigation credit designated for FDOT wetland impacts. In addition to the hydrologic improvements, Brazilian pepper eradication will be another mitigation component of the hammock.

High Salt-Marsh Restoration (Approx. 15 Acres)

As the hammock transitions to the adjacent saltwater wetland habitat, there is an extensive area of dense Brazilian pepper with very minimal coverage of other species, primarily scattered cabbage palm, salt-bush and leather fern (*Acrostichum danaeifolium*). This area was historically within a high salt-marsh landscape position. With some hydrologic changes of contributing tidal conditions due to the mosquito ditches, this altered the depth and duration of inundation. Subsequently, the condition provided the opportunity for the Brazilian pepper to generate and substantially dominate this area. The Brazilian pepper density is essentially a dense thicket that decreases within the hammock where it has to compete with the native vegetation (refer to Figure B and photos). But without eradication, the Brazilian pepper will increase in the hammock.

Enhancement opportunities will include Brazilian pepper eradication and determination of which mosquito ditches can be backfilled to historic grade elevations. Once the B. pepper is removed, this area has so little coverage of other desirable species, supplemental planting of herbs and shrubs will be necessary. The grade elevations in this area range from 2.5 to 2.7 feet so examples of anticipated plantings include cordgrass (*S. patens*, *S. bakeri*), knotgrass (*Paspalum distichum*), seashore dropseed (*Sporobolus virginus*), seaside oxeye (*Borrichia frutescens*), hairawn muhly (*Muhlenbergia capillaries*), and salt-grass (*Distichlis spicata*). With the B. pepper eradication, mangrove and other desirable herb species will recruit from the adjacent salt-marsh habitat.

Mangrove and Salt-Marsh (Approx. 27 Acres)

There is a mosaic of mangroves surrounding salt-marsh habitat. White mangrove (*Laguncularia racemosa*) is dominant, with additional coverage provided by black mangrove (*Avicennia germinans*) and buttonwood (*Conocarpus erectus*). Some red mangrove (*Rhizophora mangle*) is present along the lower slopes of a few larger and deeper perimeter and mosquito ditches. The mangroves transition into a salt-marsh interior, dominant species include saltwort (*Batis maritima*), glasswort (*Salicornia* spp.), and salt-grass (*Distichlis spicata*). Scattered mangrove saplings are present in the marsh.

The mosquito ditches will be evaluated for determining if and where backfilling activities can be conducted with minimal impact to existing mangrove habitat. For spoil material removal, SWIM is incorporating a hydro-blast method within another restoration project (Gateway, construction 2003). This method utilizes high water pressure from fire hoses to displace spoil material underneath Brazilian pepper and into the adjacent mosquito ditches. Compared to traditional earthwork construction methods, this alternative method will minimize the potential of damage to surrounding mangroves. By achieving appropriate grade elevations below high tide elevations, this method also removes the continuous problem of Brazilian pepper generation. This restoration technique will be evaluated for adoption at the Bahia Beach project. A couple large perimeter ditches are the primary source of providing tidal flow to the saltwater wetlands, so unless additional evaluation determines otherwise, it's unlikely these ditches can modified much if any. Overall, the design plan for Bahia Beach will include an inter-related mosaic of upland and wetland habitat, as well as freshwater and saltwater wetland habitat conditions. In turn, providing this many habitats allow for more species diversity and use by a variety of wildlife species.

Attachment B – Schedule

The proposed schedule includes contracting the services of a consulting firm in late 2003 to gather additional site information and commence a design plan. A design plan is anticipated by the summer 2004

and presented in the 2004 DOT mitigation plan. The design will be finalized by late 2004 for permit submittal. Pending permit approval, construction should commence by mid-late 2005 and continue into 2006.

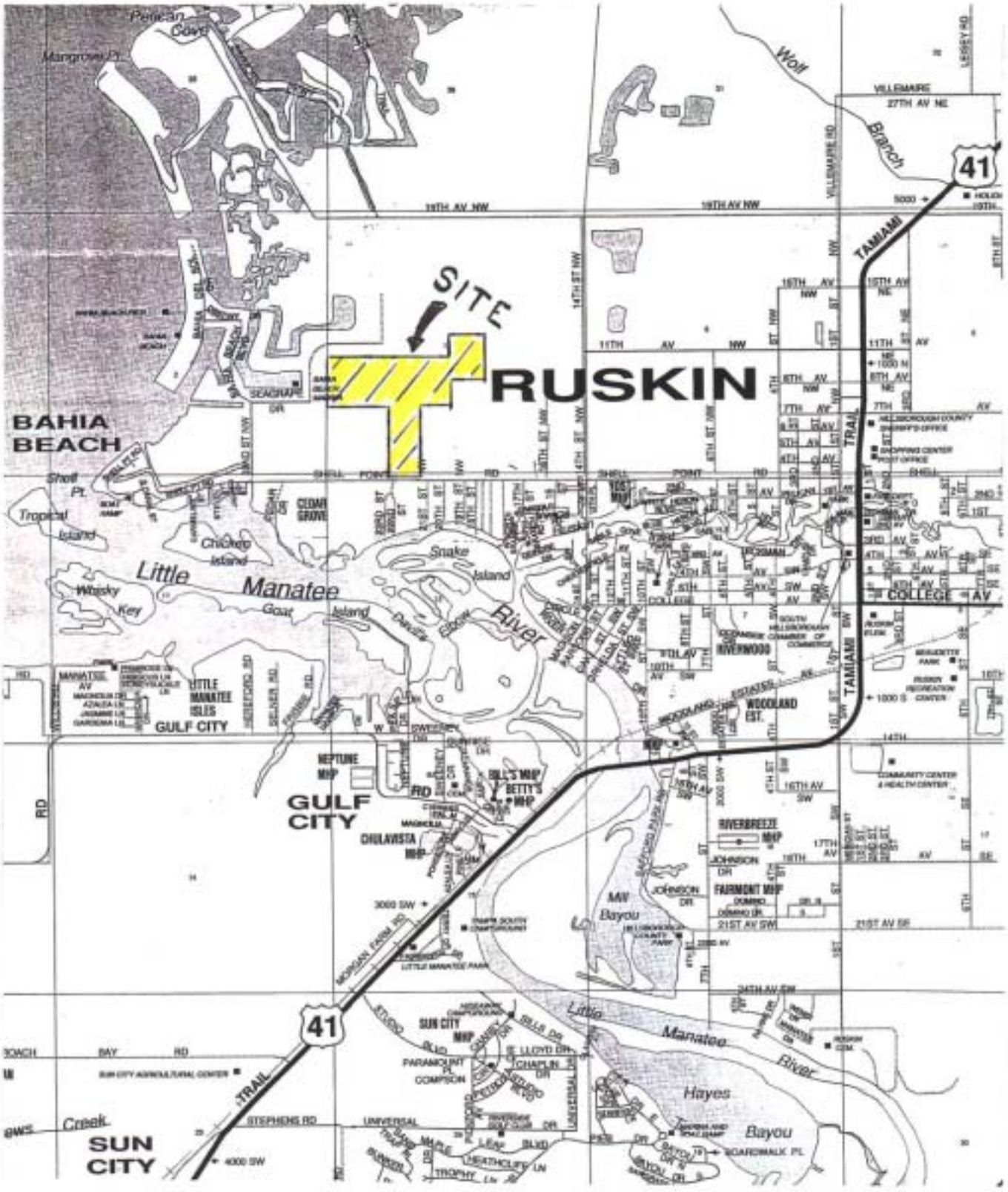
Attachment C – Maintenance & Monitoring, Success Criteria

The following information relates to potential maintenance, monitoring, and success criteria that could be implemented, this information will be updated with the design plans.

Post-construction and planting, there will be a minimum 3 years of maintenance to guarantee mitigation success criteria. Maintenance will be a more intensive effort during the first year after planting to allow for establishment of plant species, and less frequent maintenance as the habitat matures. The primary maintenance activity will include herbicide treatment of exotics & nuisance vegetation on an as needed basis based on periodic inspections. Treatments are expected to be every couple months for the first year after construction and quarterly thereafter. Based on the conditions of the various habitats and status of selected species proposed for planting, supplemental planting will be conducted where necessary to fulfill desired results of each habitat area and success criteria. After a minimum 3 years and the desired habitat conditions and mitigation success has been achieved, perpetual management will be conducted by the Hillsborough County Parks, Recreation & Conservation Department to maintain the same success criteria. Based on the progress of the habitat conditions, inspections and any necessary herbicide treatments will be expected on a semi-annual basis to eradicate exotics and nuisance species.

Monitoring will be conducted by a consulting firm on contract with the WMD, semi-annually for a minimum of three years and until success criteria is met. Monitoring will include a comprehensive qualitative assessment of each habitat area on the site, including but not limited to plant health & survivorship, recruited plant species, cumulative plant coverage, exotic & nuisance species coverage, wildlife use & opportunities, and recommended & proposed actions necessary to ensure and further enhance success. The first monitoring report will include qualitative and photo documentation of pre-construction habitat conditions, construction activities, and habitat conditions at the monitoring station locations that will be documented on the permitted design plans and utilized for the entire monitoring period. However, site conditions will be annually documented for the entire site, not just for the monitoring stations. Annual monitoring reports will be prepared and submitted to the SWFWMD-Regulation Dept. and USACOE Enforcement Branch to document habitat conditions, any problems and solutions, and anticipated activities for the following year.

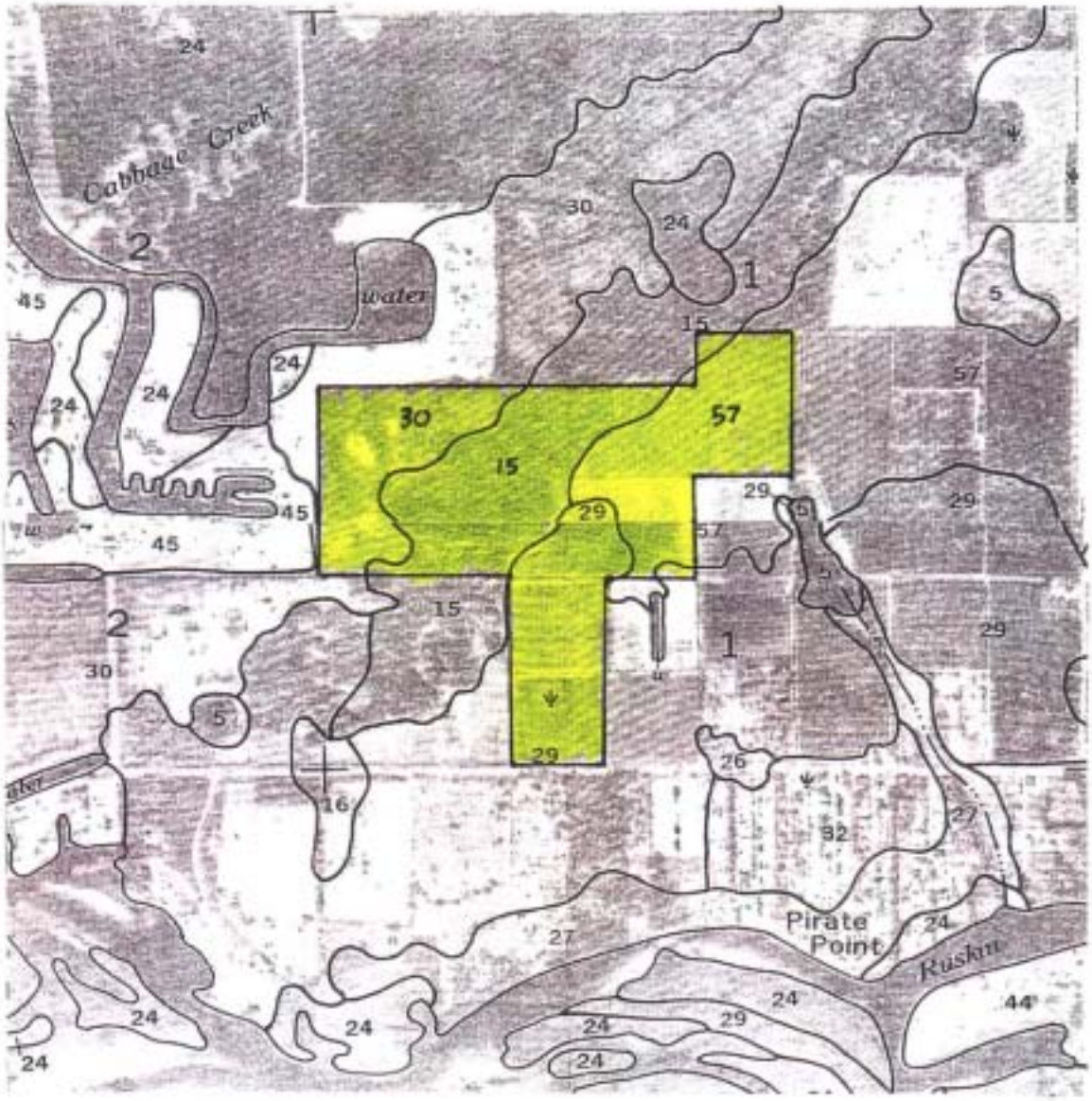
Success criteria will be determined as part of the design process but is expected to include a minimum 90% survivorship of planted material for a minimum of one year from the selected nursery contractor. Any plant mortality will be replaced with appropriate species to be agreed upon with the WMD and Hillsborough County. Plant coverage for the created wetlands and restored upland habitat is expected to include a minimum 90% coverage of planted and recruited desirable species. Exotic and nuisance vegetative eradication will be conducted to as close to no coverage as possible for all the various habitat areas, with a maximum coverage limit of 10% to achieve success criteria.



FDOT – District 7 **MITIGATION SITE** **(Tampa Bay Drainage Basin)**	**BAHIA BEACH** **(SW 78)**	**FIGURE A – Location Map** **Scale 2 in. = 1 mile, ^North**

FDOT – District 7 MITIGATION SITE (Tampa Bay Drainage Basin)	BAHIA BEACH (SW 78)	FIGURE B Adjacent Public Lands Scale 2.3 in. = 1 mile, ^North

FDOT – District 7 MITIGATION SITE (Tampa Bay Drainage Basin)	BAHIA BEACH (SW 78)	FIGURE C Existing Conditions & Conceptual Plan Scale 1 in. = approx. 530 ft. ^North



LEGEND

#15 - Felda fine sand**

#29 - Myakka fine sand

#30 - Myakka fine sand, frequently flooded**

#57 - Wabasso fine sand

**** - Hydric soils**

FDOT – District 7 **MITIGATION SITE** **(Tampa Bay Drainage Basin)**	**BAHIA BEACH** **(SW 78)**	**FIGURE D** **NRCS Hills. Co. Soil Survey** **Scale 4.2 in. = 1 mile ^North**

The citrus groves were removed from the uplands, allowing the generation of nuisance vegetation such as natalgrass, bahiagrass, dog fennel, ragweed, smutgrass, chickweed, beggar'-tick, and nutsedge.

Upland-cut swales (left and right) were used to provide grove drainage to collector ditches. Two large ditches were constructed along the perimeter between the grove and coastal hammock. The associated spoil ridges are covered with a dense stand of Brazilian pepper (background).

FDOT – District 7 **MITIGATION SITE** **(Tampa Bay Drainage Basin)**	**BAHIA BEACH** **(SW 78)**

The coastal wetland hammock has a dominant cover of cabbage palm with scattered oaks and slash pine. The Brazilian pepper provides minor to moderate coverage. Other common species include salt-bush, saw palmetto, broomsedge, and swamp fern.

The hammock has a few marsh pockets, dominant species include sawgrass, cordgrass, and for this particular marsh, a dominance of black needle rush and marsh fleabane.

FDOT – District 7 **MITIGATION SITE** **(Tampa Bay Drainage Basin)**	**BAHIA BEACH** **(SW 78)**

The transition between the coastal hammock and the mangrove & salt-marsh area is a dense stand of Brazilian pepper with very minimal coverage of other species; scattered small cabbage palm, salt-bush, and leather fern.

View from within the core of the mangrove & salt-marsh area, looking east toward the B. pepper transition and coastal hammock. The salt-marsh has dominant cover of glasswort, saltwalt, and salt-grass. Shrub-size white and black mangroves transition to larger mangroves along the northwestern and western portions of this ecosystem.

FDOT – District 7 **MITIGATION SITE** **(Tampa Bay Drainage Basin)**	**BAHIA BEACH** **(SW 78)**